Robinson+Cole

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts

October 29, 2018

Melanie A. Bachman, Esq.
Executive Director/Staff Attorney
Connecticut Siting Council
10 Franklin Square
New Britain, CT 06051

Re: **Notice of Exempt Modification – Facility Modification**
1394 Meriden Waterbury Turnpike, Southington, Connecticut

Dear Ms. Bachman:

Cellco Partnership d/b/a Verizon Wireless ("Cellco") currently maintains fifteen (15) antennas at the 138-foot level of an existing 160-foot tower at 1394 Meriden Waterbury Turnpike in Southington, Connecticut (the "Property"). The tower is owned by Crown Castle ("Crown"). The Council approved Cellco's use of this tower in 2002. Cellco now intends to remove nine (9) of its existing antennas and install six (6) new antennas (three (3) model NNHH-65B-R4, 700/850 MHz antennas and three (3) model NNHH-65B-R4, 19000/2100 MHz antennas), all at the same level on the tower. Cellco also intends to install six (6) remote radio heads ("RRHs") and one (1) HYBRIFLEX™ fiber optic antenna cable. Included in Attachment 1 are specifications for Cellco's replacement antennas, RRHs and HYBRIFLEX™ cable.

Please accept this letter as notification pursuant to R.C.S.A. § 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.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mark Sciota, Town Manager of the Town of Southington; Robert Phillips, Southington Director of Planning Community Development; Southington Tower Development LLC, the Property owner; and Crown, the tower owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure. Cellco's replacement antennas and RRHs will be installed on a new mount at the same 138-foot level on the tower.

2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, will not require the extension of the site boundary.

3. The proposed modifications 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 (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative General Power Density table for Cellco's modified facility is included in Attachment 2.

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

6. The tower and its foundation can support Cellco's proposed modifications. (*See* Structural Analysis Report included in Attachment 3). Please note that three of the antennas to be removed do not show up in the report as antennas to be removed however, the structural contemplates the final configuration of Cellco's existing and proposed equipment.

A copy of the parcel map and property owner information is included in Attachment 4. A Certificate of Mailing verifying that this filing was sent to municipal officials and the owner of the Property is included in Attachment 5.

For the foregoing reasons, Cellco respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Kenneth C. Baldwin

Enclosures
Copy to:
Mark Sciota, Southington Town Manager
Robert Phillips, Southington Director of Planning Community Development
Southington Tower Development LLC
Crown Castle
Tim Parks

ATTACHMENT 1

NNHH-65B-R4

8-port sector antenna, 4x 698–896 and 4x 1695–2360 MHz, 65° HPBW, 4x RETs

Electrical Specifications

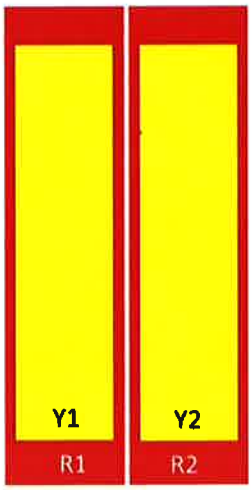
Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2180	2300–2360
Gain, dBi	14.6	15.0	17.0	17.3	17.5	17.9
Beamwidth, Horizontal, degrees	66	64	58	61	63	59
Beamwidth, Vertical, degrees	11.9	10.3	7.4	6.9	6.4	5.7
Beam Tilt, degrees	2–14	2–14	2–12	2–12	2–12	2–12
USLS (First Lobe), dB	17	19	14	19	16	18
Front-to-Back Ratio at 180°, dB	30	31	35	38	37	34
Isolation, dB	25	25	25	25	25	25
Isolation, Intersystem, dB	25	25	25	25	25	25
VSWR | Return Loss, dB	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0	1.5 | 14.0
PIM, 3rd Order, 2 x 20 W, dBc	-150	-150	-150	-150	-150	-150
Input Power per Port at 50°C, maximum, watts	300	300	250	250	250	200
Polarization	±45°	±45°	±45°	±45°	±45°	±45°
Impedance	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm	50 ohm

Electrical Specifications, BASTA*

Frequency Band, MHz	698–806	806–896	1695–1880	1850–1990	1920–2180	2300–2360
Gain by all Beam Tilts, average, dBi	14.2	14.7	16.4	16.9	17.0	17.5
Gain by all Beam Tilts Tolerance, dB	±0.5	±0.5	±0.9	±0.4	±0.5	±0.5
Gain by Beam Tilt, average, dBi	2 ° | 14.2 8 ° | 14.2 14 ° | 13.9	2 ° | 14.7 8 ° | 14.8 14 ° | 14.3	2 ° | 16.5 7 ° | 16.6 12 ° | 16.1	2 ° | 16.7 7 ° | 17.0 12 ° | 16.7	2 ° | 16.8 7 ° | 17.1 12 ° | 16.7	2 ° | 17.2 7 ° | 17.8 12 ° | 17.3
Beamwidth, Horizontal Tolerance, degrees	±3.3	±3.1	±6.4	±3	±3.5	±5.3
Beamwidth, Vertical Tolerance, degrees	±0.8	±0.8	±0.8	±0.4	±0.7	±0.2
USLS, beampeak to 20° above beampeak, dB	17	19	14	17	15	17
Front-to-Back Total Power at 180° ± 30°, dB	21	21	30	31	27	27
CPR at Boresight, dB	21	22	16	17	18	17
CPR at Sector, dB	9	6	9	9	8	12

* CommScope® supports NGMN recommendations on Base Station Antenna Standards (BASTA). To learn more about the benefits of BASTA, download the whitepaper Time to Raise the Bar on BSAs.

Array Layout

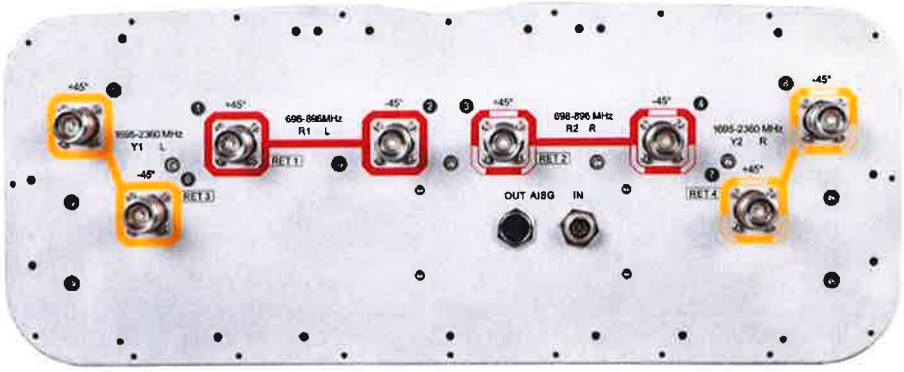


Left Right
Bottom

(Sizes of colored boxes are not true depictions of array sizes)

Array	Freq (MHz)	Conns	RET (MRET)	AISG RET UID
R1	698-896	1-2	1	CPxxxxxxxxxxxxxxxMM.1
R2	698-896	3-4	2	CPxxxxxxxxxxxxxxxMM.2
Y1	1695-2360	5-6	3	CPxxxxxxxxxxxxxxxMM.3
Y2	1695-2360	7-8	4	CPxxxxxxxxxxxxxxxMM.4

Port Configuration



General Specifications

Operating Frequency Band 1695 – 2360 MHz | 698 – 896 MHz

NNHH-65B-R4

Antenna Type	Sector
Band	Multiband
Performance Note	Outdoor usage
Total Input Power, maximum	900 W @ 50 °C

Mechanical Specifications

RF Connector Quantity, total	8
RF Connector Quantity, low band	4
RF Connector Quantity, high band	4
RF Connector Interface	4.3-10 Female
Color	Light gray
Grounding Type	RF connector inner conductor and body grounded to reflector and mounting bracket
Radiator Material	Aluminum | Low loss circuit board
Radome Material	Fiberglass, UV resistant
Reflector Material	Aluminum
RF Connector Location	Bottom
Wind Loading, frontal	685.0 N @ 150 km/h 154.0 lbf @ 150 km/h
Wind Loading, lateral	232.0 N @ 150 km/h 52.2 lbf @ 150 km/h
Wind Loading, maximum	889.0 N @ 150 km/h 199.9 lbf @ 150 km/h
Wind Speed, maximum	241 km/h | 150 mph

Dimensions

Length	1828.0 mm | 72.0 in
Width	498.0 mm | 19.6 in
Depth	197.0 mm | 7.8 in
Net Weight, without mounting kit	35.1 kg | 77.4 lb

Remote Electrical Tilt (RET) Information

Input Voltage	10–30 Vdc
Internal RET	High band (2) | Low band (2)
Power Consumption, idle state, maximum	1 W
Power Consumption, normal conditions, maximum	8 W
Protocol	3GPP/AISG 2.0 (Multi-RET)
RET Hardware	CommRET v2
RET Interface	8-pin DIN Female | 8-pin DIN Male
RET Interface, quantity	1 female | 1 male

NNHH-65B-R4

Packed Dimensions

Length	2010.0 mm | 79.1 in
Width	608.0 mm | 23.9 in
Depth	352.0 mm | 13.9 in
Shipping Weight	49.0 kg | 108.0 lb

Regulatory Compliance/Certifications

Agency	**Classification**
RoHS 2011/65/EU	Compliant by Exemption
China RoHS SJ/T 11364-2006	Above Maximum Concentration Value (MCV)
ISO 9001:2008	Designed, manufactured and/or distributed under this quality management system

Included Products

BSAMNT-3 — Wide Profile Antenna Downtilt Mounting Kit for 2.4 - 4.5 in (60 - 115 mm) OD round members. Kit contains one scissor top bracket set and one bottom bracket set.

* Footnotes

Performance Note	Severe environmental conditions may degrade optimum performance

SAMSUNG

Dual-Band Radio Unit
700/850MHz (B13/B5)
RFV01U-D2A

Samsung's RFV01U-D2A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.

