Crown Castle
3 Corporate Park Drive, Suite 101
Clifton Park, NY 12065

April 11, 2019

Melanie A. Bachman
Acting Executive Director
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

RE: **Notice of Exempt Modification for Verizon Wireless: 876334**
Verizon Site ID: 469273
625 Spring Street, Southington CT 06489
Latitude: 41° -37' 56.9"/ Longitude: -72° -53' 39.3"

Dear Ms. Bachman:

Verizon currently maintains twelve (12) antennas at the 133-foot level of the existing 158-foot monopole tower at 625 Spring Street, Southington, CT 06489. The tower is owned by Crown Castle as well the property. Verizon now intends to replace six (6) RRH's. Verizon also intends to add one (1) hybrid cable and (1) OVP.

This facility was approved by the Town of Southington Planning and Zoning Department on May 18, 1998. There were no conditions listed in the approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to Town Manager Mr. Mark J. Sciota, Town of Southington and Planning & Zoning Department in the Town of Southington, CT. Crown Castle is the tower and property owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

For the foregoing reasons, Verizon respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,

Jeffrey Barbadora
Real Estate Specialist
12 Gill Street, Suite 5800, Woburn, MA 01801
781-729-0053
Jeff.Barbadora@crowncastle.com

Attachments:

Tab 1: Exhibit-1: Compound plan and elevation depicting the planned changes
Tab 2: Exhibit-2: Structural Modification Report
Tab 3: Exhibit-3: General Power Density Table Report (RF Emissions Analysis Report)

cc: Mr. Mark J. Sciota-Town
Manager
75 Main Street
Southington, CT

Planning and Zoning
Municipal Center
196 North Main Street
Southington, CT 06489

Rec'd 5/11/98
CK#1903
SWM

PLANNING AND ZONING DEPARTMENT

P.O. BOX 610 • SOUTHINGTON, CONN. 06489 • 203/276-6248

TOWN FEE: $10.00
STATE FEE: $10.00
TOTAL FEE: $20.00

Z.P. # 5625

ZONING PERMIT APPLICATION

Applicant (please print):

~~Sprint PCS~~
~~9 Barnes Industrial Road~~
~~Wallingford, CT. 06492~~
Telephone: 203-294-5676

Owner (please print):

Josephine Smoron
55 Smoron Drive
Southington, CT. 06489
Telephone: ~~860-628-6243~~

Address of Property: 625 Spring Street Zone: R-40
Utilities: Sewer N/A Septic System N/A Well N/A Town Water N/A

Proposed Activity: install Telecommunication Facility
Does proposed activity entail construction or land alteration within 50 feet of a wetland/wet area/waterbody? Yes X No ____

Date of following approvals: Special Permit* 12/9/97 Subdivision ____
Site Plan ~~12/9/97~~ Inland/Wetland ~~12/2/97~~ Filling of Floodplain ____
Variance ____ Special Exception* ____ Home Occupation* ____
Expansion of Non-Conforming Use* ____

Submit 7 set of plans. * NOTE: Provide one copy each of certain approval letters stamped by the Town Clerk and noting the volume and page number of the approval in the land records.

OFFICE USE ONLY	Approved	Denied
Planner/Inland Wetlands:	5/18/98	
Zoning Officer:	5/18/98	
Town Engineer:	5/15/98	
Water Department:	—	
Health Department:	—	

Approved for Zoning Permit. A copy of this approval shall be presented to the Building Official prior to issuance of a Building Permit.

Zoning Enforcement Officer 5/18/98 Date

CERTIFICATE OF ZONING COMPLIANCE Z.P. # ____

I hereby certify that all improvements were installed in compliance with the Zoning Permit.

	Approved	Denied
Planner/Inland Wetlands:		
Zoning Officer:		
Town Engineer:		
Water Department:		
Health Department:		

Approved for Certificate of Zoning Compliance. A copy of this approval shall be presented to the Building Official prior to issuance of a Certificate of Occupancy.

1/94

Zoning Enforcement Officer Date

** I have received a copy of the ordinance requiring the fencing of pools

Signed ____
Print ____

625 SPRING ST

Location	625 SPRING ST	**Mblu**	168/ / 020/ /
Acct#	19111	**Owner**	GLOBAL SIGNAL ACQUISITIONS II LLC
Assessment	$160,910	**Appraisal**	$229,870
PID	15908	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$23,750	$206,120	$229,870
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2016	$16,630	$144,280	$160,910

Owner of Record

Owner	GLOBAL SIGNAL ACQUISITIONS II LLC	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	4017 WASHINGTON RD PMB 331 CANONSBURG, PA 15317	**Book & Page**	788/ 214
		Sale Date	04/25/2001

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
GLOBAL SIGNAL ACQUISITIONS II LLC	$0		788/ 214	04/25/2001

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Building Percent Good:

Building Attributes	
Field	**Description**
Style	Vacant w/OB
Model	

Building Photo

Building Photo
(http://images.vgsi.com/photos2/SouthingtonCTPhotos//\00\05\

Building Layout

(http://images.vgsi.com/photos2/SouthingtonCTPhotos//Sketche

Building Sub-Areas (sq ft)	Legend

Grade:	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Full Bthrms:	
Half Baths:	
Extra Fixtures	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Total Kitchens	
Fireplaces	
Whirlpool Tubs	
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Garages	
Attic Type	
Cath Ceiling	

No Data for Building Sub-Areas

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code 438

Land Line Valuation

Size (Acres) 1.62

Description	Cell Site	**Depth**	
Zone	R-40		
Alt Land Appr	No		
Category			

Outbuildings

Outbuildings					Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Bldg #**
FN5	Fence-10'Chain			233 L.F.	1
SHD5	Cell Shed			360 units	1
SHD5	Cell Shed			240 units	1
SHD5	Cell Shed			180 units	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$3,500	$206,120	$209,620
2016	$3,500	$206,120	$209,620
2015	$3,500	$206,120	$209,620
2014	$3,500	$181,770	$185,270
2013	$3,500	$181,770	$185,270

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$2,450	$144,280	$146,730
2016	$2,450	$144,280	$146,730
2015	$2,450	$144,280	$146,730
2014	$2,450	$127,240	$129,690
2013	$2,450	$127,240	$129,690

Site Name: Southington, CT
Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density*	Maximum Permissable Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW PCS	1970	1	5200	5200	132	0.1073	1.0	10.73%
VZW Cellular LTE	869	1	3150	3150	132	0.0650	0.579333333	11.22%
VZW Cellular	869	3	389	1167	132	0.0241	0.579333333	4.16%
VZW AWS	2145	1	5800	5800	132	0.1197	1.0	11.97%
VZW 700	746	1	2100	2100	132	0.0433	0.497333333	8.72%

Total Percentage of Maximum Permissible Exposure 46.80%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Section 1.13101 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1

MHz = Megahertz
mW/cm^2 = milliwatts per square centimeter
ERP = Effective Radiated Power

Absolute worst case maximum values used, including the following assumptions:
1. closest accessible point is distance from antenna to base of pole;
2. continuous transmission from all available channels at full power for indefinite time period; and,
3. all RF energy is assumed to be directed solely to the base of the pole.

-1992

ORIGIN ID:BEDA (781) 970-0053
JEFF BARBADORA
CROWN CASTLE
12 GILL STREET
SUITE 5800
WOBURN, MA 01801
UNITED STATES US

SHIP DATE: 11APR19
ACTWGT: 0.50 LB
CAD: 104924191/INET4100

BILL SENDER

TO PLANNI NG & ZONING DEPT
TOWN OF SOUTHINGTON
196 NORTH MAIN STREET

SOUTHINGTON CT 06489
(860) 276-6242
INV:
PO: REF: 1766.6690
DEPT:

565J1/D7E5/234D

FedEx Express

FRI - 12 APR 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7749 4303 0799

EB BNHA

06489
CT-US BDL

ORIGIN ID:BEDA (781) 970-0053
JEFF BARBADORA
CROWN CASTLE
12 GILL STREET
SUITE 5800
WOBURN, MA 01801
UNITED STATES US

SHIP DATE: 11APR19
ACTWGT: 0.50 LB
CAD: 104924191/INET4100

BILL SENDER

TO TOWN MANAGER- MARK SCIOTA
TOWN OF SOUTHINGTON
75 MAIN STREET

SOUTHINGTON CT 06489
(860) 276-6242 REF: 1766.6680
INV:
PO: DEPT:

FedEx Express

FRI - 12 APR 10:30A
PRIORITY OVERNIGHT

TRK# 0201 7749 4300 9852

EB BNHA

06489
CT-US BDL

565J1/D725/23AD

Date: **April 11, 2019**

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

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***Verizon Wireless* Equipment Swap**	
	Carrier Site Number:	20702
	Carrier Site Name:	Southington CT
Crown Castle Designation:	**Crown Castle BU Number:**	876334
	Crown Castle Site Name:	SOUTHINGTON, SMORON
	Crown Castle JDE Job Number:	518917
	Crown Castle Work Order Number:	1681343
	Crown Castle Order Number:	450298 Rev. 0
Engineering Firm Designation:	**Crown Castle Project Number:**	1681343
Site Data:	**625 Spring Street, SOUTHINGTON, Hartford County, CT** **Latitude *41° 37' 56.9"*, Longitude *-72° 53' 39.3"*** **160 Foot - Monopole Tower**	

Dear Amanda D Brown,

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

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

LC6.7: Existing Equipment + Maintenance Configuration Change (MCC) **Sufficient Capacity**

The analysis has been performed in accordance with the 2018 Connecticut State Building Code and the TIA-222-G Standard as allowed by Section 101.4.7, Existing Buildings, of the 2015 IBC and Section 301.1 Exception of the 2015 IEBC based upon a nominal 3-second gust wind speed of 97 mph. Applicable standard references and design criteria are listed in Section 2 - ANALYSIS CRITERIA.

This proposed configuration change is considered maintenance and does not increase the loading or stress rating of the tower and foundation. Therefore, conformance to TIA-222-H is not required.

Structural analysis prepared by: Nicholas Cvetic, E.I.T. / MEH

Respectfully submitted by:

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

4/11/2019

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 160 ft monopole tower designed by Summit.

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

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-G
Risk Category:	II
Wind Speed:	97 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Seismic Ss:	0.185
Seismic S1:	0.064
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
132.0	134.0	3	antel	BXA-80080-6CF-EDIN-X w/ Mount Pipe	7 1	1-5/8 1-1/4
	133.0	3	tower mounts	Side-by-Side Mounting Kit [PN. BSAMNT-SBS-2-2]		
		6	andrew	SBNHH-1D65B w/ Mount Pipe		
		3	antel	BXA-70063/6CFx2		
		1	rfs celwave	DB-C1-12C-24AB-0Z		
		1	rfs celwave	DB-T1-6Z-8AB-0Z		
		3	samsung telecommunications	RFV01U-D1A		
		3	samsung telecommunications	RFV01U-D2A		
	132.0	1	tower mounts	Pipe Mount [PM 602-3]		
		1	tower mounts	Sector Mount [SM 503-3]		

Table 2 - Equipment to be Removed, Not Considered in Analysis

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
132.0	133.0	3	alcatel lucent	RRH2X60-AWS	13	1-5/8
		3	alcatel lucent	RRH2X60-PCS		
		3	alcatel lucent	RRH2x60-700		
		1	rfs celwave	DB-T1-6Z-8AB-0Z		
	132.0	1	tower mounts	Platform Mount [LP 712-1]		

Table 3 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
156.0	157.0	2	andrew	SBNH-1D6565C	8 6 2	1-5/8 3/4 3/8
		1	kmw communications	AM-X-CD-16-65-00T-RET		
		3	cci antennas	DTMABP7819VG12A		
		3	ericsson	RRUS 11		
		2	cci antennas	TPA-65R-LCUUUU-H8		
		3	ericsson	RRUS 12		
		3	ericsson	RRUS 32		
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B66		
		3	ericsson	RRUS 4478 B14		
		1	kathrein	80010798 w/ Mount Pipe		
		1	kathrein	80010965 w/ Mount Pipe		
		2	kathrein	80010966 w/ Mount Pipe		
		1	raycap	DC6-48-60-0-8F		
		2	raycap	DC6-48-60-18-8F		
	156.0	1	sabre	C10-857-111		
148.0	148.0	3	alcatel lucent	800MHz 2X50W RRH W/FILTER	-	-
		6	alcatel lucent	PCS 1900MHz 4x45W-65MHz		
		1	tower mounts	Side Arm Mount [SO 103-3]		
146.0	147.0	3	alcatel lucent	TD-RRH8x20-25	4	1-1/4
		1	rfs celwave	APXV9ERR18-C-A20 w/ Mount Pipe		
		2	rfs celwave	APXVSPP18-C-A20 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-C-120 w/ Mount Pipe		
	146.0	1	crown mounts	Platform Mount [LP 1201-1]		
		3	rfs celwave	IBC1900BB-1		
		3	rfs celwave	IBC1900HG-2A		
		1	tower mounts	Miscellaneous [NA 510-1]		
139.0	139.0	3	rfs celwave	APXV18-206517S-C	6	1-5/8
		1	tower mounts	Pipe Mount [PM 501-3]		
129.0	130.0	3	dragonwave	HORIZON COMPACT	3	1/2
	129.0	1	tower mounts	Side Arm Mount [SO 104-3]		
	127.0	1	andrew	VHLP2-18		
		2	andrew	VHLP800-11		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
101.0	102.0	1	symmetricom	58532A	1	1/2
	101.0	1	tower mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 4 - Documents Provided

Document	Remarks	Reference	Source
4-TOWER MANUFACTURER DRAWINGS	Paul J. Ford and Company	1614569	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Paul J. Ford and Company	1999756	CCISITES
4-GEOTECHNICAL REPORTS	FDH	1530919	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Paul J. Ford and Company	2588177	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Paul J. Ford and Company	3363885	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	FDH	5288062	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	FDH	5755362	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	FDH	6249238	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	Jacobs	6962729	CCISITES
4-POST-MODIFICATION INSPECTION	Paul J. Ford and Company	2588175	CCISITES
4-POST-MODIFICATION INSPECTION	TEP	3794196	CCISITES
4-POST-MODIFICATION INSPECTION	TEP	5570676	CCISITES
4-POST-MODIFICATION INSPECTION	FDH	5888770	CCISITES
4-POST-MODIFICATION INSPECTION	ETS	6544953	CCISITES
4-POST-MODIFICATION INSPECTION	ETS	7104038	CCISITES

3.1) Analysis Method

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

3.2) Assumptions

1) Tower and structures were built and maintained in accordance with the manufacturer's specifications.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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

4) ANALYSIS RESULTS

Table 5 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
160 - 155	Pole	TP16x16x0.375	Pole	9.1%	Pass
155 - 150	Pole	TP16x16x0.375	Pole	31.4%	Pass
150 - 146	Pole	TP16x16x0.375	Pole	51.4%	Pass
146 - 141	Pole	TP22.924x22x0.25	Pole	37.7%	Pass
141 - 136	Pole	TP23.848x22.924x0.25	Pole	50.7%	Pass
136 - 131	Pole	TP24.772x23.848x0.25	Pole	64.8%	Pass
131 - 126	Pole	TP25.696x24.772x0.25	Pole	80.8%	Pass
126 - 121	Pole	TP26.62x25.696x0.25	Pole	95.7%	Pass
121 - 120.1	Pole	TP26.786x26.62x0.25	Pole	98.3%	Pass
120.1 - 119.85	Pole + Reinf.	TP26.833x26.786x0.4875	Reinf. 21 Tension Rupture	69.9%	Pass
119.85 - 117.5	Pole + Reinf.	TP27.267x26.833x0.4875	Reinf. 21 Tension Rupture	74.6%	Pass
117.5 - 117.25	Pole + Reinf.	TP27.313x27.267x0.5	Reinf. 22 Tension Rupture	69.5%	Pass
117.25 - 115.5	Pole + Reinf.	TP27.637x27.313x0.5	Reinf. 22 Tension Rupture	72.7%	Pass
115.5 - 115.25	Pole + Reinf.	TP27.683x27.637x0.6625	Reinf. 1 Tension Rupture	64.1%	Pass
115.25 - 110.25	Pole + Reinf.	TP28.607x27.683x0.65	Reinf. 1 Tension Rupture	71.8%	Pass
110.25 - 107.5	Pole + Reinf.	TP29.808x28.607x0.6375	Reinf. 1 Tension Rupture	75.8%	Pass
107.5 - 102.5	Pole + Reinf.	TP29.074x28.082x0.7125	Reinf. 1 Tension Rupture	78.9%	Pass
102.5 - 100.5	Pole + Reinf.	TP29.471x29.074x0.7	Reinf. 1 Tension Rupture	81.3%	Pass
100.5 - 100.25	Pole + Reinf.	TP29.521x29.471x0.6375	Reinf. 21 Tension Rupture	83.1%	Pass
100.25 - 98.5	Pole + Reinf.	TP29.868x29.521x0.6375	Reinf. 21 Tension Rupture	85.1%	Pass
98.5 - 98.25	Pole + Reinf.	TP29.917x29.868x0.6625	Reinf. 23 Tension Rupture	81.4%	Pass
98.25 - 93.25	Pole + Reinf.	TP30.909x29.917x0.65	Reinf. 23 Tension Rupture	86.5%	Pass
93.25 - 90.5	Pole + Reinf.	TP31.455x30.909x0.65	Reinf. 23 Tension Rupture	89.1%	Pass
90.5 - 90.25	Pole + Reinf.	TP31.504x31.455x0.6875	Reinf. 23 Tension Rupture	87.9%	Pass
90.25 - 85.25	Pole + Reinf.	TP32.496x31.504x0.675	Reinf. 23 Tension Rupture	92.4%	Pass
85.25 - 83.5	Pole + Reinf.	TP32.843x32.496x0.6625	Reinf. 23 Tension Rupture	93.9%	Pass
83.5 - 83.25	Pole + Reinf.	TP32.893x32.843x0.9125	Reinf. 6 Tension Rupture	71.1%	Pass
83.25 - 80.75	Pole + Reinf.	TP33.389x32.893x0.9	Reinf. 6 Tension Rupture	72.8%	Pass
80.75 - 80.5	Pole + Reinf.	TP33.439x33.389x1.0625	Reinf. 6 Tension Rupture	59.8%	Pass

80.5 - 80.25	Pole + Reinf.	TP33.488x33.439x0.9875	Reinf. 11 Tension Rupture	64.3%	Pass
80.25 - 77.5	Pole + Reinf.	TP34.034x33.488x0.9625	Reinf. 11 Tension Rupture	66.0%	Pass
77.5 - 77.25	Pole + Reinf.	TP34.083x34.034x0.6875	Reinf. 11 Tension Rupture	92.4%	Pass
77.25 - 73	Pole + Reinf.	TP35.819x34.083x0.6875	Reinf. 11 Tension Rupture	95.5%	Pass
73 - 68	Pole + Reinf.	TP35.233x34.301x0.75	Reinf. 11 Tension Rupture	92.8%	Pass
68 - 64.25	Pole + Reinf.	TP35.932x35.233x0.7375	Reinf. 11 Tension Rupture	95.2%	Pass
64.25 - 64	Pole + Reinf.	TP35.978x35.932x0.875	Reinf. 7 Tension Rupture	83.9%	Pass
64 - 60.5	Pole + Reinf.	TP36.63x35.978x0.8625	Reinf. 7 Tension Rupture	85.8%	Pass
60.5 - 60.25	Pole + Reinf.	TP36.677x36.63x0.925	Reinf. 7 Tension Rupture	81.0%	Pass
60.25 - 60.1	Pole + Reinf.	TP36.705x36.677x0.925	Reinf. 7 Tension Rupture	81.1%	Pass
60.1 - 59.85	Pole + Reinf.	TP36.751x36.705x0.975	Reinf. 7 Tension Rupture	78.4%	Pass
59.85 - 59.1	Pole + Reinf.	TP36.891x36.751x0.975	Reinf. 7 Tension Rupture	78.8%	Pass
59.1 - 58.85	Pole + Reinf.	TP36.938x36.891x1.05	Reinf. 7 Tension Rupture	71.7%	Pass
58.85 - 55.4	Pole + Reinf.	TP37.581x36.938x1.025	Reinf. 7 Tension Rupture	73.3%	Pass
55.4 - 55.15	Pole + Reinf.	TP37.627x37.581x1.025	Reinf. 7 Tension Rupture	73.4%	Pass
55.15 - 54.75	Pole + Reinf.	TP37.702x37.627x1.025	Reinf. 7 Tension Rupture	73.6%	Pass
54.75 - 54.5	Pole + Reinf.	TP37.748x37.702x0.825	Reinf. 10 Tension Rupture	89.4%	Pass
54.5 - 49.5	Pole + Reinf.	TP38.68x37.748x0.8125	Reinf. 10 Tension Rupture	91.8%	Pass
49.5 - 44.5	Pole + Reinf.	TP39.612x38.68x0.8	Reinf. 10 Tension Rupture	94.1%	Pass
44.5 - 41.3	Pole + Reinf.	TP40.208x39.612x0.7875	Reinf. 10 Tension Rupture	95.5%	Pass
41.3 - 41.05	Pole + Reinf.	TP40.254x40.208x0.875	Reinf. 10 Tension Rupture	83.8%	Pass
41.05 - 39	Pole + Reinf.	TP41.568x40.254x0.875	Reinf. 10 Tension Rupture	84.6%	Pass
39 - 33	Pole + Reinf.	TP40.996x39.886x1.175	Reinf. 10 Tension Rupture	65.9%	Pass
33 - 31.5	Pole + Reinf.	TP41.274x40.996x1.175	Reinf. 10 Tension Rupture	66.4%	Pass
31.5 - 31.25	Pole + Reinf.	TP41.32x41.274x1.175	Reinf. 10 Tension Rupture	66.0%	Pass
31.25 - 30.5	Pole + Reinf.	TP41.459x41.32x1.175	Reinf. 10 Tension Rupture	66.3%	Pass
30.5 - 30.25	Pole + Reinf.	TP41.505x41.459x1.125	Reinf. 9 Tension Rupture	69.5%	Pass
30.25 - 25.75	Pole + Reinf.	TP42.337x41.505x1.1	Reinf. 9 Tension Rupture	71.0%	Pass
25.75 - 25.5	Pole + Reinf.	TP42.383x42.337x1.075	Reinf. 9 Tension Rupture	74.9%	Pass
25.5 - 24.7	Pole + Reinf.	TP42.531x42.383x1.075	Reinf. 9 Tension Rupture	75.2%	Pass
24.7 - 24.45	Pole + Reinf.	TP42.578x42.531x0.95	Reinf. 9 Tension Rupture	82.4%	Pass
24.45 - 24	Pole + Reinf.	TP42.661x42.578x0.95	Reinf. 9 Tension Rupture	82.5%	Pass
24 - 23.75	Pole + Reinf.	TP42.707x42.661x1.2	Reinf. 9 Tension Rupture	66.5%	Pass
23.75 - 18.75	Pole + Reinf.	TP43.632x42.707x1.175	Reinf. 9 Tension Rupture	68.1%	Pass
18.75 - 14.1	Pole + Reinf.	TP44.492x43.632x1.15	Reinf. 9 Tension Rupture	69.5%	Pass
14.1 - 13.8	Pole + Reinf.	TP44.547x44.492x1.175	Reinf. 9 Tension Rupture	67.8%	Pass
13.8 - 13.65	Pole + Reinf.	TP44.575x44.547x1.175	Reinf. 9 Tension Rupture	67.8%	Pass
13.65 - 10.5	Pole + Reinf.	TP45.158x44.575x1.175	Reinf. 9 Tension Rupture	68.7%	Pass
10.5 - 10.25	Pole + Reinf.	TP45.204x45.158x1.175	Reinf. 9 Tension Rupture	68.8%	Pass

10.25 - 5.25	Pole + Reinf.	TP46.129x45.204x1.15	Reinf. 9 Tension Rupture	70.2%	Pass
5.25 - 3	Pole + Reinf.	TP46.545x46.129x1.125	Reinf. 9 Tension Rupture	70.8%	Pass
3 - 2.9	Pole + Reinf.	TP46.564x46.545x1.0875	Reinf. 9 Tension Rupture	73.0%	Pass
2.9 - 2.75	Pole + Reinf.	TP46.591x46.564x1.025	Reinf. 9 Tension Rupture	80.6%	Pass
2.75 - 2.65	Pole + Reinf.	TP46.61x46.591x1.025	Reinf. 9 Tension Rupture	80.6%	Pass
2.65 - 2.5	Pole + Reinf.	TP46.638x46.61x1.025	Reinf. 9 Tension Rupture	80.7%	Pass
2.5 - 2.25	Pole + Reinf.	TP46.684x46.638x1	Reinf. 18 Compression	73.5%	Pass
2.25 - 1.9	Pole + Reinf.	TP46.749x46.684x1	Reinf. 18 Compression	73.6%	Pass
1.9 - 1.65	Pole + Reinf.	TP46.795x46.749x0.95	Reinf. 18 Compression	75.2%	Pass
1.65 - 0	Pole + Reinf.	TP47.1x46.795x0.95	Reinf. 18 Compression	75.6%	Pass
				Summary	
			Pole	98.3%	Pass
			Reinforcement	95.5%	Pass
			Overall	98.3%	Pass

Table 6 - Tower Component Stresses vs. Capacity - LC6.7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Original Anchor Rods	0	75.1	Pass
1	Additional Anchor Rods	0	71.5	Pass
1	Base Plate	0	67.1	Pass
1	Base Foundation Structure	0	71.0	Pass
1	Base Foundation Soil Interaction	0	86.7	Pass

Structure Rating (max from all components) =	**98.3%**

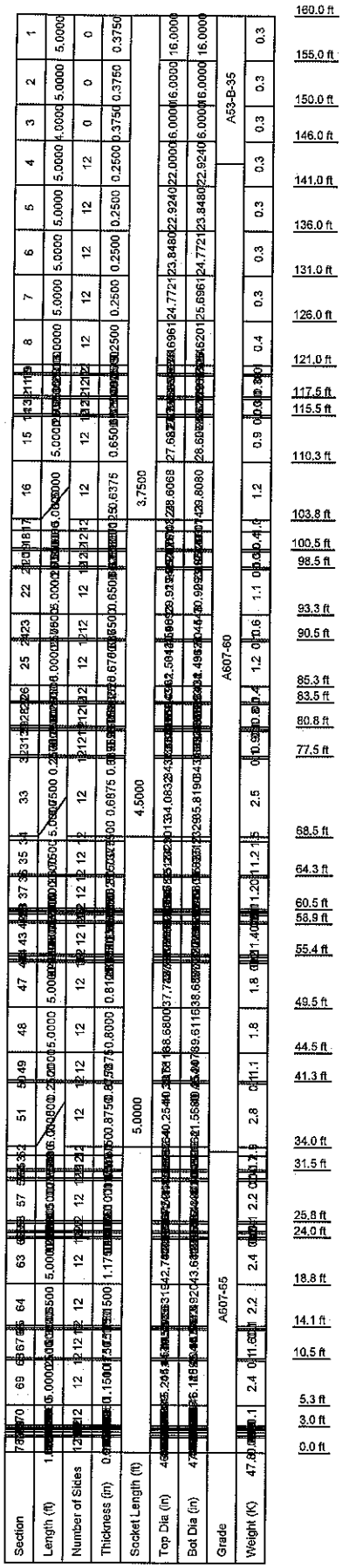
Notes:
1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity consumed.

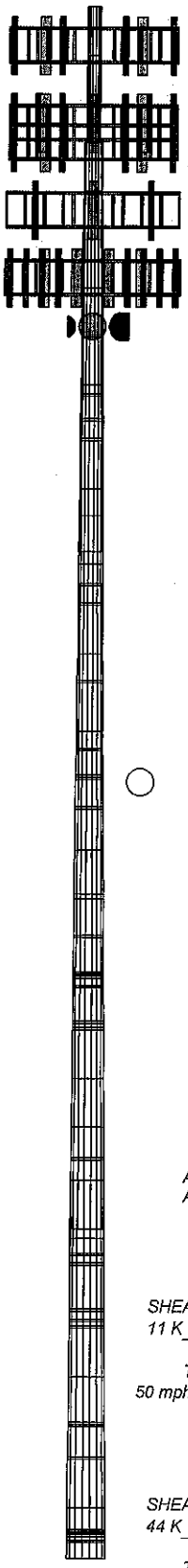
4.1) Recommendations

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

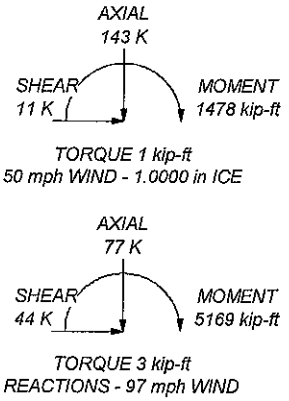
APPENDIX A

TNXTOWER OUTPUT





ALL REACTIONS ARE FACTORED



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A53-B-35	35 ksi	60 ksi	A607-65	65 ksi	80 ksi
A607-60	60 ksi	75 ksi			

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure C 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 0.0000 ft

CROWN CASTLE
The Pathway to Possible

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

Job: *BU# 876334*			
Project:			
Client: Crown Castle	Drawn by: NCvetic		App'd:
Code: TIA-222-G	Date: 02/21/19		Scale: NTS
Path: R:\BA Models - Letters\Work Area\NCvetic\COMPLETE\876334 WO 1881343\test\876334 Reinforced.er			Dwg No. E-1

Tower Input Data

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

1) Tower is located in Hartford County, Connecticut.
2) Basic wind speed of 97 mph.
3) Structure Class II.
4) Exposure Category C.
5) Topographic Category 1.
6) Crest Height 0.0000 ft.
7) Nominal ice thickness of 1.0000 in.
8) Ice thickness is considered to increase with height.
9) Ice density of 56.0000 pcf.
10) A wind speed of 50 mph is used in combination with ice.
11) Deflections calculated using a wind speed of 60 mph.
12) A non-linear (P-delta) analysis was used.
13) Pressures are calculated at each section.
14) Stress ratio used in pole design is 1.
15) 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	Ignore KL/ry For 60 Deg. Angle Legs	Pole Without Linear Attachments
		Pole With Shroud Or No Appurtenances
		Outside and Inside Corner Radii Are Known

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	160.0000-155.0000	5.0000	0.0000	Round	16.0000	16.0000	0.3750		A53-B-35 (35 ksi)
L2	155.0000-150.0000	5.0000	0.0000	Round	16.0000	16.0000	0.3750		A53-B-35 (35 ksi)
L3	150.0000-146.0000	4.0000	0.0000	Round	16.0000	16.0000	0.3750		A53-B-35 (35 ksi)
L4	146.0000-141.0000	5.0000	0.0000	12	22.0000	22.9240	0.2500	1.0000	A607-60 (60 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L5	141.0000-136.0000	5.0000	0.0000	12	22.9240	23.8480	0.2500	1.0000	A607-60 (60 ksi)
L6	136.0000-131.0000	5.0000	0.0000	12	23.8480	24.7721	0.2500	1.0000	A607-60 (60 ksi)
L7	131.0000-126.0000	5.0000	0.0000	12	24.7721	25.6961	0.2500	1.0000	A607-60 (60 ksi)
L8	126.0000-121.0000	5.0000	0.0000	12	25.6961	26.6201	0.2500	1.0000	A607-60 (60 ksi)
L9	121.0000-120.1000	0.9000	0.0000	12	26.6201	26.7864	0.2500	1.0000	A607-60 (60 ksi)
L10	120.1000-119.8500	0.2500	0.0000	12	26.7864	26.8326	0.4875	1.9500	A607-60 (60 ksi)
L11	119.8500-117.5000	2.3500	0.0000	12	26.8326	27.2669	0.4875	1.9500	A607-60 (60 ksi)
L12	117.5000-117.2500	0.2500	0.0000	12	27.2669	27.3131	0.5000	2.0000	A607-60 (60 ksi)
L13	117.2500-115.5000	1.7500	0.0000	12	27.3131	27.6365	0.5000	2.0000	A607-60 (60 ksi)
L14	115.5000-115.2500	0.2500	0.0000	12	27.6365	27.6827	0.6625	2.6500	A607-60 (60 ksi)
L15	115.2500-110.2500	5.0000	0.0000	12	27.6827	28.6068	0.6500	2.6000	A607-60 (60 ksi)
L16	110.2500-103.7500	6.5000	3.7500	12	28.6068	29.8080	0.6375	2.5500	A607-60 (60 ksi)
L17	103.7500-102.5000	5.0000	0.0000	12	28.0824	29.0743	0.7125	2.8500	A607-60 (60 ksi)
L18	102.5000-100.5000	2.0000	0.0000	12	29.0743	29.4711	0.7000	2.8000	A607-60 (60 ksi)
L19	100.5000-100.2500	0.2500	0.0000	12	29.4711	29.5206	0.6375	2.5500	A607-60 (60 ksi)
L20	100.2500-98.5000	1.7500	0.0000	12	29.5206	29.8678	0.6375	2.5500	A607-60 (60 ksi)
L21	98.5000-98.2500	0.2500	0.0000	12	29.8678	29.9174	0.6625	2.6500	A607-60 (60 ksi)
L22	98.2500-93.2500	5.0000	0.0000	12	29.9174	30.9093	0.6500	2.6000	A607-60 (60 ksi)
L23	93.2500-90.5000	2.7500	0.0000	12	30.9093	31.4548	0.6500	2.6000	A607-60 (60 ksi)
L24	90.5000-90.2500	0.2500	0.0000	12	31.4548	31.5044	0.6875	2.7500	A607-60 (60 ksi)
L25	90.2500-85.2500	5.0000	0.0000	12	31.5044	32.4962	0.6750	2.7000	A607-60 (60 ksi)
L26	85.2500-83.5000	1.7500	0.0000	12	32.4962	32.8434	0.6625	2.6500	A607-60 (60 ksi)
L27	83.5000-83.2500	0.2500	0.0000	12	32.8434	32.8930	0.9125	3.6500	A607-60 (60 ksi)
L28	83.2500-80.7500	2.5000	0.0000	12	32.8930	33.3889	0.9000	3.6000	A607-60 (60 ksi)
L29	80.7500-80.5000	0.2500	0.0000	12	33.3889	33.4385	1.0625	4.2500	A607-60 (60 ksi)
L30	80.5000-80.2500	0.2500	0.0000	12	33.4385	33.4881	0.9875	3.9500	A607-60 (60 ksi)
L31	80.2500-77.5000	2.7500	0.0000	12	33.4881	34.0336	0.9625	3.8500	A607-60 (60 ksi)
L32	77.5000-77.2500	0.2500	0.0000	12	34.0336	34.0832	0.6875	2.7500	A607-60 (60 ksi)
L33	77.2500-68.5000	8.7500	4.5000	12	34.0832	35.8190	0.6875	2.7500	A607-60 (60 ksi)
L34	68.5000-68.0000	5.0000	0.0000	12	34.3013	35.2329	0.7500	3.0000	A607-60 (60 ksi)
L35	68.0000-64.2500	3.7500	0.0000	12	35.2329	35.9317	0.7375	2.9500	A607-60 (60 ksi)
L36	64.2500-64.0000	0.2500	0.0000	12	35.9317	35.9782	0.8750	3.5000	A607-60 (60 ksi)
L37	64.0000-60.5000	3.5000	0.0000	12	35.9782	36.6304	0.8625	3.4500	A607-60 (60 ksi)
L38	60.5000-60.2500	0.2500	0.0000	12	36.6304	36.6770	0.9250	3.7000	A607-60 (60 ksi)
L39	60.2500-	0.1500	0.0000	12	36.6770	36.7049	0.9250	3.7000	A607-60

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
	60.1000								(60 ksi)
L40	60.1000-59.8500	0.2500	0.0000	12	36.7049	36.7515	0.9750	3.9000	A607-60 (60 ksi)
L41	59.8500-59.1000	0.7500	0.0000	12	36.7515	36.8912	0.9750	3.9000	A607-60 (60 ksi)
L42	59.1000-58.8500	0.2500	0.0000	12	36.8912	36.9378	1.0500	4.2000	A607-60 (60 ksi)
L43	58.8500-55.4000	3.4500	0.0000	12	36.9378	37.5806	1.0250	4.1000	A607-60 (60 ksi)
L44	55.4000-55.1500	0.2500	0.0000	12	37.5806	37.6272	1.0250	4.1000	A607-60 (60 ksi)
L45	55.1500-54.7500	0.4000	0.0000	12	37.6272	37.7018	1.0250	4.1000	A607-60 (60 ksi)
L46	54.7500-54.5000	0.2500	0.0000	12	37.7018	37.7483	0.8250	3.3000	A607-60 (60 ksi)
L47	54.5000-49.5000	5.0000	0.0000	12	37.7483	38.6800	0.8125	3.2500	A607-60 (60 ksi)
L48	49.5000-44.5000	5.0000	0.0000	12	38.6800	39.6116	0.8000	3.2000	A607-60 (60 ksi)
L49	44.5000-41.3000	3.2000	0.0000	12	39.6116	40.2078	0.7875	3.1500	A607-60 (60 ksi)
L50	41.3000-41.0500	0.2500	0.0000	12	40.2078	40.2544	0.8750	3.5000	A607-60 (60 ksi)
L51	41.0500-34.0000	7.0500	5.0000	12	40.2544	41.5680	0.8750	3.5000	A607-60 (60 ksi)
L52	34.0000-33.0000	6.0000	0.0000	12	39.8864	40.9962	1.1750	4.7000	A607-65 (65 ksi)
L53	33.0000-31.5000	1.5000	0.0000	12	40.9962	41.2736	1.1750	4.7000	A607-65 (65 ksi)
L54	31.5000-31.2500	0.2500	0.0000	12	41.2736	41.3199	1.1750	4.7000	A607-65 (65 ksi)
L55	31.2500-30.5000	0.7500	0.0000	12	41.3199	41.4586	1.1750	4.7000	A607-65 (65 ksi)
L56	30.5000-30.2500	0.2500	0.0000	12	41.4586	41.5048	1.1250	4.5000	A607-65 (65 ksi)
L57	30.2500-25.7500	4.5000	0.0000	12	41.5048	42.3372	1.1000	4.4000	A607-65 (65 ksi)
L58	25.7500-25.5000	0.2500	0.0000	12	42.3372	42.3834	1.0750	4.3000	A607-65 (65 ksi)
L59	25.5000-24.7000	0.8000	0.0000	12	42.3834	42.5314	1.0750	4.3000	A607-65 (65 ksi)
L60	24.7000-24.4500	0.2500	0.0000	12	42.5314	42.5776	0.9500	3.8000	A607-65 (65 ksi)
L61	24.4500-24.0000	0.4500	0.0000	12	42.5776	42.6608	0.9500	3.8000	A607-65 (65 ksi)
L62	24.0000-23.7500	0.2500	0.0000	12	42.6608	42.7071	1.2000	4.8000	A607-65 (65 ksi)
L63	23.7500-18.7500	5.0000	0.0000	12	42.7071	43.6319	1.1750	4.7000	A607-65 (65 ksi)
L64	18.7500-14.1000	4.6500	0.0000	12	43.6319	44.4920	1.1500	4.6000	A607-65 (65 ksi)
L65	14.1000-13.8000	0.3000	0.0000	12	44.4920	44.5475	1.1750	4.7000	A607-65 (65 ksi)
L66	13.8000-13.6500	0.1500	0.0000	12	44.5475	44.5752	1.1750	4.7000	A607-65 (65 ksi)
L67	13.6500-10.5000	3.1500	0.0000	12	44.5752	45.1579	1.1750	4.7000	A607-65 (65 ksi)
L68	10.5000-10.2500	0.2500	0.0000	12	45.1579	45.2041	1.1750	4.7000	A607-65 (65 ksi)
L69	10.2500-5.2500	5.0000	0.0000	12	45.2041	46.1289	1.1500	4.6000	A607-65 (65 ksi)
L70	5.2500-3.0000	2.2500	0.0000	12	46.1289	46.5451	1.1250	4.5000	A607-65 (65 ksi)
L71	3.0000-2.9000	0.1000	0.0000	12	46.5451	46.5636	1.0875	4.3500	A607-65 (65 ksi)
L72	2.9000-2.7500	0.1500	0.0000	12	46.5636	46.5913	1.0250	4.1000	A607-65 (65 ksi)
L73	2.7500-2.6500	0.1000	0.0000	12	46.5913	46.6098	1.0250	4.1000	A607-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L74	2.6500-2.5000	0.1500	0.0000	12	46.6098	46.6376	1.0250	4.1000	A607-65 (65 ksi)
L75	2.5000-2.2500	0.2500	0.0000	12	46.6376	46.6838	1.0000	4.0000	A607-65 (65 ksi)
L76	2.2500-1.9000	0.3500	0.0000	12	46.6838	46.7486	1.0000	4.0000	A607-65 (65 ksi)
L77	1.9000-1.6500	0.2500	0.0000	12	46.7486	46.7948	0.9500	3.8000	A607-65 (65 ksi)
L78	1.6500-0.0000	1.6500		12	46.7948	47.1000	0.9500	3.8000	A607-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	16.0000	18.4078	562.0841	5.5259	8.0000	70.2605	1124.1682	9.1984	0.0000	0
	16.0000	18.4078	562.0841	5.5259	8.0000	70.2605	1124.1682	9.1984	0.0000	0
L2	16.0000	18.4078	562.0841	5.5259	8.0000	70.2605	1124.1682	9.1984	0.0000	0
	16.0000	18.4078	562.0841	5.5259	8.0000	70.2605	1124.1682	9.1984	0.0000	0
L3	16.0000	18.4078	562.0841	5.5259	8.0000	70.2605	1124.1682	9.1984	0.0000	0
	16.0000	18.4078	562.0841	5.5259	8.0000	70.2605	1124.1682	9.1984	0.0000	0
L4	22.6879	17.5087	1057.2060	7.7865	11.3960	92.7699	2142.1860	8.6173	5.2260	20.904
	23.6445	18.2526	1197.7540	8.1173	11.8746	100.8665	2426.9744	8.9834	5.4736	21.895
L5	23.6445	18.2526	1197.7540	8.1173	11.8746	100.8665	2426.9744	8.9834	5.4736	21.895
	24.6011	18.9964	1350.2370	8.4481	12.3533	109.3018	2735.9463	9.3495	5.7213	22.885
L6	24.6011	18.9964	1350.2370	8.4481	12.3533	109.3018	2735.9463	9.3495	5.7213	22.885
	25.5577	19.7403	1515.1418	8.7789	12.8319	118.0759	3070.0880	9.7156	5.9689	23.876
L7	25.5577	19.7403	1515.1418	8.7789	12.8319	118.0759	3070.0880	9.7156	5.9689	23.876
	26.5144	20.4841	1692.9544	9.1097	13.3106	127.1887	3430.3846	10.0817	6.2166	24.866
L8	26.5144	20.4841	1692.9544	9.1097	13.3106	127.1887	3430.3846	10.0817	6.2166	24.866
	27.4710	21.2279	1884.1612	9.4405	13.7892	136.6401	3817.8214	10.4477	6.4642	25.857
L9	27.4710	21.2279	1884.1612	9.4405	13.7892	136.6401	3817.8214	10.4477	6.4642	25.857
	27.6432	21.3618	1920.0386	9.5000	13.8754	138.3774	3890.5187	10.5136	6.5088	26.035
L10	27.5594	41.2828	3644.4444	9.4150	13.8754	262.6555	7384.6323	20.3181	5.8723	12.046
	27.6072	41.3553	3663.6854	9.4316	13.8993	263.5876	7423.6199	20.3538	5.8846	12.071
L11	27.6072	41.3553	3663.6854	9.4316	13.8993	263.5876	7423.6199	20.3538	5.8846	12.071
	28.0568	42.0370	3847.8725	9.5870	14.1243	272.4298	7796.8329	20.6893	6.0010	12.31
L12	28.0524	43.0948	3941.0120	9.5826	14.1243	279.0241	7985.5588	21.2099	5.9675	11.935
	28.1003	43.1691	3961.4544	9.5991	14.1482	279.9970	8026.9806	21.2465	5.9799	11.96
L13	28.1003	43.1691	3961.4544	9.5991	14.1482	279.9970	8026.9806	21.2465	5.9799	11.96
	28.4351	43.6898	4106.5341	9.7149	14.3157	286.8547	8320.9515	21.5028	6.0666	12.133
L14	28.3778	57.5424	5343.9931	9.6567	14.3157	373.2952	10828.3789	28.3206	5.6311	8.5
	28.4256	57.6409	5371.5003	9.6732	14.3397	374.5904	10884.1158	28.3691	5.6435	8.518
L15	28.4300	56.5795	5277.4687	9.6777	14.3397	368.0330	10693.5825	27.8467	5.6770	8.734
	29.3866	58.5135	5837.3551	10.0085	14.8183	393.9286	11828.0640	28.7986	5.9246	9.115
L16	29.3910	57.4139	5732.7811	10.0130	14.8183	386.8715	11616.1687	28.2574	5.9581	9.346
	30.6346	59.8797	6503.5971	10.4430	15.4405	421.2026	13178.0510	29.4710	6.2800	9.851
L17	29.5919	62.7935	6004.1030	9.7984	14.5467	412.7467	12165.9404	30.9050	5.6166	7.883
	29.8486	65.0691	6680.7972	10.1535	15.0605	443.5976	13537.1064	32.0250	5.8824	8.256
L18	29.8530	63.9557	6572.2725	10.1580	15.0605	436.3917	13317.2059	31.4770	5.9159	8.451
	30.2637	64.8500	6851.8380	10.3000	15.2660	448.8298	13883.6815	31.9172	6.0222	8.603
L19	30.2858	59.1881	6280.8215	10.3224	15.2660	411.4254	12726.6471	29.1306	6.1897	9.709
	30.3371	59.2899	6313.2858	10.3402	15.2917	412.8572	12792.4287	29.1807	6.2030	9.73

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L20	30.3371	59.2899	6313.2858	10.3402	15.2917	412.8572	12792.4287	29.1807	6.2030	9.73
	30.6965	60.0025	6543.6753	10.4644	15.4715	422.9498	13259.2602	29.5314	6.2961	9.876
L21	30.6877	62.3022	6782.8565	10.4555	15.4715	438.4092	13743.9062	30.6632	6.2291	9.402
	30.7391	62.4080	6817.4695	10.4733	15.4972	439.9160	13814.0415	30.7153	6.2424	9.422
L22	30.7435	61.2567	6697.4156	10.4777	15.4972	432.1691	13570.7798	30.1487	6.2759	9.655
	31.7703	63.3326	7401.6756	10.8328	16.0110	462.2870	14997.8014	31.1704	6.5417	10.064
L23	31.7703	63.3326	7401.6756	10.8328	16.0110	462.2870	14997.8014	31.1704	6.5417	10.064
	32.3351	64.4744	7809.2572	11.0281	16.2936	479.2843	15823.6722	31.7323	6.6879	10.289
L24	32.3219	68.1111	8229.6629	11.0147	16.2936	505.0863	16675.5283	33.5222	6.5874	9.582
	32.3732	68.2209	8269.5235	11.0324	16.3193	506.7337	16756.2965	33.5762	6.6007	9.601
L25	32.3776	67.0077	8129.0524	11.0369	16.3193	498.1260	16471.6641	32.9791	6.6342	9.828
	33.4045	69.1635	8939.1688	11.3920	16.8331	531.0485	18113.1795	34.0402	6.9000	10.222
L26	33.4089	67.9093	8783.9720	11.3965	16.8331	521.8287	17798.7088	33.4229	6.9335	10.466
	33.7683	68.6499	9074.4899	11.5208	17.0129	533.3894	18387.3767	33.7874	7.0265	10.606
L27	33.6801	93.8210	12209.7883	11.4313	17.0129	717.6791	24740.3413	46.1758	6.3565	6.966
	33.7314	93.9667	12266.7682	11.4490	17.0386	719.9412	24855.7980	46.2475	6.3698	6.981
L28	33.7358	92.7157	12112.9227	11.4535	17.0386	710.9119	24544.0653	45.6318	6.4033	7.115
	34.2493	94.1529	12684.9978	11.6310	17.2955	733.4292	25703.2446	46.3392	6.5362	7.262
L29	34.1920	110.5968	14751.7599	11.5729	17.2955	852.9265	29891.0650	54.4324	6.1007	5.742
	34.2433	110.7665	14819.7576	11.5906	17.3212	855.5873	30028.8467	54.5159	6.1140	5.754
L30	34.2697	103.1861	13869.6002	11.6175	17.3212	800.7319	28103.5702	50.7851	6.3150	6.395
	34.3211	103.3438	13933.2870	11.6352	17.3468	803.2175	28232.6170	50.8627	6.3283	6.408
L31	34.3299	100.8050	13611.9088	11.6442	17.3468	784.6909	27581.4176	49.6132	6.3953	6.644
	34.8947	102.4957	14308.3666	11.8395	17.6294	811.6184	28992.6298	50.4453	6.5415	6.796
L32	34.9917	73.8200	10477.3447	11.9379	17.6294	594.3100	21229.9409	36.3320	7.2785	10.587
	35.0430	73.9298	10524.1606	11.9557	17.6551	596.0970	21324.8025	36.3860	7.2918	10.606
L33	35.0430	73.9298	10524.1606	11.9557	17.6551	596.0970	21324.8025	36.3860	7.2918	10.606
	36.8400	77.7724	12251.9327	12.5771	18.5542	660.3305	24825.7374	38.2772	7.7570	11.283
L34	36.1148	81.0264	11642.1159	12.0114	17.7681	655.2263	23590.0832	39.8787	7.1828	9.577
	36.2113	83.2763	12639.0995	12.3449	18.2507	692.5281	25610.2423	40.9861	7.4324	9.91
L35	36.2157	81.9181	12441.9686	12.3494	18.2507	681.7268	25210.8016	40.3176	7.4659	10.123
	36.9390	83.5773	13213.4384	12.5995	18.6126	709.9189	26774.0085	41.1342	7.6532	10.377
L36	36.8905	98.7722	15493.9329	12.5503	18.6126	832.4431	31394.9087	48.6126	7.2847	8.325
	36.9388	98.9034	15555.7770	12.5670	18.6367	834.6838	31520.2215	48.6772	7.2972	8.34
L37	36.9432	97.5252	15349.9379	12.5714	18.6367	823.6389	31103.1357	47.9989	7.3307	8.499

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
	37.6183	99.3364	16221.1138	12.8049	18.9745	854.8884	32868.3743	48.8903	7.5054	8.702
L38	37.5963	106.3485	17305.5210	12.7825	18.9745	912.0391	35065.6773	52.3415	7.3379	7.933
	37.6445	106.4872	17373.3394	12.7992	18.9987	914.4504	35203.0958	52.4098	7.3504	7.946
L39	37.6445	106.4872	17373.3394	12.7992	18.9987	914.4504	35203.0958	52.4098	7.3504	7.946
	37.6734	106.5705	17414.1159	12.8092	19.0131	915.8987	35285.7201	52.4507	7.3579	7.955
L40	37.6558	112.1741	18278.5756	12.7913	19.0131	961.3652	37037.3498	55.2087	7.2239	7.409
	37.7040	112.3203	18350.1581	12.8080	19.0373	963.9068	37182.3952	55.2806	7.2364	7.422
L41	37.7040	112.3203	18350.1581	12.8080	19.0373	963.9068	37182.3952	55.2806	7.2364	7.422
	37.8487	112.7590	18566.0278	12.8580	19.1097	971.5519	37619.8058	55.4966	7.2739	7.46
L42	37.8222	121.1792	19869.1901	12.8312	19.1097	1039.7458	40260.3659	59.6407	7.0729	6.736
	37.8704	121.3367	19946.7597	12.8478	19.1338	1042.4886	40417.5429	59.7182	7.0853	6.748
L43	37.8793	118.5303	19512.5583	12.8568	19.1338	1019.7957	39537.7332	58.3370	7.1523	6.978
	38.5448	120.6519	20579.2211	13.0869	19.4668	1057.1460	41699.0813	59.3812	7.3246	7.146
L44	38.5448	120.6519	20579.2211	13.0869	19.4668	1057.1460	41699.0813	59.3812	7.3246	7.146
	38.5930	120.8056	20657.9906	13.1036	19.4909	1059.8787	41858.6896	59.4569	7.3371	7.158
L45	38.5930	120.8056	20657.9906	13.1036	19.4909	1059.8787	41858.6896	59.4569	7.3371	7.158
	38.6701	121.0516	20784.4401	13.1303	19.5295	1064.2582	42114.9105	59.5779	7.3571	7.178
L46	38.7407	97.9631	17004.1056	13.2019	19.5295	870.6879	34454.9280	48.2145	7.8931	9.567
	38.7889	98.0868	17068.6248	13.2186	19.5536	872.9130	34585.6614	48.2754	7.9056	9.582
L47	38.7933	96.6334	16827.0876	13.2230	19.5536	860.5605	34096.2416	47.5600	7.9391	9.771
	39.7578	99.0707	18132.7518	13.5566	20.0362	904.9987	36741.8712	48.7596	8.1887	10.078
L48	39.7622	97.5788	17871.4728	13.5610	20.0362	891.9583	36212.4491	48.0253	8.2222	10.278
	40.7267	99.9786	19222.7704	13.8945	20.5188	936.8369	38950.5444	49.2064	8.4719	10.59
L49	40.7311	98.4482	18940.7035	13.8990	20.5188	923.0901	38379.0003	48.4532	8.5054	10.801
	41.3484	99.9601	19826.8195	14.1125	20.8277	951.9468	40174.5115	49.1973	8.6652	11.003
L50	41.3175	110.8202	21883.4283	14.0812	20.8277	1050.6910	44341.7587	54.5424	8.4307	9.635
	41.3658	110.9515	21961.2686	14.0978	20.8518	1053.2082	44499.4842	54.6069	8.4432	9.649
L51	41.3658	110.9515	21961.2686	14.0978	20.8518	1053.2082	44499.4842	54.6069	8.4432	9.649
	42.7257	114.6525	24233.1014	14.5681	21.5322	1125.4342	49102.8334	56.4285	8.7952	10.052
L52	41.8364	146.4645	28015.3109	13.8587	20.6611	1355.9421	56766.6153	72.0854	7.5405	6.417
	42.0279	150.6634	30494.4993	14.2560	21.2360	1435.9805	61790.1231	74.1519	7.8380	6.671
L53	42.0279	150.6634	30494.4993	14.2560	21.2360	1435.9805	61790.1231	74.1519	7.8380	6.671
	42.3151	151.7131	31136.3459	14.3553	21.3797	1456.3489	63090.6783	74.6686	7.9123	6.734
L54	42.3151	151.7131	31136.3459	14.3553	21.3797	1456.3489	63090.6783	74.6686	7.9123	6.734
	42.3630	151.8880	31244.1878	14.3719	21.4037	1459.7576	63309.1952	74.7547	7.9247	6.744