The RFV01U-D2A RU targets dual-band support across Band 13 (700MHz) and Band 5 (850MHz), making it an ideal product for broad coverage footprints across multiple common low-end, long-range frequencies.

The RU handles all Radio Frequency (RF) processing in a single, compact unit, and is designed to interface via CPRI with Samsung's CDU baseband offerings, in both distributed- and central-RAN configurations.

In addition to its minimal footprint and ease of installation, the RU is also designed to reduce cost of ownership through its integrated spectrum analyzer, which allows for remote RF monitoring, greatly reducing the need for on-site maintenance visits.

Features and Benefits

- Dual-band support for broad frequency coverage
- Minimal footprint reduces site costs
- Rapid, easy installation
- Flexibly deployable in any location
- Remote RF monitoring capability
- Convection cooled, silent operation

Key Technical Specifications

Duplex Type: FDD
Operating Frequencies:
B13: DL(746-756MHz)/UL(777-787MHz)
B5: DL(869-894MHz)/UL(824-849MHz)
Instantaneous Bandwidth: 10MHz(B13) + 25MHz(B5)
RF Chain: 4T4R/2T4R/2T2R
Output Power: Total 320W
DU-RU Interface: CPRI (10Gbps)
Dimensions: 380 x 380 x 207mm (29.9L)
Weight: 31.9kg
Input Power: -48V DC
Operating Temp.: -40 - 55°(w/o solar load)
Cooling: Natural convection

SAMSUNG

Dual-Band Radio Unit
700/850MHz (B13/B5)

RFV01U-D2A

Samsung's RFV01U-D2A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.

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Input Power: -48V DC
Operating Temp.: -40 - 55°(w/o solar load)
Cooling: Natural convection

SAMSUNG

Dual-Band Radio Unit
AWS/PCS (B66/B2)
RFV01U-D1A

Samsung's RFV01U-D1A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.

The RFV01U-D1A RU targets dual-band support across Band 66 (AWS) and Band 2 (PCS), making it an ideal product for broad coverage footprints across multiple common mid-range frequencies.

The RU handles all Radio Frequency (RF) processing in a single, compact unit, and is designed to interface via CPRI with Samsung's CDU baseband offerings, in both distributed- and central-RAN configurations.

In addition to its minimal footprint and ease of installation, the RU is also designed to reduce cost of ownership through its integrated spectrum analyzer, which allows for remote RF monitoring, greatly reducing the need for on-site maintenance visits.

Features and Benefits

- Dual-band support for broad frequency coverage
- Minimal footprint reduces site costs
- Rapid, easy installation
- Flexibly deployable in any location
- Remote RF monitoring capability
- Convection cooled, silent operation
- Built-in Broadcast Auxiliary Services (BAS) filter ensures compliant AWS operation without impacting footprint

Key Technical Specifications

Duplex Type: FDD
Operating Frequencies:
B66: DL(2,110-2,180MHz)/UL(1,710-1,780MHz)
B2: DL(1,930-1,990MHz)/UL(1,850-1,910MHz)
Instantaneous Bandwidth:
70MHz(B66) + 60MHz(B2)
RF Chain: 4T4R/2T4R/2T2R
Output Power: Total 320W
DU-RU Interface: CPRI (10Gbps)
Dimensions: 380 x 380 x 255mm (36.8L)
Weight: 38.3kg
Input Power: -48V DC
Operating Temp.: -40 - 55°(w/o solar load)
Cooling: Natural convection

SAMSUNG

Dual-Band Radio Unit
AWS/PCS (B66/B2)
RFV01U-D1A

Samsung's RFV01U-D1A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.

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70MHz(B66) + 60MHz(B2)
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Dimensions: 380 x 380 x 255mm (36.8L)
Weight: 38.3kg
Input Power: -48V DC
Operating Temp.: -40 - 55°(w/o solar load)
Cooling: Natural convection

Product Data Sheet HB158-1-08U8-S8J18

HYBRIFLEX™ RRH Hybrid Feeder Cabling Solution, 1-5/8", Single-Mode Fiber

Product Description

RFS' HYBRIFLEX Remote Radio Head (RRH) hybrid feeder cabling solution combines optical fiber and DC power for RRHs in a single lightweight aluminum corrugated cable, making it the world's most innovative solution for RRH deployments.

It was developed to reduce installation complexity and costs at Cellular sites. HYBRIFLEX allows mobile operators deploying an RRH architecture to standardize the RRH installation process and eliminate the need for and cost of cable grounding. HYBRIFLEX combines optical fiber (multi-mode or single-mode) and power in a single corrugated cable. It eliminates the need for junction boxes and can connect multiple RRHs with a single feeder. Standard RFS CELLFLEX® accessories can be used with HYBRIFLEX cable. Both pre-connectorized and on-site options are available.

Figure 1: HYBRIFLEX Series

Features/Benefits

- Aluminum corrugated armor with outstanding bending characteristics – minimizes installation time and enables mechanical protection and shielding
- Same accessories as 1 5/8" coaxial cable
- Outer conductor grounding – Eliminates typical grounding requirements and saves on installation costs
- Lightweight solution and compact design – Decreases tower loading
- Robust cabling – Eliminates need for expensive cable trays and ducts
- Installation of tight bundled fiber optic cable pairs directly to the RRH – Reduces CAPEX and wind load by eliminating need for interconnection
- Optical fiber and power cables housed in single corrugated cable – Saves CAPEX by standardizing RRH cable installation and reducing installation requirements
- Outdoor polyethylene jacket – Ensures long-lasting cable protection

Technical Specifications

Structure			
Outer Conductor Armor	Corrugated Aluminum	[mm (in)]	46.5 (1.83)
Jacket:	Polyethylene, PE	[mm (in)]	50.3 (1.98)
UV-Protection	Individual and External Jacket		Yes
Mechanical Properties			
Weight, Approximate		[kg/m (lb/ft)]	1.9 (1.30)
Minimum Bending Radius, Single Bending		[mm (in)]	200 (8)
Minimum Bending Radius, Repeated Bending		[mm (in)]	500 (20)
Recommended/Maximum Clamp Spacing		[m (ft)]	1.0 / 1.2 (3.25 / 4.0)
Electrical Properties			
DC-Resistance Outer Conductor Armor		[Ω/km (Ω/1000ft)]	068 (0.205)
DC-Resistance Power Cable, 8.4mm² (8AWG)		[Ω/km (Ω/1000ft)]	2.1 (0.307)
Fiber Optic Properties			
Version			Single-mode OM3
Quantity, Fiber Count			16 (8 pairs)
Core/Clad		[µm]	50/125
Primary Coating (Acrylate)		[µm]	245
Buffer Diameter, Nominal		[µm]	900
Secondary Protection, Jacket, Nominal		[mm (in)]	2.0 (0.08)
Minimum Bending Radius		[mm (in)]	104 (4.1)
Insertion Loss @ wavelength 850nm		dB/km	3.0
Insertion Loss @ wavelength 1310nm		dB/km	1.0
Standards (Meets or exceeds)			UL94-V0, UL1666 RoHS Compliant
DC Power Cable Properties			
Size (Power)		[mm² (AWG)]	8.4 (8)
Quantity, Wire Count (Power)			16 (8 pairs)
Size (Alarm)		[mm² (AWG)]	0.8 (18)
Quantity, Wire Count (Alarm)			4 (2 pairs)
Type			UV protected
Strands			19
Primary Jacket Diameter, Nominal		[mm (in)]	6.8 (0.27)
Standards (Meets or exceeds)			NFPA 130, ICEA S-99-658 UL Type XHHW-2, UL 44 UL-LS Limited Smoke, UL VW-1 IEEE-383 (1974), IEEE1202/FT4 RoHS Compliant
Environmental			
Installation Temperature		[°C (°F)]	-40 to +65 (-40 to149)
Operation Temperature		[°C (°F)]	-40 to +65 (-40 to149)

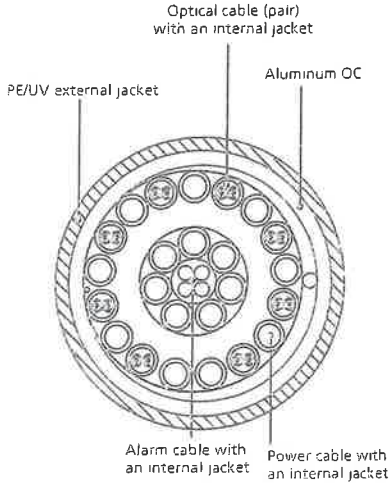


Figure 2: Construction Detail

This data is provisional and subject to change

ATTACHMENT 2

	General	Power	Density					
Site Name: Milldale								
Tower Height: 160'								
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total
*AT&T	1	245	154	850	0.0040	0.5667	0.07%	
*AT&T	1	516	154	1900	0.0085	1.0000	0.08%	
*AT&T	1	1285	154	2300	0.0211	1.0000	0.21%	
*AT&T	1	1476	154	737	0.0242	0.4913	0.49%	
*AT&T	1	2421	154	1900	0.0397	1.0000	0.40%	
*MetroPCS CDMA	3	727	119	2135	0.0614	1.0000	0.61%	
*MetroPCS LTE	1	1200	119	2130	0.0338	1.0000	0.34%	
*Sprint	1	438	148	850	0.0078	0.5667	0.14%	
*Sprint	2	438	148	850	0.0156	0.5667	0.28%	
*Sprint	5	623	148	1900	0.0556	1.0000	0.56%	
*Sprint	2	1566	148	1900	0.0559	1.0000	0.56%	
*Sprint	8	778	148	2500	0.1110	1.0000	1.11%	
*T-Mobile	2	2334	129	2100	0.1110	1.0000	1.11%	
*T-Mobile	2	1167	129	1900	0.0555	1.0000	0.55%	
*T-Mobile	2	1167	129	2100	0.0555	1.0000	0.55%	
*T-Mobile	1	865	129	700	0.0206	0.4667	0.44%	
VZW PCS	1	4900	138	0.0925	1970	1.0	9.25%	
VZW Cellular	1	3050	138	0.0576	869	0.579333	9.94%	
VZW Cellular	3	393	138	0.0223	880	0.579333	3.84%	
VZW AWS	1	7200	138	0.1359	2145	1.0	13.59%	
VZW 700	1	2100	138	0.0396	746	0.497333	7.97%	
								52.1%
* Source: Siting Council								

ATTACHMENT 3

Date: **September 28, 2018**

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

Tower Engineering Professionals
326 Tryon Road
Raleigh, NC 27603
(919) 661-6351

Subject: Structural Analysis Report

Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Carrier Site Number:	Milldale CT
	Carrier Site Name:	39947
Crown Castle Designation:	**Crown Castle BU Number:**	876313
	Crown Castle Site Name:	W. Johnson Ave. Burnt House
	Crown Castle JDE Job Number:	513395
	Crown Castle Work Order Number:	1625408
	Crown Castle Order Number:	446437 Rev. 5
Engineering Firm Designation:	**TEP Project Number:**	25560.180578
Site Data:	**1394 Meriden Waterbury Tpk., Southington, Hartford County, CT 06489**	
	Latitude *41° 33' 51.39"*, Longitude *-72° 53' 30.70"*	
	160 Foot - Monopole Tower	

Dear Denice Nicholson,

Tower Engineering Professionals is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

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

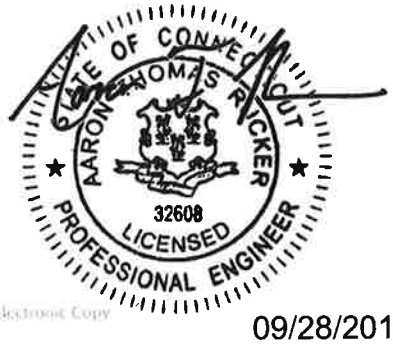
LC7: Proposed Equipment Configuration **Sufficient Capacity**

The analysis has been performed in accordance with the TIA-222-H Standard. This analysis utilizes an ultimate 3-second gust wind speed of 125 mph from the 2016 Connecticut State Building Code. Exposure Category B with a maximum topographic factor, Kzt, of 1.0 and Risk Category II were used in this analysis.

Structural analysis prepared by: Cooper Bowen, E.I. / TLI

Respectfully submitted by:

Aaron T. Rucker, P.E.



Electronic Copy

09/28/2018

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 160-ft Monopole Tower designed by Paul J. Ford and Company. The tower has been modified multiple times in the past to accommodate additional loading. The tower was previously extended 12-ft, bringing the overall tower height to 160-ft. All information provided to TEP was assumed to be accurate and complete.

2) ANALYSIS CRITERIA

Building Code:	2016 Connecticut State Building Code
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1.0
Ice Thickness:	1.50 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
138.0	142.0	1	Lucent	KS24019-L112A	1 1 6	1/2 2-1/4 1-5/8
	138.0	6	Antel	LPA-80063-6CF-EDIN-2		
		5	Commscope	NNHH-65B-R4 w/ Mount Pipe		
		1	Commscope	NNHH-65B-R4		
		3	Samsung Telecommunications	RFV01U-D2A		
		3	Samsung Telecommunications	RFV01U-D1A		
		1	Raycap	RVZDC-6627-PF-48		
		2	Site Pro1	BBPM-K2		
		3	Commscope	BSAMNT-SBS-2-2		
		1	Site Pro1	RMQP-4096-HK		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
157.0	158.0	3	Kathrein	800 10121 w/ Mount Pipe	2 4 6	3/8 3/4 1-5/8
		3	CCI Antennas	HPA-85R-BUU-H8 w/ Mount Pipe		
		3	CCI Antennas	TPA-65R-LCUUUU-H8-K w/ Mount Pipe		
		6	Powerwave Technologies	LGP21401		
		3	Ericsson	RRUS-11		
		3	Ericsson	RRUS 32		
		3	Ericsson	RRUS 32 B2		
		1	Raycap	DC6-48-60-18-8F		
		1	Raycap	TME-DC6-48-60-18-8F w/ Mount Pipe		
		1	Tower Mounts	Side Arm Mount [SO 102-3]		
		1	Tower Mounts	T-Arm Mount [TA 702-3]		
150.0	150.0	1	Tower Mounts	Side Arm Mount [SO 103-3]	-	-
	148.0	3	Alcatel Lucent	800MHz 2X50W RRH w/ Filter		
		3	Alcatel Lucent	PCS 1900MHz 4x45W-65MHz		
148.0	148.0	3	RFS Celwave	APXVSPP18-C-A20 w/ Mount Pipe	4	1-1/4
		3	RFS Celwave	IBC1900BB-1		
		3	RFS Celwave	IBC1900HG-2A		
		3	RFS Celwave	APXVTM14-C-120 w/ Mount Pipe		
		3	Alcatel Lucent	TD-RRH8x20-25		
		1	Tower Mounts	Platform Mount [LP 1201-1]		
127.0	129.0	3	Ericsson	AIR 21 B2A B4P w/ Mount Pipe	1 6	1-1/4 1-5/8
		3	Ericsson	AIR 21 B4A B2P w/ Mount Pipe		
		3	Commscope	LNX-6515DS-VTM w/ Mount Pipe		
		3	Ericsson	KRY 112 144/1		
		3	Ericsson	RRUS 11 B12		
	127.0	1	Tower Mounts	Platform Mount [LP 1201-1]		
119.0	119.0	3	Andrew	HBX-6516DS-VTM w/ Mount Pipe	1 6	3/8 1-5/8
		1	Tower Mounts	Side Arm Mount [SO 102-3]		
		1	Tower Mounts	T-Arm Mount [TA 601-3]		
48.0	50.0	1	Lucent	KS24019-L112A	1	1/2
	48.0	1	Tower Mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Geotechnical Report	Delta Oaks Group	5939573	CCISites
Tower Foundation Drawings	Paul J. Ford and Company	1633746	CCISites
Tower Manufacturer Drawings	Paul J. Ford and Company	2134246	CCISites
Tower Reinforcement Drawings	URS Corporation	1771222	CCISites
Tower Reinforcement Drawings	GPD Group	3348783	CCISites
Post Modification Inspection	Tower Engineering Professionals	3846956	CCISites
Tower Reinforcement Drawings	Paul J. Ford and Company	4094328	CCISites
Post Modification Inspection	Tower Engineering Professionals	4600286	CCISites
Tower Reinforcement Drawings	FDH	5105790	CCISites
Post Modification Inspection	Tower Engineering Professionals	5380973	CCISites
Tower Reinforcement Drawings	Paul J. Ford and Company	5266558	CCISites
Post Modification Inspection	Tower Engineering Professionals	5617077	CCISites

3.1) Analysis Method

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

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

3.2) Assumptions

1) The tower and foundation were built and maintained in accordance with the manufacturer's specification.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2, and the referenced drawings.
3) All tower components are in sufficient condition to carry their full design capacity.
4) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.
5) All antenna mounts and mounting hardware are structurally sufficient to carry the full design capacity requirements of appurtenance wind area and weight as provided by the original manufacturer specifications. It is the carrier's responsibility to ensure compliance to the structural limitations of the existing and/or proposed antenna mounts. TEP did not perform a site visit to verify the size, condition or capacity of the antenna mounts and did not analyze antennas supporting mounts as part of this structural analysis report.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)[1, 2]