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L55	42.3630	151.8880	31244.1878	14.3719	21.4037	1459.7576	63309.1952	74.7547	7.9247	6.744
	42.5066	152.4129	31569.2093	14.4215	21.4755	1470.0076	63967.7769	75.0130	7.9619	6.776
L56	42.5242	146.1084	30338.5275	14.4394	21.4755	1412.7014	61474.0818	71.9101	8.0959	7.196
	42.5721	146.2759	30442.9932	14.4560	21.4995	1415.9865	61685.7578	71.9925	8.1083	7.207
L57	42.5809	143.1139	29821.8037	14.4649	21.4995	1387.0932	60427.0594	70.4363	8.1753	7.432
	43.4426	146.0620	31703.0215	14.7629	21.9306	1445.6035	64238.9167	71.8873	8.3984	7.635
L58	43.4514	142.8290	31038.8818	14.7719	21.9306	1415.3199	62893.1897	70.2961	8.4654	7.875
	43.4993	142.9890	31143.3535	14.7884	21.9546	1418.5343	63104.8776	70.3748	8.4778	7.886
L59	43.4993	142.9890	31143.3535	14.7884	21.9546	1418.5343	63104.8776	70.3748	8.4778	7.886
	43.6525	143.5012	31479.2300	14.8414	22.0312	1428.8445	63785.4545	70.6269	8.5174	7.923
L60	43.6966	127.1974	28071.2537	14.8861	22.0312	1274.1562	56879.9705	62.6027	8.8524	9.318
	43.7445	127.3389	28165.0107	14.9027	22.0552	1277.0234	57069.9477	62.6723	8.8648	9.331
L61	43.7445	127.3389	28165.0107	14.9027	22.0552	1277.0234	57069.9477	62.6723	8.8648	9.331
	43.8306	127.5935	28334.2957	14.9325	22.0983	1282.1924	57412.9650	62.7976	8.8871	9.355
L62	43.7424	160.2047	35150.9888	14.8430	22.0983	1590.6635	71225.4333	78.8479	8.2171	6.848
	43.7903	160.3834	35268.7310	14.8595	22.1223	1594.2636	71464.0109	78.9358	8.2295	6.858
L63	43.7991	157.1367	34596.4035	14.8685	22.1223	1563.8721	70101.6931	77.3379	8.2965	7.061
	44.7566	160.6357	36959.3963	15.1996	22.6013	1635.2753	74889.7571	79.0600	8.5444	7.272
L64	44.7654	157.3105	36236.9633	15.2085	22.6013	1603.3111	73425.9120	77.4235	8.6114	7.488
	45.6558	160.4954	38482.7780	15.5164	23.0469	1669.7627	77976.5414	78.9910	8.8419	7.689
L65	45.6470	163.8899	39251.3602	15.5075	23.0469	1703.1114	79533.8974	80.6616	8.7749	7.468
	45.7045	164.0998	39402.3963	15.5273	23.0756	1707.5352	79839.9375	80.7649	8.7897	7.481
L66	45.7045	164.0998	39402.3963	15.5273	23.0756	1707.5352	79839.9375	80.7649	8.7897	7.481
	45.7332	164.2048	39478.0608	15.5373	23.0900	1709.7494	79993.2542	80.8166	8.7972	7.487
L67	45.7332	164.2048	39478.0608	15.5373	23.0900	1709.7494	79993.2542	80.8166	8.7972	7.487
	46.3364	166.4092	41089.4552	15.7459	23.3918	1756.5769	83258.3761	81.9015	8.9533	7.62
L68	46.3364	166.4092	41089.4552	15.7459	23.3918	1756.5769	83258.3761	81.9015	8.9533	7.62
	46.3842	166.5841	41219.1886	15.7624	23.4157	1760.3205	83521.2512	81.9876	8.9657	7.63
L69	46.3931	163.1324	40410.9432	15.7714	23.4157	1725.8033	81883.5269	80.2888	9.0327	7.855
	47.3505	166.5570	43009.7746	16.1025	23.8948	1799.9647	87149.4639	81.9743	9.2806	8.07
L70	47.3593	163.0268	42144.9760	16.1114	23.8948	1763.7727	85397.1474	80.2368	9.3476	8.309
	47.7902	164.5343	43325.0203	16.2604	24.1104	1796.9459	87788.2371	80.9788	9.4591	8.408
L71	47.8034	159.1812	41984.6723	16.2738	24.1104	1741.3537	85072.3287	78.3441	9.5596	8.79
	47.8226	159.2459	42035.9419	16.2804	24.1199	1742.7876	85176.2148	78.3760	9.5645	8.795
L72	47.8446	150.3002	39783.6632	16.3028	24.1199	1649.4093	80612.4875	73.9732	9.7320	9.495

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
	47.8733	150.3917	39856.4237	16.3128	24.1343	1651.4419	80759.9199	74.0182	9.7395	9.502
L73	47.8733	150.3917	39856.4237	16.3128	24.1343	1651.4419	80759.9199	74.0182	9.7395	9.502
	47.8925	150.4528	39904.9782	16.3194	24.1439	1652.7976	80858.3045	74.0483	9.7444	9.507
L74	47.8925	150.4528	39904.9782	16.3194	24.1439	1652.7976	80858.3045	74.0483	9.7444	9.507
	47.9212	150.5443	39977.8864	16.3293	24.1583	1654.8323	81006.0365	74.0933	9.7519	9.514
L75	47.9300	146.9530	39066.9829	16.3383	24.1583	1617.1266	79160.2989	72.3258	9.8189	9.819
	47.9779	147.1019	39185.8538	16.3548	24.1822	1620.4405	79401.1636	72.3991	9.8313	9.831
L76	47.9779	147.1019	39185.8538	16.3548	24.1822	1620.4405	79401.1636	72.3991	9.8313	9.831
	48.0449	147.3104	39352.6794	16.3780	24.2158	1625.0856	79739.1974	72.5017	9.8486	9.849
L77	48.0626	140.0978	37507.7572	16.3959	24.2158	1548.8988	76000.8849	68.9519	9.9826	10.508
	48.1104	140.2393	37621.4822	16.4124	24.2397	1552.0599	76231.3226	69.0215	9.9950	10.521
L78	48.1104	140.2393	37621.4822	16.4124	24.2397	1552.0599	76231.3226	69.0215	9.9950	10.521
	48.4264	141.1729	38377.8414	16.5217	24.3978	1573.0042	77763.9113	69.4810	10.0768	10.607

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 160.0000-155.0000				1	1	1			
L2 155.0000-150.0000				1	1	1			
L3 150.0000-146.0000				1	1	1			
L4 146.0000-141.0000				1	1	1			
L5 141.0000-136.0000				1	1	1			
L6 136.0000-131.0000				1	1	1			
L7 131.0000-126.0000				1	1	1			
L8 126.0000-121.0000				1	1	1			
L9 121.0000-120.1000				1	1	1			
L10 120.1000-119.8500				1	1	0.95332			
L11 119.8500-117.5000				1	1	0.946176			
L12 117.5000-117.2500				1	1	1.02662			
L13 117.2500-115.5000				1	1	1.02034			
L14 115.5000-115.2500				1	1	0.930389			
L15 115.2500-110.2500				1	1	0.929227			
L16				1	1	0.937122			

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
110.2500-103.7500									
L17 103.7500-102.5000				1	1	0.929577			
L18 102.5000-100.5000				1	1	0.938874			
L19 100.5000-100.2500				1	1	0.987647			
L20 100.2500-98.5000				1	1	0.981739			
L21 98.5000-98.2500				1	1	0.992837			
L22 98.2500-93.2500				1	1	0.994101			
L23 93.2500-90.5000				1	1	0.985011			
L24 90.5000-90.2500				1	1	1.06743			
L25 90.2500-85.2500				1	1	1.06732			
L26 85.2500-83.5000				1	1	1.08039			
L27 83.5000-83.2500				1	1	0.98167			
L28 83.2500-80.7500				1	1	0.985028			
L29 80.7500-80.5000				1	1	0.933797			
L30 80.5000-80.2500				1	1	0.980758			
L31 80.2500-77.5000				1	1	0.994229			
L32 77.5000-77.2500				1	1	1.13524			
L33 77.2500-68.5000				1	1	1.11848			
L34 68.5000-68.0000				1	1	1.10521			
L35 68.0000-64.2500				1	1	1.11132			
L36 64.2500-64.0000				1	1	1.01435			
L37 64.0000-60.5000				1	1	1.01786			
L38 60.5000-60.2500				1	1	1.00999			
L39 60.2500-60.1000				1	1	1.00952			
L40 60.1000-59.8500				1	1	0.995161			
L41 59.8500-59.1000				1	1	0.992785			
L42 59.1000-58.8500				1	1	0.991238			
L43 58.8500-55.4000				1	1	1.0033			
L44 55.4000-55.1500				1	1	1.00249			
L45 55.1500-54.7500				1	1	1.00119			
L46 54.7500-54.5000				1	1	1.0524			
L47 54.5000-				1	1	1.0533			

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft^2	in					in	in	in
49.5000									
L48 49.5000-44.5000				1	1	1.05499			
L49 44.5000-41.3000				1	1	1.06239			
L50 41.3000-41.0500				1	1	1.05355			
L51 41.0500-34.0000				1	1	1.04754			
L52 34.0000-33.0000				1	1	0.943815			
L53 33.0000-31.5000				1	1	0.939493			
L54 31.5000-31.2500				1	1	0.9488			
L55 31.2500-30.5000				1	1	0.946632			
L56 30.5000-30.2500				1	1	0.963898			
L57 30.2500-25.7500				1	1	0.97219			
L58 25.7500-25.5000				1	1	0.977059			
L59 25.5000-24.7000				1	1	0.974817			
L60 24.7000-24.4500				1	1	0.931867			
L61 24.4500-24.0000				1	1	0.930795			
L62 24.0000-23.7500				1	1	0.878408			
L63 23.7500-18.7500				1	1	0.88398			
L64 18.7500-14.1000				1	1	0.891223			
L65 14.1000-13.8000				1	1	0.887984			
L66 13.8000-13.6500				1	1	0.887621			
L67 13.6500-10.5000				1	1	0.88009			
L68 10.5000-10.2500				1	1	0.851697			
L69 10.2500-5.2500				1	1	0.858541			
L70 5.2500-3.0000				1	1	0.872149			
L71 3.0000-2.9000				1	1	0.863521			
L72 2.9000-2.7500				1	1	0.839338			
L73 2.7500-2.6500				1	1	0.839146			
L74 2.6500-2.5000				1	1	0.838858			
L75 2.5000-2.2500				1	1	0.872484			
L76 2.2500-1.9000				1	1	0.87178			
L77 1.9000-1.6500				1	1	0.857151			
L78 1.6500-0.0000				1	1	0.854093			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
LDF7-50A(1-5/8")	B	No	Surface Ar (CaAa)	156.0000 - 0.0000	8	8	-0.400 -0.200	0.0000		0.8200
2" Rigid Conduit	B	No	Surface Ar (CaAa)	156.0000 - 0.0000	3	3	-0.200 -0.100	0.0000		2.8000
**										
HB114-1-08U4-M5J(1-1/4")	B	No	Surface Ar (CaAa)	146.0000 - 0.0000	4	4	-0.100 0.100	0.0000		1.0800
**										
561(1-5/8")	A	No	Surface Ar (CaAa)	132.0000 - 0.0000	4	4	-0.150 0.000	0.0000		1.3500
**										
LDF4P-50A(1/2")	A	No	Surface Ar (CaAa)	129.0000 - 0.0000	3	3	-0.300 -0.150	0.0000		0.1500
**										
**										
**										
Aero MP305	A	No	Surface Af (CaAa)	31.5000 - 11.5000	1	1	0.500 0.500	5.3300	14.8400	0.0000
Aero MP305	B	No	Surface Af (CaAa)	30.5000 - 0.0000	1	1	0.500 0.500	5.3300	14.8400	0.0000
Aero MP305	C	No	Surface Af (CaAa)	30.5000 - 0.0000	1	1	0.500 0.500	5.3300	14.8400	0.0000
Aero MP304	A	No	Surface Af (CaAa)	15.5000 - 0.0000	1	1	-0.250 -0.250	4.7800	12.7800	0.0000
Aero MP304	B	No	Surface Af (CaAa)	15.5000 - 0.0000	1	1	0.250 0.250	4.7800	12.7800	0.0000
Aero MP304	B	No	Surface Af (CaAa)	60.5000 - 30.5000	1	1	0.500 0.500	4.7800	12.7800	0.0000
Aero MP304	C	No	Surface Af (CaAa)	60.5000 - 30.5000	1	1	0.500 0.500	4.7800	12.7800	0.0000
Aero MP304	A	No	Surface Af (CaAa)	61.5000 - 31.0000	1	1	0.500 0.500	4.7800	12.7800	0.0000
**										
6" x 1" Flat Plate (G)	C	No	Surface Af (CaAa)	30.5000 - 0.5000	1	1	-0.250 -0.250	6.0000	14.0000	0.0000
6" x 1" Flat Plate (G)	B	No	Surface Af (CaAa)	30.5000 - 0.5000	1	1	0.000 0.000	6.0000	14.0000	0.0000
6" x 1" Flat Plate (G)	A	No	Surface Af (CaAa)	30.5000 - 0.5000	1	1	0.000 0.000	6.0000	14.0000	0.0000
6.5" x 1.25" Flat Plate (G)	C	No	Surface Af (CaAa)	60.5000 - 30.5000	1	1	-0.250 -0.250	6.5000	15.5000	0.0000
6.5" x 1.25" Flat Plate (G)	B	No	Surface Af (CaAa)	60.5000 - 30.5000	1	1	0.000 0.000	6.5000	15.5000	0.0000
6.5" x 1.25" Flat Plate (G)	A	No	Surface Af (CaAa)	60.5000 - 30.5000	1	1	0.000 0.000	6.5000	15.5000	0.0000
6" x 1" Flat Plate (G)	C	No	Surface Af (CaAa)	100.5000 - 60.5000	1	1	-0.250 -0.250	6.0000	14.0000	0.0000
6" x 1" Flat Plate (G)	B	No	Surface Af (CaAa)	100.5000 - 60.5000	1	1	0.000 0.000	6.0000	14.0000	0.0000
6" x 1" Flat Plate (G)	A	No	Surface Af (CaAa)	100.5000 - 60.5000	1	1	0.000 0.000	6.0000	14.0000	0.0000
**										
6.5" x 1.25" Flat Plate (G)	C	No	Surface Af (CaAa)	38.0000 - 23.0000	1	1	0.000 0.000	6.5000	15.5000	0.0000
6.5" x 1.25" Flat Plate (G)	B	No	Surface Af (CaAa)	38.0000 - 23.0000	1	1	0.250 0.250	6.5000	15.5000	0.0000
6.5" x 1.25" Flat Plate (G)	A	No	Surface Af (CaAa)	38.0000 - 23.0000	1	1	0.250 0.250	6.5000	15.5000	0.0000
6.5" x 1.25" Flat Plate (G)	C	No	Surface Af (CaAa)	67.0000 - 52.0000	1	1	0.000 0.000	6.5000	15.5000	0.0000
6.5" x 1.25" Flat Plate (G)	B	No	Surface Af (CaAa)	67.0000 - 52.0000	1	1	0.250 0.250	6.5000	15.5000	0.0000
6.5" x 1.25" Flat Plate (G)	A	No	Surface Af (CaAa)	67.0000 - 52.0000	1	1	0.250 0.250	6.5000	15.5000	0.0000
6.5" x 1.25" Flat Plate	C	No	Surface Af	85.5000 -	1	1	0.000	6.5000	15.5000	0.0000

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
(G)			(CaAa)	72.5000			0.000			
6.5" x 1.25" Flat Plate	B	No	Surface Af	85.5000 -	1	1	0.250	6.5000	15.5000	0.0000
(G)			(CaAa)	72.5000			0.250			
6.5" x 1.25" Flat Plate	A	No	Surface Af	85.5000 -	1	1	0.250	6.5000	15.5000	0.0000
(G)			(CaAa)	72.5000			0.250			
**										
6" x 1" Flat Plate (G)	C	No	Surface Af	10.5000 -	1	1	0.250	6.0000	14.0000	0.0000
			(CaAa)	0.5000			0.250			
8.5" x 1.25" Flat Plate	C	No	Surface Af	45.5000 -	1	1	0.250	8.5000	19.5000	0.0000
(G)			(CaAa)	10.5000			0.250			
8.5" x 1.25" Flat Plate	C	No	Surface Af	85.0000 -	1	1	0.250	8.5000	19.5000	0.0000
(G)			(CaAa)	60.0000			0.250			
4.5" x 1" Flat Plate (G)	C	No	Surface Af	117.0000 -	1	1	0.250	4.5000	11.0000	0.0000
			(CaAa)	97.0000			0.250			
4.5" x 1" Flat Plate (G)	A	No	Surface Af	117.0000 -	1	1	0.250	4.5000	11.0000	0.0000
			(CaAa)	97.0000			0.250			
4.5" x 1" Flat Plate (G)	B	No	Surface Af	119.0000 -	1	1	0.250	4.5000	11.0000	0.0000
			(CaAa)	99.0000			0.250			
**										
8.5" x 1.25" Flat Plate	A	No	Surface Af	55.4000 -	1	1	-0.250	8.5000	19.5000	0.0000
(G)			(CaAa)	20.4000			-0.250			
8.5" x 1.25" Flat Plate	B	No	Surface Af	55.4000 -	1	1	-0.250	8.5000	19.5000	0.0000
(G)			(CaAa)	20.4000			-0.250			
8.5" x 1.25" Flat Plate	A	No	Surface Af	90.5000 -	1	1	-0.250	8.5000	19.5000	0.0000
(G)			(CaAa)	55.5000			-0.250			
8.5" x 1.25" Flat Plate	B	No	Surface Af	90.5000 -	1	1	-0.250	8.5000	19.5000	0.0000
(G)			(CaAa)	55.5000			-0.250			
6" x 1" Flat Plate (G)	A	No	Surface Af	122.6000 -	1	1	-0.250	6.0000	14.0000	0.0000
			(CaAa)	90.6000			-0.250			
6" x 1" Flat Plate (G)	B	No	Surface Af	122.6000 -	1	1	-0.250	6.0000	14.0000	0.0000
			(CaAa)	90.6000			-0.250			
6" x 1" Flat Plate (G)	C	No	Surface Af	122.6000 -	1	1	-0.250	6.0000	14.0000	0.0000
			(CaAa)	100.6000			-0.250			
**										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
FB-L98B-002-75000(3/8")	B	No	No	Inside Pole	156.0000 - 0.0000	2	No Ice	0.0000	0.0586
							1/2" Ice	0.0000	0.0586
							1" Ice	0.0000	0.0586
WR-VG86ST-BRD(3/4")	B	No	No	Inside Pole	156.0000 - 0.0000	6	No Ice	0.0000	0.5840
							1/2" Ice	0.0000	0.5840
							1" Ice	0.0000	0.5840
AVA7-50(1-5/8")	B	No	No	Inside Pole	139.0000 - 0.0000	6	No Ice	0.0000	0.7000
							1/2" Ice	0.0000	0.7000
							1" Ice	0.0000	0.7000
LDF4-50A(1/2")	B	No	No	Inside Pole	101.0000 - 0.0000	1	No Ice	0.0000	0.1500
							1/2" Ice	0.0000	0.1500
							1" Ice	0.0000	0.1500
561(1-5/8")	A	No	No	Inside Pole	132.0000 - 0.0000	3	No Ice	0.0000	1.3500
							1/2" Ice	0.0000	1.3500
							1" Ice	0.0000	1.3500
HB114-U6S12-xxx-LI(1-1/4")	A	No	No	Inside Pole	132.0000 - 0.0000	1	No Ice	0.0000	1.7000
							1/2" Ice	0.0000	1.7000
							1" Ice	0.0000	1.7000
**									
**									
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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	160.0000-155.0000	A	0.000	0.000	0.000	0.000	0.0000
		B	0.000	0.000	0.000	0.000	0.0186
		C	0.000	0.000	0.000	0.000	0.0000
L2	155.0000-150.0000	A	0.000	0.000	0.000	0.000	0.0000
		B	0.000	0.000	0.000	0.000	0.0929
		C	0.000	0.000	0.000	0.000	0.0000
L3	150.0000-146.0000	A	0.000	0.000	0.000	0.000	0.0000
		B	0.000	0.000	0.000	0.000	0.0743
		C	0.000	0.000	0.000	0.000	0.0000
L4	146.0000-141.0000	A	0.000	0.000	0.000	0.000	0.0000
		B	0.000	0.000	0.000	0.000	0.1145
		C	0.000	0.000	0.000	0.000	0.0000
L5	141.0000-136.0000	A	0.000	0.000	0.000	0.000	0.0000
		B	0.000	0.000	0.000	0.000	0.1271
		C	0.000	0.000	0.000	0.000	0.0000
L6	136.0000-131.0000	A	0.000	0.000	0.000	0.000	0.0112
		B	0.000	0.000	0.000	0.000	0.1355
		C	0.000	0.000	0.000	0.000	0.0000
L7	131.0000-126.0000	A	0.000	0.000	0.000	0.000	0.0571
		B	0.000	0.000	0.000	0.000	0.1355
		C	0.000	0.000	0.000	0.000	0.0000
L8	126.0000-121.0000	A	0.000	0.000	1.600	0.000	0.0580
		B	0.000	0.000	1.600	0.000	0.1355
		C	0.000	0.000	1.600	0.000	0.0000
L9	121.0000-120.1000	A	0.000	0.000	0.900	0.000	0.0104
		B	0.000	0.000	0.900	0.000	0.0244
		C	0.000	0.000	0.900	0.000	0.0000
L10	120.1000-119.8500	A	0.000	0.000	0.250	0.000	0.0029
		B	0.000	0.000	0.250	0.000	0.0068
		C	0.000	0.000	0.250	0.000	0.0000
L11	119.8500-117.5000	A	0.000	0.000	2.350	0.000	0.0273
		B	0.000	0.000	3.475	0.000	0.0637
		C	0.000	0.000	2.350	0.000	0.0000
L12	117.5000-117.2500	A	0.000	0.000	0.250	0.000	0.0029
		B	0.000	0.000	0.438	0.000	0.0068
		C	0.000	0.000	0.250	0.000	0.0000
L13	117.2500-115.5000	A	0.000	0.000	2.875	0.000	0.0203
		B	0.000	0.000	3.063	0.000	0.0474
		C	0.000	0.000	2.875	0.000	0.0000
L14	115.5000-115.2500	A	0.000	0.000	0.438	0.000	0.0029
		B	0.000	0.000	0.438	0.000	0.0068
		C	0.000	0.000	0.438	0.000	0.0000
L15	115.2500-110.2500	A	0.000	0.000	8.750	0.000	0.0580
		B	0.000	0.000	8.750	0.000	0.1355
		C	0.000	0.000	8.750	0.000	0.0000
L16	110.2500-103.7500	A	0.000	0.000	11.375	0.000	0.0754
		B	0.000	0.000	11.375	0.000	0.1762
		C	0.000	0.000	11.375	0.000	0.0000
L17	103.7500-102.5000	A	0.000	0.000	2.188	0.000	0.0145
		B	0.000	0.000	2.188	0.000	0.0339
		C	0.000	0.000	2.188	0.000	0.0000
L18	102.5000-100.5000	A	0.000	0.000	3.500	0.000	0.0232
		B	0.000	0.000	3.500	0.000	0.0543
		C	0.000	0.000	3.400	0.000	0.0000
L19	100.5000-100.2500	A	0.000	0.000	0.688	0.000	0.0029
		B	0.000	0.000	0.688	0.000	0.0068
		C	0.000	0.000	0.438	0.000	0.0000
L20	100.2500-98.5000	A	0.000	0.000	4.813	0.000	0.0203
		B	0.000	0.000	4.438	0.000	0.0477
		C	0.000	0.000	3.063	0.000	0.0000
L21	98.5000-98.2500	A	0.000	0.000	0.688	0.000	0.0029
		B	0.000	0.000	0.500	0.000	0.0068
		C	0.000	0.000	0.438	0.000	0.0000

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
L22	98.2500-93.2500	A	0.000	0.000	10.938	0.000	0.0580
		B	0.000	0.000	10.000	0.000	0.1363
		C	0.000	0.000	5.938	0.000	0.0000
L23	93.2500-90.5000	A	0.000	0.000	5.400	0.000	0.0319
		B	0.000	0.000	5.400	0.000	0.0749
		C	0.000	0.000	2.750	0.000	0.0000
L24	90.5000-90.2500	A	0.000	0.000	0.604	0.000	0.0029
		B	0.000	0.000	0.604	0.000	0.0068
		C	0.000	0.000	0.250	0.000	0.0000
L25	90.2500-85.2500	A	0.000	0.000	12.348	0.000	0.0580
		B	0.000	0.000	12.348	0.000	0.1363
		C	0.000	0.000	5.264	0.000	0.0000
L26	85.2500-83.5000	A	0.000	0.000	6.080	0.000	0.0203
		B	0.000	0.000	6.080	0.000	0.0477
		C	0.000	0.000	5.726	0.000	0.0000
L27	83.5000-83.2500	A	0.000	0.000	0.869	0.000	0.0029
		B	0.000	0.000	0.869	0.000	0.0068
		C	0.000	0.000	0.869	0.000	0.0000
L28	83.2500-80.7500	A	0.000	0.000	8.685	0.000	0.0290
		B	0.000	0.000	8.685	0.000	0.0681
		C	0.000	0.000	8.685	0.000	0.0000
L29	80.7500-80.5000	A	0.000	0.000	0.869	0.000	0.0029
		B	0.000	0.000	0.869	0.000	0.0068
		C	0.000	0.000	0.869	0.000	0.0000
L30	80.5000-80.2500	A	0.000	0.000	0.869	0.000	0.0029
		B	0.000	0.000	0.869	0.000	0.0068
		C	0.000	0.000	0.869	0.000	0.0000
L31	80.2500-77.5000	A	0.000	0.000	9.554	0.000	0.0319
		B	0.000	0.000	9.554	0.000	0.0749
		C	0.000	0.000	9.554	0.000	0.0000
L32	77.5000-77.2500	A	0.000	0.000	0.869	0.000	0.0029
		B	0.000	0.000	0.869	0.000	0.0068
		C	0.000	0.000	0.869	0.000	0.0000
L33	77.2500-68.5000	A	0.000	0.000	26.169	0.000	0.1015
		B	0.000	0.000	26.169	0.000	0.2384
		C	0.000	0.000	26.169	0.000	0.0000
L34	68.5000-68.0000	A	0.000	0.000	1.208	0.000	0.0058
		B	0.000	0.000	1.208	0.000	0.0136
		C	0.000	0.000	1.208	0.000	0.0000
L35	68.0000-64.2500	A	0.000	0.000	12.042	0.000	0.0435
		B	0.000	0.000	12.042	0.000	0.1022
		C	0.000	0.000	12.042	0.000	0.0000
L36	64.2500-64.0000	A	0.000	0.000	0.875	0.000	0.0029
		B	0.000	0.000	0.875	0.000	0.0068
		C	0.000	0.000	0.875	0.000	0.0000
L37	64.0000-60.5000	A	0.000	0.000	13.047	0.000	0.0406
		B	0.000	0.000	12.250	0.000	0.0954
		C	0.000	0.000	12.250	0.000	0.0000
L38	60.5000-60.2500	A	0.000	0.000	1.095	0.000	0.0029
		B	0.000	0.000	1.095	0.000	0.0068
		C	0.000	0.000	1.095	0.000	0.0000
L39	60.2500-60.1000	A	0.000	0.000	0.657	0.000	0.0017
		B	0.000	0.000	0.657	0.000	0.0041
		C	0.000	0.000	0.657	0.000	0.0000
L40	60.1000-59.8500	A	0.000	0.000	1.095	0.000	0.0029
		B	0.000	0.000	1.095	0.000	0.0068
		C	0.000	0.000	0.882	0.000	0.0000
L41	59.8500-59.1000	A	0.000	0.000	3.285	0.000	0.0087
		B	0.000	0.000	3.285	0.000	0.0204
		C	0.000	0.000	2.223	0.000	0.0000
L42	59.1000-58.8500	A	0.000	0.000	1.095	0.000	0.0029
		B	0.000	0.000	1.095	0.000	0.0068
		C	0.000	0.000	0.741	0.000	0.0000
L43	58.8500-55.4000	A	0.000	0.000	14.969	0.000	0.0400
		B	0.000	0.000	14.969	0.000	0.0940
		C	0.000	0.000	10.224	0.000	0.0000
L44	55.4000-55.1500	A	0.000	0.000	1.095	0.000	0.0029
		B	0.000	0.000	1.095	0.000	0.0068
		C	0.000	0.000	0.741	0.000	0.0000

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
L45	55.1500-54.7500	A	0.000	0.000	1.752	0.000	0.0046
		B	0.000	0.000	1.752	0.000	0.0109
		C	0.000	0.000	1.185	0.000	0.0000
L46	54.7500-54.5000	A	0.000	0.000	1.095	0.000	0.0029
		B	0.000	0.000	1.095	0.000	0.0068
		C	0.000	0.000	0.741	0.000	0.0000
L47	54.5000-49.5000	A	0.000	0.000	19.192	0.000	0.0580
		B	0.000	0.000	19.192	0.000	0.1363
		C	0.000	0.000	12.108	0.000	0.0000
L48	49.5000-44.5000	A	0.000	0.000	16.483	0.000	0.0580
		B	0.000	0.000	16.483	0.000	0.1363
		C	0.000	0.000	10.817	0.000	0.0000
L49	44.5000-41.3000	A	0.000	0.000	10.549	0.000	0.0371
		B	0.000	0.000	10.549	0.000	0.0872
		C	0.000	0.000	10.549	0.000	0.0000
L50	41.3000-41.0500	A	0.000	0.000	0.824	0.000	0.0029
		B	0.000	0.000	0.824	0.000	0.0068
		C	0.000	0.000	0.824	0.000	0.0000
L51	41.0500-34.0000	A	0.000	0.000	27.575	0.000	0.0818
		B	0.000	0.000	27.575	0.000	0.1921
		C	0.000	0.000	27.575	0.000	0.0000
L52	34.0000-33.0000	A	0.000	0.000	4.380	0.000	0.0116
		B	0.000	0.000	4.380	0.000	0.0273
		C	0.000	0.000	4.380	0.000	0.0000
L53	33.0000-31.5000	A	0.000	0.000	6.570	0.000	0.0174
		B	0.000	0.000	6.570	0.000	0.0409
		C	0.000	0.000	6.570	0.000	0.0000
L54	31.5000-31.2500	A	0.000	0.000	1.317	0.000	0.0029
		B	0.000	0.000	1.095	0.000	0.0068
		C	0.000	0.000	1.095	0.000	0.0000
L55	31.2500-30.5000	A	0.000	0.000	3.553	0.000	0.0087
		B	0.000	0.000	3.285	0.000	0.0204
		C	0.000	0.000	3.285	0.000	0.0000
L56	30.5000-30.2500	A	0.000	0.000	1.097	0.000	0.0029
		B	0.000	0.000	1.097	0.000	0.0068
		C	0.000	0.000	1.097	0.000	0.0000
L57	30.2500-25.7500	A	0.000	0.000	19.747	0.000	0.0522
		B	0.000	0.000	19.747	0.000	0.1226
		C	0.000	0.000	19.747	0.000	0.0000
L58	25.7500-25.5000	A	0.000	0.000	1.097	0.000	0.0029
		B	0.000	0.000	1.097	0.000	0.0068
		C	0.000	0.000	1.097	0.000	0.0000
L59	25.5000-24.7000	A	0.000	0.000	3.511	0.000	0.0093
		B	0.000	0.000	3.511	0.000	0.0218
		C	0.000	0.000	3.511	0.000	0.0000
L60	24.7000-24.4500	A	0.000	0.000	1.097	0.000	0.0029
		B	0.000	0.000	1.097	0.000	0.0068
		C	0.000	0.000	1.097	0.000	0.0000
L61	24.4500-24.0000	A	0.000	0.000	1.975	0.000	0.0052
		B	0.000	0.000	1.975	0.000	0.0123
		C	0.000	0.000	1.975	0.000	0.0000
L62	24.0000-23.7500	A	0.000	0.000	1.097	0.000	0.0029
		B	0.000	0.000	1.097	0.000	0.0068
		C	0.000	0.000	1.097	0.000	0.0000
L63	23.7500-18.7500	A	0.000	0.000	15.000	0.000	0.0580
		B	0.000	0.000	15.000	0.000	0.1363
		C	0.000	0.000	17.337	0.000	0.0000
L64	18.7500-14.1000	A	0.000	0.000	9.896	0.000	0.0539
		B	0.000	0.000	9.896	0.000	0.1267
		C	0.000	0.000	15.368	0.000	0.0000
L65	14.1000-13.8000	A	0.000	0.000	0.805	0.000	0.0035
		B	0.000	0.000	0.805	0.000	0.0082
		C	0.000	0.000	0.992	0.000	0.0000
L66	13.8000-13.6500	A	0.000	0.000	0.403	0.000	0.0017
		B	0.000	0.000	0.403	0.000	0.0041
		C	0.000	0.000	0.496	0.000	0.0000
L67	13.6500-10.5000	A	0.000	0.000	7.569	0.000	0.0365
		B	0.000	0.000	8.458	0.000	0.0858
		C	0.000	0.000	10.411	0.000	0.0000

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
L68	10.5000-10.2500	A	0.000	0.000	0.449	0.000	0.0029
		B	0.000	0.000	0.671	0.000	0.0068
		C	0.000	0.000	0.700	0.000	0.0000
L69	10.2500-5.2500	A	0.000	0.000	8.983	0.000	0.0580
		B	0.000	0.000	13.425	0.000	0.1363
		C	0.000	0.000	14.002	0.000	0.0000
L70	5.2500-3.0000	A	0.000	0.000	4.043	0.000	0.0261
		B	0.000	0.000	6.041	0.000	0.0613
		C	0.000	0.000	6.301	0.000	0.0000
L71	3.0000-2.9000	A	0.000	0.000	0.180	0.000	0.0012
		B	0.000	0.000	0.269	0.000	0.0027
		C	0.000	0.000	0.280	0.000	0.0000
L72	2.9000-2.7500	A	0.000	0.000	0.270	0.000	0.0017
		B	0.000	0.000	0.403	0.000	0.0041
		C	0.000	0.000	0.420	0.000	0.0000
L73	2.7500-2.6500	A	0.000	0.000	0.180	0.000	0.0012
		B	0.000	0.000	0.269	0.000	0.0027
		C	0.000	0.000	0.280	0.000	0.0000
L74	2.6500-2.5000	A	0.000	0.000	0.270	0.000	0.0017
		B	0.000	0.000	0.403	0.000	0.0041
		C	0.000	0.000	0.420	0.000	0.0000
L75	2.5000-2.2500	A	0.000	0.000	0.449	0.000	0.0029
		B	0.000	0.000	0.671	0.000	0.0068
		C	0.000	0.000	0.700	0.000	0.0000
L76	2.2500-1.9000	A	0.000	0.000	0.629	0.000	0.0041
		B	0.000	0.000	0.940	0.000	0.0095
		C	0.000	0.000	0.980	0.000	0.0000
L77	1.9000-1.6500	A	0.000	0.000	0.449	0.000	0.0029
		B	0.000	0.000	0.671	0.000	0.0068
		C	0.000	0.000	0.700	0.000	0.0000
L78	1.6500-0.0000	A	0.000	0.000	2.465	0.000	0.0191
		B	0.000	0.000	3.930	0.000	0.0450
		C	0.000	0.000	3.665	0.000	0.0000

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	160.0000-155.0000	A	2.338	0.000	0.000	0.000	0.000	0.0000
		B		0.000	0.000	1.169	0.000	0.0319
		C		0.000	0.000	0.000	0.000	0.0000
L2	155.0000-150.0000	A	2.331	0.000	0.000	0.000	0.000	0.0000
		B		0.000	0.000	5.827	0.000	0.1593
		C		0.000	0.000	0.000	0.000	0.0000
L3	150.0000-146.0000	A	2.324	0.000	0.000	0.000	0.000	0.0000
		B		0.000	0.000	4.648	0.000	0.1271
		C		0.000	0.000	0.000	0.000	0.0000
L4	146.0000-141.0000	A	2.317	0.000	0.000	0.000	0.000	0.0000
		B		0.000	0.000	8.687	0.000	0.2129
		C		0.000	0.000	0.000	0.000	0.0000
L5	141.0000-136.0000	A	2.308	0.000	0.000	0.000	0.000	0.0000
		B		0.000	0.000	8.657	0.000	0.2248
		C		0.000	0.000	0.000	0.000	0.0000
L6	136.0000-131.0000	A	2.300	0.000	0.000	0.575	0.000	0.0176
		B		0.000	0.000	8.625	0.000	0.2324
		C		0.000	0.000	0.000	0.000	0.0000
L7	131.0000-126.0000	A	2.291	0.000	0.000	4.582	0.000	0.1084
		B		0.000	0.000	8.592	0.000	0.2317
		C		0.000	0.000	0.000	0.000	0.0000
L8	126.0000-121.0000	A	2.282	0.000	0.000	8.036	0.000	0.1538
		B		0.000	0.000	10.888	0.000	0.2631
		C		0.000	0.000	2.330	0.000	0.0321
L9	121.0000-120.1000	A	2.277	0.000	0.000	2.334	0.000	0.0399
		B		0.000	0.000	2.847	0.000	0.0595
		C		0.000	0.000	1.310	0.000	0.0180

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
L10	120.1000-119.8500	A	2.276	0.000	0.000	0.648	0.000	0.0111
		B		0.000	0.000	0.790	0.000	0.0165
		C		0.000	0.000	0.364	0.000	0.0050
L11	119.8500-117.5000	A	2.273	0.000	0.000	6.089	0.000	0.1039
		B		0.000	0.000	9.232	0.000	0.1811
		C		0.000	0.000	3.418	0.000	0.0470
L12	117.5000-117.2500	A	2.271	0.000	0.000	0.647	0.000	0.0110
		B		0.000	0.000	1.090	0.000	0.0208
		C		0.000	0.000	0.364	0.000	0.0050
L13	117.2500-115.5000	A	2.269	0.000	0.000	6.335	0.000	0.1031
		B		0.000	0.000	7.628	0.000	0.1456
		C		0.000	0.000	4.350	0.000	0.0608
L14	115.5000-115.2500	A	2.267	0.000	0.000	0.948	0.000	0.0153
		B		0.000	0.000	1.089	0.000	0.0208
		C		0.000	0.000	0.664	0.000	0.0093
L15	115.2500-110.2500	A	2.261	0.000	0.000	18.926	0.000	0.3057
		B		0.000	0.000	21.753	0.000	0.4144
		C		0.000	0.000	13.273	0.000	0.1852
L16	110.2500-103.7500	A	2.250	0.000	0.000	24.535	0.000	0.3948
		B		0.000	0.000	28.191	0.000	0.5357
		C		0.000	0.000	17.224	0.000	0.2390
L17	103.7500-102.5000	A	2.241	0.000	0.000	4.718	0.000	0.0759
		B		0.000	0.000	5.421	0.000	0.1030
		C		0.000	0.000	3.312	0.000	0.0460
L18	102.5000-100.5000	A	2.238	0.000	0.000	7.528	0.000	0.1207
		B		0.000	0.000	8.647	0.000	0.1640
		C		0.000	0.000	5.145	0.000	0.0710
L19	100.5000-100.2500	A	2.235	0.000	0.000	1.302	0.000	0.0199
		B		0.000	0.000	1.442	0.000	0.0254
		C		0.000	0.000	0.661	0.000	0.0091
L20	100.2500-98.5000	A	2.233	0.000	0.000	9.111	0.000	0.1394
		B		0.000	0.000	9.490	0.000	0.1690
		C		0.000	0.000	4.626	0.000	0.0637
L21	98.5000-98.2500	A	2.231	0.000	0.000	1.301	0.000	0.0199
		B		0.000	0.000	1.141	0.000	0.0211
		C		0.000	0.000	0.661	0.000	0.0091
L22	98.2500-93.2500	A	2.225	0.000	0.000	21.505	0.000	0.3335
		B		0.000	0.000	22.792	0.000	0.4210
		C		0.000	0.000	8.718	0.000	0.1180
L23	93.2500-90.5000	A	2.216	0.000	0.000	10.839	0.000	0.1690
		B		0.000	0.000	12.363	0.000	0.2286
		C		0.000	0.000	3.969	0.000	0.0530
L24	90.5000-90.2500	A	2.212	0.000	0.000	1.102	0.000	0.0167
		B		0.000	0.000	1.240	0.000	0.0221
		C		0.000	0.000	0.361	0.000	0.0048
L25	90.2500-85.2500	A	2.205	0.000	0.000	22.330	0.000	0.3378
		B		0.000	0.000	25.087	0.000	0.4458
		C		0.000	0.000	7.527	0.000	0.1010
L26	85.2500-83.5000	A	2.197	0.000	0.000	9.941	0.000	0.1515
		B		0.000	0.000	10.902	0.000	0.1892
		C		0.000	0.000	7.536	0.000	0.1046
L27	83.5000-83.2500	A	2.194	0.000	0.000	1.420	0.000	0.0216
		B		0.000	0.000	1.557	0.000	0.0270
		C		0.000	0.000	1.142	0.000	0.0158
L28	83.2500-80.7500	A	2.191	0.000	0.000	14.186	0.000	0.2157
		B		0.000	0.000	15.555	0.000	0.2694
		C		0.000	0.000	11.417	0.000	0.1573
L29	80.7500-80.5000	A	2.187	0.000	0.000	1.418	0.000	0.0215
		B		0.000	0.000	1.554	0.000	0.0269
		C		0.000	0.000	1.141	0.000	0.0157
L30	80.5000-80.2500	A	2.186	0.000	0.000	1.418	0.000	0.0215
		B		0.000	0.000	1.554	0.000	0.0269
		C		0.000	0.000	1.141	0.000	0.0157
L31	80.2500-77.5000	A	2.182	0.000	0.000	15.581	0.000	0.2361
		B		0.000	0.000	17.082	0.000	0.2951
		C		0.000	0.000	12.548	0.000	0.1722
L32	77.5000-77.2500	A	2.178	0.000	0.000	1.415	0.000	0.0214
		B		0.000	0.000	1.552	0.000	0.0268
		C		0.000	0.000	1.140	0.000	0.0156

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
L33	77.2500-68.5000	A	2.165	0.000	0.000	44.291	0.000	0.6639
		B		0.000	0.000	49.026	0.000	0.8510
		C		0.000	0.000	34.719	0.000	0.4622
L34	68.5000-68.0000	A	2.151	0.000	0.000	2.182	0.000	0.0325
		B		0.000	0.000	2.453	0.000	0.0432
		C		0.000	0.000	1.636	0.000	0.0210
L35	68.0000-64.2500	A	2.144	0.000	0.000	19.996	0.000	0.2953
		B		0.000	0.000	22.006	0.000	0.3750
		C		0.000	0.000	15.936	0.000	0.2096
L36	64.2500-64.0000	A	2.137	0.000	0.000	1.421	0.000	0.0209
		B		0.000	0.000	1.555	0.000	0.0262
		C		0.000	0.000	1.151	0.000	0.0152
L37	64.0000-60.5000	A	2.131	0.000	0.000	21.096	0.000	0.3090
		B		0.000	0.000	21.738	0.000	0.3660
		C		0.000	0.000	16.107	0.000	0.2123
L38	60.5000-60.2500	A	2.125	0.000	0.000	1.744	0.000	0.0254
		B		0.000	0.000	1.877	0.000	0.0307
		C		0.000	0.000	1.476	0.000	0.0197
L39	60.2500-60.1000	A	2.124	0.000	0.000	1.046	0.000	0.0152
		B		0.000	0.000	1.126	0.000	0.0184
		C		0.000	0.000	0.886	0.000	0.0118
L40	60.1000-59.8500	A	2.123	0.000	0.000	1.744	0.000	0.0254
		B		0.000	0.000	1.876	0.000	0.0306
		C		0.000	0.000	1.201	0.000	0.0163
L41	59.8500-59.1000	A	2.121	0.000	0.000	5.229	0.000	0.0760
		B		0.000	0.000	5.627	0.000	0.0918
		C		0.000	0.000	3.053	0.000	0.0420
L42	59.1000-58.8500	A	2.120	0.000	0.000	1.743	0.000	0.0253
		B		0.000	0.000	1.875	0.000	0.0306
		C		0.000	0.000	1.018	0.000	0.0140
L43	58.8500-55.4000	A	2.113	0.000	0.000	23.836	0.000	0.3455
		B		0.000	0.000	25.658	0.000	0.4183
		C		0.000	0.000	14.030	0.000	0.1921
L44	55.4000-55.1500	A	2.106	0.000	0.000	1.739	0.000	0.0251
		B		0.000	0.000	1.870	0.000	0.0304
		C		0.000	0.000	1.016	0.000	0.0139
L45	55.1500-54.7500	A	2.105	0.000	0.000	2.781	0.000	0.0401
		B		0.000	0.000	2.991	0.000	0.0485
		C		0.000	0.000	1.625	0.000	0.0222
L46	54.7500-54.5000	A	2.103	0.000	0.000	1.738	0.000	0.0251
		B		0.000	0.000	1.869	0.000	0.0303
		C		0.000	0.000	1.016	0.000	0.0138
L47	54.5000-49.5000	A	2.093	0.000	0.000	31.344	0.000	0.4504
		B		0.000	0.000	33.960	0.000	0.5554
		C		0.000	0.000	16.935	0.000	0.2272
L48	49.5000-44.5000	A	2.072	0.000	0.000	27.879	0.000	0.3977
		B		0.000	0.000	30.469	0.000	0.5022
		C		0.000	0.000	15.375	0.000	0.1992
L49	44.5000-41.3000	A	2.053	0.000	0.000	17.776	0.000	0.2517
		B		0.000	0.000	19.419	0.000	0.3183
		C		0.000	0.000	14.491	0.000	0.1817
L50	41.3000-41.0500	A	2.045	0.000	0.000	1.386	0.000	0.0196
		B		0.000	0.000	1.514	0.000	0.0248
		C		0.000	0.000	1.131	0.000	0.0141
L51	41.0500-34.0000	A	2.026	0.000	0.000	44.283	0.000	0.6186
		B		0.000	0.000	47.853	0.000	0.7643
		C		0.000	0.000	37.142	0.000	0.4661
L52	34.0000-33.0000	A	2.003	0.000	0.000	6.860	0.000	0.0956
		B		0.000	0.000	7.366	0.000	0.1163
		C		0.000	0.000	5.847	0.000	0.0740
L53	33.0000-31.5000	A	1.995	0.000	0.000	10.232	0.000	0.1408
		B		0.000	0.000	10.980	0.000	0.1716
		C		0.000	0.000	8.736	0.000	0.1088
L54	31.5000-31.2500	A	1.990	0.000	0.000	2.025	0.000	0.0277
		B		0.000	0.000	1.828	0.000	0.0285
		C		0.000	0.000	1.455	0.000	0.0181
L55	31.2500-30.5000	A	1.987	0.000	0.000	5.476	0.000	0.0751
		B		0.000	0.000	5.481	0.000	0.0854
		C		0.000	0.000	4.363	0.000	0.0541

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
L56	30.5000-30.2500	A	1.983	0.000	0.000	1.704	0.000	0.0234
		B		0.000	0.000	1.828	0.000	0.0285
		C		0.000	0.000	1.456	0.000	0.0181
L57	30.2500-25.7500	A	1.967	0.000	0.000	30.582	0.000	0.4171
		B		0.000	0.000	32.796	0.000	0.5088
		C		0.000	0.000	26.156	0.000	0.3224
L58	25.7500-25.5000	A	1.950	0.000	0.000	1.694	0.000	0.0229
		B		0.000	0.000	1.816	0.000	0.0280
		C		0.000	0.000	1.450	0.000	0.0177
L59	25.5000-24.7000	A	1.946	0.000	0.000	5.416	0.000	0.0732
		B		0.000	0.000	5.806	0.000	0.0894
		C		0.000	0.000	4.638	0.000	0.0565
L60	24.7000-24.4500	A	1.942	0.000	0.000	1.691	0.000	0.0228
		B		0.000	0.000	1.813	0.000	0.0279
		C		0.000	0.000	1.449	0.000	0.0176
L61	24.4500-24.0000	A	1.939	0.000	0.000	3.043	0.000	0.0410
		B		0.000	0.000	3.261	0.000	0.0501
		C		0.000	0.000	2.607	0.000	0.0316
L62	24.0000-23.7500	A	1.936	0.000	0.000	1.690	0.000	0.0227
		B		0.000	0.000	1.811	0.000	0.0278
		C		0.000	0.000	1.448	0.000	0.0175
L63	23.7500-18.7500	A	1.914	0.000	0.000	25.073	0.000	0.3434
		B		0.000	0.000	27.465	0.000	0.4440
		C		0.000	0.000	23.258	0.000	0.2735
L64	18.7500-14.1000	A	1.865	0.000	0.000	18.191	0.000	0.2585
		B		0.000	0.000	20.359	0.000	0.3510
		C		0.000	0.000	20.572	0.000	0.2345
L65	14.1000-13.8000	A	1.835	0.000	0.000	1.404	0.000	0.0193
		B		0.000	0.000	1.542	0.000	0.0252
		C		0.000	0.000	1.322	0.000	0.0148
L66	13.8000-13.6500	A	1.832	0.000	0.000	0.702	0.000	0.0096
		B		0.000	0.000	0.770	0.000	0.0126
		C		0.000	0.000	0.661	0.000	0.0074
L67	13.6500-10.5000	A	1.809	0.000	0.000	13.409	0.000	0.1842
		B		0.000	0.000	16.083	0.000	0.2613
		C		0.000	0.000	13.829	0.000	0.1526
L68	10.5000-10.2500	A	1.781	0.000	0.000	0.845	0.000	0.0118
		B		0.000	0.000	1.268	0.000	0.0204
		C		0.000	0.000	0.925	0.000	0.0109
L69	10.2500-5.2500	A	1.730	0.000	0.000	16.681	0.000	0.2287
		B		0.000	0.000	25.016	0.000	0.3972
		C		0.000	0.000	18.377	0.000	0.2102
L70	5.2500-3.0000	A	1.624	0.000	0.000	7.302	0.000	0.0962
		B		0.000	0.000	10.946	0.000	0.1685
		C		0.000	0.000	8.150	0.000	0.0871
L71	3.0000-2.9000	A	1.571	0.000	0.000	0.320	0.000	0.0041
		B		0.000	0.000	0.479	0.000	0.0073
		C		0.000	0.000	0.360	0.000	0.0037
L72	2.9000-2.7500	A	1.564	0.000	0.000	0.479	0.000	0.0062
		B		0.000	0.000	0.718	0.000	0.0109
		C		0.000	0.000	0.539	0.000	0.0055
L73	2.7500-2.6500	A	1.557	0.000	0.000	0.319	0.000	0.0041
		B		0.000	0.000	0.478	0.000	0.0072
		C		0.000	0.000	0.359	0.000	0.0037
L74	2.6500-2.5000	A	1.550	0.000	0.000	0.477	0.000	0.0061
		B		0.000	0.000	0.715	0.000	0.0108
		C		0.000	0.000	0.538	0.000	0.0055
L75	2.5000-2.2500	A	1.537	0.000	0.000	0.793	0.000	0.0101
		B		0.000	0.000	1.188	0.000	0.0178
		C		0.000	0.000	0.895	0.000	0.0090
L76	2.2500-1.9000	A	1.517	0.000	0.000	1.103	0.000	0.0139
		B		0.000	0.000	1.653	0.000	0.0246
		C		0.000	0.000	1.249	0.000	0.0124
L77	1.9000-1.6500	A	1.493	0.000	0.000	0.783	0.000	0.0098
		B		0.000	0.000	1.173	0.000	0.0174
		C		0.000	0.000	0.889	0.000	0.0087
L78	1.6500-0.0000	A	1.383	0.000	0.000	4.373	0.000	0.0547
		B		0.000	0.000	6.865	0.000	0.1022
		C		0.000	0.000	4.608	0.000	0.0416