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
160 - 155	Pole	TP10.75x10.75x0.349	Pole	15.3%	Pass
155 - 150	Pole	TP10.75x10.75x0.349	Pole	41.5%	Pass
150 - 148	Pole	TP10.75x10.75x0.349	Pole	53.5%	Pass
148 - 143	Pole	TP23.81x23x0.25	Pole	16.9%	Pass
143 - 138	Pole	TP24.62x23.81x0.25	Pole	23.4%	Pass
138 - 133	Pole	TP25.43x24.62x0.25	Pole	34.5%	Pass
133 - 128	Pole	TP26.24x25.43x0.25	Pole	44.2%	Pass
128 - 123	Pole	TP27.05x26.24x0.25	Pole	56.0%	Pass
123 - 118	Pole	TP27.86x27.05x0.25	Pole	66.6%	Pass
118 - 114.75	Pole	TP28.994x27.86x0.25	Pole	73.3%	Pass
114.75 - 109.75	Pole	TP28.696x27.887x0.3125	Pole	66.3%	Pass
109.75 - 105.25	Pole	TP29.425x28.696x0.3125	Pole	72.0%	Pass
105.25 - 105	Pole + Reinf.	TP29.466x29.425x0.4625	Reinf. 5 Tension Rupture	68.8%	Pass
105 - 100	Pole + Reinf.	TP30.276x29.466x0.4625	Reinf. 5 Tension Rupture	75.0%	Pass
100 - 95	Pole + Reinf.	TP31.086x30.276x0.4575	Reinf. 5 Tension Rupture	80.6%	Pass
95 - 90	Pole + Reinf.	TP31.896x31.086x0.4525	Reinf. 5 Tension Rupture	85.8%	Pass
90 - 85	Pole + Reinf.	TP32.706x31.896x0.4475	Reinf. 5 Tension Rupture	90.6%	Pass
85 - 81	Pole + Reinf.	TP34.042x32.706x0.4425	Reinf. 5 Tension Rupture	94.2%	Pass
81 - 75.75	Pole + Reinf.	TP33.579x32.729x0.495	Reinf. 8 Tension Rupture	85.7%	Pass
75.75 - 70.75	Pole + Reinf.	TP34.389x33.579x0.5	Reinf. 8 Tension Rupture	89.0%	Pass
70.75 - 70.5	Pole + Reinf.	TP34.429x34.389x0.5	Reinf. 8 Tension Rupture	89.1%	Pass
70.5 - 70.25	Pole + Reinf.	TP34.47x34.429x0.665	Reinf. 4 Tension Rupture	72.1%	Pass
70.25 - 70	Pole + Reinf.	TP34.51x34.47x0.665	Reinf. 4 Tension Rupture	72.2%	Pass
70 - 69.75	Pole + Reinf.	TP34.551x34.51x0.555	Reinf. 4 Tension Rupture	83.0%	Pass
69.75 - 64.75	Pole + Reinf.	TP35.361x34.551x0.55	Reinf. 4 Tension Rupture	85.8%	Pass
64.75 - 59.75	Pole + Reinf.	TP36.171x35.361x0.545	Reinf. 4 Tension Rupture	88.4%	Pass
59.75 - 54.75	Pole + Reinf.	TP36.981x36.171x0.54	Reinf. 4 Tension Rupture	90.8%	Pass
54.75 - 49.75	Pole + Reinf.	TP37.791x36.981x0.535	Reinf. 4 Tension Rupture	93.1%	Pass
49.75 - 48	Pole + Reinf.	TP38.884x37.791x0.535	Reinf. 4 Tension Rupture	93.8%	Pass
48 - 42	Pole + Reinf.	TP38.296x37.324x0.6675	Reinf. 6 Tension Rupture	85.2%	Pass
42 - 37	Pole + Reinf.	TP39.106x38.296x0.6625	Reinf. 6 Tension Rupture	86.9%	Pass
37 - 32	Pole + Reinf.	TP39.916x39.106x0.6575	Reinf. 6 Tension Rupture	88.4%	Pass
32 - 27.83	Pole + Reinf.	TP40.592x39.916x0.6525	Reinf. 6 Tension Rupture	89.6%	Pass
27.83 - 27.58	Pole + Reinf.	TP40.632x40.592x0.6675	Reinf. 6 Tension Rupture	83.3%	Pass
27.58 - 27.25	Pole + Reinf.	TP40.686x40.632x0.6675	Reinf. 6 Tension Rupture	83.3%	Pass
27.25 - 27	Pole + Reinf.	TP40.726x40.686x0.4525	Pole	86.0%	Pass
27 - 26.75	Pole + Reinf.	TP40.767x40.726x0.6625	Reinf. 3 Tension Rupture	81.6%	Pass
26.75 - 21.75	Pole + Reinf.	TP41.577x40.767x0.6575	Reinf. 3 Tension Rupture	82.8%	Pass
21.75 - 16.75	Pole + Reinf.	TP42.387x41.577x0.6525	Reinf. 3 Tension Rupture	83.9%	Pass
16.75 - 16	Pole + Reinf.	TP42.508x42.387x0.6525	Reinf. 3 Tension Rupture	84.0%	Pass
16 - 15.75	Pole + Reinf.	TP42.549x42.508x0.8075	Reinf. 7 Tension Rupture	75.3%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
15.75 - 14.83	Pole + Reinf.	TP42.697x42.549x0.8025	Reinf. 7 Tension Rupture	75.5%	Pass
14.83 - 14.58	Pole + Reinf.	TP42.738x42.697x0.7175	Reinf. 7 Tension Rupture	86.2%	Pass
14.58 - 12	Pole + Reinf.	TP43.156x42.738x0.7175	Reinf. 7 Tension Rupture	86.8%	Pass
12 - 11.75	Pole + Reinf.	TP43.197x43.156x0.8225	Reinf. 7 Tension Rupture	77.2%	Pass
11.75 - 10	Pole + Reinf.	TP43.48x43.197x0.8175	Reinf. 7 Tension Rupture	77.6%	Pass
10 - 9.75	Pole + Reinf.	TP43.521x43.48x0.7275	Reinf. 1 Compression	76.1%	Pass
9.75 - 4.75	Pole + Reinf.	TP44.331x43.521x0.7175	Reinf. 1 Compression	77.0%	Pass
4.75 - 0.5	Pole + Reinf.	TP45.019x44.331x0.7125	Reinf. 1 Compression	77.7%	Pass
0.5 - 0.25	Pole + Reinf.	TP45.06x45.019x0.7825	Reinf. 9 Compression	69.2%	Pass
0.25 - 0	Pole + Reinf.	TP45.1x45.06x0.7825	Reinf. 9 Compression	69.2%	Pass
				Summary	
			Pole	86.0%	Pass
			Reinforcement	94.2%	Pass
			Overall	**94.2%**	**Pass**

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1, 2	Flange Connection	148.0	7.9	Pass
1, 2	Anchor Rods	-	75.1	Pass
1, 2	Base Plate	-	59.4	Pass
1, 2	Base Foundation Soil Interaction	-	66.4	Pass
1, 2	Base Foundation Structural	-	70.1	Pass

Structure Rating (max from all components) =	**94.2%**

Notes:
1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity listed.
2) Rating per TIA-222-H Section 15.5

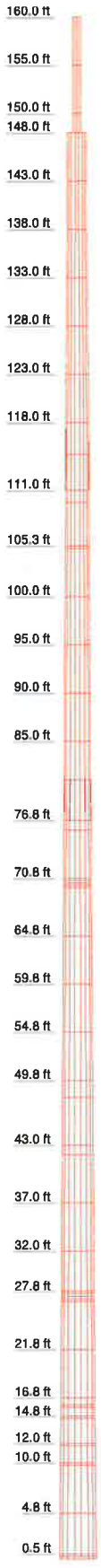
4.1) Recommendations

1) If the load differs from that described in Tables 1 and 2 of this report, the referenced drawings, or the provisions of this analysis are found to be invalid, another structural analysis should be performed.
2) The tower and its foundation have sufficient capacity to carry the proposed load configuration. No modifications are required at this time.

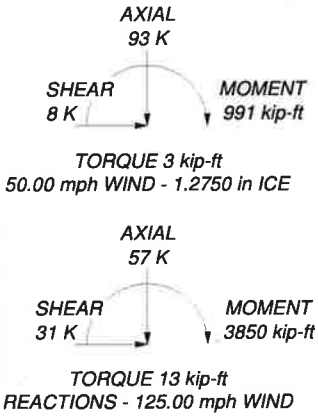
APPENDIX A

TNXTOWER OUTPUT

Section	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50
Length (ft)	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.2500	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000	5.0000
Number of Sides	0	0	0	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18	18
Thickness (in)	0.3490	0.3490	0.3490	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.2500	0.4575	0.4525	0.4475	0.4425	0.4375	0.4325	0.4275	0.4225	0.4175	0.4125	0.4075	0.4025	0.3975	0.3925	0.3875	0.3825	0.3775	0.3725	0.3675	0.3625	0.3575	0.3525	0.3475	0.3425	0.3375	0.3325	0.3275	0.3225	0.3175	0.3125	0.3075	0.3025	0.2975	0.2925	0.2875	0.2825	0.2775	0.2725	0.2675	0.2625
Socket Length (ft)										3.7500									4.2500										5.0000																								
Top Dia (in)	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500
Bot Dia (in)	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500	10.7500
Grade	A53-B-35									A607-60									A607-65																																		
Weight (K)	0.2	0.2	0.1	0.3	0.3	0.3	0.3	0.4	0.4	0.5	0.5	0.4	0.0	0.7	0.7	0.7	0.7	1.3	1.0	1.0	1.0	1.0	1.0	1.0	1.4	1.6	1.3	1.3	1.1	1.4	1.4	1.4	1.4	1.6	0.0	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4	1.4



ALL REACTIONS ARE FACTORED



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
800 10121 w/ Mount Pipe	157	(2) LPA-80063-6CF-EDIN-2	138
800 10121 w/ Mount Pipe	157	(2) LPA-80063-6CF-EDIN-2	138
800 10121 w/ Mount Pipe	157	LPA-80063-6CF-EDIN-2	138
HPA-85R-BUU-H8 w/ Mount Pipe	157	LPA-80063-6CF-EDIN-2	138
HPA-85R-BUU-H8 w/ Mount Pipe	157	KS24019-L112A	138
HPA-85R-BUU-H8 w/ Mount Pipe	157	(2) NNHH-65B-R4 w/ Mount Pipe	138
TPA-65R-LCUUUU-H8-K w/ Mount Pipe	157	(2) NNHH-65B-R4 w/ Mount Pipe	138
		NNHH-65B-R4	138
TPA-65R-LCUUUU-H8-K w/ Mount Pipe	157	NNHH-65B-R4 w/ Mount Pipe	138
		(2) RFV01U-D2A	138
TPA-65R-LCUUUU-H8-K w/ Mount Pipe	157	RFV01U-D2A	138
		RFV01U-D1A	138
(2) LGP21401	157	RFV01U-D1A	138
(2) LGP21401	157	RFV01U-D1A	138
(2) LGP21401	157	RVZDC-6627-PF-48	138
RRUS-11	157	Miscellaneous [NA 509-3]	138
RRUS-11	157	Platform Mount [LP 301-1]	138
RRUS-11	157	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	127
RRUS 32	157	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	127
RRUS 32	157	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	127
RRUS 32	157	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	127
RRUS 32 B2	157	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	127
RRUS 32 B2	157	ERICSSON AIR 21 B4A B2P w/ Mount Pipe	127
RRUS 32 B2	157	LNX-6515DS-VTM w/ Mount Pipe	127
DC6-48-60-18-8F	157	LNX-6515DS-VTM w/ Mount Pipe	127
TME-DC6-48-60-18-8F w/ Mount Pipe	157	LNX-6515DS-VTM w/ Mount Pipe	127
Side Arm Mount [SO 102-3]	157	KRY 112 144/1	127
T-Arm Mount [TA 702-3]	157	KRY 112 144/1	127
800MHZ 2X50W RRH W/FILTER	150	KRY 112 144/1	127
800MHZ 2X50W RRH W/FILTER	150	RRUS 11 B12	127
800MHZ 2X50W RRH W/FILTER	150	RRUS 11 B12	127
PCS 1900MHZ 4X45W-65MHZ	150	RRUS 11 B12	127
PCS 1900MHZ 4X45W-65MHZ	150	Platform Mount [LP 1201-1]	127
PCS 1900MHZ 4X45W-65MHZ	150	HBX-6516DS-VTM w/ Mount Pipe	119
Side Arm Mount [SO 103-3]	150	HBX-6516DS-VTM w/ Mount Pipe	119
APXVSPP18-C-A20 w/ Mount Pipe	148	HBX-6516DS-VTM w/ Mount Pipe	119
APXVSPP18-C-A20 w/ Mount Pipe	148	2.4" Dia. x 6-ft	119
APXVSPP18-C-A20 w/ Mount Pipe	148	2.4" Dia. x 6-ft	119
APXVTM14-C-120 w/ Mount Pipe	148	2.4" Dia. x 6-ft	119
APXVTM14-C-120 w/ Mount Pipe	148	Side Arm Mount [SO 102-3]	119
APXVTM14-C-120 w/ Mount Pipe	148	T-Arm Mount [TA 601-3]	119
IBC1900BB-1	148	KS24019-L112A	48
IBC1900BB-1	148	Side Arm Mount [SO 701-1]	48
IBC1900BB-1	148		
IBC1900HG-2A	148		
IBC1900HG-2A	148		
IBC1900HG-2A	148		
(3) TD-RRH8X20-25	148		
Platform Mount [LP 1201-1]	148		

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 B to the TIA-222-H Standard.
3. Tower designed for a 125.00 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50.00 mph basic wind with 1.27 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60.00 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.0000 ft
8. TIA-222-H Annex S

Tower Engineering Professionals

Tower Engineering Professionals, Inc.
326 Tryon Road
Raleigh, NC 27603-5263
Phone: (919) 661-6351
FAX: (919) 661-6350

Job:	***West Johnson Ave. Burnt House (BU 876313)***		
Project:	***TEP No. 25560.180578***		
Client:	Crown Castle	Drawn by: TLI	App'd:
Code:	TIA-222-H	Date: 09/28/18	Scale: N
Path:	C:\Users\finlante\Desktop\25560.180578 WEST JOHNSON AVE. BURNT HOUSE\tnxTower\876313_LC7.eri		Dwg No.

Tower Input Data

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

Tower is located in Hartford County, Connecticut.
Tower base elevation above sea level: 133.0000 ft.
Basic wind speed of 125.00 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height 0.0000 ft.
Nominal ice thickness of 1.2750 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50.00 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60.00 mph.
TIA-222-H Annex S.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.05.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	160.0000-155.0000	5.0000	0.000	Round	10.7500	10.7500	0.3490		A53-B-35 (35 ksi)
L2	155.0000-150.0000	5.0000	0.000	Round	10.7500	10.7500	0.3490		A53-B-35 (35 ksi)
L3	150.0000-148.0000	2.0000	0.000	Round	10.7500	10.7500	0.3490		A53-B-35 (35 ksi)
L4	148.0000-143.0000	5.0000	0.000	18	23.0000	23.8100	0.2500	1.0000	A607-60 (60 ksi)
L5	143.0000-138.0000	5.0000	0.000	18	23.8100	24.6200	0.2500	1.0000	A607-60 (60 ksi)
L6	138.0000-133.0000	5.0000	0.000	18	24.6200	25.4300	0.2500	1.0000	A607-60 (60 ksi)
L7	133.0000-128.0000	5.0000	0.000	18	25.4300	26.2400	0.2500	1.0000	A607-60 (60 ksi)
L8	128.0000-123.0000	5.0000	0.000	18	26.2400	27.0500	0.2500	1.0000	A607-60 (60 ksi)
L9	123.0000-118.0000	5.0000	0.000	18	27.0500	27.8600	0.2500	1.0000	A607-60 (60 ksi)
L10	118.0000-111.0000	7.0000	3.750	18	27.8600	28.9940	0.2500	1.0000	A607-60 (60 ksi)
L11	111.0000-109.7500	5.0000	0.000	18	27.8865	28.6964	0.3125	1.2500	A607-60 (60 ksi)
L12	109.7500-105.2500	4.5000	0.000	18	28.6964	29.4254	0.3125	1.2500	A607-60 (60 ksi)
L13	105.2500-105.0000	0.2500	0.000	18	29.4254	29.4659	0.4625	1.8500	A607-60 (60 ksi)
L14	105.0000-100.0000	5.0000	0.000	18	29.4659	30.2758	0.4625	1.8500	A607-60 (60 ksi)
L15	100.0000-95.0000	5.0000	0.000	18	30.2758	31.0857	0.4575	1.8300	A607-60 (60 ksi)
L16	95.0000-90.0000	5.0000	0.000	18	31.0857	31.8957	0.4525	1.8100	A607-60 (60 ksi)
L17	90.0000-85.0000	5.0000	0.000	18	31.8957	32.7056	0.4475	1.7900	A607-60 (60 ksi)
L18	85.0000-76.7500	8.2500	4.250	18	32.7056	34.0420	0.4425	1.7700	A607-60 (60 ksi)
L19	76.7500-75.7500	5.2500	0.000	18	32.7286	33.5790	0.4950	1.9800	A607-65 (65 ksi)
L20	75.7500-70.7500	5.0000	0.000	18	33.5790	34.3889	0.5000	2.0000	A607-65 (65 ksi)
L21	70.7500-70.5000	0.2500	0.000	18	34.3889	34.4294	0.5000	2.0000	A607-65 (65 ksi)
L22	70.5000-70.2500	0.2500	0.000	18	34.4294	34.4699	0.6650	2.6600	A607-65 (65 ksi)
L23	70.2500-70.0000	0.2500	0.000	18	34.4699	34.5104	0.6650	2.6600	A607-65 (65 ksi)
L24	70.0000-69.7500	0.2500	0.000	18	34.5104	34.5509	0.5550	2.2200	A607-65 (65 ksi)
L25	69.7500-64.7500	5.0000	0.000	18	34.5509	35.3608	0.5500	2.2000	A607-65 (65 ksi)
L26	64.7500-59.7500	5.0000	0.000	18	35.3608	36.1707	0.5450	2.1800	A607-65 (65 ksi)
L27	59.7500-54.7500	5.0000	0.000	18	36.1707	36.9807	0.5400	2.1600	A607-65 (65 ksi)
L28	54.7500-49.7500	5.0000	0.000	18	36.9807	37.7906	0.5350	2.1400	A607-65 (65 ksi)
L29	49.7500-43.0000	6.7500	5.000	18	37.7906	38.8840	0.5350	2.1400	A607-65 (65 ksi)
L30	43.0000-42.0000	6.0000	0.000	18	37.3241	38.2961	0.6675	2.6700	A607-65 (65 ksi)
L31	42.0000-37.000	5.0000	0.000	18	38.2961	39.1061	0.6625	2.6500	A607-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
	0								(65 ksi)
L32	37.0000-32.000	5.0000	0.000	18	39.1061	39.9160	0.6575	2.6300	A607-65
	0								(65 ksi)
L33	32.0000-27.830	4.1700	0.000	18	39.9160	40.5916	0.6525	2.6100	A607-65
	0								(65 ksi)
L34	27.8300-27.580	0.2500	0.000	18	40.5916	40.6321	0.6675	2.6700	A607-65
	0								(65 ksi)
L35	27.5800-27.250	0.3300	0.000	18	40.6321	40.6855	0.6675	2.6700	A607-65
	0								(65 ksi)
L36	27.2500-27.000	0.2500	0.000	18	40.6855	40.7260	0.4525	1.8100	A607-65
	0								(65 ksi)
L37	27.0000-26.750	0.2500	0.000	18	40.7260	40.7665	0.6625	2.6500	A607-65
	0								(65 ksi)
L38	26.7500-21.750	5.0000	0.000	18	40.7665	41.5765	0.6575	2.6300	A607-65
	0								(65 ksi)
L39	21.7500-16.750	5.0000	0.000	18	41.5765	42.3865	0.6525	2.6100	A607-65
	0								(65 ksi)
L40	16.7500-16.000	0.7500	0.000	18	42.3865	42.5080	0.6525	2.6100	A607-65
	0								(65 ksi)
L41	16.0000-15.750	0.2500	0.000	18	42.5080	42.5485	0.8075	3.2300	A607-65
	0								(65 ksi)
L42	15.7500-14.833	0.9170	0.000	18	42.5485	42.6971	0.8025	3.2100	A607-65
	0								(65 ksi)
L43	14.8330-14.583	0.2500	0.000	18	42.6971	42.7376	0.7175	2.8700	A607-65
	0								(65 ksi)
L44	14.5830-12.000	2.5830	0.000	18	42.7376	43.1560	0.7175	2.8700	A607-65
	0								(65 ksi)
L45	12.0000-11.750	0.2500	0.000	18	43.1560	43.1965	0.8225	3.2900	A607-65
	0								(65 ksi)
L46	11.7500-10.000	1.7500	0.000	18	43.1965	43.4800	0.8175	3.2700	A607-65
	0								(65 ksi)
L47	10.0000-9.7500	0.2500	0.000	18	43.4800	43.5205	0.7275	2.9100	A607-65
									(65 ksi)
L48	9.7500-4.7500	5.0000	0.000	18	43.5205	44.3305	0.7175	2.8700	A607-65
									(65 ksi)
L49	4.7500-0.5000	4.2500	0.000	18	44.3305	45.0190	0.7125	2.8500	A607-65
									(65 ksi)
L50	0.5000-0.2500	0.2500	0.000	18	45.0190	45.0595	0.7825	3.1300	A607-65
									(65 ksi)
L51	0.2500-0.0000	0.2500		18	45.0595	45.1000	0.7825	3.1300	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	10.7500	11.4038	154.3829	3.6794	5.3750	28.7224	308.7659	5.6985	0.0000	0
	10.7500	11.4038	154.3829	3.6794	5.3750	28.7224	308.7659	5.6985	0.0000	0
L2	10.7500	11.4038	154.3829	3.6794	5.3750	28.7224	308.7659	5.6985	0.0000	0
	10.7500	11.4038	154.3829	3.6794	5.3750	28.7224	308.7659	5.6985	0.0000	0
L3	10.7500	11.4038	154.3829	3.6794	5.3750	28.7224	308.7659	5.6985	0.0000	0
	10.7500	11.4038	154.3829	3.6794	5.3750	28.7224	308.7659	5.6985	0.0000	0
L4	23.3162	18.0521	1180.3983	8.0762	11.6840	101.0269	2362.3498	9.0278	3.6080	14.432
	24.1387	18.6949	1311.0228	8.3638	12.0955	108.3895	2623.7706	9.3492	3.7506	15.002
L5	24.1387	18.6949	1311.0228	8.3638	12.0955	108.3895	2623.7706	9.3492	3.7506	15.002
	24.9612	19.3376	1450.9451	8.6514	12.5070	116.0110	2903.7993	9.6706	3.8931	15.572