Feed Line Center of Pressure

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L1	160.0000-155.0000	0.0000	0.0000	0.3969	-0.6112
L2	155.0000-150.0000	0.0000	0.0000	1.1406	-1.7564
L3	150.0000-146.0000	0.0000	0.0000	1.1394	-1.7545
L4	146.0000-141.0000	0.0000	0.0000	2.0194	-2.2428
L5	141.0000-136.0000	0.0000	0.0000	2.0680	-2.2968
L6	136.0000-131.0000	0.0000	0.0000	1.8423	-2.3439
L7	131.0000-126.0000	0.0000	0.0000	0.3511	-2.2091
L8	126.0000-121.0000	0.0000	0.0000	0.0070	-1.8674
L9	121.0000-120.1000	0.0000	0.0000	0.0055	-1.4704
L10	120.1000-119.8500	0.0000	0.0000	0.0056	-1.4757
L11	119.8500-117.5000	1.1612	0.5600	0.7748	-1.0330
L12	117.5000-117.2500	1.7421	0.8403	1.1794	-0.8046
L13	117.2500-115.5000	0.2054	0.0991	0.1515	-1.1356
L14	115.5000-115.2500	0.0000	0.0000	0.0045	-1.1884
L15	115.2500-110.2500	0.0000	0.0000	0.0045	-1.2043
L16	110.2500-103.7500	0.0000	0.0000	0.0047	-1.2386
L17	103.7500-102.5000	0.0000	0.0000	0.0046	-1.2298
L18	102.5000-100.5000	-0.0908	-0.0617	-0.0552	-1.2838
L19	100.5000-100.2500	0.0000	-1.5597	0.0040	-2.1728
L20	100.2500-98.5000	-0.3447	-1.7690	-0.2652	-2.3530
L21	98.5000-98.2500	-1.2787	-2.3237	-0.9828	-2.8143
L22	98.2500-93.2500	-0.3647	-2.1448	-0.2686	-2.7516
L23	93.2500-90.5000	0.0714	-2.0693	0.0532	-2.7526
L24	90.5000-90.2500	-0.7400	-2.4169	-0.3626	-2.9093
L25	90.2500-85.2500	-0.6407	-2.3597	-0.3067	-2.8902
L26	85.2500-83.5000	-0.6910	-0.1348	-0.4859	-1.1815
L27	83.5000-83.2500	-0.9222	0.0290	-0.6612	-1.0522
L28	83.2500-80.7500	-0.9279	0.0292	-0.6660	-1.0585
L29	80.7500-80.5000	-0.9341	0.0294	-0.6710	-1.0650
L30	80.5000-80.2500	-0.9350	0.0294	-0.6718	-1.0660
L31	80.2500-77.5000	-0.9412	0.0296	-0.6770	-1.0727
L32	77.5000-77.2500	-0.9469	0.0298	-0.6819	-1.0789
L33	77.2500-68.5000	-1.7627	-0.2441	-1.2176	-1.3780
L34	68.5000-68.0000	-2.9940	-0.6647	-1.9546	-1.7799
L35	68.0000-64.2500	-1.3877	-0.1096	-0.9609	-1.2435
L36	64.2500-64.0000	-0.9485	0.0441	-0.6643	-1.0879
L37	64.0000-60.5000	-0.6390	-0.2701	-0.3903	-1.3600
L38	60.5000-60.2500	-0.7132	0.0000	-0.5220	-0.9655
L39	60.2500-60.1000	-0.7138	0.0000	-0.5225	-0.9661
L40	60.1000-59.8500	0.2075	-0.6532	0.1887	-1.5060
L41	59.8500-59.1000	0.8821	-1.1320	0.6986	-1.8946
L42	59.1000-58.8500	0.8839	-1.1343	0.7002	-1.8984
L43	58.8500-55.4000	0.9445	-1.1148	0.7466	-1.8938

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L44	55.4000-55.1500	0.8965	-1.1498	0.7118	-1.9242
L45	55.1500-54.7500	0.8976	-1.1512	0.7128	-1.9264
L46	54.7500-54.5000	0.8983	-1.1521	0.7137	-1.9281
L47	54.5000-49.5000	0.2782	-1.6068	0.2618	-2.3267
L48	49.5000-44.5000	-0.9499	-1.8561	-0.5952	-2.5639
L49	44.5000-41.3000	-2.4890	-0.6305	-1.7562	-1.6299
L50	41.3000-41.0500	-2.5040	-0.6343	-1.7694	-1.6383
L51	41.0500-34.0000	-1.4400	-0.2420	-1.0571	-1.2704
L52	34.0000-33.0000	-0.7773	0.0000	-0.5814	-1.0225
L53	33.0000-31.5000	-0.7807	0.0000	-0.5864	-1.0179
L54	31.5000-31.2500	0.3014	-1.0976	0.3750	-1.9573
L55	31.2500-30.5000	-0.3343	-0.4630	-0.2117	-1.3951
L56	30.5000-30.2500	-0.8863	0.0411	-0.6541	-0.9944
L57	30.2500-25.7500	-0.8934	0.0415	-0.6604	-0.9976
L58	25.7500-25.5000	-0.9005	0.0418	-0.6669	-1.0002
L59	25.5000-24.7000	-0.9021	0.0419	-0.6683	-1.0007
L60	24.7000-24.4500	-0.9035	0.0419	-0.6696	-1.0009
L61	24.4500-24.0000	-0.9045	0.0420	-0.6706	-1.0012
L62	24.0000-23.7500	-0.9060	0.0420	-0.6718	-1.0018
L63	23.7500-18.7500	-1.8723	-0.0375	-1.2995	-1.2588
L64	18.7500-14.1000	-0.7730	1.4818	-0.4354	-0.2591
L65	14.1000-13.8000	-0.7088	2.3485	-0.4088	0.5987
L66	13.8000-13.6500	-0.7092	2.3500	-0.4093	0.6008
L67	13.6500-10.5000	-1.2485	2.9589	-0.8475	1.0750
L68	10.5000-10.2500	-1.6324	3.8886	-1.1646	1.7099
L69	10.2500-5.2500	-1.6437	3.9142	-1.1805	1.7593
L70	5.2500-3.0000	-1.6592	3.9494	-1.2073	1.8555
L71	3.0000-2.9000	-1.6640	3.9604	-1.2187	1.9024
L72	2.9000-2.7500	-1.6643	3.9609	-1.2199	1.9081
L73	2.7500-2.6500	-1.6648	3.9622	-1.2213	1.9143
L74	2.6500-2.5000	-1.6653	3.9634	-1.2228	1.9207
L75	2.5000-2.2500	-1.6661	3.9650	-1.2252	1.9314
L76	2.2500-1.9000	-1.6674	3.9679	-1.2292	1.9493
L77	1.9000-1.6500	-1.6684	3.9703	-1.2334	1.9695
L78	1.6500-0.0000	-1.9268	4.3105	-1.4549	2.1741