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
L6	24.9612	19.3376	1450.9451	8.6514	12.5070	116.0110	2903.7993	9.6706	3.8931	15.572
	25.7837	19.9803	1600.4848	8.9389	12.9184	123.8915	3203.0756	9.9921	4.0357	16.143
L7	25.7837	19.9803	1600.4848	8.9389	12.9184	123.8915	3203.0756	9.9921	4.0357	16.143
	26.6062	20.6231	1759.9617	9.2264	13.3299	132.0309	3522.2392	10.3135	4.1782	16.713
L8	26.6062	20.6231	1759.9617	9.2264	13.3299	132.0309	3522.2392	10.3135	4.1782	16.713
	27.4287	21.2658	1929.6954	9.5140	13.7414	140.4293	3861.9300	10.6349	4.3208	17.283
L9	27.4287	21.2658	1929.6954	9.5140	13.7414	140.4293	3861.9300	10.6349	4.3208	17.283
	28.2512	21.9085	2110.0056	9.8016	14.1529	149.0867	4222.7875	10.9563	4.4634	17.853
L10	28.2512	21.9085	2110.0056	9.8016	14.1529	149.0867	4222.7875	10.9563	4.4634	17.853
	29.4027	22.8084	2380.8169	10.2041	14.7290	161.6420	4764.7665	11.4063	4.6629	18.652
L11	28.8853	27.3500	2627.2035	9.7888	14.1663	185.4539	5257.8639	13.6776	4.3580	13.946
	29.0909	28.1533	2865.5776	10.0763	14.5778	196.5715	5734.9257	14.0793	4.5006	14.402
L12	29.0909	28.1533	2865.5776	10.0763	14.5778	196.5715	5734.9257	14.0793	4.5006	14.402
	29.8311	28.8763	3092.0726	10.3351	14.9481	206.8540	6188.2138	14.4409	4.6289	14.812
L13	29.8080	42.5168	4505.8955	10.2818	14.9481	301.4362	9017.7201	21.2624	4.3649	9.438
	29.8491	42.5762	4524.8228	10.2962	14.9687	302.2864	9055.5995	21.2922	4.3720	9.453
L14	29.8491	42.5762	4524.8228	10.2962	14.9687	302.2864	9055.5995	21.2922	4.3720	9.453
	30.6715	43.7652	4914.5812	10.5837	15.3801	319.5414	9835.6292	21.8868	4.5145	9.761
L15	30.6723	43.2993	4863.8970	10.5855	15.3801	316.2459	9734.1940	21.6538	4.5233	9.887
	31.4947	44.4754	5271.1042	10.8730	15.7916	333.7926	10549.1442	22.2419	4.6659	10.199
L16	31.4955	43.9965	5216.0502	10.8748	15.7916	330.3063	10438.9638	22.0024	4.6747	10.331
	32.3179	45.1598	5640.8183	11.1623	16.2030	348.1341	11289.0588	22.5842	4.8172	10.646
L17	32.3187	44.6679	5581.1504	11.1641	16.2030	344.4516	11169.6447	22.3382	4.8260	10.784
	33.1411	45.8183	6023.5720	11.4516	16.6144	362.5502	12055.0701	22.9135	4.9686	11.103
L18	33.1419	45.3134	5959.0397	11.4534	16.6144	358.6661	11925.9204	22.6610	4.9774	11.248
	34.4989	47.1903	6730.6358	11.9278	17.2933	389.2040	13470.1280	23.5996	5.2126	11.78
L19	33.8561	50.6431	6647.7431	11.4429	16.6261	399.8376	13304.2334	25.3264	4.8890	9.877
	34.0206	51.9792	7187.9126	11.7448	17.0581	421.3777	14385.2832	25.9946	5.0387	10.179
L20	34.0199	52.4963	7257.2264	11.7430	17.0581	425.4411	14524.0020	26.2532	5.0299	10.06
	34.8423	53.7817	7803.4567	12.0306	17.4696	446.6887	15617.1813	26.8960	5.1724	10.345
L21	34.8423	53.7817	7803.4567	12.0306	17.4696	446.6887	15617.1813	26.8960	5.1724	10.345
	34.8834	53.8460	7831.4649	12.0449	17.4901	447.7647	15673.2346	26.9281	5.1796	10.359
L22	34.8579	71.2669	10264.6281	11.9864	17.4901	586.8810	20542.7626	35.6402	4.8892	7.352
	34.8991	71.3523	10301.6059	12.0007	17.5107	588.3032	20616.7670	35.6829	4.8963	7.363
L23	34.8991	71.3523	10301.6059	12.0007	17.5107	588.3032	20616.7670	35.6829	4.8963	7.363
	34.9402	71.4378	10338.6725	12.0151	17.5313	589.7272	20690.9489	35.7257	4.9034	7.374
L24	34.9572	59.8148	8712.9198	12.0542	17.5313	496.9928	17437.3043	29.9131	5.0970	9.184
	34.9983	59.8861	8744.1310	12.0685	17.5519	498.1885	17499.7677	29.9488	5.1042	9.197
L25	34.9990	59.3554	8669.1790	12.0703	17.5519	493.9182	17349.7651	29.6833	5.1130	9.296
	35.8215	60.7692	9303.5727	12.3578	17.9633	517.9213	18619.3873	30.3904	5.2555	9.555
L26	35.8222	60.2254	9222.9678	12.3596	17.9633	513.4341	18458.0714	30.1184	5.2643	9.659
	36.6447	61.6265	9881.7245	12.6471	18.3747	537.7886	19776.4516	30.8191	5.4069	9.921
L27	36.6454	61.0697	9795.1895	12.6489	18.3747	533.0791	19603.2678	30.5406	5.4157	10.029
	37.4679	62.4579	10478.4552	12.9364	18.7862	557.7746	20970.6982	31.2349	5.5582	10.293
L28	37.4686	61.8880	10385.7063	12.9382	18.7862	552.8375	20785.0784	30.9499	5.5670	10.406
	38.2910	63.2634	11093.6075	13.2257	19.1976	577.8636	22201.8123	31.6377	5.7095	10.672
L29	38.2910	63.2634	11093.6075	13.2257	19.1976	577.8636	22201.8123	31.6377	5.7095	10.672
	39.4013	65.1201	12099.3011	13.6139	19.7531	612.5276	24214.5228	32.5662	5.9020	11.032
L30	38.6194	77.6623	13184.1225	13.0131	18.9606	695.3420	26385.5930	38.8385	5.3942	8.081
	38.7839	79.7216	14260.9539	13.3581	19.4544	733.0452	28540.6728	39.8684	5.5653	8.338
L31	38.7846	79.1349	14159.7734	13.3599	19.4544	727.8442	28338.1786	39.5750	5.5741	8.414
	39.6071	80.8381	15093.8812	13.6475	19.8659	759.7893	30207.6233	40.4268	5.7167	8.629
L32	39.6079	80.2385	14985.8108	13.6492	19.8659	754.3493	29991.3402	40.1269	5.7255	8.708
	40.4304	81.9289	15953.0180	13.9368	20.2774	786.7407	31927.0273	40.9722	5.8680	8.925
L33	40.4312	81.3162	15837.7520	13.9386	20.2774	781.0562	31696.3437	40.6658	5.8768	9.007
	41.1171	82.7152	16669.3681	14.1784	20.6205	808.3872	33360.6702	41.3655	5.9957	9.189
L34	41.1148	84.5850	17033.3658	14.1730	20.6205	826.0394	34089.1445	42.3005	5.9693	8.943
	41.1559	84.6708	17085.2551	14.1874	20.6411	827.7300	34192.9915	42.3434	5.9764	8.953
L35	41.1559	84.6708	17085.2551	14.1874	20.6411	827.7300	34192.9915	42.3434	5.9764	8.953
	41.2102	84.7840	17153.9103	14.2064	20.6683	829.9641	34330.3921	42.4001	5.9859	8.968
L36	41.2434	57.7841	11817.1175	14.2827	20.6683	571.7521	23649.7842	28.8975	6.3643	14.065
	41.2845	57.8423	11852.8396	14.2971	20.6888	572.9101	23721.2756	28.9266	6.3714	14.08