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	1	LDF7-50A(1-5/8")	155.00 - 156.00	1.0000	1.0000
L1	4	2" Rigid Conduit	155.00 - 156.00	1.0000	1.0000
L2	1	LDF7-50A(1-5/8")	150.00 - 155.00	1.0000	1.0000
L2	4	2" Rigid Conduit	150.00 - 155.00	1.0000	1.0000
L3	1	LDF7-50A(1-5/8")	146.00 - 150.00	1.0000	1.0000
L3	4	2" Rigid Conduit	146.00 - 150.00	1.0000	1.0000
L4	1	LDF7-50A(1-5/8")	141.00 - 146.00	1.0000	1.0000
L4	4	2" Rigid Conduit	141.00 - 146.00	1.0000	1.0000
L4	6	HB114-1-08U4-M5J(1-1/4")	141.00 - 146.00	1.0000	1.0000
L5	1	LDF7-50A(1-5/8")	136.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L5	4	2" Rigid Conduit	141.00 - 136.00	1.0000	1.0000
L5	6	HB114-1-08U4-M5J(1-1/4")	141.00 - 136.00	1.0000	1.0000
L6	1	LDF7-50A(1-5/8")	141.00 - 131.00	1.0000	1.0000
L6	4	2" Rigid Conduit	136.00 - 131.00	1.0000	1.0000
L6	6	HB114-1-08U4-M5J(1-1/4")	136.00 - 131.00	1.0000	1.0000
L6	10	561(1-5/8")	136.00 - 131.00	1.0000	1.0000
L7	1	LDF7-50A(1-5/8")	132.00 - 126.00	1.0000	1.0000
L7	4	2" Rigid Conduit	131.00 - 126.00	1.0000	1.0000
L7	6	HB114-1-08U4-M5J(1-1/4")	131.00 - 126.00	1.0000	1.0000
L7	10	561(1-5/8")	131.00 - 126.00	1.0000	1.0000
L7	14	LDF4P-50A(1/2")	131.00 - 126.00	1.0000	1.0000
L8	1	LDF7-50A(1-5/8")	129.00 - 121.00	1.0000	1.0000
L8	4	2" Rigid Conduit	126.00 - 121.00	1.0000	1.0000
L8	6	HB114-1-08U4-M5J(1-1/4")	126.00 - 121.00	1.0000	1.0000
L8	10	561(1-5/8")	126.00 - 121.00	1.0000	1.0000
L8	14	LDF4P-50A(1/2")	126.00 - 121.00	1.0000	1.0000
L8	58	6" x 1" Flat Plate (G)	126.00 - 121.00	1.0000	1.0000
L8	59	6" x 1" Flat Plate (G)	122.60 - 121.00	1.0000	1.0000
L8	60	6" x 1" Flat Plate (G)	122.60 - 121.00	1.0000	1.0000
L9	1	LDF7-50A(1-5/8")	122.60 - 120.10	1.0000	1.0000
L9	4	2" Rigid Conduit	121.00 - 120.10	1.0000	1.0000
L9	6	HB114-1-08U4-M5J(1-1/4")	121.00 - 120.10	1.0000	1.0000
L9	10	561(1-5/8")	121.00 - 120.10	1.0000	1.0000
L9	14	LDF4P-50A(1/2")	121.00 - 120.10	1.0000	1.0000
L9	58	6" x 1" Flat Plate (G)	121.00 - 120.10	1.0000	1.0000
L9	59	6" x 1" Flat Plate (G)	121.00 - 120.10	1.0000	1.0000
L9	60	6" x 1" Flat Plate (G)	121.00 - 120.10	1.0000	1.0000
L10	1	LDF7-50A(1-5/8")	121.00 - 119.85	1.0000	1.0000
L10	4	2" Rigid Conduit	120.10 - 119.85	1.0000	1.0000
L10	6	HB114-1-08U4-M5J(1-1/4")	120.10 - 119.85	1.0000	1.0000
L10	10	561(1-5/8")	120.10 - 119.85	1.0000	1.0000
L10	14	LDF4P-50A(1/2")	120.10 - 119.85	1.0000	1.0000
L10	58	6" x 1" Flat Plate (G)	120.10 - 119.85	1.0000	1.0000
L10	59	6" x 1" Flat Plate (G)	120.10 - 119.85	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L10	60	6" x 1" Flat Plate (G)	119.85 - 120.10	1.0000	1.0000
L11	1	LDF7-50A(1-5/8")	117.50 - 119.85	1.0000	1.0000
L11	4	2" Rigid Conduit	117.50 - 119.85	1.0000	1.0000
L11	6	HB114-1-08U4-M5J(1-1/4")	117.50 - 119.85	1.0000	1.0000
L11	10	561(1-5/8")	117.50 - 119.85	1.0000	1.0000
L11	14	LDF4P-50A(1/2")	117.50 - 119.85	1.0000	1.0000
L11	52	4.5" x 1" Flat Plate (G)	117.50 - 119.00	1.0000	1.0000
L11	58	6" x 1" Flat Plate (G)	117.50 - 119.85	1.0000	1.0000
L11	59	6" x 1" Flat Plate (G)	117.50 - 119.85	1.0000	1.0000
L11	60	6" x 1" Flat Plate (G)	117.50 - 119.85	1.0000	1.0000
L12	1	LDF7-50A(1-5/8")	117.25 - 117.50	1.0000	1.0000
L12	4	2" Rigid Conduit	117.25 - 117.50	1.0000	1.0000
L12	6	HB114-1-08U4-M5J(1-1/4")	117.25 - 117.50	1.0000	1.0000
L12	10	561(1-5/8")	117.25 - 117.50	1.0000	1.0000
L12	14	LDF4P-50A(1/2")	117.25 - 117.50	1.0000	1.0000
L12	52	4.5" x 1" Flat Plate (G)	117.25 - 117.50	1.0000	1.0000
L12	58	6" x 1" Flat Plate (G)	117.25 - 117.50	1.0000	1.0000
L12	59	6" x 1" Flat Plate (G)	117.25 - 117.50	1.0000	1.0000
L12	60	6" x 1" Flat Plate (G)	117.25 - 117.50	1.0000	1.0000
L13	1	LDF7-50A(1-5/8")	115.50 - 117.25	1.0000	1.0000
L13	4	2" Rigid Conduit	115.50 - 117.25	1.0000	1.0000
L13	6	HB114-1-08U4-M5J(1-1/4")	115.50 - 117.25	1.0000	1.0000
L13	10	561(1-5/8")	115.50 - 117.25	1.0000	1.0000
L13	14	LDF4P-50A(1/2")	115.50 - 117.25	1.0000	1.0000
L13	50	4.5" x 1" Flat Plate (G)	115.50 - 117.00	1.0000	1.0000
L13	51	4.5" x 1" Flat Plate (G)	115.50 - 117.00	1.0000	1.0000
L13	52	4.5" x 1" Flat Plate (G)	115.50 - 117.25	1.0000	1.0000
L13	58	6" x 1" Flat Plate (G)	115.50 - 117.25	1.0000	1.0000
L13	59	6" x 1" Flat Plate (G)	115.50 - 117.25	1.0000	1.0000
L13	60	6" x 1" Flat Plate (G)	115.50 - 117.25	1.0000	1.0000
L14	1	LDF7-50A(1-5/8")	115.25 - 115.50	1.0000	1.0000
L14	4	2" Rigid Conduit	115.25 - 115.50	1.0000	1.0000
L14	6	HB114-1-08U4-M5J(1-1/4")	115.25 - 115.50	1.0000	1.0000
L14	10	561(1-5/8")	115.25 - 115.50	1.0000	1.0000
L14	14	LDF4P-50A(1/2")	115.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L14	50	4.5" x 1" Flat Plate (G)	115.50 - 115.25	1.0000	1.0000
L14	51	4.5" x 1" Flat Plate (G)	115.25 - 115.50	1.0000	1.0000
L14	52	4.5" x 1" Flat Plate (G)	115.25 - 115.50	1.0000	1.0000
L14	58	6" x 1" Flat Plate (G)	115.25 - 115.50	1.0000	1.0000
L14	59	6" x 1" Flat Plate (G)	115.25 - 115.50	1.0000	1.0000
L14	60	6" x 1" Flat Plate (G)	115.25 - 115.50	1.0000	1.0000
L15	1	LDF7-50A(1-5/8")	110.25 - 115.25	1.0000	1.0000
L15	4	2" Rigid Conduit	110.25 - 115.25	1.0000	1.0000
L15	6	HB114-1-08U4-M5J(1-1/4")	110.25 - 115.25	1.0000	1.0000
L15	10	561(1-5/8")	110.25 - 115.25	1.0000	1.0000
L15	14	LDF4P-50A(1/2")	110.25 - 115.25	1.0000	1.0000
L15	50	4.5" x 1" Flat Plate (G)	110.25 - 115.25	1.0000	1.0000
L15	51	4.5" x 1" Flat Plate (G)	110.25 - 115.25	1.0000	1.0000
L15	52	4.5" x 1" Flat Plate (G)	110.25 - 115.25	1.0000	1.0000
L15	58	6" x 1" Flat Plate (G)	110.25 - 115.25	1.0000	1.0000
L15	59	6" x 1" Flat Plate (G)	110.25 - 115.25	1.0000	1.0000
L15	60	6" x 1" Flat Plate (G)	110.25 - 115.25	1.0000	1.0000
L16	1	LDF7-50A(1-5/8")	103.75 - 110.25	1.0000	1.0000
L16	4	2" Rigid Conduit	103.75 - 110.25	1.0000	1.0000
L16	6	HB114-1-08U4-M5J(1-1/4")	103.75 - 110.25	1.0000	1.0000
L16	10	561(1-5/8")	103.75 - 110.25	1.0000	1.0000
L16	14	LDF4P-50A(1/2")	103.75 - 110.25	1.0000	1.0000
L16	50	4.5" x 1" Flat Plate (G)	103.75 - 110.25	1.0000	1.0000
L16	51	4.5" x 1" Flat Plate (G)	103.75 - 110.25	1.0000	1.0000
L16	52	4.5" x 1" Flat Plate (G)	103.75 - 110.25	1.0000	1.0000
L16	58	6" x 1" Flat Plate (G)	103.75 - 110.25	1.0000	1.0000
L16	59	6" x 1" Flat Plate (G)	103.75 - 110.25	1.0000	1.0000
L16	60	6" x 1" Flat Plate (G)	103.75 - 110.25	1.0000	1.0000
L18	1	LDF7-50A(1-5/8")	100.50 - 102.50	1.0000	1.0000
L18	4	2" Rigid Conduit	100.50 - 102.50	1.0000	1.0000
L18	6	HB114-1-08U4-M5J(1-1/4")	100.50 - 102.50	1.0000	1.0000
L18	10	561(1-5/8")	100.50 - 102.50	1.0000	1.0000
L18	14	LDF4P-50A(1/2")	100.50 - 102.50	1.0000	1.0000
L18	50	4.5" x 1" Flat Plate (G)	100.50 - 102.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L18	51	4.5" x 1" Flat Plate (G)	100.50 - 102.50	1.0000	1.0000
L18	52	4.5" x 1" Flat Plate (G)	100.50 - 102.50	1.0000	1.0000
L18	58	6" x 1" Flat Plate (G)	100.50 - 102.50	1.0000	1.0000
L18	59	6" x 1" Flat Plate (G)	100.50 - 102.50	1.0000	1.0000
L18	60	6" x 1" Flat Plate (G)	100.60 - 102.50	1.0000	1.0000
L19	1	LDF7-50A(1-5/8")	100.25 - 100.50	1.0000	1.0000
L19	4	2" Rigid Conduit	100.25 - 100.50	1.0000	1.0000
L19	6	HB114-1-08U4-M5J(1-1/4")	100.25 - 100.50	1.0000	1.0000
L19	10	561(1-5/8")	100.25 - 100.50	1.0000	1.0000
L19	14	LDF4P-50A(1/2")	100.25 - 100.50	1.0000	1.0000
L19	33	6" x 1" Flat Plate (G)	100.25 - 100.50	1.0000	1.0000
L19	34	6" x 1" Flat Plate (G)	100.25 - 100.50	1.0000	1.0000
L19	35	6" x 1" Flat Plate (G)	100.25 - 100.50	1.0000	1.0000
L19	50	4.5" x 1" Flat Plate (G)	100.25 - 100.50	1.0000	1.0000
L19	51	4.5" x 1" Flat Plate (G)	100.25 - 100.50	1.0000	1.0000
L19	52	4.5" x 1" Flat Plate (G)	100.25 - 100.50	1.0000	1.0000
L19	58	6" x 1" Flat Plate (G)	100.25 - 100.50	1.0000	1.0000
L19	59	6" x 1" Flat Plate (G)	100.25 - 100.50	1.0000	1.0000
L20	1	LDF7-50A(1-5/8")	98.50 - 100.25	1.0000	1.0000
L20	4	2" Rigid Conduit	98.50 - 100.25	1.0000	1.0000
L20	6	HB114-1-08U4-M5J(1-1/4")	98.50 - 100.25	1.0000	1.0000
L20	10	561(1-5/8")	98.50 - 100.25	1.0000	1.0000
L20	14	LDF4P-50A(1/2")	98.50 - 100.25	1.0000	1.0000
L20	33	6" x 1" Flat Plate (G)	98.50 - 100.25	1.0000	1.0000
L20	34	6" x 1" Flat Plate (G)	98.50 - 100.25	1.0000	1.0000
L20	35	6" x 1" Flat Plate (G)	98.50 - 100.25	1.0000	1.0000
L20	50	4.5" x 1" Flat Plate (G)	98.50 - 100.25	1.0000	1.0000
L20	51	4.5" x 1" Flat Plate (G)	98.50 - 100.25	1.0000	1.0000
L20	52	4.5" x 1" Flat Plate (G)	99.00 - 100.25	1.0000	1.0000
L20	58	6" x 1" Flat Plate (G)	98.50 - 100.25	1.0000	1.0000
L20	59	6" x 1" Flat Plate (G)	98.50 - 100.25	1.0000	1.0000
L21	1	LDF7-50A(1-5/8")	98.25 - 98.50	1.0000	1.0000
L21	4	2" Rigid Conduit	98.25 - 98.50	1.0000	1.0000
L21	6	HB114-1-08U4-M5J(1-1/4")	98.25 - 98.50	1.0000	1.0000
L21	10	561(1-5/8")	98.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_e No Ice	K_a Ice
L21	14	LDF4P-50A(1/2")	98.50 - 98.25	1.0000	1.0000
L21	33	6" x 1" Flat Plate (G)	98.25 - 98.50	1.0000	1.0000
L21	34	6" x 1" Flat Plate (G)	98.25 - 98.50	1.0000	1.0000
L21	35	6" x 1" Flat Plate (G)	98.25 - 98.50	1.0000	1.0000
L21	50	4.5" x 1" Flat Plate (G)	98.25 - 98.50	1.0000	1.0000
L21	51	4.5" x 1" Flat Plate (G)	98.25 - 98.50	1.0000	1.0000
L21	58	6" x 1" Flat Plate (G)	98.25 - 98.50	1.0000	1.0000
L21	59	6" x 1" Flat Plate (G)	98.25 - 98.50	1.0000	1.0000
L22	1	LDF7-50A(1-5/8")	93.25 - 98.25	1.0000	1.0000
L22	4	2" Rigid Conduit	93.25 - 98.25	1.0000	1.0000
L22	6	HB114-1-08U4-M5J(1-1/4")	93.25 - 98.25	1.0000	1.0000
L22	10	561(1-5/8")	93.25 - 98.25	1.0000	1.0000
L22	14	LDF4P-50A(1/2")	93.25 - 98.25	1.0000	1.0000
L22	33	6" x 1" Flat Plate (G)	93.25 - 98.25	1.0000	1.0000
L22	34	6" x 1" Flat Plate (G)	93.25 - 98.25	1.0000	1.0000
L22	35	6" x 1" Flat Plate (G)	93.25 - 98.25	1.0000	1.0000
L22	50	4.5" x 1" Flat Plate (G)	97.00 - 98.25	1.0000	1.0000
L22	51	4.5" x 1" Flat Plate (G)	97.00 - 98.25	1.0000	1.0000
L22	58	6" x 1" Flat Plate (G)	93.25 - 98.25	1.0000	1.0000
L22	59	6" x 1" Flat Plate (G)	93.25 - 98.25	1.0000	1.0000
L23	1	LDF7-50A(1-5/8")	90.50 - 93.25	1.0000	1.0000
L23	4	2" Rigid Conduit	90.50 - 93.25	1.0000	1.0000
L23	6	HB114-1-08U4-M5J(1-1/4")	90.50 - 93.25	1.0000	1.0000
L23	10	561(1-5/8")	90.50 - 93.25	1.0000	1.0000
L23	14	LDF4P-50A(1/2")	90.50 - 93.25	1.0000	1.0000
L23	33	6" x 1" Flat Plate (G)	90.50 - 93.25	1.0000	1.0000
L23	34	6" x 1" Flat Plate (G)	90.50 - 93.25	1.0000	1.0000
L23	35	6" x 1" Flat Plate (G)	90.50 - 93.25	1.0000	1.0000
L23	58	6" x 1" Flat Plate (G)	90.60 - 93.25	1.0000	1.0000
L23	59	6" x 1" Flat Plate (G)	90.60 - 93.25	1.0000	1.0000
L24	1	LDF7-50A(1-5/8")	90.25 - 90.50	1.0000	1.0000
L24	4	2" Rigid Conduit	90.25 - 90.50	1.0000	1.0000
L24	6	HB114-1-08U4-M5J(1-1/4")	90.25 - 90.50	1.0000	1.0000
L24	10	561(1-5/8")	90.25 - 90.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L24	14	LDF4P-50A(1/2")	90.25 - 90.50	1.0000	1.0000
L24	33	6" x 1" Flat Plate (G)	90.25 - 90.50	1.0000	1.0000
L24	34	6" x 1" Flat Plate (G)	90.25 - 90.50	1.0000	1.0000
L24	35	6" x 1" Flat Plate (G)	90.25 - 90.50	1.0000	1.0000
L24	56	8.5" x 1.25" Flat Plate (G)	90.25 - 90.50	1.0000	1.0000
L24	57	8.5" x 1.25" Flat Plate (G)	90.25 - 90.50	1.0000	1.0000
L25	1	LDF7-50A(1-5/8")	85.25 - 90.25	1.0000	1.0000
L25	4	2" Rigid Conduit	85.25 - 90.25	1.0000	1.0000
L25	6	HB114-1-08U4-M5J(1-1/4")	85.25 - 90.25	1.0000	1.0000
L25	10	561(1-5/8")	85.25 - 90.25	1.0000	1.0000
L25	14	LDF4P-50A(1/2")	85.25 - 90.25	1.0000	1.0000
L25	33	6" x 1" Flat Plate (G)	85.25 - 90.25	1.0000	1.0000
L25	34	6" x 1" Flat Plate (G)	85.25 - 90.25	1.0000	1.0000
L25	35	6" x 1" Flat Plate (G)	85.25 - 90.25	1.0000	1.0000
L25	43	6.5" x 1.25" Flat Plate (G)	85.25 - 85.50	1.0000	1.0000
L25	44	6.5" x 1.25" Flat Plate (G)	85.25 - 85.50	1.0000	1.0000
L25	45	6.5" x 1.25" Flat Plate (G)	85.25 - 85.50	1.0000	1.0000
L25	56	8.5" x 1.25" Flat Plate (G)	85.25 - 90.25	1.0000	1.0000
L25	57	8.5" x 1.25" Flat Plate (G)	85.25 - 90.25	1.0000	1.0000
L26	1	LDF7-50A(1-5/8")	83.50 - 85.25	1.0000	1.0000
L26	4	2" Rigid Conduit	83.50 - 85.25	1.0000	1.0000
L26	6	HB114-1-08U4-M5J(1-1/4")	83.50 - 85.25	1.0000	1.0000
L26	10	561(1-5/8")	83.50 - 85.25	1.0000	1.0000
L26	14	LDF4P-50A(1/2")	83.50 - 85.25	1.0000	1.0000
L26	33	6" x 1" Flat Plate (G)	83.50 - 85.25	1.0000	1.0000
L26	34	6" x 1" Flat Plate (G)	83.50 - 85.25	1.0000	1.0000
L26	35	6" x 1" Flat Plate (G)	83.50 - 85.25	1.0000	1.0000
L26	43	6.5" x 1.25" Flat Plate (G)	83.50 - 85.25	1.0000	1.0000
L26	44	6.5" x 1.25" Flat Plate (G)	83.50 - 85.25	1.0000	1.0000
L26	45	6.5" x 1.25" Flat Plate (G)	83.50 - 85.25	1.0000	1.0000
L26	49	8.5" x 1.25" Flat Plate (G)	83.50 - 85.00	1.0000	1.0000
L26	56	8.5" x 1.25" Flat Plate (G)	83.50 - 85.25	1.0000	1.0000
L26	57	8.5" x 1.25" Flat Plate (G)	83.50 - 85.25	1.0000	1.0000
L27	1	LDF7-50A(1-5/8")	83.25 - 83.50	1.0000	1.0000
L27	4	2" Rigid Conduit	83.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L27	6	HB114-1-08U4-M5J(1-1/4")	83.50 83.25 - 83.50	1.0000	1.0000
L27	10	561(1-5/8")	83.25 - 83.50	1.0000	1.0000
L27	14	LDF4P-50A(1/2")	83.25 - 83.50	1.0000	1.0000
L27	33	6" x 1" Flat Plate (G)	83.25 - 83.50	1.0000	1.0000
L27	34	6" x 1" Flat Plate (G)	83.25 - 83.50	1.0000	1.0000
L27	35	6" x 1" Flat Plate (G)	83.25 - 83.50	1.0000	1.0000
L27	43	6.5" x 1.25" Flat Plate (G)	83.25 - 83.50	1.0000	1.0000
L27	44	6.5" x 1.25" Flat Plate (G)	83.25 - 83.50	1.0000	1.0000
L27	45	6.5" x 1.25" Flat Plate (G)	83.25 - 83.50	1.0000	1.0000
L27	49	8.5" x 1.25" Flat Plate (G)	83.25 - 83.50	1.0000	1.0000
L27	56	8.5" x 1.25" Flat Plate (G)	83.25 - 83.50	1.0000	1.0000
L27	57	8.5" x 1.25" Flat Plate (G)	83.25 - 83.50	1.0000	1.0000
L28	1	LDF7-50A(1-5/8")	80.75 - 83.25	1.0000	1.0000
L28	4	2" Rigid Conduit	80.75 - 83.25	1.0000	1.0000
L28	6	HB114-1-08U4-M5J(1-1/4")	80.75 - 83.25	1.0000	1.0000
L28	10	561(1-5/8")	80.75 - 83.25	1.0000	1.0000
L28	14	LDF4P-50A(1/2")	80.75 - 83.25	1.0000	1.0000
L28	33	6" x 1" Flat Plate (G)	80.75 - 83.25	1.0000	1.0000
L28	34	6" x 1" Flat Plate (G)	80.75 - 83.25	1.0000	1.0000
L28	35	6" x 1" Flat Plate (G)	80.75 - 83.25	1.0000	1.0000
L28	43	6.5" x 1.25" Flat Plate (G)	80.75 - 83.25	1.0000	1.0000
L28	44	6.5" x 1.25" Flat Plate (G)	80.75 - 83.25	1.0000	1.0000
L28	45	6.5" x 1.25" Flat Plate (G)	80.75 - 83.25	1.0000	1.0000
L28	49	8.5" x 1.25" Flat Plate (G)	80.75 - 83.25	1.0000	1.0000
L28	56	8.5" x 1.25" Flat Plate (G)	80.75 - 83.25	1.0000	1.0000
L28	57	8.5" x 1.25" Flat Plate (G)	80.75 - 83.25	1.0000	1.0000
L29	1	LDF7-50A(1-5/8")	80.50 - 80.75	1.0000	1.0000
L29	4	2" Rigid Conduit	80.50 - 80.75	1.0000	1.0000
L29	6	HB114-1-08U4-M5J(1-1/4")	80.50 - 80.75	1.0000	1.0000
L29	10	561(1-5/8")	80.50 - 80.75	1.0000	1.0000
L29	14	LDF4P-50A(1/2")	80.50 - 80.75	1.0000	1.0000
L29	33	6" x 1" Flat Plate (G)	80.50 - 80.75	1.0000	1.0000
L29	34	6" x 1" Flat Plate (G)	80.50 - 80.75	1.0000	1.0000
L29	35	6" x 1" Flat Plate (G)	80.50 - 80.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L29	43	6.5" x 1.25" Flat Plate (G)	80.50 - 80.75	1.0000	1.0000
L29	44	6.5" x 1.25" Flat Plate (G)	80.50 - 80.75	1.0000	1.0000
L29	45	6.5" x 1.25" Flat Plate (G)	80.50 - 80.75	1.0000	1.0000
L29	49	8.5" x 1.25" Flat Plate (G)	80.50 - 80.75	1.0000	1.0000
L29	56	8.5" x 1.25" Flat Plate (G)	80.50 - 80.75	1.0000	1.0000
L29	57	8.5" x 1.25" Flat Plate (G)	80.50 - 80.75	1.0000	1.0000
L30	1	LDF7-50A(1-5/8")	80.25 - 80.50	1.0000	1.0000
L30	4	2" Rigid Conduit	80.25 - 80.50	1.0000	1.0000
L30	6	HB114-1-08U4-M5J(1-1/4")	80.25 - 80.50	1.0000	1.0000
L30	10	561(1-5/8")	80.25 - 80.50	1.0000	1.0000
L30	14	LDF4P-50A(1/2")	80.25 - 80.50	1.0000	1.0000
L30	33	6" x 1" Flat Plate (G)	80.25 - 80.50	1.0000	1.0000
L30	34	6" x 1" Flat Plate (G)	80.25 - 80.50	1.0000	1.0000
L30	35	6" x 1" Flat Plate (G)	80.25 - 80.50	1.0000	1.0000
L30	43	6.5" x 1.25" Flat Plate (G)	80.25 - 80.50	1.0000	1.0000
L30	44	6.5" x 1.25" Flat Plate (G)	80.25 - 80.50	1.0000	1.0000
L30	45	6.5" x 1.25" Flat Plate (G)	80.25 - 80.50	1.0000	1.0000
L30	49	8.5" x 1.25" Flat Plate (G)	80.25 - 80.50	1.0000	1.0000
L30	56	8.5" x 1.25" Flat Plate (G)	80.25 - 80.50	1.0000	1.0000
L30	57	8.5" x 1.25" Flat Plate (G)	80.25 - 80.50	1.0000	1.0000
L31	1	LDF7-50A(1-5/8")	77.50 - 80.25	1.0000	1.0000
L31	4	2" Rigid Conduit	77.50 - 80.25	1.0000	1.0000
L31	6	HB114-1-08U4-M5J(1-1/4")	77.50 - 80.25	1.0000	1.0000
L31	10	561(1-5/8")	77.50 - 80.25	1.0000	1.0000
L31	14	LDF4P-50A(1/2")	77.50 - 80.25	1.0000	1.0000
L31	33	6" x 1" Flat Plate (G)	77.50 - 80.25	1.0000	1.0000
L31	34	6" x 1" Flat Plate (G)	77.50 - 80.25	1.0000	1.0000
L31	35	6" x 1" Flat Plate (G)	77.50 - 80.25	1.0000	1.0000
L31	43	6.5" x 1.25" Flat Plate (G)	77.50 - 80.25	1.0000	1.0000
L31	44	6.5" x 1.25" Flat Plate (G)	77.50 - 80.25	1.0000	1.0000
L31	45	6.5" x 1.25" Flat Plate (G)	77.50 - 80.25	1.0000	1.0000
L31	49	8.5" x 1.25" Flat Plate (G)	77.50 - 80.25	1.0000	1.0000
L31	56	8.5" x 1.25" Flat Plate (G)	77.50 - 80.25	1.0000	1.0000
L31	57	8.5" x 1.25" Flat Plate (G)	77.50 - 80.25	1.0000	1.0000
L32	1	LDF7-50A(1-5/8")	77.25 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L32	4	2" Rigid Conduit	77.50 - 77.25	1.0000	1.0000
L32	6	HB114-1-08U4-M5J(1-1/4")	77.25 - 77.50	1.0000	1.0000
L32	10	561(1-5/8")	77.25 - 77.50	1.0000	1.0000
L32	14	LDF4P-50A(1/2")	77.25 - 77.50	1.0000	1.0000
L32	33	6" x 1" Flat Plate (G)	77.25 - 77.50	1.0000	1.0000
L32	34	6" x 1" Flat Plate (G)	77.25 - 77.50	1.0000	1.0000
L32	35	6" x 1" Flat Plate (G)	77.25 - 77.50	1.0000	1.0000
L32	43	6.5" x 1.25" Flat Plate (G)	77.25 - 77.50	1.0000	1.0000
L32	44	6.5" x 1.25" Flat Plate (G)	77.25 - 77.50	1.0000	1.0000
L32	45	6.5" x 1.25" Flat Plate (G)	77.25 - 77.50	1.0000	1.0000
L32	49	8.5" x 1.25" Flat Plate (G)	77.25 - 77.50	1.0000	1.0000
L32	56	8.5" x 1.25" Flat Plate (G)	77.25 - 77.50	1.0000	1.0000
L32	57	8.5" x 1.25" Flat Plate (G)	77.25 - 77.50	1.0000	1.0000
L33	1	LDF7-50A(1-5/8")	68.50 - 77.25	1.0000	1.0000
L33	4	2" Rigid Conduit	68.50 - 77.25	1.0000	1.0000
L33	6	HB114-1-08U4-M5J(1-1/4")	68.50 - 77.25	1.0000	1.0000
L33	10	561(1-5/8")	68.50 - 77.25	1.0000	1.0000
L33	14	LDF4P-50A(1/2")	68.50 - 77.25	1.0000	1.0000
L33	33	6" x 1" Flat Plate (G)	68.50 - 77.25	1.0000	1.0000
L33	34	6" x 1" Flat Plate (G)	68.50 - 77.25	1.0000	1.0000
L33	35	6" x 1" Flat Plate (G)	68.50 - 77.25	1.0000	1.0000
L33	43	6.5" x 1.25" Flat Plate (G)	72.50 - 77.25	1.0000	1.0000
L33	44	6.5" x 1.25" Flat Plate (G)	72.50 - 77.25	1.0000	1.0000
L33	45	6.5" x 1.25" Flat Plate (G)	72.50 - 77.25	1.0000	1.0000
L33	49	8.5" x 1.25" Flat Plate (G)	68.50 - 77.25	1.0000	1.0000
L33	56	8.5" x 1.25" Flat Plate (G)	68.50 - 77.25	1.0000	1.0000
L33	57	8.5" x 1.25" Flat Plate (G)	68.50 - 77.25	1.0000	1.0000
L35	1	LDF7-50A(1-5/8")	64.25 - 68.00	1.0000	1.0000
L35	4	2" Rigid Conduit	64.25 - 68.00	1.0000	1.0000
L35	6	HB114-1-08U4-M5J(1-1/4")	64.25 - 68.00	1.0000	1.0000
L35	10	561(1-5/8")	64.25 - 68.00	1.0000	1.0000
L35	14	LDF4P-50A(1/2")	64.25 - 68.00	1.0000	1.0000
L35	33	6" x 1" Flat Plate (G)	64.25 - 68.00	1.0000	1.0000
L35	34	6" x 1" Flat Plate (G)	64.25 - 68.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L35	35	6" x 1" Flat Plate (G)	64.25 - 68.00	1.0000	1.0000
L35	40	6.5" x 1.25" Flat Plate (G)	64.25 - 67.00	1.0000	1.0000
L35	41	6.5" x 1.25" Flat Plate (G)	64.25 - 67.00	1.0000	1.0000
L35	42	6.5" x 1.25" Flat Plate (G)	64.25 - 67.00	1.0000	1.0000
L35	49	8.5" x 1.25" Flat Plate (G)	64.25 - 68.00	1.0000	1.0000
L35	56	8.5" x 1.25" Flat Plate (G)	64.25 - 68.00	1.0000	1.0000
L35	57	8.5" x 1.25" Flat Plate (G)	64.25 - 68.00	1.0000	1.0000
L36	1	LDF7-50A(1-5/8")	64.00 - 64.25	1.0000	1.0000
L36	4	2" Rigid Conduit	64.00 - 64.25	1.0000	1.0000
L36	6	HB114-1-08U4-M5J(1-1/4")	64.00 - 64.25	1.0000	1.0000
L36	10	561(1-5/8")	64.00 - 64.25	1.0000	1.0000
L36	14	LDF4P-50A(1/2")	64.00 - 64.25	1.0000	1.0000
L36	33	6" x 1" Flat Plate (G)	64.00 - 64.25	1.0000	1.0000
L36	34	6" x 1" Flat Plate (G)	64.00 - 64.25	1.0000	1.0000
L36	35	6" x 1" Flat Plate (G)	64.00 - 64.25	1.0000	1.0000
L36	40	6.5" x 1.25" Flat Plate (G)	64.00 - 64.25	1.0000	1.0000
L36	41	6.5" x 1.25" Flat Plate (G)	64.00 - 64.25	1.0000	1.0000
L36	42	6.5" x 1.25" Flat Plate (G)	64.00 - 64.25	1.0000	1.0000
L36	49	8.5" x 1.25" Flat Plate (G)	64.00 - 64.25	1.0000	1.0000
L36	56	8.5" x 1.25" Flat Plate (G)	64.00 - 64.25	1.0000	1.0000
L36	57	8.5" x 1.25" Flat Plate (G)	64.00 - 64.25	1.0000	1.0000
L37	1	LDF7-50A(1-5/8")	60.50 - 64.00	1.0000	1.0000
L37	4	2" Rigid Conduit	60.50 - 64.00	1.0000	1.0000
L37	6	HB114-1-08U4-M5J(1-1/4")	60.50 - 64.00	1.0000	1.0000
L37	10	561(1-5/8")	60.50 - 64.00	1.0000	1.0000
L37	14	LDF4P-50A(1/2")	60.50 - 64.00	1.0000	1.0000
L37	25	Aero MP304	60.50 - 61.50	1.0000	1.0000
L37	33	6" x 1" Flat Plate (G)	60.50 - 64.00	1.0000	1.0000
L37	34	6" x 1" Flat Plate (G)	60.50 - 64.00	1.0000	1.0000
L37	35	6" x 1" Flat Plate (G)	60.50 - 64.00	1.0000	1.0000
L37	40	6.5" x 1.25" Flat Plate (G)	60.50 - 64.00	1.0000	1.0000
L37	41	6.5" x 1.25" Flat Plate (G)	60.50 - 64.00	1.0000	1.0000
L37	42	6.5" x 1.25" Flat Plate (G)	60.50 - 64.00	1.0000	1.0000
L37	49	8.5" x 1.25" Flat Plate (G)	60.50 - 64.00	1.0000	1.0000
L37	56	8.5" x 1.25" Flat Plate (G)	60.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L37	57	8.5" x 1.25" Flat Plate (G)	64.00 60.50 - 64.00	1.0000	1.0000
L38	1	LDF7-50A(1-5/8")	60.25 - 60.50	1.0000	1.0000
L38	4	2" Rigid Conduit	60.25 - 60.50	1.0000	1.0000
L38	6	HB114-1-08U4-M5J(1-1/4")	60.25 - 60.50	1.0000	1.0000
L38	10	561(1-5/8")	60.25 - 60.50	1.0000	1.0000
L38	14	LDF4P-50A(1/2")	60.25 - 60.50	1.0000	1.0000
L38	23	Aero MP304	60.25 - 60.50	1.0000	1.0000
L38	24	Aero MP304	60.25 - 60.50	1.0000	1.0000
L38	25	Aero MP304	60.25 - 60.50	1.0000	1.0000
L38	30	6.5" x 1.25" Flat Plate (G)	60.25 - 60.50	1.0000	1.0000
L38	31	6.5" x 1.25" Flat Plate (G)	60.25 - 60.50	1.0000	1.0000
L38	32	6.5" x 1.25" Flat Plate (G)	60.25 - 60.50	1.0000	1.0000
L38	40	6.5" x 1.25" Flat Plate (G)	60.25 - 60.50	1.0000	1.0000
L38	41	6.5" x 1.25" Flat Plate (G)	60.25 - 60.50	1.0000	1.0000
L38	42	6.5" x 1.25" Flat Plate (G)	60.25 - 60.50	1.0000	1.0000
L38	49	8.5" x 1.25" Flat Plate (G)	60.25 - 60.50	1.0000	1.0000
L38	56	8.5" x 1.25" Flat Plate (G)	60.25 - 60.50	1.0000	1.0000
L38	57	8.5" x 1.25" Flat Plate (G)	60.25 - 60.50	1.0000	1.0000
L39	1	LDF7-50A(1-5/8")	60.10 - 60.25	1.0000	1.0000
L39	4	2" Rigid Conduit	60.10 - 60.25	1.0000	1.0000
L39	6	HB114-1-08U4-M5J(1-1/4")	60.10 - 60.25	1.0000	1.0000
L39	10	561(1-5/8")	60.10 - 60.25	1.0000	1.0000
L39	14	LDF4P-50A(1/2")	60.10 - 60.25	1.0000	1.0000
L39	23	Aero MP304	60.10 - 60.25	1.0000	1.0000
L39	24	Aero MP304	60.10 - 60.25	1.0000	1.0000
L39	25	Aero MP304	60.10 - 60.25	1.0000	1.0000
L39	30	6.5" x 1.25" Flat Plate (G)	60.10 - 60.25	1.0000	1.0000
L39	31	6.5" x 1.25" Flat Plate (G)	60.10 - 60.25	1.0000	1.0000
L39	32	6.5" x 1.25" Flat Plate (G)	60.10 - 60.25	1.0000	1.0000
L39	40	6.5" x 1.25" Flat Plate (G)	60.10 - 60.25	1.0000	1.0000
L39	41	6.5" x 1.25" Flat Plate (G)	60.10 - 60.25	1.0000	1.0000
L39	42	6.5" x 1.25" Flat Plate (G)	60.10 - 60.25	1.0000	1.0000
L39	49	8.5" x 1.25" Flat Plate (G)	60.10 - 60.25	1.0000	1.0000
L39	56	8.5" x 1.25" Flat Plate (G)	60.10 - 60.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L39	57	8.5" x 1.25" Flat Plate (G)	60.10 - 60.25	1.0000	1.0000
L40	1	LDF7-50A(1-5/8")	59.85 - 60.10	1.0000	1.0000
L40	4	2" Rigid Conduit	59.85 - 60.10	1.0000	1.0000
L40	6	HB114-1-08U4-M5J(1-1/4")	59.85 - 60.10	1.0000	1.0000
L40	10	561(1-5/8")	59.85 - 60.10	1.0000	1.0000
L40	14	LDF4P-50A(1/2")	59.85 - 60.10	1.0000	1.0000
L40	23	Aero MP304	59.85 - 60.10	1.0000	1.0000
L40	24	Aero MP304	59.85 - 60.10	1.0000	1.0000
L40	25	Aero MP304	59.85 - 60.10	1.0000	1.0000
L40	30	6.5" x 1.25" Flat Plate (G)	59.85 - 60.10	1.0000	1.0000
L40	31	6.5" x 1.25" Flat Plate (G)	59.85 - 60.10	1.0000	1.0000
L40	32	6.5" x 1.25" Flat Plate (G)	59.85 - 60.10	1.0000	1.0000
L40	40	6.5" x 1.25" Flat Plate (G)	59.85 - 60.10	1.0000	1.0000
L40	41	6.5" x 1.25" Flat Plate (G)	59.85 - 60.10	1.0000	1.0000
L40	42	6.5" x 1.25" Flat Plate (G)	59.85 - 60.10	1.0000	1.0000
L40	49	8.5" x 1.25" Flat Plate (G)	60.00 - 60.10	1.0000	1.0000
L40	56	8.5" x 1.25" Flat Plate (G)	59.85 - 60.10	1.0000	1.0000
L40	57	8.5" x 1.25" Flat Plate (G)	59.85 - 60.10	1.0000	1.0000
L41	1	LDF7-50A(1-5/8")	59.10 - 59.85	1.0000	1.0000
L41	4	2" Rigid Conduit	59.10 - 59.85	1.0000	1.0000
L41	6	HB114-1-08U4-M5J(1-1/4")	59.10 - 59.85	1.0000	1.0000
L41	10	561(1-5/8")	59.10 - 59.85	1.0000	1.0000
L41	14	LDF4P-50A(1/2")	59.10 - 59.85	1.0000	1.0000
L41	23	Aero MP304	59.10 - 59.85	1.0000	1.0000
L41	24	Aero MP304	59.10 - 59.85	1.0000	1.0000
L41	25	Aero MP304	59.10 - 59.85	1.0000	1.0000
L41	30	6.5" x 1.25" Flat Plate (G)	59.10 - 59.85	1.0000	1.0000
L41	31	6.5" x 1.25" Flat Plate (G)	59.10 - 59.85	1.0000	1.0000
L41	32	6.5" x 1.25" Flat Plate (G)	59.10 - 59.85	1.0000	1.0000
L41	40	6.5" x 1.25" Flat Plate (G)	59.10 - 59.85	1.0000	1.0000
L41	41	6.5" x 1.25" Flat Plate (G)	59.10 - 59.85	1.0000	1.0000
L41	42	6.5" x 1.25" Flat Plate (G)	59.10 - 59.85	1.0000	1.0000
L41	56	8.5" x 1.25" Flat Plate (G)	59.10 - 59.85	1.0000	1.0000
L41	57	8.5" x 1.25" Flat Plate (G)	59.10 - 59.85	1.0000	1.0000
L42	1	LDF7-50A(1-5/8")	58.85 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L42	4	2" Rigid Conduit	59.10 58.85 - 59.10	1.0000	1.0000
L42	6	HB114-1-08U4-M5J(1-1/4")	58.85 - 59.10	1.0000	1.0000
L42	10	561(1-5/8")	58.85 - 59.10	1.0000	1.0000
L42	14	LDF4P-50A(1/2")	58.85 - 59.10	1.0000	1.0000
L42	23	Aero MP304	58.85 - 59.10	1.0000	1.0000
L42	24	Aero MP304	58.85 - 59.10	1.0000	1.0000
L42	25	Aero MP304	58.85 - 59.10	1.0000	1.0000
L42	30	6.5" x 1.25" Flat Plate (G)	58.85 - 59.10	1.0000	1.0000
L42	31	6.5" x 1.25" Flat Plate (G)	58.85 - 59.10	1.0000	1.0000
L42	32	6.5" x 1.25" Flat Plate (G)	58.85 - 59.10	1.0000	1.0000
L42	40	6.5" x 1.25" Flat Plate (G)	58.85 - 59.10	1.0000	1.0000
L42	41	6.5" x 1.25" Flat Plate (G)	58.85 - 59.10	1.0000	1.0000
L42	42	6.5" x 1.25" Flat Plate (G)	58.85 - 59.10	1.0000	1.0000
L42	56	8.5" x 1.25" Flat Plate (G)	58.85 - 59.10	1.0000	1.0000
L42	57	8.5" x 1.25" Flat Plate (G)	58.85 - 59.10	1.0000	1.0000
L43	1	LDF7-50A(1-5/8")	55.40 - 58.85	1.0000	1.0000
L43	4	2" Rigid Conduit	55.40 - 58.85	1.0000	1.0000
L43	6	HB114-1-08U4-M5J(1-1/4")	55.40 - 58.85	1.0000	1.0000
L43	10	561(1-5/8")	55.40 - 58.85	1.0000	1.0000
L43	14	LDF4P-50A(1/2")	55.40 - 58.85	1.0000	1.0000
L43	23	Aero MP304	55.40 - 58.85	1.0000	1.0000
L43	24	Aero MP304	55.40 - 58.85	1.0000	1.0000
L43	25	Aero MP304	55.40 - 58.85	1.0000	1.0000
L43	30	6.5" x 1.25" Flat Plate (G)	55.40 - 58.85	1.0000	1.0000
L43	31	6.5" x 1.25" Flat Plate (G)	55.40 - 58.85	1.0000	1.0000
L43	32	6.5" x 1.25" Flat Plate (G)	55.40 - 58.85	1.0000	1.0000
L43	40	6.5" x 1.25" Flat Plate (G)	55.40 - 58.85	1.0000	1.0000
L43	41	6.5" x 1.25" Flat Plate (G)	55.40 - 58.85	1.0000	1.0000
L43	42	6.5" x 1.25" Flat Plate (G)	55.40 - 58.85	1.0000	1.0000
L43	56	8.5" x 1.25" Flat Plate (G)	55.50 - 58.85	1.0000	1.0000
L43	57	8.5" x 1.25" Flat Plate (G)	55.50 - 58.85	1.0000	1.0000
L44	1	LDF7-50A(1-5/8")	55.15 - 55.40	1.0000	1.0000
L44	4	2" Rigid Conduit	55.15 - 55.40	1.0000	1.0000
L44	6	HB114-1-08U4-M5J(1-1/4")	55.15 - 55.40	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L44	10	561(1-5/8")	55.15 - 55.40	1.0000	1.0000
L44	14	LDF4P-50A(1/2")	55.15 - 55.40	1.0000	1.0000
L44	23	Aero MP304	55.15 - 55.40	1.0000	1.0000
L44	24	Aero MP304	55.15 - 55.40	1.0000	1.0000
L44	25	Aero MP304	55.15 - 55.40	1.0000	1.0000
L44	30	6.5" x 1.25" Flat Plate (G)	55.15 - 55.40	1.0000	1.0000
L44	31	6.5" x 1.25" Flat Plate (G)	55.15 - 55.40	1.0000	1.0000
L44	32	6.5" x 1.25" Flat Plate (G)	55.15 - 55.40	1.0000	1.0000
L44	40	6.5" x 1.25" Flat Plate (G)	55.15 - 55.40	1.0000	1.0000
L44	41	6.5" x 1.25" Flat Plate (G)	55.15 - 55.40	1.0000	1.0000
L44	42	6.5" x 1.25" Flat Plate (G)	55.15 - 55.40	1.0000	1.0000
L44	54	8.5" x 1.25" Flat Plate (G)	55.15 - 55.40	1.0000	1.0000
L44	55	8.5" x 1.25" Flat Plate (G)	55.15 - 55.40	1.0000	1.0000
L45	1	LDF7-50A(1-5/8")	54.75 - 55.15	1.0000	1.0000
L45	4	2" Rigid Conduit	54.75 - 55.15	1.0000	1.0000
L45	6	HB114-1-08U4-M5J(1-1/4")	54.75 - 55.15	1.0000	1.0000
L45	10	561(1-5/8")	54.75 - 55.15	1.0000	1.0000
L45	14	LDF4P-50A(1/2")	54.75 - 55.15	1.0000	1.0000
L45	23	Aero MP304	54.75 - 55.15	1.0000	1.0000
L45	24	Aero MP304	54.75 - 55.15	1.0000	1.0000
L45	25	Aero MP304	54.75 - 55.15	1.0000	1.0000
L45	30	6.5" x 1.25" Flat Plate (G)	54.75 - 55.15	1.0000	1.0000
L45	31	6.5" x 1.25" Flat Plate (G)	54.75 - 55.15	1.0000	1.0000
L45	32	6.5" x 1.25" Flat Plate (G)	54.75 - 55.15	1.0000	1.0000
L45	40	6.5" x 1.25" Flat Plate (G)	54.75 - 55.15	1.0000	1.0000
L45	41	6.5" x 1.25" Flat Plate (G)	54.75 - 55.15	1.0000	1.0000
L45	42	6.5" x 1.25" Flat Plate (G)	54.75 - 55.15	1.0000	1.0000
L45	54	8.5" x 1.25" Flat Plate (G)	54.75 - 55.15	1.0000	1.0000
L45	55	8.5" x 1.25" Flat Plate (G)	54.75 - 55.15	1.0000	1.0000
L46	1	LDF7-50A(1-5/8")	54.50 - 54.75	1.0000	1.0000
L46	4	2" Rigid Conduit	54.50 - 54.75	1.0000	1.0000
L46	6	HB114-1-08U4-M5J(1-1/4")	54.50 - 54.75	1.0000	1.0000
L46	10	561(1-5/8")	54.50 - 54.75	1.0000	1.0000
L46	14	LDF4P-50A(1/2")	54.50 - 54.75	1.0000	1.0000
L46	23	Aero MP304	54.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L46	24	Aero MP304	54.75 54.50 - 54.75	1.0000	1.0000
L46	25	Aero MP304	54.50 - 54.75	1.0000	1.0000
L46	30	6.5" x 1.25" Flat Plate (G)	54.50 - 54.75	1.0000	1.0000
L46	31	6.5" x 1.25" Flat Plate (G)	54.50 - 54.75	1.0000	1.0000
L46	32	6.5" x 1.25" Flat Plate (G)	54.50 - 54.75	1.0000	1.0000
L46	40	6.5" x 1.25" Flat Plate (G)	54.50 - 54.75	1.0000	1.0000
L46	41	6.5" x 1.25" Flat Plate (G)	54.50 - 54.75	1.0000	1.0000
L46	42	6.5" x 1.25" Flat Plate (G)	54.50 - 54.75	1.0000	1.0000
L46	54	8.5" x 1.25" Flat Plate (G)	54.50 - 54.75	1.0000	1.0000
L46	55	8.5" x 1.25" Flat Plate (G)	54.50 - 54.75	1.0000	1.0000
L47	1	LDF7-50A(1-5/8")	49.50 - 54.50	1.0000	1.0000
L47	4	2" Rigid Conduit	49.50 - 54.50	1.0000	1.0000
L47	6	HB114-1-08U4-M5J(1-1/4")	49.50 - 54.50	1.0000	1.0000
L47	10	561(1-5/8")	49.50 - 54.50	1.0000	1.0000
L47	14	LDF4P-50A(1/2")	49.50 - 54.50	1.0000	1.0000
L47	23	Aero MP304	49.50 - 54.50	1.0000	1.0000
L47	24	Aero MP304	49.50 - 54.50	1.0000	1.0000
L47	25	Aero MP304	49.50 - 54.50	1.0000	1.0000
L47	30	6.5" x 1.25" Flat Plate (G)	49.50 - 54.50	1.0000	1.0000
L47	31	6.5" x 1.25" Flat Plate (G)	49.50 - 54.50	1.0000	1.0000
L47	32	6.5" x 1.25" Flat Plate (G)	49.50 - 54.50	1.0000	1.0000
L47	40	6.5" x 1.25" Flat Plate (G)	52.00 - 54.50	1.0000	1.0000
L47	41	6.5" x 1.25" Flat Plate (G)	52.00 - 54.50	1.0000	1.0000
L47	42	6.5" x 1.25" Flat Plate (G)	52.00 - 54.50	1.0000	1.0000
L47	54	8.5" x 1.25" Flat Plate (G)	49.50 - 54.50	1.0000	1.0000
L47	55	8.5" x 1.25" Flat Plate (G)	49.50 - 54.50	1.0000	1.0000
L48	1	LDF7-50A(1-5/8")	44.50 - 49.50	1.0000	1.0000
L48	4	2" Rigid Conduit	44.50 - 49.50	1.0000	1.0000
L48	6	HB114-1-08U4-M5J(1-1/4")	44.50 - 49.50	1.0000	1.0000
L48	10	561(1-5/8")	44.50 - 49.50	1.0000	1.0000
L48	14	LDF4P-50A(1/2")	44.50 - 49.50	1.0000	1.0000
L48	23	Aero MP304	44.50 - 49.50	1.0000	1.0000
L48	24	Aero MP304	44.50 - 49.50	1.0000	1.0000
L48	25	Aero MP304	44.50 - 49.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L48	30	6.5" x 1.25" Flat Plate (G)	44.50 - 49.50	1.0000	1.0000
L48	31	6.5" x 1.25" Flat Plate (G)	44.50 - 49.50	1.0000	1.0000
L48	32	6.5" x 1.25" Flat Plate (G)	44.50 - 49.50	1.0000	1.0000
L48	48	8.5" x 1.25" Flat Plate (G)	44.50 - 45.50	1.0000	1.0000
L48	54	8.5" x 1.25" Flat Plate (G)	44.50 - 49.50	1.0000	1.0000
L48	55	8.5" x 1.25" Flat Plate (G)	44.50 - 49.50	1.0000	1.0000
L49	1	LDF7-50A(1-5/8")	41.30 - 44.50	1.0000	1.0000
L49	4	2" Rigid Conduit	41.30 - 44.50	1.0000	1.0000
L49	6	HB114-1-08U4-M5J(1-1/4")	41.30 - 44.50	1.0000	1.0000
L49	10	561(1-5/8")	41.30 - 44.50	1.0000	1.0000
L49	14	LDF4P-50A(1/2")	41.30 - 44.50	1.0000	1.0000
L49	23	Aero MP304	41.30 - 44.50	1.0000	1.0000
L49	24	Aero MP304	41.30 - 44.50	1.0000	1.0000
L49	25	Aero MP304	41.30 - 44.50	1.0000	1.0000
L49	30	6.5" x 1.25" Flat Plate (G)	41.30 - 44.50	1.0000	1.0000
L49	31	6.5" x 1.25" Flat Plate (G)	41.30 - 44.50	1.0000	1.0000
L49	32	6.5" x 1.25" Flat Plate (G)	41.30 - 44.50	1.0000	1.0000
L49	48	8.5" x 1.25" Flat Plate (G)	41.30 - 44.50	1.0000	1.0000
L49	54	8.5" x 1.25" Flat Plate (G)	41.30 - 44.50	1.0000	1.0000
L49	55	8.5" x 1.25" Flat Plate (G)	41.30 - 44.50	1.0000	1.0000
L50	1	LDF7-50A(1-5/8")	41.05 - 41.30	1.0000	1.0000
L50	4	2" Rigid Conduit	41.05 - 41.30	1.0000	1.0000
L50	6	HB114-1-08U4-M5J(1-1/4")	41.05 - 41.30	1.0000	1.0000
L50	10	561(1-5/8")	41.05 - 41.30	1.0000	1.0000
L50	14	LDF4P-50A(1/2")	41.05 - 41.30	1.0000	1.0000
L50	23	Aero MP304	41.05 - 41.30	1.0000	1.0000
L50	24	Aero MP304	41.05 - 41.30	1.0000	1.0000
L50	25	Aero MP304	41.05 - 41.30	1.0000	1.0000
L50	30	6.5" x 1.25" Flat Plate (G)	41.05 - 41.30	1.0000	1.0000
L50	31	6.5" x 1.25" Flat Plate (G)	41.05 - 41.30	1.0000	1.0000
L50	32	6.5" x 1.25" Flat Plate (G)	41.05 - 41.30	1.0000	1.0000
L50	48	8.5" x 1.25" Flat Plate (G)	41.05 - 41.30	1.0000	1.0000
L50	54	8.5" x 1.25" Flat Plate (G)	41.05 - 41.30	1.0000	1.0000
L50	55	8.5" x 1.25" Flat Plate (G)	41.05 - 41.30	1.0000	1.0000
L51	1	LDF7-50A(1-5/8")	34.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L51	4	2" Rigid Conduit	41.05 - 34.00	1.0000	1.0000
L51	6	HB114-1-08U4-M5J(1-1/4")	41.05 - 34.00	1.0000	1.0000
L51	10	561(1-5/8")	41.05 - 34.00	1.0000	1.0000
L51	14	LDF4P-50A(1/2")	41.05 - 34.00	1.0000	1.0000
L51	23	Aero MP304	41.05 - 34.00	1.0000	1.0000
L51	24	Aero MP304	41.05 - 34.00	1.0000	1.0000
L51	25	Aero MP304	41.05 - 34.00	1.0000	1.0000
L51	30	6.5" x 1.25" Flat Plate (G)	41.05 - 34.00	1.0000	1.0000
L51	31	6.5" x 1.25" Flat Plate (G)	41.05 - 34.00	1.0000	1.0000
L51	32	6.5" x 1.25" Flat Plate (G)	41.05 - 34.00	1.0000	1.0000
L51	37	6.5" x 1.25" Flat Plate (G)	41.05 - 34.00	1.0000	1.0000
L51	38	6.5" x 1.25" Flat Plate (G)	38.00 - 34.00	1.0000	1.0000
L51	39	6.5" x 1.25" Flat Plate (G)	38.00 - 34.00	1.0000	1.0000
L51	48	8.5" x 1.25" Flat Plate (G)	38.00 - 34.00	1.0000	1.0000
L51	54	8.5" x 1.25" Flat Plate (G)	41.05 - 34.00	1.0000	1.0000
L51	55	8.5" x 1.25" Flat Plate (G)	41.05 - 34.00	1.0000	1.0000
L53	1	LDF7-50A(1-5/8")	41.05 - 31.50	1.0000	1.0000
L53	4	2" Rigid Conduit	33.00 - 31.50	1.0000	1.0000
L53	6	HB114-1-08U4-M5J(1-1/4")	33.00 - 31.50	1.0000	1.0000
L53	10	561(1-5/8")	33.00 - 31.50	1.0000	1.0000
L53	14	LDF4P-50A(1/2")	33.00 - 31.50	1.0000	1.0000
L53	23	Aero MP304	33.00 - 31.50	1.0000	1.0000
L53	24	Aero MP304	33.00 - 31.50	1.0000	1.0000
L53	25	Aero MP304	33.00 - 31.50	1.0000	1.0000
L53	30	6.5" x 1.25" Flat Plate (G)	33.00 - 31.50	1.0000	1.0000
L53	31	6.5" x 1.25" Flat Plate (G)	33.00 - 31.50	1.0000	1.0000
L53	32	6.5" x 1.25" Flat Plate (G)	33.00 - 31.50	1.0000	1.0000
L53	37	6.5" x 1.25" Flat Plate (G)	33.00 - 31.50	1.0000	1.0000
L53	38	6.5" x 1.25" Flat Plate (G)	33.00 - 31.50	1.0000	1.0000
L53	39	6.5" x 1.25" Flat Plate (G)	33.00 - 31.50	1.0000	1.0000
L53	48	8.5" x 1.25" Flat Plate (G)	33.00 - 31.50	1.0000	1.0000
L53	54	8.5" x 1.25" Flat Plate (G)	33.00 - 31.50	1.0000	1.0000
L53	55	8.5" x 1.25" Flat Plate (G)	33.00 - 31.50	1.0000	1.0000
L54	1	LDF7-50A(1-5/8")	33.00 - 31.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L54	4	2" Rigid Conduit	31.25 - 31.50	1.0000	1.0000
L54	6	HB114-1-08U4-M5J(1-1/4")	31.25 - 31.50	1.0000	1.0000
L54	10	561(1-5/8")	31.25 - 31.50	1.0000	1.0000
L54	14	LDF4P-50A(1/2")	31.25 - 31.50	1.0000	1.0000
L54	18	Aero MP305	31.25 - 31.50	1.0000	1.0000
L54	23	Aero MP304	31.25 - 31.50	1.0000	1.0000
L54	24	Aero MP304	31.25 - 31.50	1.0000	1.0000
L54	25	Aero MP304	31.25 - 31.50	1.0000	1.0000
L54	30	6.5" x 1.25" Flat Plate (G)	31.25 - 31.50	1.0000	1.0000
L54	31	6.5" x 1.25" Flat Plate (G)	31.25 - 31.50	1.0000	1.0000
L54	32	6.5" x 1.25" Flat Plate (G)	31.25 - 31.50	1.0000	1.0000
L54	37	6.5" x 1.25" Flat Plate (G)	31.25 - 31.50	1.0000	1.0000
L54	38	6.5" x 1.25" Flat Plate (G)	31.25 - 31.50	1.0000	1.0000
L54	39	6.5" x 1.25" Flat Plate (G)	31.25 - 31.50	1.0000	1.0000
L54	48	8.5" x 1.25" Flat Plate (G)	31.25 - 31.50	1.0000	1.0000
L54	54	8.5" x 1.25" Flat Plate (G)	31.25 - 31.50	1.0000	1.0000
L54	55	8.5" x 1.25" Flat Plate (G)	31.25 - 31.50	1.0000	1.0000
L55	1	LDF7-50A(1-5/8")	30.50 - 31.25	1.0000	1.0000
L55	4	2" Rigid Conduit	30.50 - 31.25	1.0000	1.0000
L55	6	HB114-1-08U4-M5J(1-1/4")	30.50 - 31.25	1.0000	1.0000
L55	10	561(1-5/8")	30.50 - 31.25	1.0000	1.0000
L55	14	LDF4P-50A(1/2")	30.50 - 31.25	1.0000	1.0000
L55	18	Aero MP305	30.50 - 31.25	1.0000	1.0000
L55	23	Aero MP304	30.50 - 31.25	1.0000	1.0000
L55	24	Aero MP304	30.50 - 31.25	1.0000	1.0000
L55	25	Aero MP304	31.00 - 31.25	1.0000	1.0000
L55	30	6.5" x 1.25" Flat Plate (G)	30.50 - 31.25	1.0000	1.0000
L55	31	6.5" x 1.25" Flat Plate (G)	30.50 - 31.25	1.0000	1.0000
L55	32	6.5" x 1.25" Flat Plate (G)	30.50 - 31.25	1.0000	1.0000
L55	37	6.5" x 1.25" Flat Plate (G)	30.50 - 31.25	1.0000	1.0000
L55	38	6.5" x 1.25" Flat Plate (G)	30.50 - 31.25	1.0000	1.0000
L55	39	6.5" x 1.25" Flat Plate (G)	30.50 - 31.25	1.0000	1.0000
L55	48	8.5" x 1.25" Flat Plate (G)	30.50 - 31.25	1.0000	1.0000
L55	54	8.5" x 1.25" Flat Plate (G)	30.50 - 31.25	1.0000	1.0000
L55	55	8.5" x 1.25" Flat Plate (G)	30.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L56	1	LDF7-50A(1-5/8")	31.25 30.25 - 30.50	1.0000	1.0000
L56	4	2" Rigid Conduit	30.25 - 30.50	1.0000	1.0000
L56	6	HB114-1-08U4-M5J(1-1/4")	30.25 - 30.50	1.0000	1.0000
L56	10	561(1-5/8")	30.25 - 30.50	1.0000	1.0000
L56	14	LDF4P-50A(1/2")	30.25 - 30.50	1.0000	1.0000
L56	18	Aero MP305	30.25 - 30.50	1.0000	1.0000
L56	19	Aero MP305	30.25 - 30.50	1.0000	1.0000
L56	20	Aero MP305	30.25 - 30.50	1.0000	1.0000
L56	27	6" x 1" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L56	28	6" x 1" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L56	29	6" x 1" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L56	37	6.5" x 1.25" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L56	38	6.5" x 1.25" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L56	39	6.5" x 1.25" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L56	48	8.5" x 1.25" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L56	54	8.5" x 1.25" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L56	55	8.5" x 1.25" Flat Plate (G)	30.25 - 30.50	1.0000	1.0000
L57	1	LDF7-50A(1-5/8")	25.75 - 30.25	1.0000	1.0000
L57	4	2" Rigid Conduit	25.75 - 30.25	1.0000	1.0000
L57	6	HB114-1-08U4-M5J(1-1/4")	25.75 - 30.25	1.0000	1.0000
L57	10	561(1-5/8")	25.75 - 30.25	1.0000	1.0000
L57	14	LDF4P-50A(1/2")	25.75 - 30.25	1.0000	1.0000
L57	18	Aero MP305	25.75 - 30.25	1.0000	1.0000
L57	19	Aero MP305	25.75 - 30.25	1.0000	1.0000
L57	20	Aero MP305	25.75 - 30.25	1.0000	1.0000
L57	27	6" x 1" Flat Plate (G)	25.75 - 30.25	1.0000	1.0000
L57	28	6" x 1" Flat Plate (G)	25.75 - 30.25	1.0000	1.0000
L57	29	6" x 1" Flat Plate (G)	25.75 - 30.25	1.0000	1.0000
L57	37	6.5" x 1.25" Flat Plate (G)	25.75 - 30.25	1.0000	1.0000
L57	38	6.5" x 1.25" Flat Plate (G)	25.75 - 30.25	1.0000	1.0000
L57	39	6.5" x 1.25" Flat Plate (G)	25.75 - 30.25	1.0000	1.0000
L57	48	8.5" x 1.25" Flat Plate (G)	25.75 - 30.25	1.0000	1.0000
L57	54	8.5" x 1.25" Flat Plate (G)	25.75 - 30.25	1.0000	1.0000
L57	55	8.5" x 1.25" Flat Plate (G)	25.75 - 30.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L58	1	LDF7-50A(1-5/8")	25.50 - 25.75	1.0000	1.0000
L58	4	2" Rigid Conduit	25.50 - 25.75	1.0000	1.0000
L58	6	HB114-1-08U4-M5J(1-1/4")	25.50 - 25.75	1.0000	1.0000
L58	10	561(1-5/8")	25.50 - 25.75	1.0000	1.0000
L58	14	LDF4P-50A(1/2")	25.50 - 25.75	1.0000	1.0000
L58	18	Aero MP305	25.50 - 25.75	1.0000	1.0000
L58	19	Aero MP305	25.50 - 25.75	1.0000	1.0000
L58	20	Aero MP305	25.50 - 25.75	1.0000	1.0000
L58	27	6" x 1" Flat Plate (G)	25.50 - 25.75	1.0000	1.0000
L58	28	6" x 1" Flat Plate (G)	25.50 - 25.75	1.0000	1.0000
L58	29	6" x 1" Flat Plate (G)	25.50 - 25.75	1.0000	1.0000
L58	37	6.5" x 1.25" Flat Plate (G)	25.50 - 25.75	1.0000	1.0000
L58	38	6.5" x 1.25" Flat Plate (G)	25.50 - 25.75	1.0000	1.0000
L58	39	6.5" x 1.25" Flat Plate (G)	25.50 - 25.75	1.0000	1.0000
L58	48	8.5" x 1.25" Flat Plate (G)	25.50 - 25.75	1.0000	1.0000
L58	54	8.5" x 1.25" Flat Plate (G)	25.50 - 25.75	1.0000	1.0000
L58	55	8.5" x 1.25" Flat Plate (G)	25.50 - 25.75	1.0000	1.0000
L59	1	LDF7-50A(1-5/8")	24.70 - 25.50	1.0000	1.0000
L59	4	2" Rigid Conduit	24.70 - 25.50	1.0000	1.0000
L59	6	HB114-1-08U4-M5J(1-1/4")	24.70 - 25.50	1.0000	1.0000
L59	10	561(1-5/8")	24.70 - 25.50	1.0000	1.0000
L59	14	LDF4P-50A(1/2")	24.70 - 25.50	1.0000	1.0000
L59	18	Aero MP305	24.70 - 25.50	1.0000	1.0000
L59	19	Aero MP305	24.70 - 25.50	1.0000	1.0000
L59	20	Aero MP305	24.70 - 25.50	1.0000	1.0000
L59	27	6" x 1" Flat Plate (G)	24.70 - 25.50	1.0000	1.0000
L59	28	6" x 1" Flat Plate (G)	24.70 - 25.50	1.0000	1.0000
L59	29	6" x 1" Flat Plate (G)	24.70 - 25.50	1.0000	1.0000
L59	37	6.5" x 1.25" Flat Plate (G)	24.70 - 25.50	1.0000	1.0000
L59	38	6.5" x 1.25" Flat Plate (G)	24.70 - 25.50	1.0000	1.0000
L59	39	6.5" x 1.25" Flat Plate (G)	24.70 - 25.50	1.0000	1.0000
L59	48	8.5" x 1.25" Flat Plate (G)	24.70 - 25.50	1.0000	1.0000
L59	54	8.5" x 1.25" Flat Plate (G)	24.70 - 25.50	1.0000	1.0000
L59	55	8.5" x 1.25" Flat Plate (G)	24.70 - 25.50	1.0000	1.0000
L60	1	LDF7-50A(1-5/8")	24.45 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L60	4	2" Rigid Conduit	24.70 24.45 - 24.70	1.0000	1.0000
L60	6	HB114-1-08U4-M5J(1-1/4")	24.45 - 24.70	1.0000	1.0000
L60	10	561(1-5/8")	24.45 - 24.70	1.0000	1.0000
L60	14	LDF4P-50A(1/2")	24.45 - 24.70	1.0000	1.0000
L60	18	Aero MP305	24.45 - 24.70	1.0000	1.0000
L60	19	Aero MP305	24.45 - 24.70	1.0000	1.0000
L60	20	Aero MP305	24.45 - 24.70	1.0000	1.0000
L60	27	6" x 1" Flat Plate (G)	24.45 - 24.70	1.0000	1.0000
L60	28	6" x 1" Flat Plate (G)	24.45 - 24.70	1.0000	1.0000
L60	29	6" x 1" Flat Plate (G)	24.45 - 24.70	1.0000	1.0000
L60	37	6.5" x 1.25" Flat Plate (G)	24.45 - 24.70	1.0000	1.0000
L60	38	6.5" x 1.25" Flat Plate (G)	24.45 - 24.70	1.0000	1.0000
L60	39	6.5" x 1.25" Flat Plate (G)	24.45 - 24.70	1.0000	1.0000
L60	48	8.5" x 1.25" Flat Plate (G)	24.45 - 24.70	1.0000	1.0000
L60	54	8.5" x 1.25" Flat Plate (G)	24.45 - 24.70	1.0000	1.0000
L60	55	8.5" x 1.25" Flat Plate (G)	24.45 - 24.70	1.0000	1.0000
L61	1	LDF7-50A(1-5/8")	24.00 - 24.45	1.0000	1.0000
L61	4	2" Rigid Conduit	24.00 - 24.45	1.0000	1.0000
L61	6	HB114-1-08U4-M5J(1-1/4")	24.00 - 24.45	1.0000	1.0000
L61	10	561(1-5/8")	24.00 - 24.45	1.0000	1.0000
L61	14	LDF4P-50A(1/2")	24.00 - 24.45	1.0000	1.0000
L61	18	Aero MP305	24.00 - 24.45	1.0000	1.0000
L61	19	Aero MP305	24.00 - 24.45	1.0000	1.0000
L61	20	Aero MP305	24.00 - 24.45	1.0000	1.0000
L61	27	6" x 1" Flat Plate (G)	24.00 - 24.45	1.0000	1.0000
L61	28	6" x 1" Flat Plate (G)	24.00 - 24.45	1.0000	1.0000
L61	29	6" x 1" Flat Plate (G)	24.00 - 24.45	1.0000	1.0000
L61	37	6.5" x 1.25" Flat Plate (G)	24.00 - 24.45	1.0000	1.0000
L61	38	6.5" x 1.25" Flat Plate (G)	24.00 - 24.45	1.0000	1.0000
L61	39	6.5" x 1.25" Flat Plate (G)	24.00 - 24.45	1.0000	1.0000
L61	48	8.5" x 1.25" Flat Plate (G)	24.00 - 24.45	1.0000	1.0000
L61	54	8.5" x 1.25" Flat Plate (G)	24.00 - 24.45	1.0000	1.0000
L61	55	8.5" x 1.25" Flat Plate (G)	24.00 - 24.45	1.0000	1.0000
L62	1	LDF7-50A(1-5/8")	23.75 - 24.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L62	4	2" Rigid Conduit	23.75 - 24.00	1.0000	1.0000
L62	6	HB114-1-08U4-M5J(1-1/4")	23.75 - 24.00	1.0000	1.0000
L62	10	561(1-5/8")	23.75 - 24.00	1.0000	1.0000
L62	14	LDF4P-50A(1/2")	23.75 - 24.00	1.0000	1.0000
L62	18	Aero MP305	23.75 - 24.00	1.0000	1.0000
L62	19	Aero MP305	23.75 - 24.00	1.0000	1.0000
L62	20	Aero MP305	23.75 - 24.00	1.0000	1.0000
L62	27	6" x 1" Flat Plate (G)	23.75 - 24.00	1.0000	1.0000
L62	28	6" x 1" Flat Plate (G)	23.75 - 24.00	1.0000	1.0000
L62	29	6" x 1" Flat Plate (G)	23.75 - 24.00	1.0000	1.0000
L62	37	6.5" x 1.25" Flat Plate (G)	23.75 - 24.00	1.0000	1.0000
L62	38	6.5" x 1.25" Flat Plate (G)	23.75 - 24.00	1.0000	1.0000
L62	39	6.5" x 1.25" Flat Plate (G)	23.75 - 24.00	1.0000	1.0000
L62	48	8.5" x 1.25" Flat Plate (G)	23.75 - 24.00	1.0000	1.0000
L62	54	8.5" x 1.25" Flat Plate (G)	23.75 - 24.00	1.0000	1.0000
L62	55	8.5" x 1.25" Flat Plate (G)	23.75 - 24.00	1.0000	1.0000
L63	1	LDF7-50A(1-5/8")	18.75 - 23.75	1.0000	1.0000
L63	4	2" Rigid Conduit	18.75 - 23.75	1.0000	1.0000
L63	6	HB114-1-08U4-M5J(1-1/4")	18.75 - 23.75	1.0000	1.0000
L63	10	561(1-5/8")	18.75 - 23.75	1.0000	1.0000
L63	14	LDF4P-50A(1/2")	18.75 - 23.75	1.0000	1.0000
L63	18	Aero MP305	18.75 - 23.75	1.0000	1.0000
L63	19	Aero MP305	18.75 - 23.75	1.0000	1.0000
L63	20	Aero MP305	18.75 - 23.75	1.0000	1.0000
L63	27	6" x 1" Flat Plate (G)	18.75 - 23.75	1.0000	1.0000
L63	28	6" x 1" Flat Plate (G)	18.75 - 23.75	1.0000	1.0000
L63	29	6" x 1" Flat Plate (G)	18.75 - 23.75	1.0000	1.0000
L63	37	6.5" x 1.25" Flat Plate (G)	23.00 - 23.75	1.0000	1.0000
L63	38	6.5" x 1.25" Flat Plate (G)	23.00 - 23.75	1.0000	1.0000
L63	39	6.5" x 1.25" Flat Plate (G)	23.00 - 23.75	1.0000	1.0000
L63	48	8.5" x 1.25" Flat Plate (G)	18.75 - 23.75	1.0000	1.0000
L63	54	8.5" x 1.25" Flat Plate (G)	20.40 - 23.75	1.0000	1.0000
L63	55	8.5" x 1.25" Flat Plate (G)	20.40 - 23.75	1.0000	1.0000
L64	1	LDF7-50A(1-5/8")	14.10 - 18.75	1.0000	1.0000
L64	4	2" Rigid Conduit	14.10 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L64	6	HB114-1-08U4-M5J(1-1/4")	18.75 - 14.10	1.0000	1.0000
L64	10	561(1-5/8")	18.75 - 14.10	1.0000	1.0000
L64	14	LDF4P-50A(1/2")	18.75 - 14.10	1.0000	1.0000
L64	18	Aero MP305	18.75 - 14.10	1.0000	1.0000
L64	19	Aero MP305	18.75 - 14.10	1.0000	1.0000
L64	20	Aero MP305	18.75 - 14.10	1.0000	1.0000
L64	21	Aero MP304	18.75 - 14.10	1.0000	1.0000
L64	22	Aero MP304	15.50 - 14.10	1.0000	1.0000
L64	27	6" x 1" Flat Plate (G)	15.50 - 14.10	1.0000	1.0000
L64	28	6" x 1" Flat Plate (G)	18.75 - 14.10	1.0000	1.0000
L64	29	6" x 1" Flat Plate (G)	18.75 - 14.10	1.0000	1.0000
L64	48	8.5" x 1.25" Flat Plate (G)	18.75 - 14.10	1.0000	1.0000
L65	1	LDF7-50A(1-5/8")	18.75 - 13.80	1.0000	1.0000
L65	4	2" Rigid Conduit	14.10 - 13.80	1.0000	1.0000
L65	6	HB114-1-08U4-M5J(1-1/4")	14.10 - 13.80	1.0000	1.0000
L65	10	561(1-5/8")	14.10 - 13.80	1.0000	1.0000
L65	14	LDF4P-50A(1/2")	14.10 - 13.80	1.0000	1.0000
L65	18	Aero MP305	14.10 - 13.80	1.0000	1.0000
L65	19	Aero MP305	14.10 - 13.80	1.0000	1.0000
L65	20	Aero MP305	14.10 - 13.80	1.0000	1.0000
L65	21	Aero MP304	14.10 - 13.80	1.0000	1.0000
L65	22	Aero MP304	14.10 - 13.80	1.0000	1.0000
L65	27	6" x 1" Flat Plate (G)	14.10 - 13.80	1.0000	1.0000
L65	28	6" x 1" Flat Plate (G)	14.10 - 13.80	1.0000	1.0000
L65	29	6" x 1" Flat Plate (G)	14.10 - 13.80	1.0000	1.0000
L65	48	8.5" x 1.25" Flat Plate (G)	14.10 - 13.80	1.0000	1.0000
L66	1	LDF7-50A(1-5/8")	13.80 - 13.65	1.0000	1.0000
L66	4	2" Rigid Conduit	13.80 - 13.65	1.0000	1.0000
L66	6	HB114-1-08U4-M5J(1-1/4")	13.80 - 13.65	1.0000	1.0000
L66	10	561(1-5/8")	13.80 - 13.65	1.0000	1.0000
L66	14	LDF4P-50A(1/2")	13.80 - 13.65	1.0000	1.0000
L66	18	Aero MP305	13.80 - 13.65	1.0000	1.0000
L66	19	Aero MP305	13.80 - 13.65	1.0000	1.0000
L66	20	Aero MP305	13.80 - 13.65	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L66	21	Aero MP304	13.65 - 13.80	1.0000	1.0000
L66	22	Aero MP304	13.65 - 13.80	1.0000	1.0000
L66	27	6" x 1" Flat Plate (G)	13.65 - 13.80	1.0000	1.0000
L66	28	6" x 1" Flat Plate (G)	13.65 - 13.80	1.0000	1.0000
L66	29	6" x 1" Flat Plate (G)	13.65 - 13.80	1.0000	1.0000
L66	48	8.5" x 1.25" Flat Plate (G)	13.65 - 13.80	1.0000	1.0000
L67	1	LDF7-50A(1-5/8")	10.50 - 13.65	1.0000	1.0000
L67	4	2" Rigid Conduit	10.50 - 13.65	1.0000	1.0000
L67	6	HB114-1-08U4-M5J(1-1/4")	10.50 - 13.65	1.0000	1.0000
L67	10	561(1-5/8")	10.50 - 13.65	1.0000	1.0000
L67	14	LDF4P-50A(1/2")	10.50 - 13.65	1.0000	1.0000
L67	18	Aero MP305	11.50 - 13.65	1.0000	1.0000
L67	19	Aero MP305	10.50 - 13.65	1.0000	1.0000
L67	20	Aero MP305	10.50 - 13.65	1.0000	1.0000
L67	21	Aero MP304	10.50 - 13.65	1.0000	1.0000
L67	22	Aero MP304	10.50 - 13.65	1.0000	1.0000
L67	27	6" x 1" Flat Plate (G)	10.50 - 13.65	1.0000	1.0000
L67	28	6" x 1" Flat Plate (G)	10.50 - 13.65	1.0000	1.0000
L67	29	6" x 1" Flat Plate (G)	10.50 - 13.65	1.0000	1.0000
L67	48	8.5" x 1.25" Flat Plate (G)	10.50 - 13.65	1.0000	1.0000
L68	1	LDF7-50A(1-5/8")	10.25 - 10.50	1.0000	1.0000
L68	4	2" Rigid Conduit	10.25 - 10.50	1.0000	1.0000
L68	6	HB114-1-08U4-M5J(1-1/4")	10.25 - 10.50	1.0000	1.0000
L68	10	561(1-5/8")	10.25 - 10.50	1.0000	1.0000
L68	14	LDF4P-50A(1/2")	10.25 - 10.50	1.0000	1.0000
L68	19	Aero MP305	10.25 - 10.50	1.0000	1.0000
L68	20	Aero MP305	10.25 - 10.50	1.0000	1.0000
L68	21	Aero MP304	10.25 - 10.50	1.0000	1.0000
L68	22	Aero MP304	10.25 - 10.50	1.0000	1.0000
L68	27	6" x 1" Flat Plate (G)	10.25 - 10.50	1.0000	1.0000
L68	28	6" x 1" Flat Plate (G)	10.25 - 10.50	1.0000	1.0000
L68	29	6" x 1" Flat Plate (G)	10.25 - 10.50	1.0000	1.0000
L68	47	6" x 1" Flat Plate (G)	10.25 - 10.50	1.0000	1.0000
L69	1	LDF7-50A(1-5/8")	5.25 - 10.25	1.0000	1.0000
L69	4	2" Rigid Conduit	5.25 - 10.25	1.0000	1.0000
L69	6	HB114-1-08U4-M5J(1-	5.25 - 10.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		1/4")			
L69	10	561(1-5/8")	5.25 - 10.25	1.0000	1.0000
L69	14	LDF4P-50A(1/2")	5.25 - 10.25	1.0000	1.0000
L69	19	Aero MP305	5.25 - 10.25	1.0000	1.0000
L69	20	Aero MP305	5.25 - 10.25	1.0000	1.0000
L69	21	Aero MP304	5.25 - 10.25	1.0000	1.0000
L69	22	Aero MP304	5.25 - 10.25	1.0000	1.0000
L69	27	6" x 1" Flat Plate (G)	5.25 - 10.25	1.0000	1.0000
L69	28	6" x 1" Flat Plate (G)	5.25 - 10.25	1.0000	1.0000
L69	29	6" x 1" Flat Plate (G)	5.25 - 10.25	1.0000	1.0000
L69	47	6" x 1" Flat Plate (G)	5.25 - 10.25	1.0000	1.0000
L70	1	LDF7-50A(1-5/8")	3.00 - 5.25	1.0000	1.0000
L70	4	2" Rigid Conduit	3.00 - 5.25	1.0000	1.0000
L70	6	HB114-1-08U4-M5J(1-1/4")	3.00 - 5.25	1.0000	1.0000
L70	10	561(1-5/8")	3.00 - 5.25	1.0000	1.0000
L70	14	LDF4P-50A(1/2")	3.00 - 5.25	1.0000	1.0000
L70	19	Aero MP305	3.00 - 5.25	1.0000	1.0000
L70	20	Aero MP305	3.00 - 5.25	1.0000	1.0000
L70	21	Aero MP304	3.00 - 5.25	1.0000	1.0000
L70	22	Aero MP304	3.00 - 5.25	1.0000	1.0000
L70	27	6" x 1" Flat Plate (G)	3.00 - 5.25	1.0000	1.0000
L70	28	6" x 1" Flat Plate (G)	3.00 - 5.25	1.0000	1.0000
L70	29	6" x 1" Flat Plate (G)	3.00 - 5.25	1.0000	1.0000
L70	47	6" x 1" Flat Plate (G)	3.00 - 5.25	1.0000	1.0000
L71	1	LDF7-50A(1-5/8")	2.90 - 3.00	1.0000	1.0000
L71	4	2" Rigid Conduit	2.90 - 3.00	1.0000	1.0000
L71	6	HB114-1-08U4-M5J(1-1/4")	2.90 - 3.00	1.0000	1.0000
L71	10	561(1-5/8")	2.90 - 3.00	1.0000	1.0000
L71	14	LDF4P-50A(1/2")	2.90 - 3.00	1.0000	1.0000
L71	19	Aero MP305	2.90 - 3.00	1.0000	1.0000
L71	20	Aero MP305	2.90 - 3.00	1.0000	1.0000
L71	21	Aero MP304	2.90 - 3.00	1.0000	1.0000
L71	22	Aero MP304	2.90 - 3.00	1.0000	1.0000
L71	27	6" x 1" Flat Plate (G)	2.90 - 3.00	1.0000	1.0000
L71	28	6" x 1" Flat Plate (G)	2.90 - 3.00	1.0000	1.0000
L71	29	6" x 1" Flat Plate (G)	2.90 - 3.00	1.0000	1.0000
L71	47	6" x 1" Flat Plate (G)	2.90 - 3.00	1.0000	1.0000
L72	1	LDF7-50A(1-5/8")	2.75 - 2.90	1.0000	1.0000
L72	4	2" Rigid Conduit	2.75 - 2.90	1.0000	1.0000
L72	6	HB114-1-08U4-M5J(1-1/4")	2.75 - 2.90	1.0000	1.0000
L72	10	561(1-5/8")	2.75 - 2.90	1.0000	1.0000
L72	14	LDF4P-50A(1/2")	2.75 - 2.90	1.0000	1.0000
L72	19	Aero MP305	2.75 - 2.90	1.0000	1.0000
L72	20	Aero MP305	2.75 - 2.90	1.0000	1.0000
L72	21	Aero MP304	2.75 - 2.90	1.0000	1.0000
L72	22	Aero MP304	2.75 - 2.90	1.0000	1.0000
L72	27	6" x 1" Flat Plate (G)	2.75 - 2.90	1.0000	1.0000
L72	28	6" x 1" Flat Plate (G)	2.75 - 2.90	1.0000	1.0000
L72	29	6" x 1" Flat Plate (G)	2.75 - 2.90	1.0000	1.0000
L72	47	6" x 1" Flat Plate (G)	2.75 - 2.90	1.0000	1.0000
L73	1	LDF7-50A(1-5/8")	2.65 - 2.75	1.0000	1.0000
L73	4	2" Rigid Conduit	2.65 - 2.75	1.0000	1.0000
L73	6	HB114-1-08U4-M5J(1-1/4")	2.65 - 2.75	1.0000	1.0000
L73	10	561(1-5/8")	2.65 - 2.75	1.0000	1.0000
L73	14	LDF4P-50A(1/2")	2.65 - 2.75	1.0000	1.0000
L73	19	Aero MP305	2.65 - 2.75	1.0000	1.0000
L73	20	Aero MP305	2.65 - 2.75	1.0000	1.0000
L73	21	Aero MP304	2.65 - 2.75	1.0000	1.0000
L73	22	Aero MP304	2.65 - 2.75	1.0000	1.0000
L73	27	6" x 1" Flat Plate (G)	2.65 - 2.75	1.0000	1.0000
L73	28	6" x 1" Flat Plate (G)	2.65 - 2.75	1.0000	1.0000
L73	29	6" x 1" Flat Plate (G)	2.65 - 2.75	1.0000	1.0000
L73	47	6" x 1" Flat Plate (G)	2.65 - 2.75	1.0000	1.0000
L74	1	LDF7-50A(1-5/8")	2.50 - 2.65	1.0000	1.0000
L74	4	2" Rigid Conduit	2.50 - 2.65	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L74	6	HB114-1-08U4-M5J(1-1/4")	2.50 - 2.65	1.0000	1.0000
L74	10	561(1-5/8")	2.50 - 2.65	1.0000	1.0000
L74	14	LDF4P-50A(1/2")	2.50 - 2.65	1.0000	1.0000
L74	19	Aero MP305	2.50 - 2.65	1.0000	1.0000
L74	20	Aero MP305	2.50 - 2.65	1.0000	1.0000
L74	21	Aero MP304	2.50 - 2.65	1.0000	1.0000
L74	22	Aero MP304	2.50 - 2.65	1.0000	1.0000
L74	27	6" x 1" Flat Plate (G)	2.50 - 2.65	1.0000	1.0000
L74	28	6" x 1" Flat Plate (G)	2.50 - 2.65	1.0000	1.0000
L74	29	6" x 1" Flat Plate (G)	2.50 - 2.65	1.0000	1.0000
L74	47	6" x 1" Flat Plate (G)	2.50 - 2.65	1.0000	1.0000
L75	1	LDF7-50A(1-5/8")	2.25 - 2.50	1.0000	1.0000
L75	4	2" Rigid Conduit	2.25 - 2.50	1.0000	1.0000
L75	6	HB114-1-08U4-M5J(1-1/4")	2.25 - 2.50	1.0000	1.0000
L75	10	561(1-5/8")	2.25 - 2.50	1.0000	1.0000
L75	14	LDF4P-50A(1/2")	2.25 - 2.50	1.0000	1.0000
L75	19	Aero MP305	2.25 - 2.50	1.0000	1.0000
L75	20	Aero MP305	2.25 - 2.50	1.0000	1.0000
L75	21	Aero MP304	2.25 - 2.50	1.0000	1.0000
L75	22	Aero MP304	2.25 - 2.50	1.0000	1.0000
L75	27	6" x 1" Flat Plate (G)	2.25 - 2.50	1.0000	1.0000
L75	28	6" x 1" Flat Plate (G)	2.25 - 2.50	1.0000	1.0000
L75	29	6" x 1" Flat Plate (G)	2.25 - 2.50	1.0000	1.0000
L75	47	6" x 1" Flat Plate (G)	2.25 - 2.50	1.0000	1.0000
L76	1	LDF7-50A(1-5/8")	1.90 - 2.25	1.0000	1.0000
L76	4	2" Rigid Conduit	1.90 - 2.25	1.0000	1.0000
L76	6	HB114-1-08U4-M5J(1-1/4")	1.90 - 2.25	1.0000	1.0000
L76	10	561(1-5/8")	1.90 - 2.25	1.0000	1.0000
L76	14	LDF4P-50A(1/2")	1.90 - 2.25	1.0000	1.0000
L76	19	Aero MP305	1.90 - 2.25	1.0000	1.0000
L76	20	Aero MP305	1.90 - 2.25	1.0000	1.0000
L76	21	Aero MP304	1.90 - 2.25	1.0000	1.0000
L76	22	Aero MP304	1.90 - 2.25	1.0000	1.0000
L76	27	6" x 1" Flat Plate (G)	1.90 - 2.25	1.0000	1.0000
L76	28	6" x 1" Flat Plate (G)	1.90 - 2.25	1.0000	1.0000
L76	29	6" x 1" Flat Plate (G)	1.90 - 2.25	1.0000	1.0000
L76	47	6" x 1" Flat Plate (G)	1.90 - 2.25	1.0000	1.0000
L77	1	LDF7-50A(1-5/8")	1.65 - 1.90	1.0000	1.0000
L77	4	2" Rigid Conduit	1.65 - 1.90	1.0000	1.0000
L77	6	HB114-1-08U4-M5J(1-1/4")	1.65 - 1.90	1.0000	1.0000
L77	10	561(1-5/8")	1.65 - 1.90	1.0000	1.0000
L77	14	LDF4P-50A(1/2")	1.65 - 1.90	1.0000	1.0000
L77	19	Aero MP305	1.65 - 1.90	1.0000	1.0000
L77	20	Aero MP305	1.65 - 1.90	1.0000	1.0000
L77	21	Aero MP304	1.65 - 1.90	1.0000	1.0000
L77	22	Aero MP304	1.65 - 1.90	1.0000	1.0000
L77	27	6" x 1" Flat Plate (G)	1.65 - 1.90	1.0000	1.0000
L77	28	6" x 1" Flat Plate (G)	1.65 - 1.90	1.0000	1.0000
L77	29	6" x 1" Flat Plate (G)	1.65 - 1.90	1.0000	1.0000
L77	47	6" x 1" Flat Plate (G)	1.65 - 1.90	1.0000	1.0000
L78	1	LDF7-50A(1-5/8")	0.00 - 1.65	1.0000	1.0000
L78	4	2" Rigid Conduit	0.00 - 1.65	1.0000	1.0000
L78	6	HB114-1-08U4-M5J(1-1/4")	0.00 - 1.65	1.0000	1.0000
L78	10	561(1-5/8")	0.00 - 1.65	1.0000	1.0000
L78	14	LDF4P-50A(1/2")	0.00 - 1.65	1.0000	1.0000
L78	19	Aero MP305	0.00 - 1.65	1.0000	1.0000
L78	20	Aero MP305	0.00 - 1.65	1.0000	1.0000
L78	21	Aero MP304	0.00 - 1.65	1.0000	1.0000
L78	22	Aero MP304	0.00 - 1.65	1.0000	1.0000
L78	27	6" x 1" Flat Plate (G)	0.50 - 1.65	1.0000	1.0000
L78	28	6" x 1" Flat Plate (G)	0.50 - 1.65	1.0000	1.0000
L78	29	6" x 1" Flat Plate (G)	0.50 - 1.65	1.0000	1.0000
L78	47	6" x 1" Flat Plate (G)	0.50 - 1.65	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft²	C_AA_A Side ft²	Weight K
Lightning Rod	A	From Leg	1.0000 0.0000 0.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	0.2500 0.6635 0.9732	0.2500 0.6635 0.9732	0.0300 0.0338 0.0393
**									
(2) SBNH-1D6565C w/ Mount Pipe	A	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	11.6828 12.4043 13.1351	9.8418 11.3657 12.9138	0.0938 0.1834 0.2831
(2) AM-X-CD-16-65-00T-RET w/ Mount Pipe	B	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	8.2619 8.8215 9.3462	6.3042 7.4790 8.3676	0.0741 0.1390 0.2119
(2) SBNH-1D6565C w/ Mount Pipe	C	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	11.6828 12.4043 13.1351	9.8418 11.3657 12.9138	0.0938 0.1834 0.2831
80010966 w/ Mount Pipe	A	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	17.6005 18.3314 19.0711	9.6375 11.1547 12.6961	0.1475 0.2633 0.3897
(2) 80010966 w/ Mount Pipe	B	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	17.6005 18.3314 19.0711	9.6375 11.1547 12.6961	0.1475 0.2633 0.3897
80010966 w/ Mount Pipe	C	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	17.6005 18.3314 19.0711	9.6375 11.1547 12.6961	0.1475 0.2633 0.3897
TPA-65R-LCUUUU-H8 w/ Mount Pipe	A	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	13.5353 14.2380 14.9495	10.9597 12.4861 14.0367	0.1145 0.2176 0.3310
TPA-65R-LCUUUU-H8 w/ Mount Pipe	C	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	13.5353 14.2380 14.9495	10.9597 12.4861 14.0367	0.1145 0.2176 0.3310
DTMABP7819VG12A	A	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	0.9762 1.1002 1.2316	0.3387 0.4192 0.5098	0.0192 0.0265 0.0356
DTMABP7819VG12A	B	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	0.9762 1.1002 1.2316	0.3387 0.4192 0.5098	0.0192 0.0265 0.0356
DTMABP7819VG12A	C	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	0.9762 1.1002 1.2316	0.3387 0.4192 0.5098	0.0192 0.0265 0.0356
RRUS 11	A	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	2.7845 2.9919 3.2066	1.1872 1.3342 1.4897	0.0476 0.0684 0.0923
RRUS 11	B	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	2.7845 2.9919 3.2066	1.1872 1.3342 1.4897	0.0476 0.0684 0.0923

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
RRUS 11	C	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	2.7845 2.9919 3.2066	1.1872 1.3342 1.4897	0.0476 0.0684 0.0923
DC6-48-60-18-8F	A	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	0.7915 1.2743 1.4503	0.7915 1.2743 1.4503	0.0200 0.0351 0.0526
RRUS 4478 B14	A	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	1.8425 2.0123 2.1895	1.0588 1.1969 1.3425	0.0599 0.0758 0.0943
RRUS 4478 B14	B	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	1.8425 2.0123 2.1895	1.0588 1.1969 1.3425	0.0599 0.0758 0.0943
RRUS 4478 B14	C	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	1.8425 2.0123 2.1895	1.0588 1.1969 1.3425	0.0599 0.0758 0.0943
RRUS 32 B66	A	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	2.7427 2.9647 3.1941	1.6681 1.8552 2.0493	0.0530 0.0741 0.0984
RRUS 32 B66	B	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	2.7427 2.9647 3.1941	1.6681 1.8552 2.0493	0.0530 0.0741 0.0984
RRUS 32 B66	C	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	2.7427 2.9647 3.1941	1.6681 1.8552 2.0493	0.0530 0.0741 0.0984
RRUS 12	A	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	3.1450 3.3648 3.5920	1.2854 1.4379 1.5998	0.0580 0.0812 0.1076
RRUS 12	B	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	3.1450 3.3648 3.5920	1.2854 1.4379 1.5998	0.0580 0.0812 0.1076
RRUS 12	C	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	3.1450 3.3648 3.5920	1.2854 1.4379 1.5998	0.0580 0.0812 0.1076
RRUS 32 B2	A	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	2.7313 2.9531 3.1823	1.6681 1.8552 2.0493	0.0529 0.0740 0.0982
RRUS 32 B2	B	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	2.7313 2.9531 3.1823	1.6681 1.8552 2.0493	0.0529 0.0740 0.0982
RRUS 32 B2	C	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	2.7313 2.9531 3.1823	1.6681 1.8552 2.0493	0.0529 0.0740 0.0982
RRUS 32	A	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	2.8571 3.0830 3.3163	1.7766 1.9677 2.1658	0.0551 0.0774 0.1029
RRUS 32	B	From Leg	4.0000 0.0000 1.0000	0.0000	156.0000	No Ice 1/2" Ice 1" Ice	2.8571 3.0830 3.3163	1.7766 1.9677 2.1658	0.0551 0.0774 0.1029
RRUS 32	C	From Leg	4.0000	0.0000	156.0000	No Ice	2.8571	1.7766	0.0551