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
L37	41.2521	84.2446	17083.5552	14.2226	20.6888	825.7381	34189.5893	42.1303	6.0018	9.059
	41.2932	84.3298	17135.4161	14.2369	20.7094	827.4220	34293.3794	42.1729	6.0089	9.07
L38	41.2940	83.7038	17012.4537	14.2387	20.7094	821.4845	34047.2929	41.8598	6.0177	9.152
	42.1165	85.3941	18064.0955	14.5263	21.1209	855.2720	36151.9602	42.7052	6.1603	9.369
L39	42.1173	84.7551	17933.2983	14.5280	21.1209	849.0792	35890.1936	42.3856	6.1691	9.455
	42.9397	86.4326	19019.3522	14.8156	21.5324	883.2918	38063.7305	43.2245	6.3116	9.673
L40	42.9397	86.4326	19019.3522	14.8156	21.5324	883.2918	38063.7305	43.2245	6.3116	9.673
	43.0631	86.6843	19185.9474	14.8587	21.5941	888.4820	38397.1403	43.3504	6.3330	9.706
L41	43.0392	106.8787	23480.7223	14.8037	21.5941	1087.3687	46992.3411	53.4495	6.0602	7.505
	43.0803	106.9825	23549.2023	14.8181	21.6147	1089.5019	47129.3913	53.5014	6.0673	7.514
L42	43.0811	106.3328	23411.7980	14.8198	21.6147	1083.1449	46854.4019	53.1765	6.0761	7.572
	43.2319	106.7111	23662.6201	14.8726	21.6901	1090.9403	47356.3760	53.3657	6.1023	7.604
L43	43.2451	95.6020	21285.3326	14.9027	21.6901	981.3379	42598.6729	47.8101	6.2519	8.713
	43.2862	95.6942	21346.9968	14.9171	21.7107	983.2483	42722.0826	47.8562	6.2590	8.723
L44	43.2862	95.6942	21346.9968	14.9171	21.7107	983.2483	42722.0826	47.8562	6.2590	8.723
	43.7111	96.6471	21991.0981	15.0657	21.9233	1003.0945	44011.1326	48.3328	6.3327	8.826
L45	43.6949	110.5165	25022.6540	15.0284	21.9233	1141.3748	50078.2334	55.2688	6.1479	7.475
	43.7360	110.6222	25094.5387	15.0428	21.9438	1143.5806	50222.0974	55.3216	6.1550	7.483
L46	43.7368	109.9627	24950.8186	15.0446	21.9438	1137.0311	49934.4681	54.9918	6.1638	7.54
	44.0247	110.6983	25454.9063	15.1452	22.0878	1152.4394	50943.3069	55.3597	6.2137	7.601
L47	44.0385	98.7192	22796.1960	15.1771	22.0878	1032.0696	45622.3878	49.3690	6.3721	8.759
	44.0797	98.8127	22861.0421	15.1915	22.1084	1034.0423	45752.1654	49.4157	6.3792	8.769
L48	44.0812	97.4772	22562.6111	15.1951	22.1084	1020.5437	45154.9107	48.7479	6.3968	8.915
	44.9037	99.3219	23867.9093	15.4826	22.5199	1059.8587	47767.2246	49.6704	6.5394	9.114
L49	44.9045	98.6410	23709.7351	15.4844	22.5199	1052.8349	47450.6681	49.3299	6.5482	9.19
	45.6036	100.1980	24850.2977	15.7288	22.8697	1086.6058	49733.2941	50.1085	6.6693	9.36
L50	45.5928	109.8682	27162.5798	15.7040	22.8697	1187.7128	54360.9009	54.9445	6.5461	8.366
	45.6339	109.9688	27237.2522	15.7183	22.8902	1189.9075	54510.3439	54.9948	6.5533	8.375
L51	45.6339	109.9688	27237.2522	15.7183	22.8902	1189.9075	54510.3439	54.9948	6.5533	8.375
	45.6750	110.0694	27312.0613	15.7327	22.9108	1192.1042	54660.0606	55.0451	6.5604	8.384

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 150.0000-148. 0000				1	1	1			
L4 148.0000-143. 0000				1	1	1			
L5 143.0000-138. 0000				1	1	1			
L6 138.0000-133. 0000				1	1	1			
L7 133.0000-128. 0000				1	1	1			
L8 128.0000-123. 0000				1	1	1			
L9				1	1	1			

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
123.0000-118.0000									
L10				1	1	1			
118.0000-111.0000									
L11				1	1	1			
111.0000-109.7500									
L12				1	1	1			
109.7500-105.2500									
L13				1	1	0.970188			
105.2500-105.0000									
L14				1	1	0.962187			
105.0000-100.0000									
L15				1	1	0.964885			
100.0000-95.0000									
L16				1	1	0.968052			
95.0000-90.0000									
L17				1	1	0.971672			
90.0000-85.0000									
L18				1	1	0.97706			
85.0000-76.7500									
L19				1	1	1.10663			
76.7500-75.7500									
L20				1	1	1.08746			
75.7500-70.7500									
L21				1	1	1.08706			
70.7500-70.5000									
L22				1	1	1.05859			
70.5000-70.2500									
L23				1	1	1.058			
70.2500-70.0000									
L24				1	1	0.962301			
70.0000-69.7500									
L25				1	1	0.96418			
69.7500-64.7500									
L26				1	1	0.966411			
64.7500-59.7500									
L27				1	1	0.968982			
59.7500-54.7500									
L28				1	1	0.971882			
54.7500-49.7500									

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
L29 49.7500-43.0000				1	1	0.969836			
L30 43.0000-42.0000				1	1	0.9652			
L31 42.0000-37.0000				1	1	0.965782			
L32 37.0000-32.0000				1	1	0.966653			
L33 32.0000-27.8300				1	1	0.968804			
L34 27.8300-27.5800				1	1	1.04713			
L35 27.5800-27.2500				1	1	1.04661			
L36 27.2500-27.0000				1	1	1.11365			
L37 27.0000-26.7500				1	1	0.96541			
L38 26.7500-21.7500				1	1	0.966549			
L39 21.7500-16.7500				1	1	0.967949			
L40 16.7500-16.0000				1	1	0.967086			
L41 16.0000-15.7500				1	1	0.95238			
L42 15.7500-14.8330				1	1	0.956735			
L43 14.8330-14.5830				1	1	0.978954			
L44 14.5830-12.0000				1	1	0.975313			
L45 12.0000-11.7500				1	1	1.00575			
L46 11.7500-10.0000				1	1	1.00861			
L47 10.0000-9.7500				1	1	0.948333			
L48 9.7500-4.7500				1	1	0.954796			

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
L49 4.7500-0.5000				1	1	0.955989			
L50 0.5000-0.2500				1	1	0.927215			
L51 0.2500-0.0000				1	1	0.926878			

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 klf
LDF7-50A(1-5/8)	A	No	Surface Ar (CaAa)	127.0000 - 0.0000	5	5	0.500 0.500	1.9800		0.001
***										
Safety Line 3/8	B	No	Surface Ar (CaAa)	0.0000 - 0.0000	1	1	0.250 0.250	0.3750		0.000
Step Pegs (5/8" SR) 7.5-in w/ 30" Step	B	No	Surface Ar (CaAa)	0.0000 - 0.0000	1	1	0.250 0.250	0.3130		0.001
**********										
(Area) Aero MP3-06	A	No	Surface Ar (CaAa)	14.0000 - 0.0000	1	1	-0.250 -0.250	2.6100		0.000
(Area) Aero MP3-06	A	No	Surface Ar (CaAa)	30.5000 - 0.0000	1	1	0.500 0.500	2.6100		0.000
(Area) Aero MP3-06	B	No	Surface Ar (CaAa)	30.5000 - 0.0000	1	1	0.250 0.250	2.6100		0.000
(Area) Aero MP3-06	C	No	Surface Ar (CaAa)	14.0000 - 0.0000	1	1	0.000 0.000	2.6100		0.000
***										
***										
PL 1.25x6.5	A	No	Surface Ar (CaAa)	43.0000 - 30.5000	1	1	-0.250 -0.250	1.2500		0.000
PL 1.25x6.5	A	No	Surface Ar (CaAa)	43.0000 - 30.5000	1	1	0.500 0.500	1.2500		0.000
***										
(Area) Aero MP3-05	A	No	Surface Ar (CaAa)	73.1667 - 43.0000	1	1	0.500 0.500	2.0900		0.000
(Area) Aero MP3-05	A	No	Surface Ar (CaAa)	73.1667 - 43.0000	1	1	-0.250 -0.250	2.0900		0.000
***										
(Area) CCI-65FP-060100	A	No	Surface Ar (CaAa)	82.5000 - 67.5000	1	1	0.500 0.500	1.0000		0.000
(Area) CCI-65FP-060100	A	No	Surface Ar (CaAa)	82.5000 - 67.5000	1	1	-0.250 -0.250	1.0000		0.000
***										
(Area) Aero MP3-04	A	No	Surface Ar (CaAa)	106.7500 - 76.7500	1	1	0.500 0.500	1.6100		0.000
(Area) Aero MP3-04	B	No	Surface Ar (CaAa)	106.7500 - 76.5000	1	1	0.250 0.250	1.6100		0.000
***										
(Area) HSS 6x6x1/2	A	No	Surface Ar (CaAa)	155.5000 - 140.0000	1	1	0.000 0.000	6.0000		0.035
(Area) HSS 6x6x1/2	B	No	Surface Ar (CaAa)	155.5000 - 140.0000	1	1	0.000 0.000	6.0000		0.035

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 klf
(Area) HSS 6x6x1/2	C	No	Surface Ar (CaAa)	155.5000 - 140.0000	1	1	0.000 0.000	6.0000		0.035

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 klf
157									
LDF7-50A(1-5/8)	C	No	No	Inside Pole	157.0000 - 0.0000	6	No Ice	0.0000	0.001
							1/2" Ice	0.0000	0.001
							1" Ice	0.0000	0.001
							2" Ice	0.0000	0.001
FB-L98B-002-75000 (3/8)	C	No	No	Inside Pole	157.0000 - 0.0000	1	No Ice	0.0000	0.000
							1/2" Ice	0.0000	0.000
							1" Ice	0.0000	0.000
							2" Ice	0.0000	0.000
FB-L98B-034-XXX(3/8)	C	No	No	Inside Pole	157.0000 - 0.0000	1	No Ice	0.0000	0.000
							1/2" Ice	0.0000	0.000
							1" Ice	0.0000	0.000
							2" Ice	0.0000	0.000
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	157.0000 - 0.0000	4	No Ice	0.0000	0.001
							1/2" Ice	0.0000	0.001
							1" Ice	0.0000	0.001
							2" Ice	0.0000	0.001
2" Flexible Conduit	C	No	No	Inside Pole	157.0000 - 0.0000	2	No Ice	0.0000	0.000
							1/2" Ice	0.0000	0.000
							1" Ice	0.0000	0.000
							2" Ice	0.0000	0.000
148									
HB114-1-08U4-M5J (1-1/4)	C	No	No	Inside Pole	148.0000 - 0.0000	3	No Ice	0.0000	0.001
							1/2" Ice	0.0000	0.001
							1" Ice	0.0000	0.001
							2" Ice	0.0000	0.001
HB114-21U3M12-X XXF(1-1/4)	C	No	No	Inside Pole	148.0000 - 0.0000	1	No Ice	0.0000	0.001
							1/2" Ice	0.0000	0.001
							1" Ice	0.0000	0.001
							2" Ice	0.0000	0.001
138									
AL7-50(1-5/8)	C	No	No	Inside Pole	138.0000 - 0.0000	6	No Ice	0.0000	0.001
							1/2" Ice	0.0000	0.001
							1" Ice	0.0000	0.001
							2" Ice	0.0000	0.001
LDF4-50A(1/2)	C	No	No	Inside Pole	138.0000 - 0.0000	1	No Ice	0.0000	0.000
							1/2" Ice	0.0000	0.000
							1" Ice	0.0000	0.000
							2" Ice	0.0000	0.000
LCF214-50JA(2-1/4)	C	No	No	Inside Pole	138.0000 - 0.0000	1	No Ice	0.0000	0.001
							1/2" Ice	0.0000	0.001
							1" Ice	0.0000	0.001
							2" Ice	0.0000	0.001
127									
LDF7-50A(1-5/8)	A	No	No	Inside Pole	127.0000 - 0.0000	1	No Ice	0.0000	0.001
							1/2" Ice	0.0000	0.001
							1" Ice	0.0000	0.001
							2" Ice	0.0000	0.001