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.0000				1/2" Ice	3.0830	1.9677	0.0774
			1.0000				1" Ice	3.3163	2.1658	0.1029
DC6-48-60-0-8F	A	From Leg	4.0000		0.0000	156.0000	No Ice	0.9167	0.9167	0.0328
			0.0000				1/2" Ice	1.4583	1.4583	0.0505
			1.0000				1" Ice	1.6431	1.6431	0.0707
DC6-48-60-18-8F	A	From Leg	4.0000		0.0000	156.0000	No Ice	0.7915	0.7915	0.0200
			0.0000				1/2" Ice	1.2743	1.2743	0.0351
			1.0000				1" Ice	1.4503	1.4503	0.0526
T-Arm Mount [TA 703-3]	C	None			0.0000	156.0000	No Ice	14.2000	14.2000	0.4470
							1/2" Ice	18.5000	18.5000	0.6450
							1" Ice	22.8000	22.8000	0.8430
**										
(2) PCS 1900MHz 4x45W-65MHz	A	From Leg	1.0000		0.0000	148.0000	No Ice	2.3218	2.2381	0.0600
			0.0000				1/2" Ice	2.5266	2.4407	0.0831
			0.0000				1" Ice	2.7388	2.6507	0.1095
(2) PCS 1900MHz 4x45W-65MHz	B	From Leg	1.0000		0.0000	148.0000	No Ice	2.3218	2.2381	0.0600
			0.0000				1/2" Ice	2.5266	2.4407	0.0831
			0.0000				1" Ice	2.7388	2.6507	0.1095
(2) PCS 1900MHz 4x45W-65MHz	C	From Leg	1.0000		0.0000	148.0000	No Ice	2.3218	2.2381	0.0600
			0.0000				1/2" Ice	2.5266	2.4407	0.0831
			0.0000				1" Ice	2.7388	2.6507	0.1095
800MHz 2X50W RRH W/FILTER	A	From Leg	1.0000		0.0000	148.0000	No Ice	2.0583	1.9317	0.0640
			0.0000				1/2" Ice	2.2398	2.1087	0.0861
			0.0000				1" Ice	2.4287	2.2931	0.1113
800MHz 2X50W RRH W/FILTER	B	From Leg	1.0000		0.0000	148.0000	No Ice	2.0583	1.9317	0.0640
			0.0000				1/2" Ice	2.2398	2.1087	0.0861
			0.0000				1" Ice	2.4287	2.2931	0.1113
800MHz 2X50W RRH W/FILTER	C	From Leg	1.0000		0.0000	148.0000	No Ice	2.0583	1.9317	0.0640
			0.0000				1/2" Ice	2.2398	2.1087	0.0861
			0.0000				1" Ice	2.4287	2.2931	0.1113
Side Arm Mount [SO 103-3]	C	None			0.0000	148.0000	No Ice	9.5000	9.5000	0.2240
							1/2" Ice	11.8000	11.8000	0.3170
							1" Ice	14.1000	14.1000	0.4100
(2) 4' x 2" Pipe Mount	A	From Leg	1.0000		0.0000	148.0000	No Ice	0.7852	0.7852	0.0290
			0.0000				1/2" Ice	1.0284	1.0284	0.0353
			0.0000				1" Ice	1.2809	1.2809	0.0445
(2) 4' x 2" Pipe Mount	B	From Leg	1.0000		0.0000	148.0000	No Ice	0.7852	0.7852	0.0290
			0.0000				1/2" Ice	1.0284	1.0284	0.0353
			0.0000				1" Ice	1.2809	1.2809	0.0445
(2) 4' x 2" Pipe Mount	C	From Leg	1.0000		0.0000	148.0000	No Ice	0.7852	0.7852	0.0290
			0.0000				1/2" Ice	1.0284	1.0284	0.0353
			0.0000				1" Ice	1.2809	1.2809	0.0445
**										
APXVTM14-C-120 w/ Mount Pipe	A	From Leg	4.0000		0.0000	146.0000	No Ice	6.5799	4.9591	0.0738
			0.0000				1/2" Ice	7.0306	5.7544	0.1284
			1.0000				1" Ice	7.4733	6.4723	0.1897
APXVTM14-C-120 w/ Mount Pipe	B	From Leg	4.0000		0.0000	146.0000	No Ice	6.5799	4.9591	0.0738
			0.0000				1/2" Ice	7.0306	5.7544	0.1284
			1.0000				1" Ice	7.4733	6.4723	0.1897

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
APXVTM14-C-120 w/ Mount Pipe	C	From Leg	4.0000 0.0000 1.0000	0.0000	146.0000	No Ice 1/2" Ice 1" Ice	6.5799 7.0306 7.4733	4.9591 5.7544 6.4723	0.0738 0.1284 0.1897
APXV9ERR18-C-A20 w/ Mount Pipe	A	From Leg	4.0000 0.0000 1.0000	0.0000	146.0000	No Ice 1/2" Ice 1" Ice	8.2619 8.8215 9.3462	7.4708 8.6564 9.5559	0.0876 0.1580 0.2365
APXVSPP18-C-A20 w/ Mount Pipe	B	From Leg	4.0000 0.0000 1.0000	0.0000	146.0000	No Ice 1/2" Ice 1" Ice	8.2619 8.8215 9.3462	6.9458 8.1266 9.0212	0.0826 0.1506 0.2265
APXVSPP18-C-A20 w/ Mount Pipe	C	From Leg	4.0000 0.0000 1.0000	0.0000	146.0000	No Ice 1/2" Ice 1" Ice	8.2619 8.8215 9.3462	6.9458 8.1266 9.0212	0.0826 0.1506 0.2265
TD-RRH8x20-25	A	From Leg	4.0000 0.0000 1.0000	0.0000	146.0000	No Ice 1/2" Ice 1" Ice	4.0455 4.2975 4.5570	1.5345 1.7142 1.9008	0.0700 0.0972 0.1278
TD-RRH8x20-25	B	From Leg	4.0000 0.0000 1.0000	0.0000	146.0000	No Ice 1/2" Ice 1" Ice	4.0455 4.2975 4.5570	1.5345 1.7142 1.9008	0.0700 0.0972 0.1278
TD-RRH8x20-25	C	From Leg	4.0000 0.0000 1.0000	0.0000	146.0000	No Ice 1/2" Ice 1" Ice	4.0455 4.2975 4.5570	1.5345 1.7142 1.9008	0.0700 0.0972 0.1278
IBC1900HG-2A	A	From Leg	4.0000 0.0000 0.0000	0.0000	146.0000	No Ice 1/2" Ice 1" Ice	0.9660 1.0908 1.2230	0.4635 0.5576 0.6599	0.0220 0.0297 0.0393
IBC1900HG-2A	B	From Leg	4.0000 0.0000 0.0000	0.0000	146.0000	No Ice 1/2" Ice 1" Ice	0.9660 1.0908 1.2230	0.4635 0.5576 0.6599	0.0220 0.0297 0.0393
IBC1900HG-2A	C	From Leg	4.0000 0.0000 0.0000	0.0000	146.0000	No Ice 1/2" Ice 1" Ice	0.9660 1.0908 1.2230	0.4635 0.5576 0.6599	0.0220 0.0297 0.0393
IBC1900BB-1	A	From Leg	4.0000 0.0000 0.0000	0.0000	146.0000	No Ice 1/2" Ice 1" Ice	0.9660 1.0908 1.2230	0.4635 0.5576 0.6599	0.0220 0.0297 0.0393
IBC1900BB-1	B	From Leg	4.0000 0.0000 0.0000	0.0000	146.0000	No Ice 1/2" Ice 1" Ice	0.9660 1.0908 1.2230	0.4635 0.5576 0.6599	0.0220 0.0297 0.0393
IBC1900BB-1	C	From Leg	4.0000 0.0000 0.0000	0.0000	146.0000	No Ice 1/2" Ice 1" Ice	0.9660 1.0908 1.2230	0.4635 0.5576 0.6599	0.0220 0.0297 0.0393
Platform Mount [LP 1201-1]	C	None		0.0000	146.0000	No Ice 1/2" Ice 1" Ice	23.1000 26.8000 30.5000	23.1000 26.8000 30.5000	2.1000 2.5000 2.9000
Miscellaneous [NA 510-1]	C	None		0.0000	146.0000	No Ice 1/2" Ice 1" Ice	6.0000 8.5000 11.0000	6.0000 8.5000 11.0000	0.2557 0.3395 0.4233
5' x 2" Pipe Mount	A	From Leg	4.0000 0.0000 1.0000	0.0000	146.0000	No Ice 1/2" Ice 1" Ice	1.1875 1.4956 1.8071	1.1875 1.4956 1.8071	0.0183 0.0273 0.0398
5' x 2" Pipe Mount	B	From Leg	4.0000	0.0000	146.0000	No Ice	1.1875	1.1875	0.0183

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.0000				1/2"	1.4956	1.4956	0.0273
			1.0000				Ice	1.8071	1.8071	0.0398
							1" Ice			
5' x 2" Pipe Mount	C	From Leg	4.0000		0.0000	146.0000	No Ice	1.1875	1.1875	0.0183
			0.0000				1/2"	1.4956	1.4956	0.0273
			1.0000				Ice	1.8071	1.8071	0.0398
							1" Ice			
**										
APXV18-206517S-C	A	From Leg	2.0000		30.0000	139.0000	No Ice	5.1667	3.0375	0.0264
			0.0000				1/2"	5.6182	3.4693	0.0530
			0.0000				Ice	6.0772	3.9086	0.0851
							1" Ice			
APXV18-206517S-C	B	From Leg	2.0000		30.0000	139.0000	No Ice	5.1667	3.0375	0.0264
			0.0000				1/2"	5.6182	3.4693	0.0530
			0.0000				Ice	6.0772	3.9086	0.0851
							1" Ice			
APXV18-206517S-C	C	From Leg	2.0000		30.0000	139.0000	No Ice	5.1667	3.0375	0.0264
			0.0000				1/2"	5.6182	3.4693	0.0530
			0.0000				Ice	6.0772	3.9086	0.0851
							1" Ice			
Pipe Mount [PM 501-3]	C	None			0.0000	139.0000	No Ice	5.7800	5.7800	0.1560
							1/2"	7.3700	7.3700	0.1769
							Ice	8.9600	8.9600	0.1979
							1" Ice			
**										
BXA-80080-6CF-EDIN-X w/ Mount Pipe	A	From Leg	4.0000		0.0000	132.0000	No Ice	6.0062	6.2035	0.0432
			0.0000				1/2"	6.5619	7.3594	0.0978
			2.0000				Ice	7.0826	8.2293	0.1600
							1" Ice			
BXA-80080-6CF-EDIN-X w/ Mount Pipe	B	From Leg	4.0000		0.0000	132.0000	No Ice	6.0062	6.2035	0.0432
			0.0000				1/2"	6.5619	7.3594	0.0978
			2.0000				Ice	7.0826	8.2293	0.1600
							1" Ice			
BXA-80080-6CF-EDIN-X w/ Mount Pipe	C	From Leg	4.0000		0.0000	132.0000	No Ice	6.0062	6.2035	0.0432
			0.0000				1/2"	6.5619	7.3594	0.0978
			2.0000				Ice	7.0826	8.2293	0.1600
							1" Ice			
(2) SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.0000		0.0000	132.0000	No Ice	8.3858	7.0840	0.0765
			0.0000				1/2"	8.9496	8.2754	0.1455
			1.0000				Ice	9.4797	9.1876	0.2226
							1" Ice			
(2) SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.0000		0.0000	132.0000	No Ice	8.3858	7.0840	0.0765
			0.0000				1/2"	8.9496	8.2754	0.1455
			1.0000				Ice	9.4797	9.1876	0.2226
							1" Ice			
(2) SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.0000		0.0000	132.0000	No Ice	8.3858	7.0840	0.0765
			0.0000				1/2"	8.9496	8.2754	0.1455
			1.0000				Ice	9.4797	9.1876	0.2226
							1" Ice			
BXA-70063/6CFx2	A	From Leg	4.0000		0.0000	132.0000	No Ice	7.5690	3.7554	0.0170
			0.0000				1/2"	8.0160	4.1889	0.0576
			1.0000				Ice	8.4701	4.6297	0.1040
							1" Ice			
BXA-70063/6CFx2	B	From Leg	4.0000		0.0000	132.0000	No Ice	7.5690	3.7554	0.0170
			0.0000				1/2"	8.0160	4.1889	0.0576
			1.0000				Ice	8.4701	4.6297	0.1040
							1" Ice			
BXA-70063/6CFx2	C	From Leg	4.0000		0.0000	132.0000	No Ice	7.5690	3.7554	0.0170
			0.0000				1/2"	8.0160	4.1889	0.0576
			1.0000				Ice	8.4701	4.6297	0.1040
							1" Ice			
RFV01U-D1A	A	From Leg	4.0000		0.0000	132.0000	No Ice	1.8750	1.2500	0.0844
			0.0000				1/2"	2.0454	1.3926	0.1027
			1.0000				Ice	2.2231	1.5426	0.1239
							1" Ice			

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
RFV01U-D1A	B	From Leg	4.0000	0.0000	0.0000	132.0000	No Ice	1.8750	1.2500	0.0844
			0.0000				1/2" Ice	2.0454	1.3926	0.1027
			1.0000				1" Ice	2.2231	1.5426	0.1239
RFV01U-D1A	C	From Leg	4.0000	0.0000	0.0000	132.0000	No Ice	1.8750	1.2500	0.0844
			0.0000				1/2" Ice	2.0454	1.3926	0.1027
			1.0000				1" Ice	2.2231	1.5426	0.1239
RFV01U-D2A	A	From Leg	4.0000	0.0000	0.0000	132.0000	No Ice	1.8750	1.0125	0.0703
			0.0000				1/2" Ice	2.0454	1.1445	0.0867
			1.0000				1" Ice	2.2231	1.2840	0.1058
RFV01U-D2A	B	From Leg	4.0000	0.0000	0.0000	132.0000	No Ice	1.8750	1.0125	0.0703
			0.0000				1/2" Ice	2.0454	1.1445	0.0867
			1.0000				1" Ice	2.2231	1.2840	0.1058
RFV01U-D2A	C	From Leg	4.0000	0.0000	0.0000	132.0000	No Ice	1.8750	1.0125	0.0703
			0.0000				1/2" Ice	2.0454	1.1445	0.0867
			1.0000				1" Ice	2.2231	1.2840	0.1058
DB-C1-12C-24AB-0Z	A	From Leg	4.0000	0.0000	0.0000	132.0000	No Ice	4.0563	3.0975	0.0320
			0.0000				1/2" Ice	4.3155	3.3351	0.0685
			1.0000				1" Ice	4.5822	3.5801	0.1090
DB-T1-6Z-8AB-0Z	B	From Leg	4.0000	0.0000	0.0000	132.0000	No Ice	4.8000	2.0000	0.0440
			0.0000				1/2" Ice	5.0704	2.1926	0.0801
			1.0000				1" Ice	5.3481	2.3926	0.1202
Sector Mount [SM 503-3]	C	None			0.0000	132.0000	No Ice	33.6400	33.6400	1.6905
							1/2" Ice	48.1700	48.1700	2.2551
							1" Ice	62.7000	62.7000	2.8197
Pipe Mount [PM 602-3]	C	None			0.0000	132.0000	No Ice	7.6800	7.6800	0.2790
							1/2" Ice	9.5000	9.5000	0.3532
							1" Ice	11.3200	11.3200	0.4274
Side-by-Side Mounting Kit [PN. BSAMNT-SBS-2-2]	A	From Leg	4.0000	0.0000	0.0000	132.0000	No Ice	0.0000	0.1106	0.0700
			0.0000				1/2" Ice	0.0000	0.1792	0.0799
			1.0000				1" Ice	0.0000	0.2520	0.0957
Side-by-Side Mounting Kit [PN. BSAMNT-SBS-2-2]	B	From Leg	4.0000	0.0000	0.0000	132.0000	No Ice	0.0000	0.1106	0.0700
			0.0000				1/2" Ice	0.0000	0.1792	0.0799
			1.0000				1" Ice	0.0000	0.2520	0.0957
Side-by-Side Mounting Kit [PN. BSAMNT-SBS-2-2]	C	From Leg	4.0000	0.0000	0.0000	132.0000	No Ice	0.0000	0.1106	0.0700
			0.0000				1/2" Ice	0.0000	0.1792	0.0799
			1.0000				1" Ice	0.0000	0.2520	0.0957
**										
HORIZON COMPACT	A	From Leg	1.0000	0.0000	0.0000	129.0000	No Ice	0.7208	0.3681	0.0115
			0.0000				1/2" Ice	0.8278	0.4499	0.0180
			1.0000				1" Ice	0.9422	0.5391	0.0261
HORIZON COMPACT	B	From Leg	1.0000	0.0000	0.0000	129.0000	No Ice	0.7208	0.3681	0.0115
			0.0000				1/2" Ice	0.8278	0.4499	0.0180
			1.0000				1" Ice	0.9422	0.5391	0.0261

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
VHLP800-11	A	Paraboloid w/Shroud (HP)	From Leg	1.0000 0.0000 -2.0000	0.0000		129.0000	2.9167	No Ice 1/2" Ice 1" Ice	6.6800 7.0700 7.4600	0.0200 0.0300 0.0300
VHLP800-11	B	Paraboloid w/Shroud (HP)	From Leg	1.0000 0.0000 -2.0000	30.0000		129.0000	2.9167	No Ice 1/2" Ice 1" Ice	6.6800 7.0700 7.4600	0.0200 0.0300 0.0300
VHLP2-18	C	Paraboloid w/o Radome	From Leg	1.0000 0.0000 -2.0000	90.0000		129.0000	2.1750	No Ice 1/2" Ice 1" Ice	3.7200 4.0100 4.3000	0.0310 0.0500 0.0700

**

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
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service

Comb. No.	Description
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	160 - 155	Pole	Max Tension	27	0.0000	-0.0001	0.0000
			Max. Compression	26	-14.6899	0.8787	2.4778
			Max. Mx	20	-2.5887	20.0024	0.5466
			Max. My	2	-2.6068	0.0595	20.1902
			Max. Vy	8	10.5110	-19.9568	0.0401
			Max. Vx	2	-10.3694	0.0595	20.1902
			Max. Torque	16			-2.3099
L2	155 - 150	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-15.5046	0.7821	2.5882
			Max. Mx	8	-3.0593	-73.2590	-0.5503
			Max. My	2	-3.0809	0.6593	72.7622
			Max. Vy	8	10.7890	-73.2590	-0.5503
			Max. Vx	2	-10.6472	0.6593	72.7622
			Max. Torque	16			-2.3099
L3	150 - 146	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-19.3249	0.7021	2.6764
			Max. Mx	8	-4.3918	-120.3500	-1.0312
			Max. My	2	-4.4133	1.1398	119.2681
			Max. Vy	8	12.7369	-120.3500	-1.0312
			Max. Vx	2	-12.5947	1.1398	119.2681
			Max. Torque	16			-2.3094
L4	146 - 141	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-29.6675	0.5087	2.9473
			Max. Mx	8	-8.2256	-210.6615	-1.6234
			Max. My	2	-8.2504	1.7258	208.7143
			Max. Vy	8	17.8623	-210.6615	-1.6234
			Max. Vx	2	-17.6961	1.7258	208.7143
			Max. Torque	18			-2.3871
L5	141 - 136	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-31.5791	0.3061	3.1329
			Max. Mx	8	-8.9610	-304.1021	-2.2344
			Max. My	2	-8.9845	2.3056	301.2834
			Max. Vy	8	19.3086	-304.1021	-2.2344
			Max. Vx	2	-19.1425	2.3056	301.2834
			Max. Torque	18			-2.3862
L6	136 - 131	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-45.0712	-1.0177	3.9148
			Max. Mx	8	-12.8846	-414.2898	-2.9437
			Max. My	2	-12.9096	2.8078	410.4003
			Max. Vy	8	26.7612	-414.2898	-2.9437
			Max. Vx	2	-26.5758	2.8078	410.4003
			Max. Torque	18			-2.5854
L7	131 - 126	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-46.7016	-1.2168	4.1954
			Max. Mx	8	-13.6963	-550.3771	-4.1899
			Max. My	2	-13.6914	3.8905	545.8555
			Max. Vy	8	28.0549	-550.3771	-4.1899
			Max. Vx	14	28.2284	-5.6294	-544.1647
			Max. Torque	20			-2.7832
L8	126 - 121	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-48.0215	-1.3522	4.4475
			Max. Mx	8	-14.5339	-692.0200	-6.9245
			Max. My	2	-14.5280	5.5696	687.9178
			Max. Vy	8	28.5954	-692.0200	-6.9245
			Max. Vx	14	28.7701	-8.0937	-686.5213
			Max. Torque	20			-2.7826
L9	121 - 120.1	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-48.2985	-1.3765	4.4922
			Max. Mx	8	-14.6927	-717.8011	-7.4168

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-14.6867	5.8711	713.7749
			Max. Vy	8	28.6904	-717.8011	-7.4168
			Max. Vx	14	28.8653	-8.5376	-712.4309
			Max. Torque	20			-2.7794
L10	120.1 - 119.85	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-48.3939	-1.3834	4.5050
			Max. Mx	8	-14.7688	-724.9785	-7.5538
			Max. My	2	-14.7627	5.9554	720.9734
			Max. Vy	8	28.7122	-724.9785	-7.5538
			Max. Vx	14	28.8873	-8.6613	-719.6440
			Max. Torque	20			-2.7790
L11	119.85 - 117.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-49.3188	-1.4810	4.6235
			Max. Mx	8	-15.2830	-792.8290	-8.8382
			Max. My	2	-15.2768	6.7419	789.0229
			Max. Vy	8	29.0137	-792.8290	-8.8382
			Max. Vx	14	29.1890	-9.8203	-787.8297
			Max. Torque	20			-2.7788
L12	117.5 - 117.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-49.4238	-1.4936	4.6368
			Max. Mx	8	-15.3579	-800.0882	-8.9751
			Max. My	2	-15.3516	6.8262	796.3032
			Max. Vy	8	29.0392	-800.0882	-8.9751
			Max. Vx	14	29.2145	-9.9441	-795.1245
			Max. Torque	20			-2.7781
L13	117.25 - 115.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-50.2113	-1.5471	4.7237
			Max. Mx	8	-15.7642	-851.1252	-9.9316
			Max. My	2	-15.7579	7.4114	847.4887
			Max. Vy	8	29.2738	-851.1252	-9.9316
			Max. Vx	14	29.4493	-10.8079	-846.4107
			Max. Torque	20			-2.7779
L14	115.5 - 115.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-50.3346	-1.5541	4.7366
			Max. Mx	8	-15.8563	-858.4484	-10.0687
			Max. My	2	-15.8500	7.4959	854.8331
			Max. Vy	8	29.2959	-858.4484	-10.0687
			Max. Vx	14	29.4714	-10.9319	-853.7695
			Max. Torque	20			-2.7775
L15	115.25 - 110.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-52.8009	-1.6931	4.9864
			Max. Mx	8	-17.2364	-1006.6667	-12.8036
			Max. My	2	-17.2299	9.1678	1003.4768
			Max. Vy	8	29.9702	-1006.6667	-12.8036
			Max. Vx	14	30.1462	-13.4055	-1002.6974
			Max. Torque	20			-2.7773
L16	110.25 - 103.75	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-54.1704	-1.7714	5.1261
			Max. Mx	8	-18.0105	-1089.6147	-14.3080
			Max. My	2	-18.0040	10.0865	1086.6594
			Max. Vy	8	30.3406	-1089.6147	-14.3080
			Max. Vx	14	30.5168	-14.7693	-1086.0329
			Max. Torque	20			-2.7758
L17	103.75 - 102.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-57.9411	-1.9138	5.3802

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	-20.3361	-1243.3433	-17.0498
			Max. My	2	-20.3296	11.7612	1240.8154
			Max. Vy	8	31.1110	-1243.3433	-17.0498
			Max. Vx	14	31.2876	-17.2549	-1240.4678
			Max. Torque	20			-2.7744
L18	102.5 - 100.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-58.9828	-1.9696	5.4841
			Max. Mx	8	-20.9639	-1305.8363	-18.1486
			Max. My	2	-20.9575	12.4315	1303.4796
			Max. Vy	8	31.3700	-1305.8363	-18.1486
			Max. Vx	14	31.5467	-18.2512	-1303.2434
			Max. Torque	20			-2.7741
L19	100.5 - 100.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-59.1211	-1.9769	5.5034
			Max. Mx	8	-21.0516	-1313.6846	-18.2862
			Max. My	2	-21.0452	12.5158	1311.3494
			Max. Vy	8	31.3958	-1313.6846	-18.2862
			Max. Vx	14	31.5725	-18.3761	-1311.1271
			Max. Torque	20			-2.7735
L20	100.25 - 98.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-60.0815	-2.0149	5.6347
			Max. Mx	8	-21.5655	-1368.8473	-19.2470
			Max. My	2	-21.5591	13.1012	1366.6622
			Max. Vy	8	31.6360	-1368.8473	-19.2470
			Max. Vx	14	31.8128	-19.2479	-1366.5365
			Max. Torque	20			-2.7732
L21	98.5 - 98.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-60.2192	-2.0163	5.6538
			Max. Mx	8	-21.6701	-1376.7600	-19.3848
			Max. My	2	-21.6637	13.1854	1374.5963
			Max. Vy	8	31.6529	-1376.7600	-19.3848
			Max. Vx	14	31.8297	-19.3731	-1374.4844
			Max. Torque	20			-2.7728
L22	98.25 - 93.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-62.8494	-2.1313	6.0338
			Max. Mx	8	-23.2695	-1536.7034	-22.1294
			Max. My	14	-23.2554	-21.8674	-1535.1295
			Max. Vy	8	32.3063	-1536.7034	-22.1294
			Max. Vx	14	32.4835	-21.8674	-1535.1295
			Max. Torque	20			-2.7726
L23	93.25 - 90.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-64.2831	-2.2134	6.2436
			Max. Mx	8	-24.1642	-1626.0494	-23.6376
			Max. My	14	-24.1504	-23.2404	-1624.8596

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	8	32.6660	-1626.0494	-23.6376
			Max. Vx	14	32.8433	-23.2404	-1624.8596
			Max. Torque	20			-2.7709
L24	90.5 - 90.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-64.4263	-2.2202	6.2651
			Max. Mx	8	-24.2751	-1634.2204	-23.7750
			Max. My	14	-24.2614	-23.3657	-1633.0654
			Max. Vy	8	32.6860	-1634.2204	-23.7750
			Max. Vx	14	32.8633	-23.3657	-1633.0654
			Max. Torque	20			-2.7702
L25	90.25 - 85.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-67.3056	-2.3568	6.6882
			Max. Mx	8	-26.0990	-1799.3651	-26.5143
			Max. My	14	-26.0861	-25.8635	-1798.9045
			Max. Vy	8	33.3530	-1799.3651	-26.5143
			Max. Vx	14	33.5307	-25.8635	-1798.9045
			Max. Torque	20			-2.7700
L26	85.25 - 83.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-68.4595	-2.4038	6.7871
			Max. Mx	8	-26.7384	-1857.9443	-27.4720
			Max. My	14	-26.7257	-26.7381	-1857.7255
			Max. Vy	8	33.5931	-1857.9443	-27.4720
			Max. Vx	14	33.7708	-26.7381	-1857.7255
			Max. Torque	20			-2.7685
L27	83.5 - 83.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-68.6440	-2.4102	6.8006
			Max. Mx	8	-26.8747	-1866.3460	-27.6092
			Max. My	14	-26.8622	-26.8635	-1866.1617
			Max. Vy	8	33.6087	-1866.3460	-27.6092
			Max. Vx	14	33.7864	-26.8635	-1866.1617
			Max. Torque	20			-2.7682
L28	83.25 - 80.75	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-70.4877	-2.4720	6.9302
			Max. Mx	8	-27.9612	-1950.8467	-28.9765
			Max. My	14	-27.9488	-28.1133	-1951.0068
			Max. Vy	8	33.9709	-1950.8467	-28.9765
			Max. Vx	14	34.1487	-28.1133	-1951.0068
			Max. Torque	20			-2.7680
L29	80.75 - 80.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-70.6836	-2.4783	6.9437
			Max. Mx	8	-28.0953	-1959.3456	-29.1134
			Max. My	14	-28.0831	-28.2387	-1959.5401
			Max. Vy	8	33.9976	-	-29.1134

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	34.1754	1959.3456 -28.2387	- 1959.5401
			Max. Torque	20			-2.7676
L30	80.5 - 80.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-70.8775	-2.4846	6.9568
			Max. Mx	8	-28.2140	- 1967.8535	-29.2501
			Max. My	14	-28.2018	-28.3637	- 1968.0823
			Max. Vy	8	34.0339	- 1967.8535	-29.2501
			Max. Vx	14	34.2117	-28.3637	- 1968.0823
			Max. Torque	20			-2.7676
L31	80.25 - 77.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-73.0071	-2.5533	7.1005
			Max. Mx	8	-29.5080	- 2062.0332	-30.7537
			Max. My	14	-29.4960	-29.7400	- 2062.6391
			Max. Vy	8	34.4400	- 2062.0332	-30.7537
			Max. Vx	14	34.6179	-29.7400	- 2062.6391
			Max. Torque	20			-2.7674
L32	77.5 - 77.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-73.1832	-2.5598	7.1142
			Max. Mx	8	-29.6245	- 2070.6488	-30.8906
			Max. My	14	-29.6126	-29.8655	- 2071.2889
			Max. Vy	8	34.4634	- 2070.6488	-30.8906
			Max. Vx	14	34.6413	-29.8655	- 2071.2889
			Max. Torque	20			-2.7670
L33	77.25 - 68.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-76.0573	-2.6398	7.3395
			Max. Mx	8	-31.3732	- 2218.3633	-33.2110
			Max. My	14	-31.3620	-31.9951	- 2219.5805
			Max. Vy	8	35.0304	- 2218.3633	-33.2110
			Max. Vx	14	35.2085	-31.9951	- 2219.5805
			Max. Torque	20			-2.7668
L34	68.5 - 68	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-81.5971	-2.7298	7.6042
			Max. Mx	8	-35.1025	- 2395.5956	-35.9426
			Max. My	14	-35.0918	-34.5024	- 2397.4925
			Max. Vy	8	35.8292	- 2395.5956	-35.9426
			Max. Vx	14	36.0075	-34.5024	- 2397.4925
			Max. Torque	20			-2.7653
L35	68 - 64.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-84.2940	-2.8116	7.8025
			Max. Mx	8	-36.7761	- 2530.8905	-37.9909
			Max. My	14	-36.7660	-36.3849	- 2533.2949
			Max. Vy	8	36.3173	- 2530.8905	-37.9909
			Max. Vx	14	36.4957	-36.3849	- 2533.2949

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	20			-2.7651
L36	64.25 - 64	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-84.4862	-2.8183	7.8162
			Max. Mx	8	-36.9138	-2539.9738	-38.1276
			Max. My	14	-36.9039	-36.5106	-2542.4120
			Max. Vy	8	36.3335	-2539.9738	-38.1276
			Max. Vx	14	36.5118	-36.5106	-2542.4120
			Max. Torque	20			-2.7643
L37	64 - 60.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-87.1915	-2.8981	8.0376
			Max. Mx	8	-38.5780	-2667.9979	-40.0349
			Max. My	14	-38.5686	-38.2662	-2670.9068
			Max. Vy	8	36.8047	-2667.9979	-40.0349
			Max. Vx	14	36.9831	-38.2662	-2670.9068
			Max. Torque	20			-2.7642
L38	60.5 - 60.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-87.4047	-2.9050	8.0513
			Max. Mx	8	-38.7190	-2677.2041	-40.1712
			Max. My	14	-38.7097	-38.3917	-2680.1465
			Max. Vy	8	36.8246	-2677.2041	-40.1712
			Max. Vx	14	37.0029	-38.3917	-2680.1465
			Max. Torque	20			-2.7636
L39	60.25 - 60.1	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-87.5327	-2.9092	8.0597
			Max. Mx	8	-38.7966	-2682.7318	-40.2528
			Max. My	14	-38.7874	-38.4670	-2685.6943
			Max. Vy	8	36.8455	-2682.7318	-40.2528
			Max. Vx	14	37.0238	-38.4670	-2685.6943
			Max. Torque	20			-2.7636
L40	60.1 - 59.85	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-87.7468	-2.9184	8.0779
			Max. Mx	8	-38.9263	-2691.9511	-40.3889
			Max. My	14	-38.9171	-38.5923	-2694.9471
			Max. Vy	8	36.8781	-2691.9511	-40.3889
			Max. Vx	14	37.0564	-38.5923	-2694.9471
			Max. Torque	20			-2.7636
L41	59.85 - 59.1	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-88.3821	-2.9516	8.1444
			Max. Mx	8	-39.3123	-2719.6599	-40.7970
			Max. My	14	-39.3032	-38.9684	-2722.7562
			Max. Vy	8	36.9851	-2719.6599	-40.7970
			Max. Vx	14	37.1635	-38.9684	-2722.7562
			Max. Torque	20			-2.7635
L42	59.1 - 58.85	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-88.6026	-2.9628	8.1670

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	-39.4584	-2728.9132	-40.9330
			Max. My	14	-39.4493	-39.0938	-2732.0430
			Max. Vy	8	37.0134	-2728.9132	-40.9330
			Max. Vx	14	37.1917	-39.0938	-2732.0430
			Max. Torque	20			-2.7634
L43	58.85 - 55.4	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-91.6348	-3.1150	8.4617
			Max. Mx	8	-41.3671	-2857.4767	-42.8085
			Max. My	14	-41.3584	-40.8237	-2861.0666
			Max. Vy	8	37.4943	-2857.4767	-42.8085
			Max. Vx	14	37.6727	-40.8237	-2861.0666
			Max. Torque	20			-2.7633
L44	55.4 - 55.15	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-91.8558	-3.1255	8.4825
			Max. Mx	8	-41.5190	-2866.8559	-42.9444
			Max. My	14	-41.5105	-40.9492	-2870.4791
			Max. Vy	8	37.5165	-2866.8559	-42.9444
			Max. Vx	14	37.6949	-40.9492	-2870.4791
			Max. Torque	20			-2.7629
L45	55.15 - 54.75	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-92.2094	-3.1422	8.5148
			Max. Mx	8	-41.7416	-2881.8801	-43.1616
			Max. My	14	-41.7331	-41.1498	-2885.5564
			Max. Vy	8	37.5719	-2881.8801	-43.1616
			Max. Vx	14	37.7503	-41.1498	-2885.5564
			Max. Torque	20			-2.7628
L46	54.75 - 54.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-92.4121	-3.1527	8.5354
			Max. Mx	8	-41.8664	-2891.2810	-43.2974
			Max. My	14	-41.8579	-41.2751	-2894.9905
			Max. Vy	8	37.6030	-2891.2810	-43.2974
			Max. Vx	14	37.7814	-41.2751	-2894.9905
			Max. Torque	20			-2.7628
L47	54.5 - 49.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-96.3165	-3.3253	8.9450
			Max. Mx	8	-44.3272	-3080.9289	-46.0075
			Max. My	14	-44.3196	-43.7801	-3085.2993
			Max. Vy	8	38.2365	-3080.9289	-46.0075
			Max. Vx	14	38.4149	-43.7801	-3085.2993
			Max. Torque	20			-2.7627
L48	49.5 - 44.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-100.1168	-3.4449	9.3229
			Max. Mx	8	-46.8297	-3273.6375	-48.7065

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	14	-46.8231	-46.2798	-3278.6625
			Max. Vy	8	38.8401	-3273.6375	-48.7065
			Max. Vx	14	39.0183	-46.2798	-3278.6625
			Max. Torque	20			-2.7619
L49	44.5 - 41.3	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-102.6157	-3.4765	9.4716
			Max. Mx	8	-48.4491	-3398.5362	-50.4273
			Max. My	14	-48.4431	-47.8762	-3403.9768
			Max. Vy	8	39.2170	-3398.5362	-50.4273
			Max. Vx	14	39.3952	-47.8762	-3403.9768
			Max. Torque	20			-2.7612
L50	41.3 - 41.05	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-102.8224	-3.4791	9.4836
			Max. Mx	8	-48.6008	-3408.3446	-50.5616
			Max. My	14	-48.5949	-48.0009	-3413.8176
			Max. Vy	8	39.2309	-3408.3446	-50.5616
			Max. Vx	14	39.4090	-48.0009	-3413.8176
			Max. Torque	20			-2.7608
L51	41.05 - 34	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-104.5770	-3.5182	9.5798
			Max. Mx	8	-49.7172	-3489.0523	-51.6602
			Max. My	14	-49.7116	-49.0224	-3494.7888
			Max. Vy	8	39.4861	-3489.0523	-51.6602
			Max. Vx	14	39.6642	-49.0224	-3494.7888
			Max. Torque	20			-2.7608
L52	34 - 33	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-113.2706	-3.6398	9.8622
			Max. Mx	8	-55.9321	-3728.7104	-54.8738
			Max. My	14	-55.9270	-52.0107	-3735.2184
			Max. Vy	8	40.3611	-3728.7104	-54.8738
			Max. Vx	14	40.5392	-52.0107	-3735.2184
			Max. Torque	20			-2.7604
L53	33 - 31.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-114.7352	-3.6785	9.9322
			Max. Mx	8	-56.8981	-3789.3968	-55.6766
			Max. My	14	-56.8932	-52.7575	-3796.0972
			Max. Vy	8	40.5487	-3789.3968	-55.6766
			Max. Vx	14	40.7268	-52.7575	-3796.0972
			Max. Torque	20			-2.7603
L54	31.5 - 31.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-114.9854	-3.6821	9.9545
			Max. Mx	8	-57.0774	-3799.5376	-55.8104
			Max. My	14	-57.0727	-52.8820	-3806.2697
			Max. Vy	8	40.5598	-	-55.8104

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	14	40.7360	3799.5376 -52.8820	- 3806.2697
			Max. Torque	20			-2.7602
L55	31.25 - 30.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-115.7279	-3.6977	10.0017
			Max. Mx	8	-57.5636	- 3830.0046	-56.2113
			Max. My	14	-57.5590	-53.2552	- 3836.8314
			Max. Vy	8	40.6561	- 3830.0046	-56.2113
			Max. Vx	14	40.8323	-53.2552	- 3836.8314
			Max. Torque	20			-2.7602
L56	30.5 - 30.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-115.9707	-3.7040	10.0137
			Max. Mx	8	-57.7308	- 3840.1751	-56.3450
			Max. My	14	-57.7262	-53.3796	- 3847.0333
			Max. Vy	8	40.6775	- 3840.1751	-56.3450
			Max. Vx	14	40.8537	-53.3796	- 3847.0333
			Max. Torque	20			-2.7601
L57	30.25 - 25.75	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-120.3235	-3.8172	10.2248
			Max. Mx	8	-60.6181	- 4024.4479	-58.7444
			Max. My	14	-60.6142	-55.6157	- 4031.8703
			Max. Vy	8	41.1997	- 4024.4479	-58.7444
			Max. Vx	14	41.3757	-55.6157	- 4031.8703
			Max. Torque	20			-2.7601
L58	25.75 - 25.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-120.5636	-3.8237	10.2368
			Max. Mx	8	-60.7898	- 4034.7521	-58.8775
			Max. My	14	-60.7859	-55.7399	- 4042.2056
			Max. Vy	8	41.2112	- 4034.7521	-58.8775
			Max. Vx	14	41.3872	-55.7399	- 4042.2056
			Max. Torque	20			-2.7598
L59	25.5 - 24.7	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-121.3316	-3.8439	10.2743
			Max. Mx	8	-61.2953	- 4067.7708	-59.3028
			Max. My	14	-61.2916	-56.1367	- 4075.3240
			Max. Vy	8	41.3079	- 4067.7708	-59.3028
			Max. Vx	14	41.4839	-56.1367	- 4075.3240
			Max. Torque	20			-2.7598
L60	24.7 - 24.45	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-121.5500	-3.8504	10.2863
			Max. Mx	8	-61.4418	- 4078.1033	-59.4358
			Max. My	14	-61.4381	-56.2608	- 4085.6876
			Max. Vy	8	41.3240	- 4078.1033	-59.4358
			Max. Vx	14	41.4999	-56.2608	-

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	20			4085.6876
L61	24.45 - 24	Pole	Max Tension	1	0.0000	0.0000	-2.7598
			Max. Compression	26	-121.9429	-3.8618	0.0000
			Max. Mx	8	-61.6903	-4096.7176	10.3074
			Max. My	14	-61.6867	-56.4839	-59.6748
			Max. Vy	8	41.3735	-4096.7176	-4104.3578
			Max. Vx	14	41.5493	-56.4839	-59.6748
			Max. Torque	20			-4104.3578
L62	24 - 23.75	Pole	Max Tension	1	0.0000	0.0000	-2.7597
			Max. Compression	26	-122.1836	-3.8682	0.0000
			Max. Mx	8	-61.8548	-4107.0681	10.3193
			Max. My	14	-61.8513	-56.6078	-59.8076
			Max. Vy	8	41.3962	-4107.0681	-4114.7394
			Max. Vx	14	41.5721	-56.6078	-59.8076
			Max. Torque	20			-4114.7394
L63	23.75 - 18.75	Pole	Max Tension	1	0.0000	0.0000	-2.7597
			Max. Compression	26	-126.6911	-3.9617	0.0000
			Max. Mx	8	-65.0594	-4315.4773	10.4941
			Max. My	14	-65.0565	-59.0825	-62.4555
			Max. Vy	8	41.9415	-4315.4773	-4323.7662
			Max. Vx	14	42.1171	-59.0825	-62.4555
			Max. Torque	20			-4323.7662
L64	18.75 - 14.1	Pole	Max Tension	1	0.0000	0.0000	-2.7597
			Max. Compression	26	-130.7590	-4.0952	0.0000
			Max. Mx	8	-68.0720	-4511.5990	10.5507
			Max. My	14	-68.0698	-61.3770	-64.9057
			Max. Vy	8	42.4024	-4511.5990	-4520.4558
			Max. Vx	14	42.5778	-61.3770	-64.9057
			Max. Torque	20			-4520.4558
L65	14.1 - 13.8	Pole	Max Tension	1	0.0000	0.0000	-2.7594
			Max. Compression	26	-131.0311	-4.1039	0.0000
			Max. Mx	8	-68.2821	-4524.3249	10.5555
			Max. My	14	-68.2800	-61.5249	-65.0635
			Max. Vy	8	42.4145	-4524.3249	-4533.2182
			Max. Vx	14	42.5898	-61.5249	-65.0635
			Max. Torque	20			-4533.2182
L66	13.8 - 13.65	Pole	Max Tension	1	0.0000	0.0000	-2.7593
			Max. Compression	26	-131.1671	-4.1083	0.0000
			Max. Mx	8	-68.3836	-4530.6912	10.5580
			Max. My	14	-68.3815	-61.5988	-65.1423
			Max. Vy	8	42.4274	-4530.6912	-4539.6027
			Max. Vx	14	42.6027	-61.5988	-65.1423
			Max. Torque	20			-4539.6027
							-2.7593

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L67	13.65 - 10.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-133.9940	-4.2110	10.5672
			Max. Mx	8	-70.4639	-4664.8843	-66.7938
			Max. My	14	-70.4622	-63.1483	-4674.1766
			Max. Vy	8	42.7478	-4664.8843	-66.7938
			Max. Vx	14	42.9229	-63.1483	-4674.1766
			Max. Torque	20			-2.7593
L68	10.5 - 10.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-134.2101	-4.2220	10.5633
			Max. Mx	8	-70.6358	-4675.5756	-66.9248
			Max. My	14	-70.6342	-63.2712	-4684.8980
			Max. Vy	8	42.7564	-4675.5756	-66.9248
			Max. Vx	14	42.9314	-63.2712	-4684.8980
			Max. Torque	20			-2.7592
L69	10.25 - 5.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-138.4879	-4.4404	10.4900
			Max. Mx	8	-73.8685	-4890.6570	-69.5328
			Max. My	14	-73.8676	-65.7226	-4900.5774
			Max. Vy	8	43.2492	-4890.6570	-69.5328
			Max. Vx	14	43.4239	-65.7226	-4900.5774
			Max. Torque	20			-2.7592
L70	5.25 - 3	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-140.3890	-4.5365	10.4628
			Max. Mx	8	-75.3391	-4988.2206	-70.7010
			Max. My	14	-75.3385	-66.8223	-4998.4077
			Max. Vy	8	43.4652	-4988.2206	-70.7010
			Max. Vx	14	43.6398	-66.8223	-4998.4077
			Max. Torque	20			-2.7591
L71	3 - 2.9	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-140.4705	-4.5408	10.4618
			Max. Mx	8	-75.4152	-4992.5679	-70.7530
			Max. My	14	-75.4147	-66.8712	-5002.7668
			Max. Vy	8	43.4535	-4992.5679	-70.7530
			Max. Vx	14	43.6280	-66.8712	-5002.7668
			Max. Torque	20			-2.7591
L72	2.9 - 2.75	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-140.5856	-4.5471	10.4602
			Max. Mx	8	-75.5028	-4999.0905	-70.8307
			Max. My	14	-75.5023	-66.9445	-5009.3071
			Max. Vy	8	43.4678	-4999.0905	-70.8307
			Max. Vx	14	43.6422	-66.9445	-5009.3071
			Max. Torque	20			-2.7591
L73	2.75 - 2.65	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-140.6623	-4.5513	10.4592
			Max. Mx	8	-75.5623	-	-70.8825

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	14	-75.5619	5003.4401 -66.9933	-5013.6685
			Max. Vy	8	43.4762	-5003.4401	-70.8825
			Max. Vx	14	43.6506	-66.9933	-5013.6685
			Max. Torque	20			-2.7591
L74	2.65 - 2.5	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-140.7772	-4.5575	10.4576
			Max. Mx	8	-75.6500	-5009.9661	-70.9602
			Max. My	14	-75.6496	-67.0665	-5020.2122
			Max. Vy	8	43.4904	-5009.9661	-70.9602
			Max. Vx	14	43.6648	-67.0665	-5020.2122
			Max. Torque	20			-2.7591
L75	2.5 - 2.25	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-140.9701	-4.5680	10.4551
			Max. Mx	8	-75.7980	-5020.8473	-71.0897
			Max. My	14	-75.7976	-67.1885	-5031.1229
			Max. Vy	8	43.5150	-5020.8473	-71.0897
			Max. Vx	14	43.6894	-67.1885	-5031.1229
			Max. Torque	20			-2.7591
L76	2.25 - 1.9	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-141.2393	-4.5825	10.4518
			Max. Mx	8	-76.0060	-5036.0904	-71.2709
			Max. My	14	-76.0056	-67.3592	-5046.4072
			Max. Vy	8	43.5487	-5036.0904	-71.2709
			Max. Vx	14	43.7231	-67.3592	-5046.4072
			Max. Torque	20			-2.7591
L77	1.9 - 1.65	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-141.4223	-4.5928	10.4497
			Max. Mx	8	-76.1487	-5046.9849	-71.4003
			Max. My	14	-76.1484	-67.4812	-5057.3312
			Max. Vy	8	43.5684	-5046.9849	-71.4003
			Max. Vx	14	43.7428	-67.4812	-5057.3312
			Max. Torque	20			-2.7591
L78	1.65 - 0	Pole	Max Tension	1	0.0000	0.0000	0.0000
			Max. Compression	26	-142.5814	-4.6584	10.4503
			Max. Mx	8	-77.0624	-5119.0269	-72.2527
			Max. My	14	-77.0623	-68.2848	-5129.5670
			Max. Vy	8	43.7485	-5119.0269	-72.2527
			Max. Vx	14	43.9227	-68.2848	-5129.5670
			Max. Torque	20			-2.7590

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	142.5814	0.0718	11.2690
	Max. H_x	21	57.8146	43.6450	0.4818
	Max. H_z	2	77.0862	0.3356	43.7890
	Max. M_x	2	5125.3500	0.3356	43.7890
	Max. M_z	8	5119.0269	-43.7065	-0.5453
	Max. Torsion	6	2.5637	-37.5867	21.6290
	Min. Vert	11	57.8146	-37.8472	-22.4505
	Min. H_x	8	77.0862	-43.7065	-0.5453
	Min. H_z	14	77.0862	-0.4591	-43.8807
	Min. M_x	14	-5129.5670	-0.4591	-43.8807
	Min. M_z	20	-5104.0474	43.6450	0.4818
	Min. Torsion	20	-2.7591	43.6450	0.4818

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	64.2385	0.0000	0.0000	-3.1613	-2.7921	-0.0000
1.2 Dead+1.6 Wind 0 deg - No Ice	77.0862	-0.3356	-43.7890	-5125.3500	45.0598	-1.0874
0.9 Dead+1.6 Wind 0 deg - No Ice	57.8146	-0.3356	-43.7890	-5073.1170	45.4465	-1.0933
1.2 Dead+1.6 Wind 30 deg - No Ice	77.0862	21.3894	-37.8316	-4425.2123	-2496.5899	-2.0534
0.9 Dead+1.6 Wind 30 deg - No Ice	57.8146	21.3894	-37.8316	-4379.9979	-2470.7372	-2.0505
1.2 Dead+1.6 Wind 60 deg - No Ice	77.0862	37.5867	-21.6290	-2525.9774	-4397.0257	-2.5637
0.9 Dead+1.6 Wind 60 deg - No Ice	57.8146	37.5867	-21.6290	-2499.7686	-4352.1399	-2.5523
1.2 Dead+1.6 Wind 90 deg - No Ice	77.0862	43.7065	0.5453	72.2530	-5119.0269	-1.9424
0.9 Dead+1.6 Wind 90 deg - No Ice	57.8146	43.7065	0.5453	72.4866	-5066.9143	-1.9252
1.2 Dead+1.6 Wind 120 deg - No Ice	77.0862	37.8472	22.4505	2633.6988	-4435.3741	-1.0873
0.9 Dead+1.6 Wind 120 deg - No Ice	57.8146	37.8472	22.4505	2608.3285	-4390.0859	-1.0692
1.2 Dead+1.6 Wind 150 deg - No Ice	77.0862	22.0838	38.2037	4470.4290	-2595.3776	0.1143
0.9 Dead+1.6 Wind 150 deg - No Ice	57.8146	22.0838	38.2037	4426.6940	-2568.5041	0.1283
1.2 Dead+1.6 Wind 180 deg - No Ice	77.0862	0.4591	43.8807	5129.5670	-68.2850	1.3518
0.9 Dead+1.6 Wind 180 deg - No Ice	57.8146	0.4591	43.8807	5079.2444	-66.7164	1.3578
1.2 Dead+1.6 Wind 210 deg - No Ice	77.0862	-21.3182	38.0467	4445.6971	2480.2300	2.3238
0.9 Dead+1.6 Wind 210 deg - No Ice	57.8146	-21.3182	38.0467	4402.2299	2456.2660	2.3203
1.2 Dead+1.6 Wind 240 deg - No Ice	77.0862	-37.5247	21.7767	2537.6389	4381.9259	2.3374
0.9 Dead+1.6 Wind 240 deg - No Ice	57.8146	-37.5247	21.7767	2513.2580	4338.9070	2.3254
1.2 Dead+1.6 Wind 270 deg - No Ice	77.0862	-43.6450	-0.4818	-71.6873	5104.0474	2.7591
0.9 Dead+1.6 Wind 270 deg - No Ice	57.8146	-43.6450	-0.4818	-69.9821	5053.7926	2.7425
1.2 Dead+1.6 Wind 300 deg - No Ice	77.0862	-37.9310	-22.2579	-2616.1702	4439.5049	1.7766
0.9 Dead+1.6 Wind 300 deg - No Ice	57.8146	-37.9310	-22.2579	-2589.0149	4395.8948	1.7594
1.2 Dead+1.6 Wind 330 deg	77.0862	-22.0574	-38.1035	-4465.1086	2584.9817	0.2242

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
- No Ice						
0.9 Dead+1.6 Wind 330 deg - No Ice	57.8146	-22.0574	-38.1035	-4419.4678	2559.9337	0.2109
1.2 Dead+1.0 Ice	142.5814	0.0000	-0.0000	-10.4503	-4.6584	-0.0005
1.2 Dead+1.0 Wind 0 deg+1.0 Ice	142.5814	-0.0718	-11.2690	-1473.4046	6.4074	-0.2640
1.2 Dead+1.0 Wind 30 deg+1.0 Ice	142.5814	5.5272	-9.7392	-1274.0770	-720.8032	-0.6011
1.2 Dead+1.0 Wind 60 deg+1.0 Ice	142.5814	9.6879	-5.5770	-733.0341	-1262.1184	-0.7952
1.2 Dead+1.0 Wind 90 deg+1.0 Ice	142.5814	11.2531	0.1197	7.1608	-1466.5752	-0.6714
1.2 Dead+1.0 Wind 120 deg+1.0 Ice	142.5814	9.7451	5.7551	738.4901	-1271.2490	-0.4385
1.2 Dead+1.0 Wind 150 deg+1.0 Ice	142.5814	5.6769	9.8207	1265.1886	-743.6971	-0.0758
1.2 Dead+1.0 Wind 180 deg+1.0 Ice	142.5814	0.1000	11.2897	1454.8816	-19.8852	0.3227
1.2 Dead+1.0 Wind 210 deg+1.0 Ice	142.5814	-5.5099	9.7872	1259.3852	708.8554	0.6580
1.2 Dead+1.0 Wind 240 deg+1.0 Ice	142.5814	-9.6749	5.6080	715.9556	1250.7739	0.7414
1.2 Dead+1.0 Wind 270 deg+1.0 Ice	142.5814	-11.2390	-0.1029	-26.2224	1455.0767	0.8550
1.2 Dead+1.0 Wind 300 deg+1.0 Ice	142.5814	-9.7627	-5.7120	-753.8704	1264.1814	0.5953
1.2 Dead+1.0 Wind 330 deg+1.0 Ice	142.5814	-5.6706	-9.7983	-1283.4803	733.2920	0.1539
Dead+Wind 0 deg - Service	64.2385	-0.0718	-9.3691	-1093.5386	7.4578	-0.2379
Dead+Wind 30 deg - Service	64.2385	4.5765	-8.0945	-944.4640	-533.6072	-0.4496
Dead+Wind 60 deg - Service	64.2385	8.0421	-4.6278	-540.1559	-938.1701	-0.5587
Dead+Wind 90 deg - Service	64.2385	9.3515	0.1167	12.9565	-1091.9095	-0.4196
Dead+Wind 120 deg - Service	64.2385	8.0978	4.8035	558.2740	-946.3930	-0.2307
Dead+Wind 150 deg - Service	64.2385	4.7251	8.1741	949.3072	-554.6701	0.0297
Dead+Wind 180 deg - Service	64.2385	0.0982	9.3888	1089.6017	-16.6657	0.2952
Dead+Wind 210 deg - Service	64.2385	-4.5613	8.1405	943.9878	525.8661	0.5021
Dead+Wind 240 deg - Service	64.2385	-8.0288	4.6594	537.7898	930.6866	0.5043
Dead+Wind 270 deg - Service	64.2385	-9.3383	-0.1031	-17.6822	1084.4406	0.5985
Dead+Wind 300 deg - Service	64.2385	-8.1157	-4.7623	-559.3819	942.9972	0.3857
Dead+Wind 330 deg - Service	64.2385	-4.7194	-8.1527	-953.0058	548.1850	0.0484

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX	PY	PZ	PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.0000	-64.2385	0.0000	0.0000	64.2385	0.0000	0.000%
2	-0.3356	-77.0862	-43.7890	0.3356	77.0862	43.7890	0.000%
3	-0.3356	-57.8146	-43.7890	0.3356	57.8146	43.7890	0.000%
4	21.3894	-77.0862	-37.8316	-21.3894	77.0862	37.8316	0.000%
5	21.3894	-57.8146	-37.8316	-21.3894	57.8146	37.8316	0.000%
6	37.5867	-77.0862	-21.6290	-37.5867	77.0862	21.6290	0.000%
7	37.5867	-57.8146	-21.6290	-37.5867	57.8146	21.6290	0.000%
8	43.7065	-77.0862	0.5453	-43.7065	77.0862	-0.5453	0.000%
9	43.7065	-57.8146	0.5453	-43.7065	57.8146	-0.5453	0.000%
10	37.8472	-77.0862	22.4505	-37.8472	77.0862	-22.4505	0.000%
11	37.8472	-57.8146	22.4505	-37.8472	57.8146	-22.4505	0.000%
12	22.0838	-77.0862	38.2037	-22.0838	77.0862	-38.2037	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
13	22.0838	-57.8146	38.2037	-22.0838	57.8146	-38.2037	0.000%
14	0.4591	-77.0862	43.8807	-0.4591	77.0862	-43.8807	0.000%
15	0.4591	-57.8146	43.8807	-0.4591	57.8146	-43.8807	0.000%
16	-21.3182	-77.0862	38.0467	21.3182	77.0862	-38.0467	0.000%
17	-21.3182	-57.8146	38.0467	21.3182	57.8146	-38.0467	0.000%
18	-37.5247	-77.0862	21.7767	37.5247	77.0862	-21.7767	0.000%
19	-37.5247	-57.8146	21.7767	37.5247	57.8146	-21.7767	0.000%
20	-43.6450	-77.0862	-0.4818	43.6450	77.0862	0.4818	0.000%
21	-43.6450	-57.8146	-0.4818	43.6450	57.8146	0.4818	0.000%
22	-37.9310	-77.0862	-22.2579	37.9310	77.0862	22.2579	0.000%
23	-37.9310	-57.8146	-22.2579	37.9310	57.8146	22.2579	0.000%
24	-22.0574	-77.0862	-38.1035	22.0574	77.0862	38.1035	0.000%
25	-22.0574	-57.8146	-38.1035	22.0574	57.8146	38.1035	0.000%
26	0.0000	-142.5814	0.0000	-0.0000	142.5814	0.0000	0.000%
27	-0.0718	-142.5814	-11.2690	0.0718	142.5814	11.2690	0.000%
28	5.5272	-142.5814	-9.7392	-5.5272	142.5814	9.7392	0.000%
29	9.6879	-142.5814	-5.5770	-9.6879	142.5814	5.5770	0.000%
30	11.2531	-142.5814	0.1197	-11.2531	142.5814	-0.1197	0.000%
31	9.7451	-142.5814	5.7551	-9.7451	142.5814	-5.7551	0.000%
32	5.6769	-142.5814	9.8207	-5.6769	142.5814	-9.8207	0.000%
33	0.1000	-142.5814	11.2897	-0.1000	142.5814	-11.2897	0.000%
34	-5.5099	-142.5814	9.7872	5.5099	142.5814	-9.7872	0.000%
35	-9.6749	-142.5814	5.6080	9.6749	142.5814	-5.6080	0.000%
36	-11.2390	-142.5814	-0.1029	11.2390	142.5814	0.1029	0.000%
37	-9.7627	-142.5814	-5.7119	9.7627	142.5814	5.7120	0.000%
38	-5.6706	-142.5814	-9.7983	5.6706	142.5814	9.7983	0.000%
39	-0.0718	-64.2385	-9.3691	0.0718	64.2385	9.3691	0.000%
40	4.5765	-64.2385	-8.0945	-4.5765	64.2385	8.0945	0.000%
41	8.0421	-64.2385	-4.6278	-8.0421	64.2385	4.6278	0.000%
42	9.3515	-64.2385	0.1167	-9.3515	64.2385	-0.1167	0.000%
43	8.0978	-64.2385	4.8035	-8.0978	64.2385	-4.8035	0.000%
44	4.7251	-64.2385	8.1741	-4.7251	64.2385	-8.1741	0.000%
45	0.0982	-64.2385	9.3888	-0.0982	64.2385	-9.3888	0.000%
46	-4.5613	-64.2385	8.1405	4.5613	64.2385	-8.1405	0.000%
47	-8.0288	-64.2385	4.6594	8.0288	64.2385	-4.6594	0.000%
48	-9.3383	-64.2385	-0.1031	9.3383	64.2385	0.1031	0.000%
49	-8.1157	-64.2385	-4.7623	8.1157	64.2385	4.7623	0.000%
50	-4.7194	-64.2385	-8.1527	4.7194	64.2385	8.1527	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000196
2	Yes	5	0.00000001	0.00080886
3	Yes	5	0.00000001	0.00036335
4	Yes	6	0.00000001	0.00071275
5	Yes	6	0.00000001	0.00021604
6	Yes	6	0.00000001	0.00075804
7	Yes	6	0.00000001	0.00023185
8	Yes	5	0.00000001	0.00023518
9	Yes	5	0.00000001	0.00008513
10	Yes	6	0.00000001	0.00075235
11	Yes	6	0.00000001	0.00022581
12	Yes	6	0.00000001	0.00075660
13	Yes	6	0.00000001	0.00022756
14	Yes	5	0.00000001	0.00028351
15	Yes	5	0.00000001	0.00010381
16	Yes	6	0.00000001	0.00075182
17	Yes	6	0.00000001	0.00023014
18	Yes	6	0.00000001	0.00071351
19	Yes	6	0.00000001	0.00021632
20	Yes	6	0.00000001	0.00007089
21	Yes	5	0.00000001	0.00070962
22	Yes	6	0.00000001	0.00077438

23	Yes	6	0.00000001	0.00023386
24	Yes	6	0.00000001	0.00075341
25	Yes	6	0.00000001	0.00022693
26	Yes	4	0.00000001	0.00017250
27	Yes	6	0.00000001	0.00023600
28	Yes	6	0.00000001	0.00099617
29	Yes	7	0.00000001	0.00015155
30	Yes	6	0.00000001	0.00025217
31	Yes	7	0.00000001	0.00013981
32	Yes	7	0.00000001	0.00014455
33	Yes	6	0.00000001	0.00022666
34	Yes	7	0.00000001	0.00014189
35	Yes	6	0.00000001	0.00093807
36	Yes	6	0.00000001	0.00029291
37	Yes	7	0.00000001	0.00015393
38	Yes	7	0.00000001	0.00014497
39	Yes	5	0.00000001	0.00004830
40	Yes	5	0.00000001	0.00021952
41	Yes	5	0.00000001	0.00025768
42	Yes	5	0.00000001	0.00005106
43	Yes	5	0.00000001	0.00023968
44	Yes	5	0.00000001	0.00024506
45	Yes	5	0.00000001	0.00004545
46	Yes	5	0.00000001	0.00024950
47	Yes	5	0.00000001	0.00021510
48	Yes	5	0.00000001	0.00007056
49	Yes	5	0.00000001	0.00026141
50	Yes	5	0.00000001	0.00024288

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 155	24.6756	50	1.5841	0.0082
L2	155 - 150	23.0173	50	1.5823	0.0079
L3	150 - 146	21.3718	50	1.5562	0.0063
L4	146 - 141	20.0847	50	1.5140	0.0050
L5	141 - 136	18.5216	50	1.4689	0.0044
L6	136 - 131	17.0146	50	1.4077	0.0038
L7	131 - 126	15.5791	50	1.3325	0.0033
L8	126 - 121	14.2306	50	1.2412	0.0028
L9	121 - 120.1	12.9852	50	1.1355	0.0021
L10	120.1 - 119.85	12.7731	50	1.1154	0.0020
L11	119.85 - 117.5	12.7148	50	1.1124	0.0020
L12	117.5 - 117.25	12.1744	50	1.0835	0.0019
L13	117.25 - 115.5	12.1177	50	1.0804	0.0019
L14	115.5 - 115.25	11.7256	50	1.0590	0.0018
L15	115.25 - 110.25	11.6703	50	1.0566	0.0018
L16	110.25 - 103.75	10.5904	50	1.0054	0.0016
L17	107.5 - 102.5	10.0199	50	0.9756	0.0015
L18	102.5 - 100.5	9.0138	50	0.9405	0.0014
L19	100.5 - 100.25	8.6247	50	0.9173	0.0013
L20	100.25 - 98.5	8.5768	50	0.9142	0.0013
L21	98.5 - 98.25	8.2457	50	0.8923	0.0012
L22	98.25 - 93.25	8.1991	50	0.8892	0.0012
L23	93.25 - 90.5	7.3009	50	0.8261	0.0011
L24	90.5 - 90.25	6.8352	50	0.7912	0.0010
L25	90.25 - 85.25	6.7938	50	0.7882	0.0010
L26	85.25 - 83.5	6.0006	50	0.7268	0.0009
L27	83.5 - 83.25	5.7381	50	0.7053	0.0008
L28	83.25 - 80.75	5.7013	50	0.7029	0.0008
L29	80.75 - 80.5	5.3394	50	0.6795	0.0008
L30	80.5 - 80.25	5.3038	50	0.6774	0.0008
L31	80.25 - 77.5	5.2684	50	0.6753	0.0008
L32	77.5 - 77.25	4.8865	50	0.6511	0.0007
L33	77.25 - 68.5	4.8525	50	0.6481	0.0007
L34	73 - 68	4.2983	50	0.5972	0.0006

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L35	68 - 64.25	3.6884	50	0.5649	0.0006
L36	64.25 - 64	3.2620	50	0.5210	0.0005
L37	64 - 60.5	3.2347	50	0.5185	0.0005
L38	60.5 - 60.25	2.8676	50	0.4832	0.0005
L39	60.25 - 60.1	2.8424	50	0.4809	0.0005
L40	60.1 - 59.85	2.8273	50	0.4795	0.0005
L41	59.85 - 59.1	2.8022	50	0.4772	0.0005
L42	59.1 - 58.85	2.7278	50	0.4706	0.0005
L43	58.85 - 55.4	2.7032	50	0.4685	0.0005
L44	55.4 - 55.15	2.3753	50	0.4391	0.0004
L45	55.15 - 54.75	2.3524	50	0.4370	0.0004
L46	54.75 - 54.5	2.3159	50	0.4336	0.0004
L47	54.5 - 49.5	2.2933	50	0.4311	0.0004
L48	49.5 - 44.5	1.8692	44	0.3789	0.0003
L49	44.5 - 41.3	1.4999	44	0.3266	0.0003
L50	41.3 - 41.05	1.2923	44	0.2930	0.0002
L51	41.05 - 34	1.2770	44	0.2906	0.0002
L52	39 - 33	1.1564	44	0.2712	0.0002
L53	33 - 31.5	0.8316	44	0.2429	0.0002
L54	31.5 - 31.25	0.7570	44	0.2318	0.0002
L55	31.25 - 30.5	0.7449	44	0.2300	0.0002
L56	30.5 - 30.25	0.7092	44	0.2244	0.0002
L57	30.25 - 25.75	0.6975	44	0.2225	0.0002
L58	25.75 - 25.5	0.5044	44	0.1874	0.0001
L59	25.5 - 24.7	0.4947	44	0.1854	0.0001
L60	24.7 - 24.45	0.4641	44	0.1791	0.0001
L61	24.45 - 24	0.4548	44	0.1769	0.0001
L62	24 - 23.75	0.4383	44	0.1729	0.0001
L63	23.75 - 18.75	0.4293	44	0.1712	0.0001
L64	18.75 - 14.1	0.2690	44	0.1352	0.0001
L65	14.1 - 13.8	0.1537	44	0.1016	0.0001
L66	13.8 - 13.65	0.1473	44	0.0995	0.0001
L67	13.65 - 10.5	0.1442	44	0.0985	0.0001
L68	10.5 - 10.25	0.0865	44	0.0765	0.0001
L69	10.25 - 5.25	0.0825	44	0.0748	0.0001
L70	5.25 - 3	0.0226	44	0.0398	0.0000
L71	3 - 2.9	0.0076	44	0.0239	0.0000
L72	2.9 - 2.75	0.0071	44	0.0232	0.0000
L73	2.75 - 2.65	0.0064	44	0.0220	0.0000
L74	2.65 - 2.5	0.0059	44	0.0212	0.0000
L75	2.5 - 2.25	0.0053	44	0.0201	0.0000
L76	2.25 - 1.9	0.0043	44	0.0181	0.0000
L77	1.9 - 1.65	0.0031	44	0.0154	0.0000
L78	1.65 - 0	0.0023	44	0.0134	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
156.0000	Lightning Rod	50	23.3486	1.5838	0.0084	23325
148.0000	(2) PCS 1900MHz 4x45W-65MHz	50	20.7243	1.5356	0.0060	6267
146.0000	APXVTM14-C-120 w/ Mount Pipe	50	20.0847	1.5140	0.0054	5925
139.0000	APXV18-206517S-C	50	17.9113	1.4468	0.0043	4886
132.0000	BXA-80080-6CF-EDIN-X w/ Mount Pipe	50	15.8597	1.3489	0.0034	3577
129.0000	HORIZON COMPACT	50	15.0284	1.2973	0.0031	3210
127.0000	VHLP800-11	50	14.4925	1.2601	0.0029	2998

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 155	115.6617	12	7.4288	0.0365
L2	155 - 150	107.9296	12	7.4212	0.0350
L3	150 - 146	100.2531	12	7.3033	0.0278
L4	146 - 141	94.2425	12	7.1085	0.0236
L5	141 - 136	86.9377	12	6.8983	0.0208
L6	136 - 131	79.8895	12	6.6112	0.0182
L7	131 - 126	73.1708	12	6.2587	0.0158
L8	126 - 121	66.8541	12	5.8326	0.0130
L9	121 - 120.1	61.0157	12	5.3387	0.0100
L10	120.1 - 119.85	60.0207	12	5.2444	0.0095
L11	119.85 - 117.5	59.7471	12	5.2304	0.0094
L12	117.5 - 117.25	57.2119	12	5.0949	0.0088
L13	117.25 - 115.5	56.9461	12	5.0805	0.0087
L14	115.5 - 115.25	55.1064	12	4.9800	0.0083
L15	115.25 - 110.25	54.8465	12	4.9687	0.0082
L16	110.25 - 103.75	49.7783	12	4.7288	0.0073
L17	107.5 - 102.5	47.1000	12	4.5887	0.0068
L18	102.5 - 100.5	42.3756	12	4.4240	0.0063
L19	100.5 - 100.25	40.5484	12	4.3151	0.0060
L20	100.25 - 98.5	40.3232	12	4.3002	0.0060
L21	98.5 - 98.25	38.7683	12	4.1974	0.0057
L22	98.25 - 93.25	38.5493	12	4.1830	0.0057
L23	93.25 - 90.5	34.3299	12	3.8866	0.0049
L24	90.5 - 90.25	32.1414	12	3.7225	0.0046
L25	90.25 - 85.25	31.9471	12	3.7084	0.0046
L26	85.25 - 83.5	28.2190	12	3.4196	0.0040
L27	83.5 - 83.25	26.9854	12	3.3184	0.0038
L28	83.25 - 80.75	26.8121	12	3.3075	0.0038
L29	80.75 - 80.5	25.1108	12	3.1970	0.0036
L30	80.5 - 80.25	24.9438	12	3.1875	0.0035
L31	80.25 - 77.5	24.7773	12	3.1774	0.0035
L32	77.5 - 77.25	22.9816	12	3.0634	0.0033
L33	77.25 - 68.5	22.8218	12	3.0493	0.0033
L34	73 - 68	20.2161	12	2.8098	0.0029
L35	68 - 64.25	17.3480	12	2.6583	0.0027
L36	64.25 - 64	15.3426	12	2.4514	0.0024
L37	64 - 60.5	15.2147	12	2.4397	0.0024
L38	60.5 - 60.25	13.4880	12	2.2738	0.0022
L39	60.25 - 60.1	13.3693	12	2.2627	0.0021
L40	60.1 - 59.85	13.2983	12	2.2561	0.0021
L41	59.85 - 59.1	13.1805	12	2.2456	0.0021
L42	59.1 - 58.85	12.8304	12	2.2142	0.0021
L43	58.85 - 55.4	12.7148	12	2.2044	0.0021
L44	55.4 - 55.15	11.1726	12	2.0662	0.0019
L45	55.15 - 54.75	11.0647	12	2.0563	0.0019
L46	54.75 - 54.5	10.8931	12	2.0404	0.0019
L47	54.5 - 49.5	10.7867	12	2.0282	0.0019
L48	49.5 - 44.5	8.7921	12	1.7827	0.0016
L49	44.5 - 41.3	7.0548	12	1.5365	0.0013
L50	41.3 - 41.05	6.0783	12	1.3783	0.0011
L51	41.05 - 34	6.0064	12	1.3671	0.0011
L52	39 - 33	5.4391	12	1.2760	0.0010
L53	33 - 31.5	3.9111	12	1.1425	0.0009
L54	31.5 - 31.25	3.5604	12	1.0905	0.0009
L55	31.25 - 30.5	3.5035	12	1.0817	0.0009
L56	30.5 - 30.25	3.3356	12	1.0557	0.0008
L57	30.25 - 25.75	3.2806	12	1.0467	0.0008
L58	25.75 - 25.5	2.3723	12	0.8813	0.0007
L59	25.5 - 24.7	2.3264	12	0.8720	0.0007
L60	24.7 - 24.45	2.1828	12	0.8425	0.0006
L61	24.45 - 24	2.1389	12	0.8321	0.0006
L62	24 - 23.75	2.0614	12	0.8134	0.0006
L63	23.75 - 18.75	2.0190	12	0.8051	0.0006
L64	18.75 - 14.1	1.2648	12	0.6359	0.0005
L65	14.1 - 13.8	0.7225	12	0.4780	0.0003
L66	13.8 - 13.65	0.6928	12	0.4681	0.0003

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L67	13.65 - 10.5	0.6782	12	0.4632	0.0003
L68	10.5 - 10.25	0.4067	12	0.3599	0.0003
L69	10.25 - 5.25	0.3881	12	0.3518	0.0003
L70	5.25 - 3	0.1062	12	0.1870	0.0001
L71	3 - 2.9	0.0357	12	0.1123	0.0001
L72	2.9 - 2.75	0.0334	12	0.1088	0.0001
L73	2.75 - 2.65	0.0301	12	0.1034	0.0001
L74	2.65 - 2.5	0.0279	12	0.0998	0.0001
L75	2.5 - 2.25	0.0249	12	0.0945	0.0001
L76	2.25 - 1.9	0.0202	12	0.0853	0.0001
L77	1.9 - 1.65	0.0144	12	0.0724	0.0000
L78	1.65 - 0	0.0109	12	0.0628	0.0000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
156.0000	Lightning Rod	12	109.4746	7.4281	0.0401	5374
148.0000	(2) PCS 1900MHz 4x45W-65MHz	12	97.2300	7.2086	0.0286	1401
146.0000	APXVTM14-C-120 w/ Mount Pipe	12	94.2425	7.1085	0.0259	1319
139.0000	APXV18-206517S-C	12	84.0842	6.7946	0.0206	1077
132.0000	BXA-80080-6CF-EDIN-X w/ Mount Pipe	12	74.4847	6.3351	0.0163	783
129.0000	HORIZON COMPACT	12	70.5917	6.0946	0.0147	701
127.0000	VHLP800-11	12	68.0816	5.9209	0.0135	654

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	160 - 155 (1)	TP16x16x0.375	5.0000	0.0000	0.0	18.4078	-2.5776	579.8450	0.004
L2	155 - 150 (2)	TP16x16x0.375	5.0000	0.0000	0.0	18.4078	-3.0420	579.8450	0.005
L3	150 - 146 (3)	TP16x16x0.375	4.0000	0.0000	0.0	18.4078	-4.3736	579.8450	0.008
L4	146 - 141 (4)	TP22.924x22x0.25	5.0000	0.0000	0.0	18.2526	-8.2050	1239.9700	0.007
L5	141 - 136 (5)	TP23.848x22.924x0.25	5.0000	0.0000	0.0	18.9964	-8.9401	1274.1200	0.007
L6	136 - 131 (6)	TP24.7721x23.848x0.25	5.0000	0.0000	0.0	19.7403	-12.8525	1306.9900	0.010
L7	131 - 126 (7)	TP25.6961x24.7721x0.25	5.0000	0.0000	0.0	20.4841	-13.6450	1338.5700	0.010
L8	126 - 121 (8)	TP26.6201x25.6961x0.25	5.0000	0.0000	0.0	21.2279	-14.4858	1368.8800	0.011
L9	121 - 120.1 (9)	TP26.7864x26.6201x0.25	0.9000	0.0000	0.0	21.3618	-14.6454	1374.2000	0.011
L10	120.1 - 119.85 (10)	TP26.8326x26.7864x0.4875	0.2500	0.0000	0.0	41.3553	-14.7218	2813.8100	0.005
L11	119.85 - 117.5 (11)	TP27.2669x26.8326x0.4875	2.3500	0.0000	0.0	42.0370	-15.2367	2860.2000	0.005

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L12	117.5 - 117.25 (12)	TP27.3131x27.2669x0.5	0.2500	0.0000	0.0	43.1691	-15.3119	2937.2300	0.005
L13	117.25 - 115.5 (13)	TP27.6365x27.3131x0.5	1.7500	0.0000	0.0	43.6898	-15.7185	2972.6600	0.005
L14	115.5 - 115.25 (14)	TP27.6827x27.6365x0.6625	0.2500	0.0000	0.0	57.6409	-15.8111	3921.8900	0.004
L15	115.25 - 110.25 (15)	TP28.6068x27.6827x0.65	5.0000	0.0000	0.0	58.5135	-17.1926	3981.2600	0.004
L16	110.25 - 103.75 (16)	TP29.808x28.6068x0.6375	6.5000	0.0000	0.0	58.4571	-17.9676	3977.4200	0.005
L17	103.75 - 102.5 (17)	TP29.0743x28.0824x0.7125	5.0000	0.0000	0.0	65.0691	-20.2943	4427.3000	0.005
L18	102.5 - 100.5 (18)	TP29.4711x29.0743x0.7	2.0000	0.0000	0.0	64.8500	-20.9102	4412.3900	0.005
L19	100.5 - 100.25 (19)	TP29.5206x29.4711x0.6375	0.2500	0.0000	0.0	59.2899	-20.9983	4034.0800	0.005
L20	100.25 - 98.5 (20)	TP29.8678x29.5206x0.6375	1.7500	0.0000	0.0	60.0025	-21.5127	4082.5700	0.005
L21	98.5 - 98.25 (21)	TP29.9174x29.8678x0.6625	0.2500	0.0000	0.0	62.4080	-21.6180	4246.2400	0.005
L22	98.25 - 93.25 (22)	TP30.9093x29.9174x0.65	5.0000	0.0000	0.0	63.3326	-23.2201	4309.1500	0.005
L23	93.25 - 90.5 (23)	TP31.4548x30.9093x0.65	2.7500	0.0000	0.0	64.4744	-24.1163	4386.8400	0.005
L24	90.5 - 90.25 (24)	TP31.5044x31.4548x0.6875	0.2500	0.0000	0.0	68.2209	-24.2278	4641.7500	0.005
L25	90.25 - 85.25 (25)	TP32.4962x31.5044x0.675	5.0000	0.0000	0.0	69.1635	-26.0546	4705.8800	0.006
L26	85.25 - 83.5 (26)	TP32.8434x32.4962x0.6625	1.7500	0.0000	0.0	68.6499	-26.6949	4670.9400	0.006
L27	83.5 - 83.25 (27)	TP32.893x32.8434x0.9125	0.2500	0.0000	0.0	93.9667	-26.8319	6393.4900	0.004
L28	83.25 - 80.75 (28)	TP33.3889x32.893x0.9	2.5000	0.0000	0.0	94.1529	-27.9192	6406.1600	0.004
L29	80.75 - 80.5 (29)	TP33.4385x33.3889x1.0625	0.2500	0.0000	0.0	110.7660	-28.0538	7536.5500	0.004
L30	80.5 - 80.25 (30)	TP33.4881x33.4385x0.9875	0.2500	0.0000	0.0	103.3440	-28.1726	7031.5100	0.004
L31	80.25 - 77.5 (31)	TP34.0336x33.4881x0.9625	2.7500	0.0000	0.0	102.4960	-29.4675	6973.8100	0.004
L32	77.5 - 77.25 (32)	TP34.0832x34.0336x0.6875	0.2500	0.0000	0.0	73.9298	-29.5844	5030.1800	0.006
L33	77.25 - 68.5 (33)	TP35.819x34.0832x0.6875	8.7500	0.0000	0.0	75.7962	-31.3357	5157.1700	0.006
L34	68.5 - 68 (34)	TP35.2329x34.3013x0.75	5.0000	0.0000	0.0	83.2763	-35.0668	5666.1200	0.006
L35	68 - 64.25 (35)	TP35.9317x35.2329x0.7375	3.7500	0.0000	0.0	83.5773	-36.7426	5686.6000	0.006
L36	64.25 - 64 (36)	TP35.9782x35.9317x0.875	0.2500	0.0000	0.0	98.9034	-36.8809	6729.3900	0.005
L37	64 - 60.5 (37)	TP36.6304x35.9782x0.8625	3.5000	0.0000	0.0	99.3364	-38.5468	6758.8500	0.006
L38	60.5 - 60.25 (38)	TP36.677x36.6304x0.925	0.2500	0.0000	0.0	106.4870	-38.6883	7245.3900	0.005
L39	60.25 - 60.1 (39)	TP36.7049x36.677x0.925	0.1500	0.0000	0.0	106.5700	-38.7660	7251.0600	0.005
L40	60.1 - 59.85 (40)	TP36.7515x36.7049x0.975	0.2500	0.0000	0.0	112.3200	-38.8957	7642.2700	0.005
L41	59.85 - 59.1 (41)	TP36.8912x36.7515x0.975	0.7500	0.0000	0.0	112.7590	-39.2820	7672.1200	0.005
L42	59.1 - 58.85 (42)	TP36.9378x36.8912x1.05	0.2500	0.0000	0.0	121.3370	-39.4284	8255.7500	0.005
L43	58.85 - 55.4 (43)	TP37.5806x36.9378x1.025	3.4500	0.0000	0.0	120.6520	-41.3385	8209.1600	0.005
L44	55.4 - 55.15 (44)	TP37.6272x37.5806x1.025	0.2500	0.0000	0.0	120.8060	-41.4908	8219.6200	0.005
L45	55.15 - 54.75 (45)	TP37.7018x37.6272x1.025	0.4000	0.0000	0.0	121.0520	-41.7136	8236.3500	0.005
L46	54.75 - 54.5	TP37.7483x37.7018x0.82	0.2500	0.0000	0.0	98.086	-41.8385	6673.8300	0.006

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	(46)	5				8			
L47	54.5 - 49.5 (47)	TP38.68x37.7483x0.8125	5.0000	0.0000	0.0	99.070 7	-44.3023	6740.7700	0.007
L48	49.5 - 44.5 (48)	TP39.6116x38.68x0.8	5.0000	0.0000	0.0	99.978 6	-46.8080	6802.5500	0.007
L49	44.5 - 41.3 (49)	TP40.2078x39.6116x0.78 75	3.2000	0.0000	0.0	99.960 1	-48.4295	6801.2900	0.007
L50	41.3 - 41.05 (50)	TP40.2544x40.2078x0.87 5	0.2500	0.0000	0.0	110.95 10	-48.5816	7549.1400	0.006
L51	41.05 - 34 (51)	TP41.568x40.2544x0.875	7.0500	0.0000	0.0	112.02 80	-49.6990	7622.3600	0.007
L52	34 - 33 (52)	TP40.9962x39.8864x1.17 5	6.0000	0.0000	0.0	150.66 30	-55.9156	11105.4000	0.005
L53	33 - 31.5 (53)	TP41.2736x40.9962x1.17 5	1.5000	0.0000	0.0	151.71 30	-56.8823	11182.8000	0.005
L54	31.5 - 31.25 (54)	TP41.3199x41.2736x1.17 5	0.2500	0.0000	0.0	151.88 80	-57.0620	11195.7000	0.005
L55	31.25 - 30.5 (55)	TP41.4586x41.3199x1.17 5	0.7500	0.0000	0.0	152.41 30	-57.5485	11234.4000	0.005
L56	30.5 - 30.25 (56)	TP41.5048x41.4586x1.12 5	0.2500	0.0000	0.0	146.27 60	-57.7159	10782.0000	0.005
L57	30.25 - 25.75 (57)	TP42.3372x41.5048x1.1	4.5000	0.0000	0.0	146.06 20	-60.6053	10766.2000	0.006
L58	25.75 - 25.5 (58)	TP42.3834x42.3372x1.07 5	0.2500	0.0000	0.0	142.98 90	-60.7773	10539.7000	0.006
L59	25.5 - 24.7 (59)	TP42.5314x42.3834x1.07 5	0.8000	0.0000	0.0	143.50 10	-61.2831	10577.5000	0.006
L60	24.7 - 24.45 (60)	TP42.5776x42.5314x0.95	0.2500	0.0000	0.0	127.33 90	-61.4299	9386.1500	0.007
L61	24.45 - 24 (61)	TP42.6608x42.5776x0.95	0.4500	0.0000	0.0	127.59 30	-61.6785	9404.9200	0.007
L62	24 - 23.75 (62)	TP42.7071x42.6608x1.2	0.2500	0.0000	0.0	160.38 30	-61.8433	11821.9000	0.005
L63	23.75 - 18.75 (63)	TP43.6319x42.7071x1.17 5	5.0000	0.0000	0.0	160.63 60	-65.0500	11840.5000	0.005
L64	18.75 - 14.1 (64)	TP44.492x43.6319x1.15	4.6500	0.0000	0.0	160.49 50	-68.0648	11830.1000	0.006
L65	14.1 - 13.8 (65)	TP44.5475x44.492x1.175	0.3000	0.0000	0.0	164.10 00	-68.2752	12095.8000	0.006
L66	13.8 - 13.65 (66)	TP44.5752x44.5475x1.17 5	0.1500	0.0000	0.0	164.20 50	-68.3769	12103.5000	0.006
L67	13.65 - 10.5 (67)	TP45.1579x44.5752x1.17 5	3.1500	0.0000	0.0	166.40 90	-70.4584	12266.0000	0.006
L68	10.5 - 10.25 (68)	TP45.2041x45.1579x1.17 5	0.2500	0.0000	0.0	166.58 40	-70.6306	12278.9000	0.006
L69	10.25 - 5.25 (69)	TP46.1289x45.2041x1.15	5.0000	0.0000	0.0	166.55 70	-73.8655	12276.9000	0.006
L70	5.25 - 3 (70)	TP46.5451x46.1289x1.12 5	2.2500	0.0000	0.0	164.53 40	-75.3372	12127.8000	0.006
L71	3 - 2.9 (71)	TP46.5636x46.5451x1.08 75	0.1000	0.0000	0.0	159.24 60	-75.4136	11738.0000	0.006
L72	2.9 - 2.75 (72)	TP46.5913x46.5636x1.02 5	0.1500	0.0000	0.0	150.39 20	-75.5012	11085.4000	0.007
L73	2.75 - 2.65 (73)	TP46.6098x46.5913x1.02 5	0.1000	0.0000	0.0	150.45 30	-75.5609	11089.9000	0.007
L74	2.65 - 2.5 (74)	TP46.6376x46.6098x1.02 5	0.1500	0.0000	0.0	150.54 40	-75.6486	11096.6000	0.007
L75	2.5 - 2.25 (75)	TP46.6838x46.6376x1	0.2500	0.0000	0.0	147.10 20	-75.7967	10842.9000	0.007
L76	2.25 - 1.9 (76)	TP46.7486x46.6838x1	0.3500	0.0000	0.0	147.31 00	-76.0048	10858.2000	0.007
L77	1.9 - 1.65 (77)	TP46.7948x46.7486x0.95	0.2500	0.0000	0.0	140.23 90	-76.1477	10337.0000	0.007
L78	1.65 - 0 (78)	TP47.1x46.7948x0.95	1.6500	0.0000	0.0	141.17 30	-77.0619	10405.9000	0.007

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	160 - 155 (1)	TP16x16x0.375	20.4191	240.3717	0.085	0.0000	240.3717	0.000
L2	155 - 150 (2)	TP16x16x0.375	73.9729	240.3717	0.308	0.0000	240.3717	0.000
L3	150 - 146 (3)	TP16x16x0.375	121.2917	240.3717	0.505	0.0000	240.3717	0.000
L4	146 - 141 (4)	TP22.924x22x0.25	211.8167	571.0217	0.371	0.0000	571.0217	0.000
L5	141 - 136 (5)	TP23.848x22.924x0.25	305.4583	610.9208	0.500	0.0000	610.9208	0.000
L6	136 - 131 (6)	TP24.7721x23.848x0.25	415.7642	651.4767	0.638	0.0000	651.4767	0.000
L7	131 - 126 (7)	TP25.6961x24.7721x0.25	552.5908	692.6158	0.798	0.0000	692.6158	0.000
L8	126 - 121 (8)	TP26.6201x25.6961x0.25	695.7158	734.2658	0.947	0.0000	734.2658	0.000
L9	121 - 120.1 (9)	TP26.7864x26.6201x0.25	721.7650	741.8117	0.973	0.0000	741.8117	0.000
L10	120.1 - 119.85 (10)	TP26.8326x26.7864x0.4875	729.0175	1494.5417	0.488	0.0000	1494.5417	0.000
L11	119.85 - 117.5 (11)	TP27.2669x26.8326x0.4875	797.5667	1544.6750	0.516	0.0000	1544.6750	0.000
L12	117.5 - 117.25 (12)	TP27.3131x27.2669x0.5	804.9008	1587.5833	0.507	0.0000	1587.5833	0.000
L13	117.25 - 115.5 (13)	TP27.6365x27.3131x0.5	856.4583	1626.4667	0.527	0.0000	1626.4667	0.000
L14	115.5 - 115.25 (14)	TP27.6827x27.6365x0.6625	863.8583	2123.9250	0.407	0.0000	2123.9250	0.000
L15	115.25 - 110.25 (15)	TP28.6068x27.6827x0.65	1013.5667	2233.5750	0.454	0.0000	2233.5750	0.000
L16	110.25 - 103.75 (16)	TP29.808x28.6068x0.6375	1097.3417	2274.9083	0.482	0.0000	2274.9083	0.000
L17	103.75 - 102.5 (17)	TP29.0743x28.0824x0.7125	1252.5667	2515.2000	0.498	0.0000	2515.2000	0.000
L18	102.5 - 100.5 (18)	TP29.4711x29.0743x0.7	1315.7000	2544.8667	0.517	0.0000	2544.8667	0.000
L19	100.5 - 100.25 (19)	TP29.5206x29.4711x0.6375	1323.6500	2340.9000	0.565	0.0000	2340.9000	0.000
L20	100.25 - 98.5 (20)	TP29.8678x29.5206x0.6375	1379.5333	2398.1250	0.575	0.0000	2398.1250	0.000
L21	98.5 - 98.25 (21)	TP29.9174x29.8678x0.6625	1387.5500	2494.3250	0.556	0.0000	2494.3250	0.000
L22	98.25 - 93.25 (22)	TP30.9093x29.9174x0.65	1549.5500	2621.1667	0.591	0.0000	2621.1667	0.000
L23	93.25 - 90.5 (23)	TP31.4548x30.9093x0.65	1640.0250	2717.5417	0.603	0.0000	2717.5417	0.000
L24	90.5 - 90.25 (24)	TP31.5044x31.4548x0.6875	1648.3000	2873.1833	0.574	0.0000	2873.1833	0.000
L25	90.25 - 85.25 (25)	TP32.4962x31.5044x0.675	1815.4917	3011.0417	0.603	0.0000	3011.0417	0.000
L26	85.25 - 83.5 (26)	TP32.8434x32.4962x0.6625	1874.7917	3024.3167	0.620	0.0000	3024.3167	0.000
L27	83.5 - 83.25 (27)	TP32.893x32.8434x0.9125	1883.2917	4082.0667	0.461	0.0000	4082.0667	0.000
L28	83.25 - 80.75 (28)	TP33.3889x32.893x0.9	1968.8167	4158.5417	0.473	0.0000	4158.5417	0.000
L29	80.75 - 80.5 (29)	TP33.4385x33.3889x1.0625	1977.4167	4851.1833	0.408	0.0000	4851.1833	0.000
L30	80.5 - 80.25 (30)	TP33.4881x33.4385x0.9875	1986.0250	4554.2417	0.436	0.0000	4554.2417	0.000
L31	80.25 - 77.5 (31)	TP34.0336x33.4881x0.9625	2081.3333	4601.8750	0.452	0.0000	4601.8750	0.000
L32	77.5 - 77.25 (32)	TP34.0832x34.0336x0.6875	2090.0500	3379.8667	0.618	0.0000	3379.8667	0.000
L33	77.25 - 68.5 (33)	TP35.819x34.0832x0.6875	2239.5000	3554.4417	0.630	0.0000	3554.4417	0.000
L34	68.5 - 68 (34)	TP35.2329x34.3013x0.75	2418.7750	3926.6333	0.616	0.0000	3926.6333	0.000
L35	68 - 64.25 (35)	TP35.9317x35.2329x0.7375	2555.6000	4025.2417	0.635	0.0000	4025.2417	0.000
L36	64.25 - 64 (36)	TP35.9782x35.9317x0.875	2564.7833	4732.6583	0.542	0.0000	4732.6583	0.000
L37	64 - 60.5 (37)	TP36.6304x35.9782x0.8625	2694.2333	4847.2167	0.556	0.0000	4847.2167	0.000
L38	60.5 - 60.25	TP36.677x36.6304x0.925	2703.5417	5184.9333	0.521	0.0000	5184.9333	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 $\frac{M_{uy}}{\phi M_{ny}}$
	(38)							
L39	60.25 - 60.1 (39)	TP36.7049x36.677x0.925	2709.1333	5193.1500	0.522	0.0000	5193.1500	0.000
L40	60.1 - 59.85 (40)	TP36.7515x36.7049x0.975	2718.4500	5465.3500	0.497	0.0000	5465.3500	0.000
L41	59.85 - 59.1 (41)	TP36.8912x36.7515x0.975	2746.4667	5508.7000	0.499	0.0000	5508.7000	0.000
L42	59.1 - 58.85 (42)	TP36.9378x36.8912x1.05	2755.8167	5910.9080	0.466	0.0000	5910.9080	0.000
L43	58.85 - 55.4 (43)	TP37.5806x36.9378x1.025	2885.7833	5994.0167	0.481	0.0000	5994.0167	0.000
L44	55.4 - 55.15 (44)	TP37.6272x37.5806x1.025	2895.2667	6009.5080	0.482	0.0000	6009.5080	0.000
L45	55.15 - 54.75 (45)	TP37.7018x37.6272x1.025	2910.4500	6034.3413	0.482	0.0000	6034.3413	0.000
L46	54.75 - 54.5 (46)	TP37.7483x37.7018x0.825	2919.9500	4949.4167	0.590	0.0000	4949.4167	0.000
L47	54.5 - 49.5 (47)	TP38.68x37.7483x0.8125	3111.6250	5131.3417	0.606	0.0000	5131.3417	0.000
L48	49.5 - 44.5 (48)	TP39.6116x38.68x0.8	3306.3417	5311.8667	0.622	0.0000	5311.8667	0.000
L49	44.5 - 41.3 (49)	TP40.2078x39.6116x0.7875	3432.5250	5397.5417	0.636	0.0000	5397.5417	0.000
L50	41.3 - 41.05 (50)	TP40.2544x40.2078x0.875	3442.4333	5971.6913	0.576	0.0000	5971.6913	0.000
L51	41.05 - 34 (51)	TP41.568x40.2544x0.875	3523.9583	6089.3667	0.579	0.0000	6089.3667	0.000
L52	34 - 33 (52)	TP40.9962x39.8864x1.175	3766.0167	8820.5000	0.427	0.0000	8820.5000	0.000
L53	33 - 31.5 (53)	TP41.2736x40.9962x1.175	3827.3000	8945.5833	0.428	0.0000	8945.5833	0.000
L54	31.5 - 31.25 (54)	TP41.3199x41.2736x1.175	3837.5417	8966.5833	0.428	0.0000	8966.5833	0.000
L55	31.25 - 30.5 (55)	TP41.4586x41.3199x1.175	3868.3083	9029.5000	0.428	0.0000	9029.5000	0.000
L56	30.5 - 30.25 (56)	TP41.5048x41.4586x1.125	3878.5750	8697.6667	0.446	0.0000	8697.6667	0.000
L57	30.25 - 25.75 (57)	TP42.3372x41.5048x1.1	4064.6250	8879.5833	0.458	0.0000	8879.5833	0.000
L58	25.75 - 25.5 (58)	TP42.3834x42.3372x1.075	4075.0333	8713.3333	0.468	0.0000	8713.3333	0.000
L59	25.5 - 24.7 (59)	TP42.5314x42.3834x1.075	4108.3667	8776.6667	0.468	0.0000	8776.6667	0.000
L60	24.7 - 24.45 (60)	TP42.5776x42.5314x0.95	4118.8000	7844.1167	0.525	0.0000	7844.1167	0.000
L61	24.45 - 24 (61)	TP42.6608x42.5776x0.95	4137.5917	7875.8667	0.525	0.0000	7875.8667	0.000
L62	24 - 23.75 (62)	TP42.7071x42.6608x1.2	4148.0333	9792.7500	0.424	0.0000	9792.7500	0.000
L63	23.75 - 18.75 (63)	TP43.6319x42.7071x1.175	4358.4083	10044.6667	0.434	0.0000	10044.6667	0.000
L64	18.75 - 14.1 (64)	TP44.492x43.6319x1.15	4556.3417	10256.5000	0.444	0.0000	10256.5000	0.000
L65	14.1 - 13.8 (65)	TP44.5475x44.492x1.175	4569.1917	10488.5000	0.436	0.0000	10488.5000	0.000
L66	13.8 - 13.65 (66)	TP44.5752x44.5475x1.175	4575.6083	10502.1667	0.436	0.0000	10502.1667	0.000
L67	13.65 - 10.5 (67)	TP45.1579x44.5752x1.175	4711.0250	10789.7500	0.437	0.0000	10789.7500	0.000
L68	10.5 - 10.25 (68)	TP45.2041x45.1579x1.175	4721.8167	10812.7500	0.437	0.0000	10812.7500	0.000
L69	10.25 - 5.25 (69)	TP46.1289x45.2041x1.15	4938.8250	11056.2500	0.447	0.0000	11056.2500	0.000
L70	5.25 - 3 (70)	TP46.5451x46.1289x1.125	5037.2583	11037.7500	0.456	0.0000	11037.7500	0.000
L71	3 - 2.9 (71)	TP46.5636x46.5451x1.0875	5041.6417	10705.0833	0.471	0.0000	10705.0833	0.000
L72	2.9 - 2.75 (72)	TP46.5913x46.5636x1.025	5048.2250	10144.0000	0.498	0.0000	10144.0000	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 $\frac{M_{uy}}{\phi M_{ny}}$
L73	2.75 - 2.65 (73)	TP46.6098x46.5913x1.025	5052.6083	10152.3333	0.498	0.0000	10152.3333	0.000
L74	2.65 - 2.5 (74)	TP46.6376x46.6098x1.025	5059.1917	10164.8333	0.498	0.0000	10164.8333	0.000
L75	2.5 - 2.25 (75)	TP46.6838x46.6376x1	5070.1667	9953.5833	0.509	0.0000	9953.5833	0.000
L76	2.25 - 1.9 (76)	TP46.7486x46.6838x1	5085.5500	9982.0833	0.509	0.0000	9982.0833	0.000
L77	1.9 - 1.65 (77)	TP46.7948x46.7486x0.95	5096.5333	9533.5000	0.535	0.0000	9533.5000	0.000
L78	1.65 - 0 (78)	TP47.1x46.7948x0.95	5169.2083	9662.1667	0.535	0.0000	9662.1667	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	160 - 155 (1)	TP16x16x0.375	10.5137	289.9220	0.036	0.6606	368.8675	0.002
L2	155 - 150 (2)	TP16x16x0.375	10.8618	289.9220	0.037	0.5694	368.8675	0.002
L3	150 - 146 (3)	TP16x16x0.375	12.8106	289.9220	0.044	0.5692	368.8675	0.002
L4	146 - 141 (4)	TP22.924x22x0.25	17.9330	619.9850	0.029	0.6617	1162.1750	0.001
L5	141 - 136 (5)	TP23.848x22.924x0.25	19.3797	637.0600	0.030	0.6610	1243.2000	0.001
L6	136 - 131 (6)	TP24.7721x23.848x0.25	26.8765	653.4950	0.041	1.2867	1325.5500	0.001
L7	131 - 126 (7)	TP25.6961x24.7721x0.25	28.3660	669.2870	0.042	1.0955	1409.0833	0.001
L8	126 - 121 (8)	TP26.6201x25.6961x0.25	28.9066	684.4380	0.042	1.0948	1493.6417	0.001
L9	121 - 120.1 (9)	TP26.7864x26.6201x0.25	29.0016	687.0980	0.042	1.0947	1508.9583	0.001
L10	120.1 - 119.85 (10)	TP26.8326x26.7864x0.4875	29.0280	1406.9100	0.021	1.0947	3049.3417	0.000
L11	119.85 - 117.5 (11)	TP27.2669x26.8326x0.4875	29.3252	1430.1000	0.021	1.0944	3151.3167	0.000
L12	117.5 - 117.25 (12)	TP27.3131x27.2669x0.5	29.3551	1468.6100	0.020	1.0945	3239.3250	0.000
L13	117.25 - 115.5 (13)	TP27.6365x27.3131x0.5	29.5853	1486.3300	0.020	1.0942	3318.4250	0.000
L14	115.5 - 115.25 (14)	TP27.6827x27.6365x0.6625	29.6134	1960.9400	0.015	1.0943	4342.0667	0.000
L15	115.25 - 110.25 (15)	TP28.6068x27.6827x0.65	30.2825	1990.6300	0.015	1.0938	4564.3333	0.000
L16	110.25 - 103.75 (16)	TP29.808x28.6068x0.6375	30.6529	1988.7100	0.015	1.0936	4647.4750	0.000
L17	103.75 - 102.5 (17)	TP29.0743x28.0824x0.7125	31.4245	2213.6500	0.014	1.0933	5142.9833	0.000
L18	102.5 - 100.5 (18)	TP29.4711x29.0743x0.7	31.8065	2206.2000	0.014	0.1153	5202.2917	0.000
L19	100.5 - 100.25 (19)	TP29.5206x29.4711x0.6375	31.8363	2017.0400	0.016	0.1153	4781.8000	0.000
L20	100.25 - 98.5 (20)	TP29.8678x29.5206x0.6375	32.0725	2041.2800	0.016	0.1153	4898.2750	0.000
L21	98.5 - 98.25 (21)	TP29.9174x29.8678x0.6625	32.0935	2123.1200	0.015	0.1152	5096.1583	0.000
L22	98.25 - 93.25 (22)	TP30.9093x29.9174x0.65	32.7433	2154.5800	0.015	0.1151	5353.2667	0.000
L23	93.25 - 90.5 (23)	TP31.4548x30.9093x0.65	33.1029	2193.4200	0.015	0.1150	5549.4000	0.000
L24	90.5 - 90.25 (24)	TP31.5044x31.4548x0.6875	33.1261	2320.8700	0.014	0.1150	5869.5580	0.000
L25	90.25 - 85.25 (25)	TP32.4962x31.5044x0.675	33.7902	2352.9400	0.014	0.1149	6148.9833	0.000
L26	85.25 - 83.5 (26)	TP32.8434x32.4962x0.6625	34.0302	2335.4700	0.015	0.1149	6174.8167	0.000
L27	83.5 - 83.25 (27)	TP32.893x32.8434x0.9125	34.0491	3196.7500	0.011	0.1148	8356.1667	0.000
L28	83.25 - 80.75 (28)	TP33.3889x32.893x0.9	34.4082	3203.0800	0.011	0.1148	8510.4167	0.000
L29	80.75 - 80.5 (29)	TP33.4385x33.3889x1.0625	34.4386	3768.2700	0.009	0.1148	9944.3333	0.000
L30	80.5 - 80.25	TP33.4881x33.4385x0.98	34.4746	3515.7600	0.010	0.1148	9328.3333	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	(30)	75						
L31	80.25 - 77.5 (31)	TP34.0336x33.4881x0.9625	34.8775	3486.9000	0.010	0.1148	9422.0000	0.000
L32	77.5 - 77.25 (32)	TP34.0832x34.0336x0.6875	34.9027	2515.0900	0.014	0.1148	6900.7500	0.000
L33	77.25 - 68.5 (33)	TP35.819x34.0832x0.6875	35.4678	2578.5900	0.014	0.1147	7255.9667	0.000
L34	68.5 - 68 (34)	TP35.2329x34.3013x0.75	36.2676	2833.0600	0.013	0.1147	8020.1580	0.000
L35	68 - 64.25 (35)	TP35.9317x35.2329x0.7375	36.7552	2843.3000	0.013	0.1146	8219.4167	0.000
L36	64.25 - 64 (36)	TP35.9782x35.9317x0.875	36.7722	3364.6900	0.011	0.1146	9676.5000	0.000
L37	64 - 60.5 (37)	TP36.6304x35.9782x0.8625	37.2422	3379.4200	0.011	0.1146	9908.1667	0.000
L38	60.5 - 60.25 (38)	TP36.677x36.6304x0.925	37.2627	3622.7000	0.010	0.1146	10604.5833	0.000
L39	60.25 - 60.1 (39)	TP36.7049x36.677x0.925	37.2849	3625.5300	0.010	0.1146	10621.2500	0.000
L40	60.1 - 59.85 (40)	TP36.7515x36.7049x0.975	37.3162	3821.1400	0.010	0.1146	11183.0833	0.000
L41	59.85 - 59.1 (41)	TP36.8912x36.7515x0.975	37.4225	3836.0600	0.010	0.1146	11271.4160	0.000
L42	59.1 - 58.85 (42)	TP36.9378x36.8912x1.05	37.4515	4127.8800	0.009	0.1146	12102.6667	0.000
L43	58.85 - 55.4 (43)	TP37.5806x36.9378x1.025	37.9315	4104.5800	0.009	0.1145	12268.0000	0.000
L44	55.4 - 55.15 (44)	TP37.6272x37.5806x1.025	37.9541	4109.8100	0.009	0.1145	12299.5827	0.000
L45	55.15 - 54.75 (45)	TP37.7018x37.6272x1.025	38.0091	4118.1800	0.009	0.1145	12350.1667	0.000
L46	54.75 - 54.5 (46)	TP37.7483x37.7018x0.825	38.0401	3336.9100	0.011	0.1145	10111.1667	0.000
L47	54.5 - 49.5 (47)	TP38.68x37.7483x0.8125	38.6726	3370.3900	0.011	0.1145	10479.7500	0.000
L48	49.5 - 44.5 (48)	TP39.6116x38.68x0.8	39.2751	3401.2700	0.012	0.1145	10845.4167	0.000
L49	44.5 - 41.3 (49)	TP40.2078x39.6116x0.7875	39.6511	3400.6400	0.012	0.1144	11018.0833	0.000
L50	41.3 - 41.05 (50)	TP40.2544x40.2078x0.875	39.6643	3774.5700	0.011	0.1144	12199.0827	0.000
L51	41.05 - 34 (51)	TP41.568x40.2544x0.875	39.9196	3811.1800	0.010	0.1144	12438.5827	0.000
L52	34 - 33 (52)	TP40.9962x39.8864x1.175	40.7946	5552.7000	0.007	0.1144	18061.6667	0.000
L53	33 - 31.5 (53)	TP41.2736x40.9962x1.175	40.9821	5591.3900	0.007	0.1144	18316.5827	0.000
L54	31.5 - 31.25 (54)	TP41.3199x41.2736x1.175	40.9905	5597.8300	0.007	0.1144	18359.2493	0.000
L55	31.25 - 30.5 (55)	TP41.4586x41.3199x1.175	41.0872	5617.1800	0.007	0.1144	18487.5827	0.000
L56	30.5 - 30.25 (56)	TP41.5048x41.4586x1.125	41.1079	5391.0000	0.008	0.1144	17800.5827	0.000
L57	30.25 - 25.75 (57)	TP42.3372x41.5048x1.1	41.6298	5383.1200	0.008	0.1144	18165.9160	0.000
L58	25.75 - 25.5 (58)	TP42.3834x42.3372x1.075	41.6403	5269.8600	0.008	0.1144	17822.0000	0.000
L59	25.5 - 24.7 (59)	TP42.5314x42.3834x1.075	41.7376	5288.7400	0.008	0.1144	17951.0000	0.000
L60	24.7 - 24.45 (60)	TP42.5776x42.5314x0.95	41.7528	4693.0700	0.009	0.1144	16027.2493	0.000
L61	24.45 - 24 (61)	TP42.6608x42.5776x0.95	41.8026	4702.4600	0.009	0.1144	16091.9160	0.000
L62	24 - 23.75 (62)	TP42.7071x42.6608x1.2	41.8248	5910.9300	0.007	0.1144	20048.5827	0.000
L63	23.75 - 18.75 (63)	TP43.6319x42.7071x1.175	42.3695	5920.2300	0.007	0.1144	20556.0827	0.000
L64	18.75 - 14.1 (64)	TP44.492x43.6319x1.15	42.8289	5915.0600	0.007	0.1144	20981.8333	0.000
L65	14.1 - 13.8	TP44.5475x44.492x1.175	42.8404	6047.9000	0.007	0.1143	21460.3333	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	(65)							
L66	13.8 - 13.65 (66)	TP44.5752x44.5475x1.175	42.8521	6051.7700	0.007	0.1143	21488.0827	0.000
L67	13.65 - 10.5 (67)	TP45.1579x44.5752x1.175	43.1731	6133.0100	0.007	0.1143	22074.0000	0.000
L68	10.5 - 10.25 (68)	TP45.2041x45.1579x1.175	43.1810	6139.4600	0.007	0.1143	22120.8333	0.000
L69	10.25 - 5.25 (69)	TP46.1289x45.2041x1.15	43.6725	6138.4600	0.007	0.1143	22610.7493	0.000
L70	5.25 - 3 (70)	TP46.5451x46.1289x1.125	43.8877	6063.9100	0.007	0.1143	22566.9173	0.000
L71	3 - 2.9 (71)	TP46.5636x46.5451x1.0875	43.8747	5869.0100	0.007	0.1143	21880.6667	0.000
L72	2.9 - 2.75 (72)	TP46.5913x46.5636x1.025	43.8895	5542.6900	0.008	0.1143	20724.1667	0.000
L73	2.75 - 2.65 (73)	TP46.6098x46.5913x1.025	43.8973	5544.9400	0.008	0.1143	20741.1667	0.000
L74	2.65 - 2.5 (74)	TP46.6376x46.6098x1.025	43.9120	5548.3100	0.008	0.1143	20766.5827	0.000
L75	2.5 - 2.25 (75)	TP46.6838x46.6376x1	43.9368	5421.4400	0.008	0.1143	20331.0827	0.000
L76	2.25 - 1.9 (76)	TP46.7486x46.6838x1	43.9704	5429.1200	0.008	0.1143	20389.1667	0.000
L77	1.9 - 1.65 (77)	TP46.7948x46.7486x0.95	43.9900	5168.5200	0.009	0.1143	19465.6667	0.000
L78	1.65 - 0 (78)	TP47.1x46.7948x0.95	44.1696	5202.9300	0.008	0.1143	19727.5000	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	160 - 155 (1)	0.004	0.085	0.000	0.036	0.002	0.091	1.000	4.8.2
L2	155 - 150 (2)	0.005	0.308	0.000	0.037	0.002	0.315	1.000	4.8.2
L3	150 - 146 (3)	0.008	0.505	0.000	0.044	0.002	0.514	1.000	4.8.2
L4	146 - 141 (4)	0.007	0.371	0.000	0.029	0.001	0.378	1.000	4.8.2
L5	141 - 136 (5)	0.007	0.500	0.000	0.030	0.001	0.508	1.000	4.8.2
L6	136 - 131 (6)	0.010	0.638	0.000	0.041	0.001	0.650	1.000	4.8.2
L7	131 - 126 (7)	0.010	0.798	0.000	0.042	0.001	0.810	1.000	4.8.2
L8	126 - 121 (8)	0.011	0.947	0.000	0.042	0.001	0.960	1.000	4.8.2
L9	121 - 120.1 (9)	0.011	0.973	0.000	0.042	0.001	0.985	1.000	4.8.2
L10	120.1 - 119.85 (10)	0.005	0.488	0.000	0.021	0.000	0.493	1.000	4.8.2
L11	119.85 - 117.5 (11)	0.005	0.516	0.000	0.021	0.000	0.522	1.000	4.8.2
L12	117.5 - 117.25 (12)	0.005	0.507	0.000	0.020	0.000	0.513	1.000	4.8.2
L13	117.25 - 115.5 (13)	0.005	0.527	0.000	0.020	0.000	0.532	1.000	4.8.2
L14	115.5 - 115.25 (14)	0.004	0.407	0.000	0.015	0.000	0.411	1.000	4.8.2
L15	115.25 - 110.25 (15)	0.004	0.454	0.000	0.015	0.000	0.458	1.000	4.8.2
L16	110.25 - 103.75 (16)	0.005	0.482	0.000	0.015	0.000	0.487	1.000	4.8.2
L17	103.75 - 102.5 (17)	0.005	0.498	0.000	0.014	0.000	0.503	1.000	4.8.2
L18	102.5 - 100.5 (18)	0.005	0.517	0.000	0.014	0.000	0.522	1.000	4.8.2
L19	100.5 - 100.25 (19)	0.005	0.565	0.000	0.016	0.000	0.571	1.000	4.8.2
L20	100.25 - 98.5 (20)	0.005	0.575	0.000	0.016	0.000	0.581	1.000	4.8.2
L21	98.5 - 98.25 (21)	0.005	0.556	0.000	0.015	0.000	0.562	1.000	4.8.2

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L22	98.25 - 93.25 (22)	0.005	0.591	0.000	0.015	0.000	0.597	1.000	4.8.2
L23	93.25 - 90.5 (23)	0.005	0.603	0.000	0.015	0.000	0.609	1.000	4.8.2
L24	90.5 - 90.25 (24)	0.005	0.574	0.000	0.014	0.000	0.579	1.000	4.8.2
L25	90.25 - 85.25 (25)	0.006	0.603	0.000	0.014	0.000	0.609	1.000	4.8.2
L26	85.25 - 83.5 (26)	0.006	0.620	0.000	0.015	0.000	0.626	1.000	4.8.2
L27	83.5 - 83.25 (27)	0.004	0.461	0.000	0.011	0.000	0.466	1.000	4.8.2
L28	83.25 - 80.75 (28)	0.004	0.473	0.000	0.011	0.000	0.478	1.000	4.8.2
L29	80.75 - 80.5 (29)	0.004	0.408	0.000	0.009	0.000	0.411	1.000	4.8.2
L30	80.5 - 80.25 (30)	0.004	0.436	0.000	0.010	0.000	0.440	1.000	4.8.2
L31	80.25 - 77.5 (31)	0.004	0.452	0.000	0.010	0.000	0.457	1.000	4.8.2
L32	77.5 - 77.25 (32)	0.006	0.618	0.000	0.014	0.000	0.624	1.000	4.8.2
L33	77.25 - 68.5 (33)	0.006	0.630	0.000	0.014	0.000	0.636	1.000	4.8.2
L34	68.5 - 68 (34)	0.006	0.616	0.000	0.013	0.000	0.622	1.000	4.8.2
L35	68 - 64.25 (35)	0.006	0.635	0.000	0.013	0.000	0.642	1.000	4.8.2
L36	64.25 - 64 (36)	0.005	0.542	0.000	0.011	0.000	0.548	1.000	4.8.2
L37	64 - 60.5 (37)	0.006	0.556	0.000	0.011	0.000	0.562	1.000	4.8.2
L38	60.5 - 60.25 (38)	0.005	0.521	0.000	0.010	0.000	0.527	1.000	4.8.2
L39	60.25 - 60.1 (39)	0.005	0.522	0.000	0.010	0.000	0.527	1.000	4.8.2
L40	60.1 - 59.85 (40)	0.005	0.497	0.000	0.010	0.000	0.503	1.000	4.8.2
L41	59.85 - 59.1 (41)	0.005	0.499	0.000	0.010	0.000	0.504	1.000	4.8.2
L42	59.1 - 58.85 (42)	0.005	0.466	0.000	0.009	0.000	0.471	1.000	4.8.2
L43	58.85 - 55.4 (43)	0.005	0.481	0.000	0.009	0.000	0.487	1.000	4.8.2
L44	55.4 - 55.15 (44)	0.005	0.482	0.000	0.009	0.000	0.487	1.000	4.8.2
L45	55.15 - 54.75 (45)	0.005	0.482	0.000	0.009	0.000	0.487	1.000	4.8.2
L46	54.75 - 54.5 (46)	0.006	0.590	0.000	0.011	0.000	0.596	1.000	4.8.2
L47	54.5 - 49.5 (47)	0.007	0.606	0.000	0.011	0.000	0.613	1.000	4.8.2
L48	49.5 - 44.5 (48)	0.007	0.622	0.000	0.012	0.000	0.629	1.000	4.8.2
L49	44.5 - 41.3 (49)	0.007	0.636	0.000	0.012	0.000	0.643	1.000	4.8.2
L50	41.3 - 41.05 (50)	0.006	0.576	0.000	0.011	0.000	0.583	1.000	4.8.2
L51	41.05 - 34 (51)	0.007	0.579	0.000	0.010	0.000	0.585	1.000	4.8.2
L52	34 - 33 (52)	0.005	0.427	0.000	0.007	0.000	0.432	1.000	4.8.2
L53	33 - 31.5 (53)	0.005	0.428	0.000	0.007	0.000	0.433	1.000	4.8.2
L54	31.5 - 31.25 (54)	0.005	0.428	0.000	0.007	0.000	0.433	1.000	4.8.2
L55	31.25 - 30.5 (55)	0.005	0.428	0.000	0.007	0.000	0.434	1.000	4.8.2
L56	30.5 - 30.25 (56)	0.005	0.446	0.000	0.008	0.000	0.451	1.000	4.8.2
L57	30.25 - 25.75 (57)	0.006	0.458	0.000	0.008	0.000	0.463	1.000	4.8.2
L58	25.75 - 25.5	0.006	0.468	0.000	0.008	0.000	0.474	1.000	4.8.2

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	(58)								
L59	25.5 - 24.7	0.006	0.468	0.000	0.008	0.000	0.474	1.000	4.8.2
	(59)								
L60	24.7 - 24.45	0.007	0.525	0.000	0.009	0.000	0.532	1.000	4.8.2
	(60)								
L61	24.45 - 24	0.007	0.525	0.000	0.009	0.000	0.532	1.000	4.8.2
	(61)								
L62	24 - 23.75	0.005	0.424	0.000	0.007	0.000	0.429	1.000	4.8.2
	(62)								
L63	23.75 - 18.75	0.005	0.434	0.000	0.007	0.000	0.439	1.000	4.8.2
	(63)								
L64	18.75 - 14.1	0.006	0.444	0.000	0.007	0.000	0.450	1.000	4.8.2
	(64)								
L65	14.1 - 13.8	0.006	0.436	0.000	0.007	0.000	0.441	1.000	4.8.2
	(65)								
L66	13.8 - 13.65	0.006	0.436	0.000	0.007	0.000	0.441	1.000	4.8.2
	(66)								
L67	13.65 - 10.5	0.006	0.437	0.000	0.007	0.000	0.442	1.000	4.8.2
	(67)								
L68	10.5 - 10.25	0.006	0.437	0.000	0.007	0.000	0.442	1.000	4.8.2
	(68)								
L69	10.25 - 5.25	0.006	0.447	0.000	0.007	0.000	0.453	1.000	4.8.2
	(69)								
L70	5.25 - 3 (70)	0.006	0.456	0.000	0.007	0.000	0.463	1.000	4.8.2
L71	3 - 2.9 (71)	0.006	0.471	0.000	0.007	0.000	0.477	1.000	4.8.2
L72	2.9 - 2.75 (72)	0.007	0.498	0.000	0.008	0.000	0.505	1.000	4.8.2
L73	2.75 - 2.65	0.007	0.498	0.000	0.008	0.000	0.505	1.000	4.8.2
	(73)								
L74	2.65 - 2.5 (74)	0.007	0.498	0.000	0.008	0.000	0.505	1.000	4.8.2
L75	2.5 - 2.25 (75)	0.007	0.509	0.000	0.008	0.000	0.516	1.000	4.8.2
L76	2.25 - 1.9 (76)	0.007	0.509	0.000	0.008	0.000	0.517	1.000	4.8.2
L77	1.9 - 1.65 (77)	0.007	0.535	0.000	0.009	0.000	0.542	1.000	4.8.2
L78	1.65 - 0 (78)	0.007	0.535	0.000	0.008	0.000	0.542	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	160 - 155	Pole	TP16x16x0.375	1	-2.5776	579.8450	9.1	Pass
L2	155 - 150	Pole	TP16x16x0.375	2	-3.0420	579.8450	31.5	Pass
L3	150 - 146	Pole	TP16x16x0.375	3	-4.3736	579.8450	51.4	Pass
L4	146 - 141	Pole	TP22.924x22x0.25	4	-8.2050	1239.9700	37.8	Pass
L5	141 - 136	Pole	TP23.848x22.924x0.25	5	-8.9401	1274.1200	50.8	Pass
L6	136 - 131	Pole	TP24.7721x23.848x0.25	6	-12.8525	1306.9900	65.0	Pass
L7	131 - 126	Pole	TP25.6961x24.7721x0.25	7	-13.6450	1338.5700	81.0	Pass
L8	126 - 121	Pole	TP26.6201x25.6961x0.25	8	-14.4858	1368.8800	96.0	Pass
L9	121 - 120.1	Pole	TP26.7864x26.6201x0.25	9	-14.6454	1374.2000	98.5	Pass
L10	120.1 - 119.85	Pole	TP26.8326x26.7864x0.4875	10	-14.7218	2813.8100	49.3	Pass
L11	119.85 - 117.5	Pole	TP27.2669x26.8326x0.4875	11	-15.2367	2860.2000	52.2	Pass
L12	117.5 - 117.25	Pole	TP27.3131x27.2669x0.5	12	-15.3119	2937.2300	51.3	Pass
L13	117.25 - 115.5	Pole	TP27.6365x27.3131x0.5	13	-15.7185	2972.6600	53.2	Pass
L14	115.5 - 115.25	Pole	TP27.6827x27.6365x0.6625	14	-15.8111	3921.8900	41.1	Pass
L15	115.25 - 110.25	Pole	TP28.6068x27.6827x0.65	15	-17.1926	3981.2600	45.8	Pass
L16	110.25 - 103.75	Pole	TP29.808x28.6068x0.6375	16	-17.9676	3977.4200	48.7	Pass
L17	103.75 - 102.5	Pole	TP29.0743x28.0824x0.7125	17	-20.2943	4427.3000	50.3	Pass
L18	102.5 - 100.5	Pole	TP29.4711x29.0743x0.7	18	-20.9102	4412.3900	52.2	Pass
L19	100.5 - 100.25	Pole	TP29.5206x29.4711x0.6375	19	-20.9983	4034.0800	57.1	Pass
L20	100.25 - 98.5	Pole	TP29.8678x29.5206x0.6375	20	-21.5127	4082.5700	58.1	Pass
L21	98.5 - 98.25	Pole	TP29.9174x29.8678x0.6625	21	-21.6180	4246.2400	56.2	Pass
L22	98.25 - 93.25	Pole	TP30.9093x29.9174x0.65	22	-23.2201	4309.1500	59.7	Pass
L23	93.25 - 90.5	Pole	TP31.4548x30.9093x0.65	23	-24.1163	4386.8400	60.9	Pass
L24	90.5 - 90.25	Pole	TP31.5044x31.4548x0.6875	24	-24.2278	4641.7500	57.9	Pass

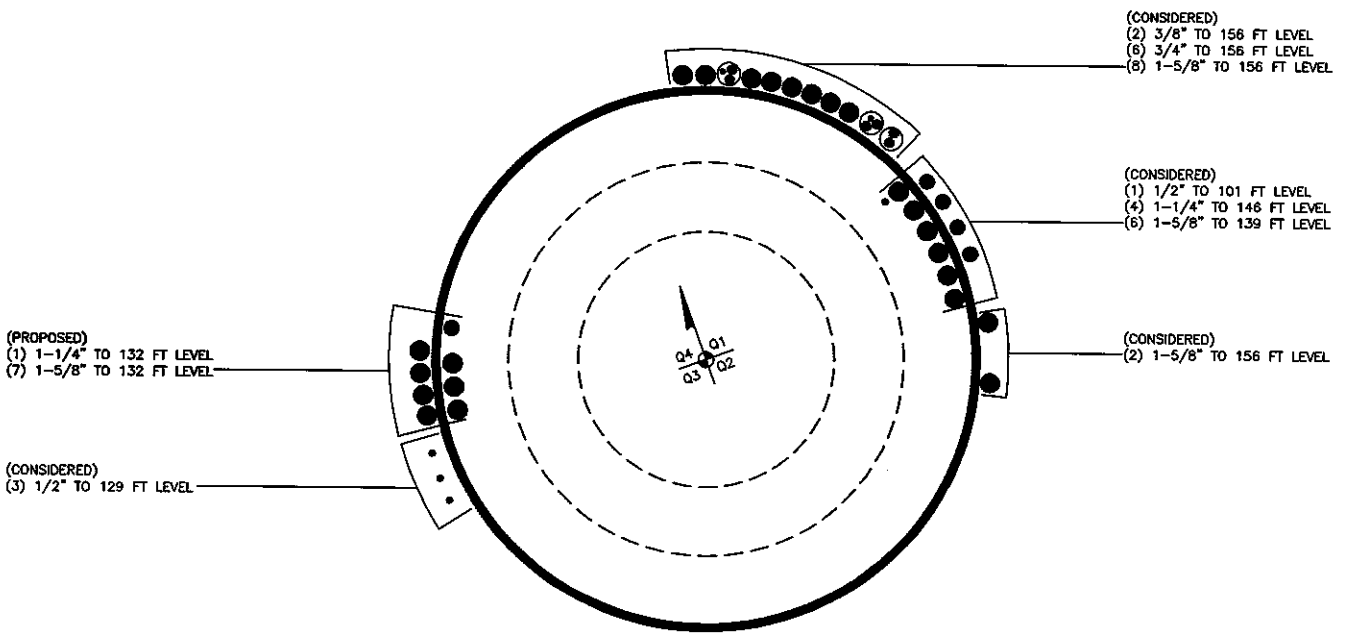
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L25	90.25 - 85.25	Pole	TP32.4962x31.5044x0.675	25	-26.0546	4705.8800	60.9	Pass
L26	85.25 - 83.5	Pole	TP32.8434x32.4962x0.6625	26	-26.6949	4670.9400	62.6	Pass
L27	83.5 - 83.25	Pole	TP32.893x32.8434x0.9125	27	-26.8319	6393.4900	46.6	Pass
L28	83.25 - 80.75	Pole	TP33.3889x32.893x0.9	28	-27.9192	6406.1600	47.8	Pass
L29	80.75 - 80.5	Pole	TP33.4385x33.3889x1.0625	29	-28.0538	7536.5500	41.1	Pass
L30	80.5 - 80.25	Pole	TP33.4881x33.4385x0.9875	30	-28.1726	7031.5100	44.0	Pass
L31	80.25 - 77.5	Pole	TP34.0336x33.4881x0.9625	31	-29.4675	6973.8100	45.7	Pass
L32	77.5 - 77.25	Pole	TP34.0832x34.0336x0.6875	32	-29.5844	5030.1800	62.4	Pass
L33	77.25 - 68.5	Pole	TP35.819x34.0832x0.6875	33	-31.3357	5157.1700	63.6	Pass
L34	68.5 - 68	Pole	TP35.2329x34.3013x0.75	34	-35.0668	5666.1200	62.2	Pass
L35	68 - 64.25	Pole	TP35.9317x35.2329x0.7375	35	-36.7426	5686.6000	64.2	Pass
L36	64.25 - 64	Pole	TP35.9782x35.9317x0.875	36	-36.8809	6729.3900	54.8	Pass
L37	64 - 60.5	Pole	TP36.6304x35.9782x0.8625	37	-38.5468	6758.8500	56.2	Pass
L38	60.5 - 60.25	Pole	TP36.677x36.6304x0.925	38	-38.6883	7245.3900	52.7	Pass
L39	60.25 - 60.1	Pole	TP36.7049x36.677x0.925	39	-38.7660	7251.0600	52.7	Pass
L40	60.1 - 59.85	Pole	TP36.7515x36.7049x0.975	40	-38.8957	7642.2700	50.3	Pass
L41	59.85 - 59.1	Pole	TP36.8912x36.7515x0.975	41	-39.2820	7672.1200	50.4	Pass
L42	59.1 - 58.85	Pole	TP36.9378x36.8912x1.05	42	-39.4284	8255.7500	47.1	Pass
L43	58.85 - 55.4	Pole	TP37.5806x36.9378x1.025	43	-41.3385	8209.1600	48.7	Pass
L44	55.4 - 55.15	Pole	TP37.6272x37.5806x1.025	44	-41.4908	8219.6200	48.7	Pass
L45	55.15 - 54.75	Pole	TP37.7018x37.6272x1.025	45	-41.7136	8236.3500	48.7	Pass
L46	54.75 - 54.5	Pole	TP37.7483x37.7018x0.825	46	-41.8385	6673.8300	59.6	Pass
L47	54.5 - 49.5	Pole	TP38.68x37.7483x0.8125	47	-44.3023	6740.7700	61.3	Pass
L48	49.5 - 44.5	Pole	TP39.6116x38.68x0.8	48	-46.8080	6802.5500	62.9	Pass
L49	44.5 - 41.3	Pole	TP40.2078x39.6116x0.7875	49	-48.4295	6801.2900	64.3	Pass
L50	41.3 - 41.05	Pole	TP40.2544x40.2078x0.875	50	-48.5816	7549.1400	58.3	Pass
L51	41.05 - 34	Pole	TP41.568x40.2544x0.875	51	-49.6990	7622.3600	58.5	Pass
L52	34 - 33	Pole	TP40.9962x39.8864x1.175	52	-55.9156	11105.400 0	43.2	Pass
L53	33 - 31.5	Pole	TP41.2736x40.9962x1.175	53	-56.8823	11182.800 0	43.3	Pass
L54	31.5 - 31.25	Pole	TP41.3199x41.2736x1.175	54	-57.0620	11195.700 0	43.3	Pass
L55	31.25 - 30.5	Pole	TP41.4586x41.3199x1.175	55	-57.5485	11234.400 0	43.4	Pass
L56	30.5 - 30.25	Pole	TP41.5048x41.4586x1.125	56	-57.7159	10782.000 0	45.1	Pass
L57	30.25 - 25.75	Pole	TP42.3372x41.5048x1.1	57	-60.6053	10766.200 0	46.3	Pass
L58	25.75 - 25.5	Pole	TP42.3834x42.3372x1.075	58	-60.7773	10539.700 0	47.4	Pass
L59	25.5 - 24.7	Pole	TP42.5314x42.3834x1.075	59	-61.2831	10577.500 0	47.4	Pass
L60	24.7 - 24.45	Pole	TP42.5776x42.5314x0.95	60	-61.4299	9386.1500	53.2	Pass
L61	24.45 - 24	Pole	TP42.6608x42.5776x0.95	61	-61.6785	9404.9200	53.2	Pass
L62	24 - 23.75	Pole	TP42.7071x42.6608x1.2	62	-61.8433	11821.900 0	42.9	Pass
L63	23.75 - 18.75	Pole	TP43.6319x42.7071x1.175	63	-65.0500	11840.500 0	43.9	Pass
L64	18.75 - 14.1	Pole	TP44.492x43.6319x1.15	64	-68.0648	11830.100 0	45.0	Pass
L65	14.1 - 13.8	Pole	TP44.5475x44.492x1.175	65	-68.2752	12095.800 0	44.1	Pass
L66	13.8 - 13.65	Pole	TP44.5752x44.5475x1.175	66	-68.3769	12103.500 0	44.1	Pass
L67	13.65 - 10.5	Pole	TP45.1579x44.5752x1.175	67	-70.4584	12266.000 0	44.2	Pass
L68	10.5 - 10.25	Pole	TP45.2041x45.1579x1.175	68	-70.6306	12278.900 0	44.2	Pass
L69	10.25 - 5.25	Pole	TP46.1289x45.2041x1.15	69	-73.8655	12276.900 0	45.3	Pass
L70	5.25 - 3	Pole	TP46.5451x46.1289x1.125	70	-75.3372	12127.800 0	46.3	Pass
L71	3 - 2.9	Pole	TP46.5636x46.5451x1.0875	71	-75.4136	11738.000 0	47.7	Pass
L72	2.9 - 2.75	Pole	TP46.5913x46.5636x1.025	72	-75.5012	11085.400 0	50.5	Pass
L73	2.75 - 2.65	Pole	TP46.6098x46.5913x1.025	73	-75.5609	11089.900 0	50.5	Pass
L74	2.65 - 2.5	Pole	TP46.6376x46.6098x1.025	74	-75.6486	11096.600	50.5	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L75	2.5 - 2.25	Pole	TP46.6838x46.6376x1	75	-75.7967	0 10842.900 0	51.6	Pass
L76	2.25 - 1.9	Pole	TP46.7486x46.6838x1	76	-76.0048	10858.200 0	51.7	Pass
L77	1.9 - 1.65	Pole	TP46.7948x46.7486x0.95	77	-76.1477	10337.000 0	54.2	Pass
L78	1.65 - 0	Pole	TP47.1x46.7948x0.95	78	-77.0619	10405.900 0	54.2	Pass
							Summary	
						Pole (L9)	98.5	Pass
						RATING =	**98.5**	**Pass**

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

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876334 TOWER ID: C_BASELEVEL

APPENDIX C

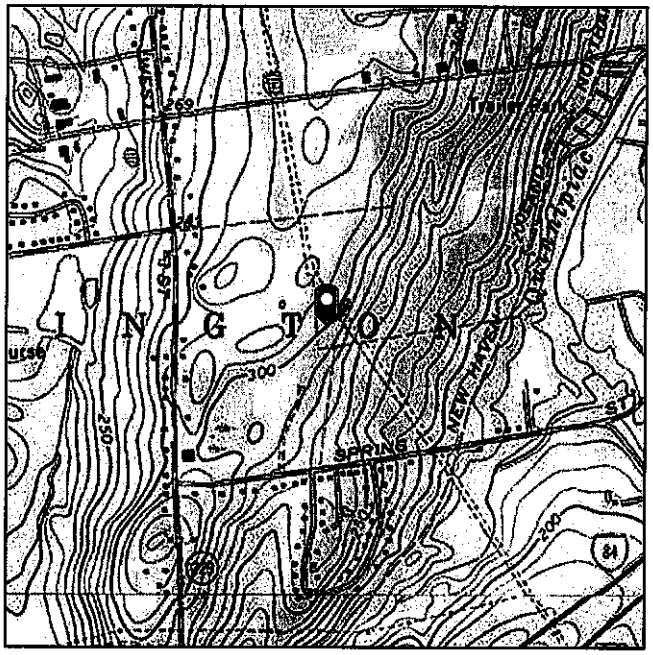
ADDITIONAL CALCULATIONS

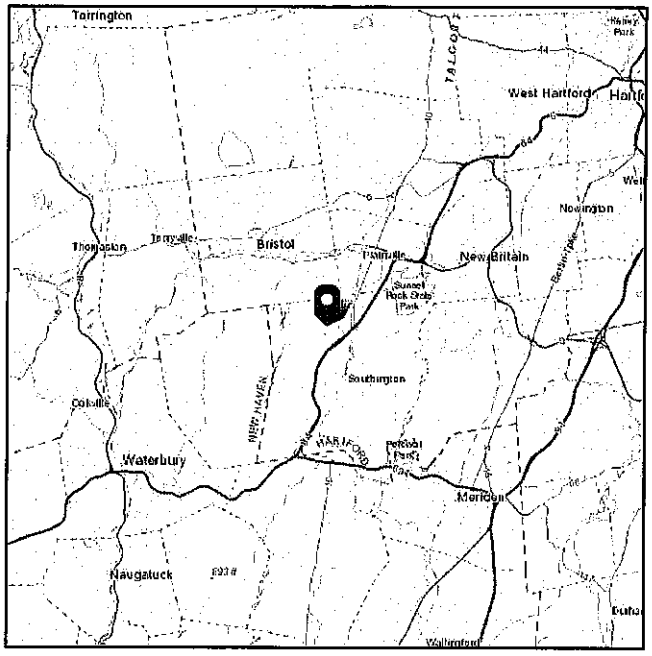
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 296.07 ft (NAVD 88)
Latitude: 41.632472
Longitude: -72.89425





ASCE
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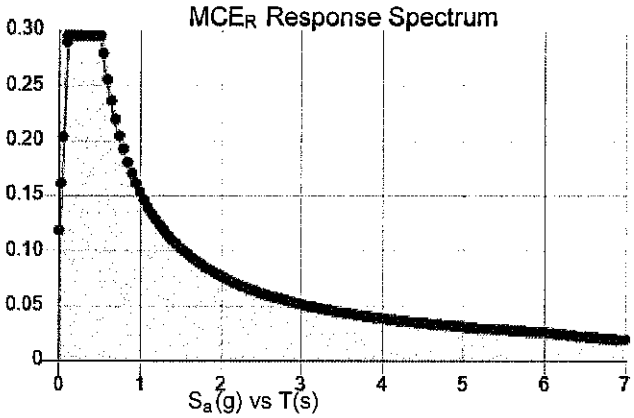
Seismic

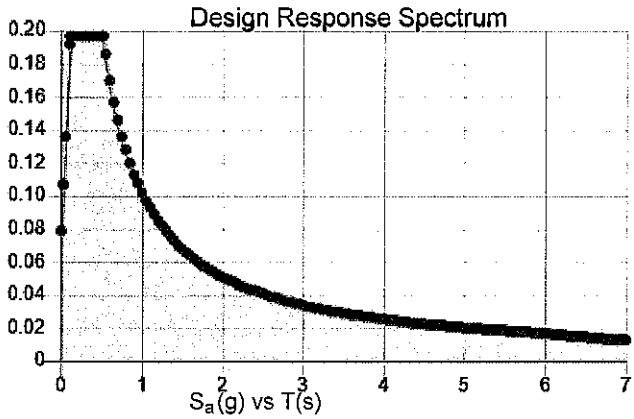
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.185	S_{DS} :	0.197
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.094
S_{MS} :	0.295	PGA_M :	0.151
S_{M1} :	0.153	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Mon Jan 14 2019

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.

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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:	Mon Jan 14 2019

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.

CCIpole

per TIA-222- G

Site BU: 876334

Work Order: 1681343

CROWN CASTLE

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	160	14	0	0	16	16	0.375	n/a	A53-B-35
2	146	42.25	3.75	12	22.00	29.808	0.25	1	A607-60
3	107.5	39	4.5	12	28.08	35.819	0.3125	1.25	A607-60
4	78	39	5	12	34.30	41.568	0.375	1.5	A607-60
5	39	39	0	12	39.89	47.1	0.375	1.5	A607-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Pole Flat Width (in)	1	2	3	4	5	6	7	8	9	10	11	12
1	100.5	117.5	plate	CCI-SFP-045100	7.31												
2	98.5	115.5	plate	CCI-SFP-045100	7.41												
3	64.25	80.75	plate	CCI-AFP-085125	8.95												
4	10.5	41.3	plate	CCI-AFP-085125	10.77												
5	3	10.5	plate	CCI-AFP-060100	12.1												
6	77.5	83.5	plate	MS-600 (1.1875")	8.8												
7	54.75	64.25	plate	MS-600 (1.1875")	9.63												
8	25.75	35.25	plate	MS-650 (1.1875")	11.08												
9	2.5	30.5	plate	MS-600 (1.1875")	11.11												
10	30.5	60.5	plate	MS-650 (1.1875")	9.82												
11	60.5	80.5	plate	MS-600 (1.1875")	8.96												
12	80.5	98.5	plate	MS-600 (1.1875")	8												
13	1.9	14.1	channel	MP3-04 (1.1875")	11.92												
14	2.9	30.5	channel	MP3-05 (1.1875")	11.11												
15	30.5	59.1	channel	MP3-04 (1.1875")	9.88												
16	13.9	31.5	channel	MP3-05 (1.1875")	11.06												
17	31.5	60.1	channel	MP3-04 (1.1875")	9.84												
18	0	24	plate	TS-5.875"x1.25"	11.43												
19	24.7	55.4	plate	CCI-AFP-085125	10.07												
20	55.4	90.5	plate	CCI-AFP-085125	8.49												
21	90.5	120.1	plate	CCI-AFP-060100	7.18												
22	100.5	120.1	plate	CCI-AFP-060100	7.18												
23	80.5	100.5	plate	MS-650 (1.1875")	7.9												
24	0	2.5	plate	1.25"x 4"	12.5												
25	24	25.75	plate	TS-5.875"x1.25"	11.34												
26																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_a (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
2	4.5	1	4.5	0.5	18.000	18.000	20.000	3.250	1.1875	A572-65
3	8.5	1.25	10.625	0.625	51.000	51.000	17.000	9.063	1.1875	A572-65
4	8.5	1.25	10.625	0.625	51.000	51.000	17.000	9.063	1.1875	A572-65
5	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
6	6	1	6	0.5	24.000	24.000	16.375	4.750	1.1875	A572-65
7	6	1	6	0.5	24.000	24.000	16.375	4.750	1.1875	A572-65
8	6.5	1.25	8.125	0.625	33.000	33.000	19.250	6.563	1.1875	A572-65
9	6	1	6	0.5	24.000	24.000	16.375	4.750	1.1875	A572-65
10	6.5	1.25	8.125	0.625	33.000	33.000	19.250	6.563	1.1875	A572-65
11	6	1	6	0.5	24.000	24.000	16.375	4.750	1.1875	A572-65
12	6	1	6	0.5	24.000	24.000	16.375	4.750	1.1875	A572-65
13	4.78	1.61	4.13	0.61	17.000	17.000	18.000	3.593	1.1875	A572-65
14	5.33	2.09	5.65	0.79	29.000	29.000	18.000	5.025	1.1875	A572-65
15	4.78	1.61	4.13	0.61	17.000	17.000	18.000	3.593	1.1875	A572-65
16	5.33	2.09	5.65	0.79	29.000	29.000	18.000	5.025	1.1875	A572-65
17	4.78	1.61	4.13	0.61	17.000	17.000	18.000	3.593	1.1875	A572-65
18	1.25	5.875	7.34375	2.9375	n/a	n/a	0.000	7.344	0.0000	A572-65
19	8.5	1.25	10.625	0.625	51.000	51.000	17.000	9.063	1.1875	A572-65
20	8.5	1.25	10.625	0.625	51.000	51.000	17.000	9.063	1.1875	A572-65
21	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
22	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
23	6.5	1.25	8.125	0.625	33.000	33.000	19.250	6.563	1.1875	A572-65
24	1.25	4	5	2	n/a	n/a	0.000	5.000	0.0000	A572-65
25	1.25	5.875	7.34375	2.9375	n/a	n/a	0.000	7.344	0.0000	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	160 - 155	5		0	16.000	16.000	0.375	A53-B-35	1.000
2	155 - 150	5		0	16.000	16.000	0.375	A53-B-35	1.000
3	150 - 146	4	0	0	16.000	16.000	0.375	A53-B-35	1.000
4	146 - 141	5		12	22.000	22.924	0.25	A607-60	1.000
5	141 - 136	5		12	22.924	23.848	0.25	A607-60	1.000
6	136 - 131	5		12	23.848	24.772	0.25	A607-60	1.000
7	131 - 126	5		12	24.772	25.696	0.25	A607-60	1.000
8	126 - 121	5		12	25.696	26.620	0.25	A607-60	1.000
9	121 - 120.1	0.9		12	26.620	26.786	0.25	A607-60	1.000
10	120.1 - 119.85	0.25		12	26.786	26.833	0.4875	A607-60	0.953
11	119.85 - 117.5	2.35		12	26.833	27.267	0.4875	A607-60	0.946
12	117.5 - 117.25	0.25		12	27.267	27.313	0.5	A607-60	1.027
13	117.25 - 115.5	1.75		12	27.313	27.637	0.5	A607-60	1.020
14	115.5 - 115.25	0.25		12	27.637	27.683	0.6625	A607-60	0.930
15	115.25 - 110.25	5		12	27.683	28.607	0.65	A607-60	0.929
16	110.25 - 107.5	6.5	3.75	12	28.607	29.808	0.6375	A607-60	0.937
17	107.5 - 102.5	5		12	28.082	29.074	0.7125	A607-60	0.930
18	102.5 - 100.5	2		12	29.074	29.471	0.7	A607-60	0.939
19	100.5 - 100.25	0.25		12	29.471	29.521	0.6375	A607-60	0.988
20	100.25 - 98.5	1.75		12	29.521	29.868	0.6375	A607-60	0.982
21	98.5 - 98.25	0.25		12	29.868	29.917	0.6625	A607-60	0.993
22	98.25 - 93.25	5		12	29.917	30.909	0.65	A607-60	0.994
23	93.25 - 90.5	2.75		12	30.909	31.455	0.65	A607-60	0.985
24	90.5 - 90.25	0.25		12	31.455	31.504	0.6875	A607-60	1.067
25	90.25 - 85.25	5		12	31.504	32.496	0.675	A607-60	1.067
26	85.25 - 83.5	1.75		12	32.496	32.843	0.6625	A607-60	1.080
27	83.5 - 83.25	0.25		12	32.843	32.893	0.9125	A607-60	0.982
28	83.25 - 80.75	2.5		12	32.893	33.389	0.9	A607-60	0.985
29	80.75 - 80.5	0.25		12	33.389	33.439	1.0625	A607-60	0.934
30	80.5 - 80.25	0.25		12	33.439	33.488	0.9875	A607-60	0.981
31	80.25 - 77.5	2.75		12	33.488	34.034	0.9625	A607-60	0.994
32	77.5 - 77.25	0.25		12	34.034	34.083	0.6875	A607-60	1.135
33	77.25 - 73	8.75	4.5	12	34.083	35.819	0.6875	A607-60	1.118
34	73 - 68	5		12	34.301	35.233	0.75	A607-60	1.105
35	68 - 64.25	3.75		12	35.233	35.932	0.7375	A607-60	1.111
36	64.25 - 64	0.25		12	35.932	35.978	0.875	A607-60	1.014
37	64 - 60.5	3.5		12	35.978	36.630	0.8625	A607-60	1.018
38	60.5 - 60.25	0.25		12	36.630	36.677	0.925	A607-60	1.010
39	60.25 - 60.1	0.15		12	36.677	36.705	0.925	A607-60	1.010
40	60.1 - 59.85	0.25		12	36.705	36.751	0.975	A607-60	0.995
41	59.85 - 59.1	0.75		12	36.751	36.891	0.975	A607-60	0.993
42	59.1 - 58.85	0.25		12	36.891	36.938	1.05	A607-60	0.991
43	58.85 - 55.4	3.45		12	36.938	37.581	1.025	A607-60	1.003
44	55.4 - 55.15	0.25		12	37.581	37.627	1.025	A607-60	1.002
45	55.15 - 54.75	0.4		12	37.627	37.702	1.025	A607-60	1.001
46	54.75 - 54.5	0.25		12	37.702	37.748	0.825	A607-60	1.052
47	54.5 - 49.5	5		12	37.748	38.680	0.8125	A607-60	1.053
48	49.5 - 44.5	5		12	38.680	39.612	0.8	A607-60	1.055
49	44.5 - 41.3	3.2		12	39.612	40.208	0.7875	A607-60	1.062
50	41.3 - 41.05	0.25		12	40.208	40.254	0.875	A607-60	1.054
51	41.05 - 39	7.05	5	12	40.254	41.568	0.875	A607-60	1.048
52	39 - 33	6		12	39.886	40.996	1.175	A607-65	0.944
53	33 - 31.5	1.5		12	40.996	41.274	1.175	A607-65	0.939
54	31.5 - 31.25	0.25		12	41.274	41.320	1.175	A607-65	0.949
55	31.25 - 30.5	0.75		12	41.320	41.459	1.175	A607-65	0.947
56	30.5 - 30.25	0.25		12	41.459	41.505	1.125	A607-65	0.964
57	30.25 - 25.75	4.5		12	41.505	42.337	1.1	A607-65	0.972
58	25.75 - 25.5	0.25		12	42.337	42.383	1.075	A607-65	0.977
59	25.5 - 24.7	0.8		12	42.383	42.531	1.075	A607-65	0.975
60	24.7 - 24.45	0.25		12	42.531	42.578	0.95	A607-65	0.932
61	24.45 - 24	0.45		12	42.578	42.661	0.95	A607-65	0.931
62	24 - 23.75	0.25		12	42.661	42.707	1.2	A607-65	0.878
63	23.75 - 18.75	5		12	42.707	43.632	1.175	A607-65	0.884
64	18.75 - 14.1	4.65		12	43.632	44.492	1.15	A607-65	0.891
65	14.1 - 13.8	0.3		12	44.492	44.547	1.175	A607-65	0.888
66	13.8 - 13.65	0.15		12	44.547	44.575	1.175	A607-65	0.888
67	13.65 - 10.5	3.15		12	44.575	45.158	1.175	A607-65	0.880
68	10.5 - 10.25	0.25		12	45.158	45.204	1.175	A607-65	0.852
69	10.25 - 5.25	5		12	45.204	46.129	1.15	A607-65	0.859
70	5.25 - 3	2.25		12	46.129	46.545	1.125	A607-65	0.872
71	3 - 2.9	0.1		12	46.545	46.564	1.0875	A607-65	0.864
72	2.9 - 2.75	0.15		12	46.564	46.591	1.025	A607-65	0.839
73	2.75 - 2.65	0.1		12	46.591	46.610	1.025	A607-65	0.839
74	2.65 - 2.5	0.15		12	46.610	46.638	1.025	A607-65	0.839
75	2.5 - 2.25	0.25		12	46.638	46.684	1	A607-65	0.872
76	2.25 - 1.9	0.35		12	46.684	46.749	1	A607-65	0.872
77	1.9 - 1.65	0.25		12	46.749	46.795	0.95	A607-65	0.857
78	1.65 - 0	1.65		12	46.795	47.100	0.95	A607-65	0.854

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	160 - 155	2.58	20.42	10.51
2	155 - 150	3.04	73.97	10.86
3	150 - 146	4.37	121.29	12.81
4	146 - 141	8.20	211.82	17.93
5	141 - 136	8.94	305.46	19.38
6	136 - 131	12.85	415.76	26.88
7	131 - 126	13.65	552.59	28.37
8	126 - 121	14.49	695.72	28.91
9	121 - 120.1	14.65	721.76	29.00
10	120.1 - 119.85	14.72	729.02	29.03
11	119.85 - 117.5	15.24	797.57	29.33
12	117.5 - 117.25	15.31	804.90	29.36
13	117.25 - 115.5	15.72	856.46	29.59
14	115.5 - 115.25	15.81	863.86	29.61
15	115.25 - 110.25	17.19	1013.57	30.28
16	110.25 - 107.5	17.97	1097.34	30.65
17	107.5 - 102.5	20.29	1252.57	31.42
18	102.5 - 100.5	20.91	1315.70	31.81
19	100.5 - 100.25	21.00	1323.65	31.84
20	100.25 - 98.5	21.51	1379.53	32.07
21	98.5 - 98.25	21.62	1387.55	32.09
22	98.25 - 93.25	23.22	1549.55	32.74
23	93.25 - 90.5	24.12	1640.02	33.10
24	90.5 - 90.25	24.23	1648.30	33.13
25	90.25 - 85.25	26.05	1815.49	33.79
26	85.25 - 83.5	26.69	1874.79	34.03
27	83.5 - 83.25	26.83	1883.29	34.05
28	83.25 - 80.75	27.92	1968.82	34.41
29	80.75 - 80.5	28.05	1977.42	34.44
30	80.5 - 80.25	28.17	1986.03	34.47
31	80.25 - 77.5	29.47	2081.33	34.88
32	77.5 - 77.25	29.58	2090.05	34.90
33	77.25 - 73	31.34	2239.50	35.47
34	73 - 68	35.07	2418.77	36.27
35	68 - 64.25	36.74	2555.60	36.76
36	64.25 - 64	36.88	2564.78	36.77
37	64 - 60.5	38.55	2694.23	37.24
38	60.5 - 60.25	38.69	2703.54	37.26
39	60.25 - 60.1	38.77	2709.13	37.28
40	60.1 - 59.85	38.90	2718.45	37.32
41	59.85 - 59.1	39.28	2746.46	37.42
42	59.1 - 58.85	39.43	2755.82	37.45
43	58.85 - 55.4	41.34	2885.78	37.93
44	55.4 - 55.15	41.49	2895.26	37.95
45	55.15 - 54.75	41.71	2910.45	38.01
46	54.75 - 54.5	41.84	2919.95	38.04
47	54.5 - 49.5	44.30	3111.62	38.67
48	49.5 - 44.5	46.81	3306.35	39.28
49	44.5 - 41.3	48.43	3432.53	39.65
50	41.3 - 41.05	48.58	3442.44	39.66
51	41.05 - 39	49.70	3523.96	39.92
52	39 - 33	55.92	3766.02	40.79
53	33 - 31.5	56.88	3827.30	40.98
54	31.5 - 31.25	57.06	3837.54	40.99
55	31.25 - 30.5	57.55	3868.31	41.09
56	30.5 - 30.25	57.72	3878.58	41.11
57	30.25 - 25.75	60.61	4064.63	41.63
58	25.75 - 25.5	60.78	4075.03	41.64
59	25.5 - 24.7	61.28	4108.37	41.74
60	24.7 - 24.45	61.43	4118.80	41.75
61	24.45 - 24	61.68	4137.59	41.80
62	24 - 23.75	61.84	4148.04	41.82
63	23.75 - 18.75	65.05	4358.41	42.37
64	18.75 - 14.1	68.06	4556.35	42.83
65	14.1 - 13.8	68.28	4569.19	42.84
66	13.8 - 13.65	68.38	4575.61	42.85
67	13.65 - 10.5	70.46	4711.03	43.17
68	10.5 - 10.25	70.63	4721.82	43.18
69	10.25 - 5.25	73.87	4938.83	43.67
70	5.25 - 3	75.34	5037.26	43.89
71	3 - 2.9	75.41	5041.64	43.87
72	2.9 - 2.75	75.50	5048.22	43.89
73	2.75 - 2.65	75.56	5052.61	43.90
74	2.65 - 2.5	75.65	5059.19	43.91
75	2.5 - 2.25	75.80	5070.17	43.94
76	2.25 - 1.9	76.00	5085.55	43.97
77	1.9 - 1.65	76.15	5096.54	43.99
78	1.65 - 0	77.06	5169.21	44.17

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
160 - 155	Pole	TP16x16x0.375	Pole	9.1%	Pass
155 - 150	Pole	TP16x16x0.375	Pole	31.4%	Pass
150 - 146	Pole	TP16x16x0.375	Pole	51.4%	Pass
146 - 141	Pole	TP22.924x22x0.25	Pole	37.7%	Pass
141 - 136	Pole	TP23.848x22.924x0.25	Pole	50.7%	Pass
136 - 131	Pole	TP24.772x23.848x0.25	Pole	64.8%	Pass
131 - 126	Pole	TP25.696x24.772x0.25	Pole	80.8%	Pass
126 - 121	Pole	TP26.62x25.696x0.25	Pole	95.7%	Pass
121 - 120.1	Pole	TP26.786x26.62x0.25	Pole	98.3%	Pass
120.1 - 119.85	Pole + Reinf.	TP26.833x26.786x0.4875	Reinf. 21 Tension Rupture	69.9%	Pass
119.85 - 117.5	Pole + Reinf.	TP27.267x26.833x0.4875	Reinf. 21 Tension Rupture	74.6%	Pass
117.5 - 117.25	Pole + Reinf.	TP27.313x27.267x0.5	Reinf. 22 Tension Rupture	69.5%	Pass
117.25 - 115.5	Pole + Reinf.	TP27.637x27.313x0.5	Reinf. 22 Tension Rupture	72.7%	Pass
115.5 - 115.25	Pole + Reinf.	TP27.683x27.637x0.6625	Reinf. 1 Tension Rupture	64.1%	Pass
115.25 - 110.25	Pole + Reinf.	TP28.607x27.683x0.65	Reinf. 1 Tension Rupture	71.8%	Pass
110.25 - 107.5	Pole + Reinf.	TP29.808x28.607x0.6375	Reinf. 1 Tension Rupture	75.8%	Pass
107.5 - 102.5	Pole + Reinf.	TP29.074x28.082x0.7125	Reinf. 1 Tension Rupture	78.9%	Pass
102.5 - 100.5	Pole + Reinf.	TP29.471x29.074x0.7	Reinf. 1 Tension Rupture	81.3%	Pass
100.5 - 100.25	Pole + Reinf.	TP29.521x29.471x0.6375	Reinf. 21 Tension Rupture	83.1%	Pass
100.25 - 98.5	Pole + Reinf.	TP29.868x29.521x0.6375	Reinf. 21 Tension Rupture	85.1%	Pass
98.5 - 98.25	Pole + Reinf.	TP29.917x29.868x0.6625	Reinf. 23 Tension Rupture	81.4%	Pass
98.25 - 93.25	Pole + Reinf.	TP30.909x29.917x0.65	Reinf. 23 Tension Rupture	86.5%	Pass
93.25 - 90.5	Pole + Reinf.	TP31.455x30.909x0.65	Reinf. 23 Tension Rupture	89.1%	Pass
90.5 - 90.25	Pole + Reinf.	TP31.504x31.455x0.6875	Reinf. 23 Tension Rupture	87.9%	Pass
90.25 - 85.25	Pole + Reinf.	TP32.496x31.504x0.675	Reinf. 23 Tension Rupture	92.4%	Pass
85.25 - 83.5	Pole + Reinf.	TP32.843x32.496x0.6625	Reinf. 23 Tension Rupture	93.9%	Pass
83.5 - 83.25	Pole + Reinf.	TP32.893x32.843x0.9125	Reinf. 6 Tension Rupture	71.1%	Pass
83.25 - 80.75	Pole + Reinf.	TP33.389x32.893x0.9	Reinf. 6 Tension Rupture	72.8%	Pass
80.75 - 80.5	Pole + Reinf.	TP33.439x33.389x1.0625	Reinf. 6 Tension Rupture	59.8%	Pass
80.5 - 80.25	Pole + Reinf.	TP33.488x33.439x0.9875	Reinf. 11 Tension Rupture	64.3%	Pass
80.25 - 77.5	Pole + Reinf.	TP34.034x33.488x0.9625	Reinf. 11 Tension Rupture	66.0%	Pass
77.5 - 77.25	Pole + Reinf.	TP34.083x34.034x0.6875	Reinf. 11 Tension Rupture	92.4%	Pass
77.25 - 73	Pole + Reinf.	TP35.819x34.083x0.6875	Reinf. 11 Tension Rupture	95.5%	Pass
73 - 68	Pole + Reinf.	TP35.233x34.301x0.75	Reinf. 11 Tension Rupture	92.8%	Pass
68 - 64.25	Pole + Reinf.	TP35.932x35.233x0.7375	Reinf. 11 Tension Rupture	95.2%	Pass
64.25 - 64	Pole + Reinf.	TP35.978x35.932x0.875	Reinf. 7 Tension Rupture	83.9%	Pass
64 - 60.5	Pole + Reinf.	TP36.63x35.978x0.8625	Reinf. 7 Tension Rupture	85.8%	Pass
60.5 - 60.25	Pole + Reinf.	TP36.677x36.63x0.925	Reinf. 7 Tension Rupture	81.0%	Pass
60.25 - 60.1	Pole + Reinf.	TP36.705x36.677x0.925	Reinf. 7 Tension Rupture	81.1%	Pass
60.1 - 59.85	Pole + Reinf.	TP36.751x36.705x0.975	Reinf. 7 Tension Rupture	78.4%	Pass
59.85 - 59.1	Pole + Reinf.	TP36.891x36.751x0.975	Reinf. 7 Tension Rupture	78.8%	Pass
59.1 - 58.85	Pole + Reinf.	TP36.938x36.891x1.05	Reinf. 7 Tension Rupture	71.7%	Pass
58.85 - 55.4	Pole + Reinf.	TP37.581x36.938x1.025	Reinf. 7 Tension Rupture	73.3%	Pass
55.4 - 55.15	Pole + Reinf.	TP37.627x37.581x1.025	Reinf. 7 Tension Rupture	73.4%	Pass
55.15 - 54.75	Pole + Reinf.	TP37.702x37.627x1.025	Reinf. 7 Tension Rupture	73.6%	Pass
54.75 - 54.5	Pole + Reinf.	TP37.748x37.702x0.825	Reinf. 10 Tension Rupture	89.4%	Pass
54.5 - 49.5	Pole + Reinf.	TP38.68x37.748x0.8125	Reinf. 10 Tension Rupture	91.8%	Pass
49.5 - 44.5	Pole + Reinf.	TP39.612x38.68x0.8	Reinf. 10 Tension Rupture	94.1%	Pass
44.5 - 41.3	Pole + Reinf.	TP40.208x39.612x0.7875	Reinf. 10 Tension Rupture	95.5%	Pass
41.3 - 41.05	Pole + Reinf.	TP40.254x40.208x0.875	Reinf. 10 Tension Rupture	83.8%	Pass
41.05 - 39	Pole + Reinf.	TP41.568x40.254x0.875	Reinf. 10 Tension Rupture	84.6%	Pass
39 - 33	Pole + Reinf.	TP40.996x39.886x1.175	Reinf. 10 Tension Rupture	65.9%	Pass
33 - 31.5	Pole + Reinf.	TP41.274x40.996x1.175	Reinf. 10 Tension Rupture	66.4%	Pass
31.5 - 31.25	Pole + Reinf.	TP41.32x41.274x1.175	Reinf. 10 Tension Rupture	66.0%	Pass
31.25 - 30.5	Pole + Reinf.	TP41.459x41.32x1.175	Reinf. 10 Tension Rupture	66.3%	Pass
30.5 - 30.25	Pole + Reinf.	TP41.505x41.459x1.125	Reinf. 9 Tension Rupture	69.5%	Pass
30.25 - 25.75	Pole + Reinf.	TP42.337x41.505x1.1	Reinf. 9 Tension Rupture	71.0%	Pass
25.75 - 25.5	Pole + Reinf.	TP42.383x42.337x1.075	Reinf. 9 Tension Rupture	74.9%	Pass
25.5 - 24.7	Pole + Reinf.	TP42.531x42.383x1.075	Reinf. 9 Tension Rupture	75.2%	Pass
24.7 - 24.45	Pole + Reinf.	TP42.578x42.531x0.95	Reinf. 9 Tension Rupture	82.4%	Pass
24.45 - 24	Pole + Reinf.	TP42.661x42.578x0.95	Reinf. 9 Tension Rupture	82.5%	Pass
24 - 23.75	Pole + Reinf.	TP42.707x42.661x1.2	Reinf. 9 Tension Rupture	66.5%	Pass
23.75 - 18.75	Pole + Reinf.	TP43.632x42.707x1.175	Reinf. 9 Tension Rupture	66.1%	Pass
18.75 - 14.1	Pole + Reinf.	TP44.492x43.632x1.15	Reinf. 9 Tension Rupture	69.5%	Pass
14.1 - 13.8	Pole + Reinf.	TP44.547x44.492x1.175	Reinf. 9 Tension Rupture	67.6%	Pass
13.8 - 13.65	Pole + Reinf.	TP44.575x44.547x1.175	Reinf. 9 Tension Rupture	67.8%	Pass
13.65 - 10.5	Pole + Reinf.	TP45.158x44.575x1.175	Reinf. 9 Tension Rupture	68.7%	Pass
10.5 - 10.25	Pole + Reinf.	TP45.204x45.158x1.175	Reinf. 9 Tension Rupture	68.8%	Pass
10.25 - 5.25	Pole + Reinf.	TP46.129x45.204x1.15	Reinf. 9 Tension Rupture	70.2%	Pass
5.25 - 3	Pole + Reinf.	TP46.545x46.129x1.125	Reinf. 9 Tension Rupture	70.8%	Pass
3 - 2.9	Pole + Reinf.	TP46.564x46.545x1.0875	Reinf. 9 Tension Rupture	73.0%	Pass
2.9 - 2.75	Pole + Reinf.	TP46.591x46.564x1.025	Reinf. 9 Tension Rupture	80.6%	Pass
2.75 - 2.65	Pole + Reinf.	TP46.61x46.591x1.025	Reinf. 9 Tension Rupture	80.6%	Pass
2.65 - 2.5	Pole + Reinf.	TP46.638x46.61x1.025	Reinf. 9 Tension Rupture	80.7%	Pass
2.5 - 2.25	Pole + Reinf.	TP46.684x46.638x1	Reinf. 18 Compression	73.5%	Pass
2.25 - 1.9	Pole + Reinf.	TP46.749x46.684x1	Reinf. 18 Compression	73.6%	Pass
1.9 - 1.65	Pole + Reinf.	TP46.795x46.749x0.95	Reinf. 18 Compression	75.2%	Pass
1.65 - 0	Pole + Reinf.	TP47.1x46.795x0.95	Reinf. 18 Compression	75.6%	Pass
				Summary	
			Pole	98.3%	Pass
			Reinforcement	95.5%	Pass
			Overall	98.3%	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	R14	R15	R16	R17	R18	R19	R20	R21	R22	R23	R24	R25
160 - 155	562	n/a	562	18.41	n/a	18.41	31.1%																									
155 - 150	562	n/a	562	18.41	n/a	18.41	31.4%																									
150 - 145	562	n/a	562	18.41	n/a	18.41	31.4%																									
146 - 141	1199	n/a	1199	18.23	n/a	18.23	37.7%																									
141 - 136	1352	n/a	1352	18.97	n/a	18.97	50.7%																									
136 - 131	1517	n/a	1517	19.71	n/a	19.71	64.8%																									
131 - 126	1695	n/a	1695	20.45	n/a	20.45	80.8%																									
126 - 121	1887	n/a	1887	21.20	n/a	21.20	85.7%																									
121 - 120.1	1923	n/a	1923	21.33	n/a	21.33	88.3%																									
120.1 - 119.85	1933	1771	3703	21.37	18.00	39.37	60.0%																				69.9%	69.9%				
119.85 - 117.5	2039	1826	3865	21.72	18.00	39.72	63.7%																				74.8%	74.8%				
117.5 - 117.25	2045	1928	3972	21.75	22.50	44.25	59.3%	61.2%																			69.5%	69.5%				
117.25 - 115.5	2119	1971	4090	22.01	22.50	44.51	59.9%	64.1%																			72.7%	72.7%				
115.5 - 115.25	2124	3279	5403	22.05	31.50	53.55	42.4%	64.1%	64.1%																		53.5%	58.5%				
115.25 - 110.25	2345	3491	5837	22.79	31.50	54.29	46.2%	71.8%	71.8%																		66.6%	66.6%				
110.25 - 107.5	2474	3611	6085	23.20	31.50	54.70	51.5%	75.8%	75.8%																		69.5%	69.5%				
107.5 - 102.5	3060	3601	6661	28.90	31.50	60.40	49.1%	78.9%	78.5%																		72.1%	72.1%				
102.5 - 100.5	3188	3696	6884	29.30	31.50	60.80	56.8%	81.3%	81.3%																		74.2%	74.2%				
100.5 - 100.25	3233	3141	6379	29.35	29.13	58.47	60.8%		80.1%																		83.1%		72.9%			
100.25 - 98.5	3240	3212	6561	29.70	29.13	58.82	62.3%		82.1%																		85.1%		74.6%			
98.5 - 98.25	3280	3543	6903	29.75	32.13	61.87	59.3%												71.8%								76.5%		81.4%			
98.25 - 93.25	3769	3770	7478	33.74	32.13	65.87	63.8%												76.5%								81.4%		86.5%			
93.25 - 90.5	3909	3898	7807	31.39	32.13	63.42	66.2%												79.5%								84.9%		89.1%			
90.5 - 90.25	4006	4381	8388	31.34	41.38	72.72	65.3%												56.2%							64.5%			87.9%			
90.25 - 85.25	4357	4647	9004	31.34	41.38	73.71	68.5%												59.6%							68.0%			92.4%			
85.25 - 83.5	4540	4741	9281	32.69	41.38	74.06	70.9%												71.1%							69.2%			93.9%			
83.5 - 83.25	4510	7810	12320	32.74	59.38	92.11	61.9%						77.1%						59.2%							87.2%			68.7%			
83.25 - 80.75	4719	8035	12755	33.24	59.38	92.61	63.5%						72.6%						60.7%							58.6%			67.4%			
80.75 - 80.5	4686	10160	14846	33.29	70.00	103.29	44.0%			48.9%			58.6%						50.0%							62.4%			59.1%			
80.5 - 80.25	4703	9156	13859	33.34	57.88	101.21	47.3%			50.3%			61.8%					64.3%								52.0%						
80.25 - 77.5	4939	9452	14390	33.88	57.88	101.76	48.9%			51.6%			63.5%					66.0%								54.3%						
77.5 - 77.25	4992	9577	14568	33.93	65.88	99.81	56.5%			62.5%								52.4%								64.1%						
77.25 - 73	5374	9944	15318	34.78	65.88	94.66	71.0%			64.8%								55.5%								66.4%						
73 - 68	6579	8650	12626	42.03	49.88	91.91	66.3%			64.3%								52.9%								65.1%						
68 - 64.25	6982	6279	13261	42.87	49.88	92.75	67.4%			66.1%								55.2%								67.9%						
64.25 - 64	7091	8632	15723	42.93	57.25	100.18	58.3%							63.9%				50.2%								64.7%						
64 - 60.5	7485	8936	16421	43.72	57.25	100.97	60.0%							66.8%				52.1%								66.3%						
60.5 - 60.25	7509	9889	17398	43.77	63.63	107.40	57.8%							61.0%			74.9%									63.3%						
60.25 - 60.1	7527	9913	17439	43.81	63.63	107.43	57.9%							61.1%			75.0%									63.3%						
60.1 - 59.85	7668	10996	18662	43.86	67.76	111.62	56.9%							78.4%			73.1%							58.6%		62.9%						
59.85 - 59.1	7755	11075	18830	44.03	67.76	111.79	58.4%							78.5%			73.4%							58.6%		63.2%						
59.1 - 58.85	7648	12343	19990	44.69	78.02	122.10	51.3%							71.7%			66.5%				63.4%			58.4%		57.1%						
58.85 - 55.4	8055	12759	20814	44.86	78.02	122.88	52.9%							73.3%			68.3%				64.9%			59.8%		58.6%						
55.4 - 55.15	8086	12789	20875	44.92	78.02	120.93	52.9%							73.4%			68.4%				65.0%			59.9%	58.8%							
55.15 - 54.75	8134	12838	20972	45.01	78.02	121.02	53.1%							73.6%			68.6%				65.1%			60.0%	58.7%							
54.75 - 54.5	8121	8999	17220	45.05	58.02	103.09	66.8%										89.4%				77.9%			72.7%	68.9%							
54.5 - 49.5	8847	9431	18278	46.19	58.01	104.20	69.2%										91.8%				79.7%			74.8%	70.1%							
49.5 - 44.5	9504	9873	19377	47.31	58.02	105.33	71.6%										94.1%				81.6%			76.9%	72.0%							
44.5 - 41.3	9941	10162	20103	48.03	58.02	106.04	73.1%										95.5%				83.1%			78.1%	73.2%							
41.3 - 41.05	9821	12255	21077	68.09	68.64	116.73	62.9%				64.8%						83.8%				80.0%			72.5%	68.0%							
41.05 - 39	10106	12479	22585	68.55	68.64	117.19	63.7%				65.4%						84.5%				80.8%			73.2%	68.7%							
39 - 33	10346	20124	30470	48.98	93.02	141.99	46.1%				58.4%				64.0%		65.9%				64.2%			61.6%	59.5%							
33 - 31.5	10560	20385	30946	49.33	93.02	142.35	48.2%				58.9%				65.4%		68.4%				64.7%		62.1%		59.9%							
31.5 - 31.25	10602	20827	31429	49.37	94.54	143.91	47.9%				58.5%				65.5%		68.0%				64.7%	58.6%			59.9%							
31.25 - 30.5	10710	20962	31672	49.54	94.54	144.07	47.3%				58.7%				65.7%		68.3%				65.0%	58.6%			60.1%							
30.5 - 30.25	10742	19797	30539	49.59	91.20	140.79	48.9%				58.8%				67.6%	69.5%					66.7%				61.2%							
30.25 - 25.75	11407	20567	31974	50.60	91.20	141.80	50.4%				60.0%				69.2%	71.0%					67.0%		62.7%		62.8%							
25.75 - 25.5	11472	19614	31087	50.65	88.86	139.51	53.2%				57.4%					74.9%					69.5%		62.6%		59.2%						70.1%	
25.5 - 24.7	11594	19739	31334	50.83	88.86	139.69	53.3%				57.6%					75.2%					69.8%		62.8%		59.4%						70.3%	
24.7 - 24.45	11615	16785	28400	50.89	67.61	118.49	58.6%				65.8%					82.4%					73.8%		76.8%								75.3%	
24.45 - 24	11684	16844	28528	50.99	67.61	118.59	58.8%				65.9%					82.5%					74.0%		78.7%								76.4%	
24 - 23.75	11718	23690	35408	51.04	89.64	140.68	47.4%				54.6%					68.5%					60.0%		61.9%	61.8%								
23.75 - 18.75	12508	24609	37112	51.16	89.64	141.80	49.1%				55.9%					68.1%					61.4%		63.4%	63.0%								
18.75 - 14.1	13783	25480	39744	53.20	89.64	142.83	50.6%				57.1%					69.5%					62.7%		64.7%	64.2%								
14.1 - 13.8	13308	26163	39571	53.26	92.25	145.51	49.3%				57.0%					67.6%					55.8%	81.6%			63.1%							
13.8 - 13.65	13333	26193	39725	53.30	92.25	145.54	49.4%				57.1%					67.6%					55.9%	81.7%			63.1%							
13.65 - 10.5	13967	27014	40881	54.00	92.25	146.25	50.3%				57.8%					68.7%					56.7%	82.5%			63.9%							
10.5 - 10.25	13907	27978	40585	54.05	87.62	141.68	49.3%					67.6%				68.6%					56.8%	82.7%			64.7%							
10.25 - 5.25	14785	28083	42869	55.17	87.62	142.79	50.8%					69.0%				70.2%					58.1%	83.9%			65.8%							
5.25 - 3	15193	28542	43736	55.67	87.62	143.29	51.5%					69.6%				70.8%					58.7%	84.5%			66.3%							
3 - 2.9	15209	26919	42127	55.69	83.62	137.33	54.3%									73.9%					71.5%	71.5%			71.2%							
2.9 - 2.75	15309	24497	39793	55.73	70.32	126.05	60.0%									80.6%					73.7%				80.3%							
2.75 - 2.65	15324	24504	39819	55.75	70.32	126.07	60.0%									80.6%					73.7%				80.3%							
2.65 - 2.5	15352	24530	39882	55.78	70.32	126.10	60.1%									80.7%					73.8%				80.3%							
2.5 - 2.25	15338	23814	39153	55.84	72.32	128.16	60.4%														69.6%				73.5%				68.6%			
2.25 - 1.9	15403	23971	39374	55.92	72.32	128.24	60.5%														69.7%				73.6%				68.6%			
1.9 - 1.65	15497	22477	37974	55.97	64.05	120.03	61.8%																		75.2%				71.1%			
1.65 - 0	15744	22732	38476	55.34	64.05	120.40	62.4%																		75.8%				71.5%			

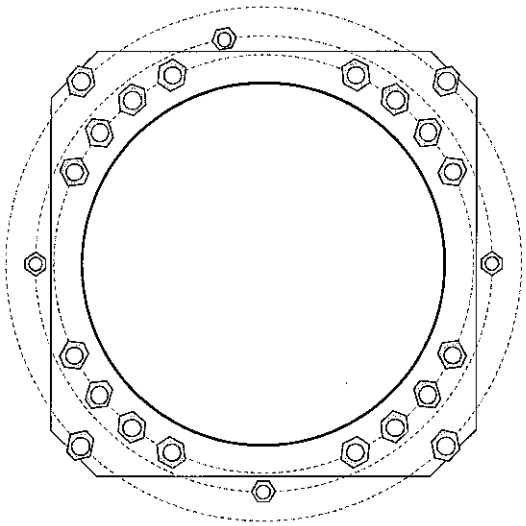
Note: Section capacity checked in 5 degree increments.

Monopole Base Plate Connection

Site Info	
BU #	876334
Site Name	OUTHINGTON, SMORO
Order #	450298 Rev. 0

Analysis Considerations	
TIA-222 Revision	G
Grout Considered:	No
l_{ar} (in)	4.75
Eta Factor, η	0.5

Applied Loads	
Moment (kip-ft)	5169.00
Axial Force (kips)	77.00
Shear Force (kips)	44.00



Connection Properties

Anchor Rod Data

GROUP 1: (16) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 54.375" BC

GROUP 2: (4) 1-3/4" ø bolts (F1554-105 N; Fy=105 ksi, Fu=125 ksi) on 59.1" BC

pos. (deg): 0, 100, 180, 270

GROUP 3: (4) 2-1/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 66.8125" BC

Base Plate Data

55" OD x 3" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Stiffener Data

N/A

Pole Data

47.1" x 0.375" 12-sided pole (A607-60; Fy=60 ksi, Fu=75 ksi)

Analysis Results

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

GROUP 1:		
Pu_c = 189.71	ϕPn_t = 260	**Stress Rating**
Vu = 2.75	ϕVn = n/a	**75.1%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_c = 119.19	ϕPn_t = 190	**Stress Rating**
Vu = 0	ϕVn = n/a	**62.7%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 3:		
Pu_c = 232.25	ϕPn_t = 325	**Stress Rating**
Vu = 0	ϕVn = n/a	**71.5%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	30.19	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**67.1%**	**Pass**

Drilled Pier Foundation

BU # :	876334
Site Name:	SOUTHINGTON, SMC
Order Number:	450298 Rev. 0

TIA-222 Revison:	G
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	5169	
Axial Force (kips)	77	
Shear Force (kips)	44	

Material Properties		
Concrete Strength, f'c:	3	ksi
Rebar Strength, Fy:	60	ksi

Pier Design Data		
Depth	21	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 21' below grade		
Pier Diameter	7	ft
Rebar Quantity	32	
Rebar Size	11	
Clear Cover to Ties	4	in
Tie Size	5	

Analysis Results		
Soil Lateral Capacity	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	5.48	-
Soil Safety Factor	1.53	-
Max Moment (kip-ft)	5378.29	-
Rating	*86.7%*	-
Soil Vertical Capacity	*Compression*	*Uplift*
Skin Friction (kips)	245.32	-
End Bearing (kips)	1665.42	-
Weight of Concrete (kips)	148.94	-
Total Capacity (kips)	1910.74	-
Axial (kips)	225.94	-
Rating	*11.8%*	-
Reinforced Concrete Capacity	*Compression*	*Uplift*
Critical Depth (ft from TOC)	5.25	-
Critical Moment (kip-ft)	5377.37	-
Critical Moment Capacity	7574.49	-
Rating	*71.0%*	-

Soil Interaction Rating	**86.7%**
Structural Foundation Rating	**71.0%**

Check Limitation	
N/A	☐

Soil Profile

Groundwater Depth	n/a	ft	# of Layers: 8

Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Gross Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	2	2	110	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	2	3.3	1.3	130	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	3.3	5	1.7	130	150	0	36	0.000	0.000	0.00	0.00			Cohesionless
4	5	6	1	130	150	0	36	0.000	0.000	0.65	0.65			Cohesionless
5	6	8	2	120	150	0	30	0.000	0.000	0.90	0.90			Cohesionless
6	8	12.4	4.4	130	150	0	36	0.000	0.000	1.38	1.38			Cohesionless
7	12.4	14	1.6	145	150	0	40	0.00	0.00	3.97	3.97			Cohesionless
8	14	21	7	145	150	0	40	0.00	0.00	0.00	0.00	57.7		Cohesionless

Date: **March 11, 2019**

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518-690-0790
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Charles McGuirt
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277

Subject:	**Mount Replacement Report**	
Carrier Designation:	**Verizon Mount Replacment**	
	Carrier Site Number:	20702
	Carrier Site Name:	Southington CT
Crown Castle Designation:	**Crown Castle BU Number:**	876334
	Crown Castle Site Name:	Southington, Smoron
	Crown Castle JDE Job Number:	518917
	Crown Castle Order Number:	450298, Rev. 0
Engineering Firm Designation:	**Infinigy Report Designation:**	1039-D0001-B
Site Data:	**625 Spring Street, Southington, Hartford County, CT, 06489** **Latitude 41°37'56.9" Longitude -72°53'39.30"**	
Structure Information:	**Tower Height & Type:**	**158 ft Monopole**
	Mount Elevation:	**132.0 ft**
	Mount Type:	**14.0 ft Sector Frames**

Dear Charles McGuirt,

Infinigy is pleased to submit this **"Mount Replacement Report"** to determine the structural integrity of Verizon's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

The purpose of the analysis is to determine acceptability of the mount stress level. Based on our analysis we have determined the mount stress level to be:

Sector Frames (typical) **Sufficient**

The analysis has been performed in accordance with the TIA-222-H Standard. This analysis utilizes an ultimate 3-second gust wind speed of 125 mph from the 2015 International Building Code and 2018 Connecticut State Building Code. Exposure Category C with a maximum topographic factor, Kzt, of 1.0 and Risk Category II was/were used in this analysis.

We at Infinigy Engineering, PLLC 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.

Mount analysis prepared by: Christopher Kudlacik
Respectfully Submitted by:

Joe Johnston, P.E.
VP Structural Engineering / Prinicipal

TABLE OF CONTENTS

1) INTRODUCTION

This mount is a proposed Sitepro 1 Sector Frames designed by Sitepro1.This mount is to be installed at the 132.0 ft elevation on 3 sector(s) of the 158.0 ft Monopole.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	C
Topographic Factor at Base:	1.0
Topographic Factor at Mount:	1.0
Ice Thickness:	1.7 in
Wind Speed with Ice:	50 mph
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
132	134	3	Antel	BXA-80080-6CF-EDIN-X	14 ft Sector Frame
	133	6	Andrew	SBNHH-1D65B	
		3	Antel	BXA-70063/6CFX2	
		1	RFS	DB-T1-6Z-8AB-0Z	
		1	RFS	DB-C1-12C-24AB-0Z	
		3	Samsung	RFV01U-D1A	
		3	Samsung	RFV01U-D2A	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	Verizon Application	450298 Rev, 0	CCI Sites
Mount	--	VFA12-HD	Sitepro1
Photos	--	876334	CCI Sites

3.1) Analysis Method

RISA-3D (Version 17.0.02), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 *Tower Mount Analysis* (Revision B).

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A53 (GR 35)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

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

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (Sector Frames, Alpha Sector)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2	Standoff	M5	133.0	44.5	Pass
	Mount Pipe	MP1		58.0	Pass
	Main Horizontal	M79		46.9	Pass
	Bolt Check	--		43.6	Pass

Structure Rating (max from all components) =	58.0%

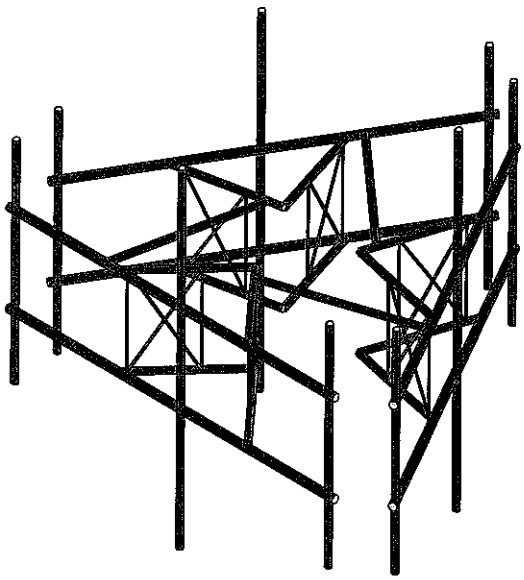
Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) All sectors are typical

4.1) Recommendations

The Sector Frame Mount has sufficient capacity to support the proposed loading when the mount is replaced with (3) Sitepro1 VFA12-HD

APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

Infinigy Engineering PLLC		Final Configuraiton
		Mar 11, 2019 at 1:12 PM
		876334_VFA12-HD3L4NP.r3d

APPENDIX B

SOFTWARE INPUT CALCULATIONS

Site Name:	Southington, Smolen
Client:	Crown Castle
Carrier:	Verizon Wireless
Engineer:	CLK
Date:	3/11/2019

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INFINIGY WIND LOAD CALCULATOR 3.0.2

Site Information Inputs:

Adopted Building Code:	2015 IBC
Structure Load Standard:	TIA-222-H
Antenna Load Standard:	TIA-222-H
Structure Risk Category:	II
Structure Type:	Mount Platform
Number of Sectors:	3
Structure Shape 1:	Round

Rooftop Inputs:

Rooftop Wind Speed-Up?: No

Wind Loading Inputs:

Design Wind Velocity:	105	mph (ultimate 3-second gust)
Wind Centerline 1 (z_1):	133.0	ft
Side Face Angle (θ):	60	degrees
Exposure Category:	C	
Topographic Category:	1	

Wind with No Ice		
q_z (psf)	Gh	F_{ST} (psf)
50.58	1.00	**60.69**

Wind with Ice		
q_z (psf)	Gh	F_{ST} (psf)
8.09	1.00	**35.20**

Ice Loading Inputs:

Is Ice Loading Needed?:	Yes	
Ice Wind Velocity:	50	mph (ultimate 3-second gust)
Base Ice Thickness:	1.70	in

Input Appurtenance Information and Load Placements:

Appurtenance Name	Elevation (ft)	Total Quantity	Ka	Front Shape	Side Shape	q_z (psf)	EPA (ft^2)	Fz (lbs)	Fx (lbs)	Fz(60) (lbs)	Fx(30) (lbs)
Andrew SBNHH-1D65B	133.0	3	1.00	Flat	Flat	50.58	8.08	408.62	270.17	304.78	374.00
Andrew SBNHH-1D65B	133.0	3	1.00	Flat	Flat	50.58	8.08	408.62	270.17	304.78	374.00
Antel BXA-70063/6CFX2	133.0	3	1.00	Flat	Flat	50.58	7.57	382.82	189.94	238.16	334.60
Antel BXA-80080-6CF-EDIN-X	134.0	3	1.00	Flat	Flat	50.66	5.77	292.23	231.04	246.34	276.93
Samsung Telecommunications RFV01U-D1A	133.0	3	1.00	Flat	Flat	50.58	1.88	94.83	63.22	71.13	86.93
Samsung Telecommunications RFV01U-D2A	133.0	3	1.00	Flat	Flat	50.58	1.88	94.83	51.21	62.12	83.93
RFS DB-L-6Z-8AB-0Z	133.0	3	1.00	Flat	Flat	50.58	4.80	242.78	101.16	136.56	207.37
RFS DBC1-12C-24AB-0Z	133.0	3	1.00	Flat	Flat	50.58	4.06	205.16	156.67	168.79	193.03

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N3	N4			2.5" pipe	Beam	None	A53 Gr.B	Typical
2	M2	N1	N2			2.5" pipe	Beam	None	A53 Gr.B	Typical
3	M3	N6	N10			2" pipe	Beam	None	A53 Gr.B	Typical
4	M5	N5	N9			2" pipe	Beam	None	A53 Gr.B	Typical
5	M11	N8	N10			2" pipe	Beam	None	A53 Gr.B	Typical
6	M12	N7	N9			2" pipe	Beam	None	A53 Gr.B	Typical
7	M7	N11	N14			0.625" S.R.	Beam	None	A36 Gr.36	Typical
8	M8	N14	N13			0.625" S.R.	Beam	None	A36 Gr.36	Typical
9	M9	N13	N12			0.625" S.R.	Beam	None	A36 Gr.36	Typical
10	M10	N12	N11			0.625" S.R.	Beam	None	A36 Gr.36	Typical
11	M11A	N17	N18			0.625" S.R.	Beam	None	A36 Gr.36	Typical
12	M12A	N18	N15			0.625" S.R.	Beam	None	A36 Gr.36	Typical
13	M13	N15	N16			0.625" S.R.	Beam	None	A36 Gr.36	Typical
14	M14	N16	N17			0.625" S.R.	Beam	None	A36 Gr.36	Typical
15	MP4	N44	N40A			2" pipe	Beam	None	A53 Gr.B	Typical
16	MP3	N45	N41A			2" pipe	Beam	None	A53 Gr.B	Typical
17	MP1	N50	N49			2" pipe	Beam	None	A53 Gr.B	Typical
18	M55	N123A	N125			2" pipe	Beam	None	A53 Gr.B	Typical
19	M19	N50A	N51			2.5" pipe	Beam	None	A53 Gr.B	Typical
20	M20	N48A	N49A			2.5" pipe	Beam	None	A53 Gr.B	Typical
21	M21	N53	N57			2" pipe	Beam	None	A53 Gr.B	Typical
22	M22	N52	N56			2" pipe	Beam	None	A53 Gr.B	Typical
23	M23	N55	N57			2" pipe	Beam	None	A53 Gr.B	Typical
24	M24	N54	N56			2" pipe	Beam	None	A53 Gr.B	Typical
25	M25	N58	N61			0.625" S.R.	Beam	None	A36 Gr.36	Typical
26	M26	N61	N60			0.625" S.R.	Beam	None	A36 Gr.36	Typical
27	M27	N60	N59			0.625" S.R.	Beam	None	A36 Gr.36	Typical
28	M28	N59	N58			0.625" S.R.	Beam	None	A36 Gr.36	Typical
29	M29	N64	N65			0.625" S.R.	Beam	None	A36 Gr.36	Typical
30	M30	N65	N62			0.625" S.R.	Beam	None	A36 Gr.36	Typical
31	M31	N62	N63			0.625" S.R.	Beam	None	A36 Gr.36	Typical
32	M32	N63	N64			0.625" S.R.	Beam	None	A36 Gr.36	Typical
33	MP12	N78	N75			2" pipe	Beam	None	A53 Gr.B	Typical
34	MP11	N79	N76			2" pipe	Beam	None	A53 Gr.B	Typical
35	MP9	N83	N82			2" pipe	Beam	None	A53 Gr.B	Typical
36	M36	N87	N88			2" pipe	Beam	None	A53 Gr.B	Typical
37	M37	N91	N92			2.5" pipe	Beam	None	A53 Gr.B	Typical
38	M38	N89	N90			2.5" pipe	Beam	None	A53 Gr.B	Typical
39	M39	N94	N98			2" pipe	Beam	None	A53 Gr.B	Typical
40	M40	N93	N97			2" pipe	Beam	None	A53 Gr.B	Typical
41	M41	N96	N98			2" pipe	Beam	None	A53 Gr.B	Typical
42	M42	N95	N97			2" pipe	Beam	None	A53 Gr.B	Typical
43	M43	N99	N102			0.625" S.R.	Beam	None	A36 Gr.36	Typical
44	M44	N102	N101			0.625" S.R.	Beam	None	A36 Gr.36	Typical
45	M45	N101	N100			0.625" S.R.	Beam	None	A36 Gr.36	Typical
46	M46	N100	N99			0.625" S.R.	Beam	None	A36 Gr.36	Typical
47	M47	N105	N106			0.625" S.R.	Beam	None	A36 Gr.36	Typical
48	M48	N106	N103			0.625" S.R.	Beam	None	A36 Gr.36	Typical
49	M49	N103	N104			0.625" S.R.	Beam	None	A36 Gr.36	Typical
50	M50	N104	N105			0.625" S.R.	Beam	None	A36 Gr.36	Typical
51	MP8	N119	N116			2" pipe	Beam	None	A53 Gr.B	Typical
52	MP7	N120	N117			2" pipe	Beam	None	A53 Gr.B	Typical
53	MP5	N124	N123			2" pipe	Beam	None	A53 Gr.B	Typical
54	M54	N128	N129			2" pipe	Beam	None	A53 Gr.B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	Hot Rolled Steel				
2	A36 Gr.36	0.625" S.R.	24	1041.3	0
3	A53 Gr.B	PIPE_2.0	24	1750.3	.5
4	A53 Gr.B	PIPE_2.5	6	900	.4
5	Total HR Steel		54	3691.7	1

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Self Weight	DL		-1			36	3		
2	Wind Load AZI 000	WLZ					36		1	
3	Wind Load AZI 090	WLX					36		1	
4	Ice Weight	OL1					36	54		
5	Wind + Ice Load AZI ...	OL2					36		1	
6	Wind + Ice Load AZI ...	OL3					36		1	
7	Service Live 1	LL				6				
8	BLC 2 Transient Area...	None						48		
9	BLC 3 Transient Area...	None						46		
10	BLC 5 Transient Area...	None						48		
11	BLC 6 Transient Area...	None						46		

Load Combinations

	Description	S...	PD...	S...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	F...	B...	Fa...	F...	F...	F...	F...	F...
1	1.4D	Yes	Y		DL	1.4													
2	1.2D + 1W AZI 000	Yes	Y		DL	1.2	WLZ	1											
3	1.2D + 1W AZI 030	Yes	Y		DL	1.2	WLZ	.866	WLX	.5									
4	1.2D + 1W AZI 060	Yes	Y		DL	1.2	WLZ	.5	WLX	.866									
5	1.2D + 1W AZI 090	Yes	Y		DL	1.2			WLX	1									
6	1.2D + 1W AZI 120	Yes	Y		DL	1.2	WLZ	-.5	WLX	.866									
7	1.2D + 1W AZI 150	Yes	Y		DL	1.2	WLZ	-.866	WLX	.5									
8	1.2D + 1W AZI 180	Yes	Y		DL	1.2	WLZ	-1											
9	1.2D + 1W AZI 210	Yes	Y		DL	1.2	WLZ	-.866	WLX	-.5									
10	1.2D + 1W AZI 240	Yes	Y		DL	1.2	WLZ	-.5	WLX	-.866									
11	1.2D + 1W AZI 270	Yes	Y		DL	1.2			WLX	-1									
12	1.2D + 1W AZI 300	Yes	Y		DL	1.2	WLZ	.5	WLX	-.866									
13	1.2D + 1W AZI 330	Yes	Y		DL	1.2	WLZ	.866	WLX	-.5									
14	0.9D + 1W AZI 000	Yes	Y		DL	.9	WLZ	1											
15	0.9D + 1W AZI 030	Yes	Y		DL	.9	WLZ	.866	WLX	.5									
16	0.9D + 1W AZI 060	Yes	Y		DL	.9	WLZ	.5	WLX	.866									
17	0.9D + 1W AZI 090	Yes	Y		DL	.9			WLX	1									
18	0.9D + 1W AZI 120	Yes	Y		DL	.9	WLZ	-.5	WLX	.866									
19	0.9D + 1W AZI 150	Yes	Y		DL	.9	WLZ	-.866	WLX	.5									
20	0.9D + 1W AZI 180	Yes	Y		DL	.9	WLZ	-1											
21	0.9D + 1W AZI 210	Yes	Y		DL	.9	WLZ	-.866	WLX	-.5									
22	0.9D + 1W AZI 240	Yes	Y		DL	.9	WLZ	-.5	WLX	-.866									
23	0.9D + 1W AZI 270	Yes	Y		DL	.9			WLX	-1									
24	0.9D + 1W AZI 300	Yes	Y		DL	.9	WLZ	.5	WLX	-.866									
25	0.9D + 1W AZI 330	Yes	Y		DL	.9	WLZ	.866	WLX	-.5									
26	1.2D + 1.0Di	Yes	Y		DL	1.2	OL1	1											
27	1.2D + 1.0Di + 1.0Wi AZI 000	Yes	Y		DL	1.2	OL1	1	OL2	1									
28	1.2D + 1.0Di + 1.0Wi AZI 030	Yes	Y		DL	1.2	OL1	1	OL2	.866	OL3	.5							
29	1.2D + 1.0Di + 1.0Wi AZI 060	Yes	Y		DL	1.2	OL1	1	OL2	.5	OL3	.8...							
30	1.2D + 1.0Di + 1.0Wi AZI 090	Yes	Y		DL	1.2	OL1	1			OL3	1							
31	1.2D + 1.0Di + 1.0Wi AZI 120	Yes	Y		DL	1.2	OL1	1	OL2	-.5	OL3	.8...							

Load Combinations (Continued)

	Description	S...	PD...	S...	BLC	Factor	BLC	Factor	BLC	Factor	BLC	F...	B...	Fa...	...	F...	F...	F...	F...	F...
32	1.2D + 1.0Di + 1.0Wi AZI 150	Yes	Y		DL	1.2	OL1	1	OL2	-.866	OL3	.5								
33	1.2D + 1.0Di + 1.0Wi AZI 180	Yes	Y		DL	1.2	OL1	1	OL2	-1										
34	1.2D + 1.0Di + 1.0Wi AZI 210	Yes	Y		DL	1.2	OL1	1	OL2	-.866	OL3	-.5								
35	1.2D + 1.0Di + 1.0Wi AZI 240	Yes	Y		DL	1.2	OL1	1	OL2	-.5	OL3	-....								
36	1.2D + 1.0Di + 1.0Wi AZI 270	Yes	Y		DL	1.2	OL1	1			OL3	-1								
37	1.2D + 1.0Di + 1.0Wi AZI 300	Yes	Y		DL	1.2	OL1	1	OL2	.5	OL3	-....								
38	1.2D + 1.0Di + 1.0Wi AZI 330	Yes	Y		DL	1.2	OL1	1	OL2	.866	OL3	-.5								
39	1.2D + 1.5L + 1.0WL (30 mph) AZI 000	Yes	Y		DL	1.2	LL	1.5	WLZ	.058										
40	1.2D + 1.5L + 1.0WL (30 mph) AZI 030	Yes	Y		DL	1.2	LL	1.5	WLZ	.05	W...	.0...								
41	1.2D + 1.5L + 1.0WL (30 mph) AZI 060	Yes	Y		DL	1.2	LL	1.5	WLZ	.029	W...	.05								
42	1.2D + 1.5L + 1.0WL (30 mph) AZI 090	Yes	Y		DL	1.2	LL	1.5			W...	.0...								
43	1.2D + 1.5L + 1.0WL (30 mph) AZI 120	Yes	Y		DL	1.2	LL	1.5	WLZ	-.029	W...	.05								
44	1.2D + 1.5L + 1.0WL (30 mph) AZI 150	Yes	Y		DL	1.2	LL	1.5	WLZ	-.05	W...	.0...								
45	1.2D + 1.5L + 1.0WL (30 mph) AZI 180	Yes	Y		DL	1.2	LL	1.5	WLZ	-.058										
46	1.2D + 1.5L + 1.0WL (30 mph) AZI 210	Yes	Y		DL	1.2	LL	1.5	WLZ	-.05	W...	-....								
47	1.2D + 1.5L + 1.0WL (30 mph) AZI 240	Yes	Y		DL	1.2	LL	1.5	WLZ	-.029	W...	.05								
48	1.2D + 1.5L + 1.0WL (30 mph) AZI 270	Yes	Y		DL	1.2	LL	1.5			W...	-....								
49	1.2D + 1.5L + 1.0WL (30 mph) AZI 300	Yes	Y		DL	1.2	LL	1.5	WLZ	.029	W...	-.05								
50	1.2D + 1.5L + 1.0WL (30 mph) AZI 330	Yes	Y		DL	1.2	LL	1.5	WLZ	.05	W...	-....								

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N10	max	1804.649	7	1665.287	31	1960.9	25	-85.494	14	999.645	8	124.474	16
2		min	-1684.162	25	182.895	14	-2828.156	7	-1063.405	31	-983.652	14	-249.356	35
3	N9	max	688.766	17	1504.433	37	2220.8	27	-103.764	20	697.139	17	99.276	16
4		min	-801.307	11	180.709	20	-813.906	20	-924.622	27	-740.894	11	-178.33	10
5	N56	max	2022.922	30	1506.368	29	658.966	14	369.044	33	851.389	21	883.962	29
6		min	-704.523	23	182.496	24	-1038.415	33	-57.679	14	-894.81	3	89.898	22
7	N57	max	3483.651	17	1667.57	35	1038.579	5	459.187	34	1136.124	12	996.903	27
8		min	-4295.302	11	184.818	18	-705.812	23	-72.678	15	-1123.278	18	57.871	19
9	N97	max	733.097	17	1503.397	33	589.24	14	609.3	32	848.174	25	-23.783	17
10		min	-1833.3	36	183.771	16	-1358.335	33	11.711	25	-891.902	7	-745.593	36
11	N98	max	1858.066	28	1664.625	27	3361.196	2	729.449	31	847.008	3	-54.817	20
12		min	-777.502	20	185.995	22	-2814.786	20	-56.158	24	-836.03	21	-872.467	27
13	Totals:	max	7492.489	17	9223.588	38	7595.159	14						
14		min	-7492.489	11	1843.648	14	-7595.159	8						

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

	Member	Shape	Code Ch...	Loc[in]	LC	Shear Check	Loc....	LC	phi*Pnc [lb]	phi*Pn...	phi*M...	phi*M...	...	Eqn
1	MP3	PIPE_2.0	.580	95.313	8	.072	93.75	10	6295.422	32130	1871.6...	1871.6...	4...	H1-1b
2	M29	0.625" S.R.	.522	40	30	.012	40	2	2339.328	9946.8	96.768	96.768	2...	H1-1a
3	M47	0.625" S.R.	.519	40	34	.013	40	6	2339.328	9946.8	96.768	96.768	2...	H1-1a
4	M11A	0.625" S.R.	.518	40	38	.012	0	10	2339.328	9946.8	96.768	96.768	2...	H1-1a
5	M31	0.625" S.R.	.517	0	34	.021	0	3	2339.328	9946.8	96.768	96.768	2...	H1-1a
6	M49	0.625" S.R.	.517	0	38	.023	0	6	2339.328	9946.8	96.768	96.768	2...	H1-1a
7	M13	0.625" S.R.	.513	40	34	.018	0	11	2339.328	9946.8	96.768	96.768	2...	H1-1a
8	MP11	PIPE_2.0	.491	95.313	11	.059	93.75	3	6295.422	32130	1871.6...	1871.6...	2...	H1-1b
9	MP7	PIPE_2.0	.491	95.313	5	.069	93.75	6	6295.422	32130	1871.6...	1871.6...	2...	H1-1b
10	M19	PIPE_2.5	.486	50	17	.174	50	3	14558.792	50715	3596.25	3596.25	2...	H1-1b
11	M3	PIPE_2.0	.473	44.604	33	.140	44....	37	27224.963	32130	1871.6...	1871.6...	3...	H1-1b
12	M21	PIPE_2.0	.472	44.604	36	.142	44....	29	27224.963	32130	1871.6...	1871.6...	3...	H1-1b
13	M39	PIPE_2.0	.471	44.604	29	.140	44....	33	27224.963	32130	1871.6...	1871.6...	3...	H1-1b
14	M1	PIPE_2.5	.469	50	7	.135	50	5	14558.792	50715	3596.25	3596.25	1...	H1-1b
15	M22	PIPE_2.0	.455	44.604	29	.133	2.788	38	27224.963	32130	1871.6...	1871.6...	3...	H1-1b

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

	Member	Shape	Code Ch...	Loc[in]	LC	Shear Check	Loc.....	LC	phi*Pnc [lb]	phi*Pn...	phi*M...	phi*M...	...	Eqn
16	M44	0.625" S.R.	.453	0	36	.015	40	6	2339.328	9946.8	96.768	96.768	2..	H1-1a
17	M8	0.625" S.R.	.451	0	28	.014	40	10	2339.328	9946.8	96.768	96.768	2..	H1-1a
18	M26	0.625" S.R.	.450	0	32	.014	40	2	2339.328	9946.8	96.768	96.768	2..	H1-1a
19	M40	PIPE_2.0	.449	44.604	32	.135	2.788	30	27224.963	32130	1871.6..	1871.6..	3..	H1-1b
20	M5	PIPE_2.0	.445	44.604	37	.132	2.788	34	27224.963	32130	1871.6..	1871.6..	3..	H1-1b
21	M10	0.625" S.R.	.438	0	29	.012	40	10	2339.328	9946.8	96.768	96.768	2..	H1-1a
22	M46	0.625" S.R.	.437	0	36	.014	40	6	2339.328	9946.8	96.768	96.768	2..	H1-1a
23	M28	0.625" S.R.	.436	0	32	.012	40	3	2339.328	9946.8	96.768	96.768	3..	H1-1a
24	M23	PIPE_2.0	.420	44.604	12	.232	44....	13	27224.963	32130	1871.6..	1871.6..	2..	H1-1b
25	M37	PIPE_2.5	.411	43.75	5	.177	45....	7	14558.792	50715	3596.25	3596.25	1..	H1-1b
26	M11	PIPE_2.0	.400	44.604	28	.218	44....	9	27224.963	32130	1871.6..	1871.6..	3..	H1-1b
27	M41	PIPE_2.0	.393	44.604	37	.182	44....	4	27224.963	32130	1871.6..	1871.6..	3..	H1-1b
28	M2	PIPE_2.5	.368	50	2	.092	109..	8	14558.792	50715	3596.25	3596.25	1..	H1-1b
29	M20	PIPE_2.5	.356	50	5	.097	51....	5	14558.792	50715	3596.25	3596.25	2..	H1-1b
30	MP8	PIPE_2.0	.353	68	37	.068	68	11	14916.096	32130	1871.6..	1871.6..	3..	H1-1b
31	MP12	PIPE_2.0	.351	68	34	.059	68	11	14916.096	32130	1871.6..	1871.6..	4..	H1-1b
32	MP4	PIPE_2.0	.349	68	29	.074	68	2	14916.096	32130	1871.6..	1871.6..	4..	H1-1b
33	M42	PIPE_2.0	.347	44.604	37	.098	5.576	27	27224.963	32130	1871.6..	1871.6..	2..	H1-1b
34	M32	0.625" S.R.	.344	0	28	.014	46....	7	722.733	9946.8	96.768	96.768	2..	H1-1a
35	M14	0.625" S.R.	.344	0	36	.018	46....	3	722.733	9946.8	96.768	96.768	2..	H1-1a
36	M50	0.625" S.R.	.343	0	32	.016	46....	17	722.733	9946.8	96.768	96.768	2..	H1-1a
37	M24	PIPE_2.0	.342	44.604	33	.099	5.576	35	27224.963	32130	1871.6..	1871.6..	2..	H1-1b
38	M12	PIPE_2.0	.342	44.604	29	.096	5.576	31	27224.963	32130	1871.6..	1871.6..	2..	H1-1b
39	M38	PIPE_2.5	.311	50	4	.095	109..	4	14558.792	50715	3596.25	3596.25	1..	H1-1b
40	M45	0.625" S.R.	.310	46.777	37	.015	0	7	722.733	9946.8	96.768	96.768	2..	H1-1a
41	M9	0.625" S.R.	.309	46.777	29	.015	0	12	722.733	9946.8	96.768	96.768	2..	H1-1a
42	M27	0.625" S.R.	.308	46.777	33	.017	0	4	722.733	9946.8	96.768	96.768	2..	H1-1a
43	MP5	PIPE_2.0	.287	68	32	.051	68	4	14916.096	32130	1871.6..	1871.6..	4..	H1-1b
44	MP9	PIPE_2.0	.287	68	28	.053	68	5	14916.096	32130	1871.6..	1871.6..	4..	H1-1b
45	MP1	PIPE_2.0	.283	68	36	.059	68	8	14916.096	32130	1871.6..	1871.6..	4..	H1-1b
46	M54	PIPE_2.0	.098	63.029	12	.034	0	45	23081.246	32130	1871.6..	1871.6..	1..	H1-1b*
47	M36	PIPE_2.0	.090	63.029	9	.035	63....	29	23081.246	32130	1871.6..	1871.6..	1..	H1-1b*
48	M55	PIPE_2.0	.073	0	4	.034	63....	49	23081.246	32130	1871.6..	1871.6..	1..	H1-1b*
49	M7	0.625" S.R.	.000	0	50	.011	0	8	1710.612	9946.8	96.768	96.768	2..	H1-1a
50	M12A	0.625" S.R.	.000	0	50	.015	46....	6	1710.612	9946.8	96.768	96.768	2..	H1-1a
51	M25	0.625" S.R.	.000	0	50	.008	0	12	1710.612	9946.8	96.768	96.768	2..	H1-1a
52	M30	0.625" S.R.	.000	0	50	.018	46....	10	1710.612	9946.8	96.768	96.768	2..	H1-1a
53	M43	0.625" S.R.	.000	0	50	.009	0	5	1710.612	9946.8	96.768	96.768	2..	H1-1a
54	M48	0.625" S.R.	.000	0	50	.015	46....	2	1710.612	9946.8	96.768	96.768	2..	H1-1a

APPENDIX D

ADDITIONAL CALCUATIONS

Date:	3/11/2019
Client	Crown Castle
Carrier	Verizon
Engineer:	CLK
Site:	876334
Job #:	1039-D0002-B

Code:	LRFD	
Axial:	1665.00	lbs
Shear:	3361.00	lbs

Bolt Capacity (1/2" A307 Threaded Rod)				
	Ult Load / Bolt	Factored Load (ϕ=0.75)	# of Bolts	Factor Joint Capacity
Axial (lb)	8226.7	6170.0	2	12340
Shear(lb)	5133.3	3850.0	2	7700

Interaction Check	
$T/\phi T_n$	13.5%
$V/\phi Vn$	43.6%
≤1.0	20.9%
	OK