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
MLE HYBRID 3POWER/6FIBER RL 2(1-1/4)	A	No	No	CaAa (Out Of Face)	127.0000 - 0.0000	1	No Ice	0.0000	0.001
							1/2" Ice	0.0000	0.002
							1" Ice	0.0000	0.003
							2" Ice	0.0000	0.009
119									
FXL-1873(1-5/8)	A	No	No	CaAa (Out Of Face)	119.0000 - 0.0000	6	No Ice	0.0000	0.001
							1/2" Ice	0.0000	0.002
							1" Ice	0.0000	0.004
							2" Ice	0.0000	0.010
860 10033(3/8)	A	No	No	CaAa (Out Of Face)	119.0000 - 0.0000	1	No Ice	0.0000	0.000
							1/2" Ice	0.0000	0.001
							1" Ice	0.0000	0.002
							2" Ice	0.0000	0.006
***									
LDF4-50A(1/2)	C	No	No	Inside Pole	48.0000 - 0.0000	1	No Ice	0.0000	0.000
							1/2" Ice	0.0000	0.000
							1" Ice	0.0000	0.000
							2" Ice	0.0000	0.000

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	160.0000-155.000	A	0.000	0.000	0.177	0.000	0.018
	0	B	0.000	0.000	0.177	0.000	0.018
		C	0.000	0.000	0.177	0.000	0.034
L2	155.0000-150.000	A	0.000	0.000	1.777	0.000	0.176
	0	B	0.000	0.000	1.777	0.000	0.176
		C	0.000	0.000	1.777	0.000	0.216
L3	150.0000-148.000	A	0.000	0.000	0.713	0.000	0.070
	0	B	0.000	0.000	0.713	0.000	0.070
		C	0.000	0.000	0.713	0.000	0.087
L4	148.0000-143.000	A	0.000	0.000	1.789	0.000	0.176
	0	B	0.000	0.000	1.789	0.000	0.176
		C	0.000	0.000	1.789	0.000	0.239
L5	143.0000-138.000	A	0.000	0.000	1.078	0.000	0.106
	0	B	0.000	0.000	1.078	0.000	0.106
		C	0.000	0.000	1.078	0.000	0.168
L6	138.0000-133.000	A	0.000	0.000	0.000	0.000	0.000
	0	B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L7	133.0000-128.000	A	0.000	0.000	0.000	0.000	0.000
	0	B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L8	128.0000-123.000	A	0.000	0.000	3.960	0.000	0.022
	0	B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L9	123.0000-118.000	A	0.000	0.000	4.950	0.000	0.032
	0	B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L10	118.0000-111.000	A	0.000	0.000	6.930	0.000	0.067
	0	B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.118

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L11	111.0000-109.750	A	0.000	0.000	1.238	0.000	0.012
	0	B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.021
L12	109.7500-105.250	A	0.000	0.000	4.697	0.000	0.043
	0	B	0.000	0.000	0.241	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.076
L13	105.2500-105.000	A	0.000	0.000	0.288	0.000	0.002
	0	B	0.000	0.000	0.040	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.004
L14	105.0000-100.000	A	0.000	0.000	5.755	0.000	0.048
	0	B	0.000	0.000	0.805	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L15	100.0000-95.0000	A	0.000	0.000	5.755	0.000	0.048
		B	0.000	0.000	0.805	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L16	95.0000-90.0000	A	0.000	0.000	5.755	0.000	0.048
		B	0.000	0.000	0.805	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L17	90.0000-85.0000	A	0.000	0.000	5.755	0.000	0.048
		B	0.000	0.000	0.805	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L18	85.0000-76.7500	A	0.000	0.000	10.646	0.000	0.079
		B	0.000	0.000	1.328	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.140
L19	76.7500-75.7500	A	0.000	0.000	1.190	0.000	0.010
		B	0.000	0.000	0.040	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.017
L20	75.7500-70.7500	A	0.000	0.000	6.960	0.000	0.048
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L21	70.7500-70.5000	A	0.000	0.000	0.402	0.000	0.002
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.004
L22	70.5000-70.2500	A	0.000	0.000	0.402	0.000	0.002
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.004
L23	70.2500-70.0000	A	0.000	0.000	0.402	0.000	0.002
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.004
L24	70.0000-69.7500	A	0.000	0.000	0.402	0.000	0.002
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.004
L25	69.7500-64.7500	A	0.000	0.000	7.490	0.000	0.048
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L26	64.7500-59.7500	A	0.000	0.000	7.040	0.000	0.048
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L27	59.7500-54.7500	A	0.000	0.000	7.040	0.000	0.048
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L28	54.7500-49.7500	A	0.000	0.000	7.040	0.000	0.048
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L29	49.7500-43.0000	A	0.000	0.000	9.504	0.000	0.065
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.115
L30	43.0000-42.0000	A	0.000	0.000	1.240	0.000	0.010
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.017
L31	42.0000-37.0000	A	0.000	0.000	6.200	0.000	0.048

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L32	37.0000-32.0000	A	0.000	0.000	6.200	0.000	0.048
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L33	32.0000-27.8300	A	0.000	0.000	5.200	0.000	0.040
		B	0.000	0.000	0.697	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.071
L34	27.8300-27.5800	A	0.000	0.000	0.313	0.000	0.002
		B	0.000	0.000	0.065	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.004
L35	27.5800-27.2500	A	0.000	0.000	0.413	0.000	0.003
		B	0.000	0.000	0.086	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.006
L36	27.2500-27.0000	A	0.000	0.000	0.313	0.000	0.002
		B	0.000	0.000	0.065	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.004
L37	27.0000-26.7500	A	0.000	0.000	0.313	0.000	0.002
		B	0.000	0.000	0.065	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.004
L38	26.7500-21.7500	A	0.000	0.000	6.255	0.000	0.048
		B	0.000	0.000	1.305	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L39	21.7500-16.7500	A	0.000	0.000	6.255	0.000	0.048
		B	0.000	0.000	1.305	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.085
L40	16.7500-16.0000	A	0.000	0.000	0.938	0.000	0.007
		B	0.000	0.000	0.196	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.013
L41	16.0000-15.7500	A	0.000	0.000	0.313	0.000	0.002
		B	0.000	0.000	0.065	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.004
L42	15.7500-14.8330	A	0.000	0.000	1.147	0.000	0.009
		B	0.000	0.000	0.239	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.016
L43	14.8330-14.5830	A	0.000	0.000	0.313	0.000	0.002
		B	0.000	0.000	0.065	0.000	0.000
		C	0.000	0.000	0.000	0.000	0.004
L44	14.5830-12.0000	A	0.000	0.000	3.753	0.000	0.025
		B	0.000	0.000	0.674	0.000	0.000
		C	0.000	0.000	0.522	0.000	0.044
L45	12.0000-11.7500	A	0.000	0.000	0.378	0.000	0.002
		B	0.000	0.000	0.065	0.000	0.000
		C	0.000	0.000	0.065	0.000	0.004
L46	11.7500-10.0000	A	0.000	0.000	2.646	0.000	0.017
		B	0.000	0.000	0.457	0.000	0.000
		C	0.000	0.000	0.457	0.000	0.030
L47	10.0000-9.7500	A	0.000	0.000	0.378	0.000	0.002
		B	0.000	0.000	0.065	0.000	0.000
		C	0.000	0.000	0.065	0.000	0.004
L48	9.7500-4.7500	A	0.000	0.000	7.560	0.000	0.048
		B	0.000	0.000	1.305	0.000	0.000
		C	0.000	0.000	1.305	0.000	0.085
L49	4.7500-0.5000	A	0.000	0.000	6.426	0.000	0.041
		B	0.000	0.000	1.109	0.000	0.000
		C	0.000	0.000	1.109	0.000	0.073
L50	0.5000-0.2500	A	0.000	0.000	0.378	0.000	0.002
		B	0.000	0.000	0.065	0.000	0.000
		C	0.000	0.000	0.065	0.000	0.004
L51	0.2500-0.0000	A	0.000	0.000	0.378	0.000	0.002
		B	0.000	0.000	0.065	0.000	0.000

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	0.065	0.000	0.004

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	160.0000-155.000	A	1.491	0.000	0.000	0.416	0.000	0.024
	0	B		0.000	0.000	0.416	0.000	0.024
		C		0.000	0.000	0.416	0.000	0.041
L2	155.0000-150.000	A	1.486	0.000	0.000	4.159	0.000	0.244
	0	B		0.000	0.000	4.159	0.000	0.244
		C		0.000	0.000	4.159	0.000	0.284
L3	150.0000-148.000	A	1.482	0.000	0.000	1.663	0.000	0.098
	0	B		0.000	0.000	1.663	0.000	0.098
		C		0.000	0.000	1.663	0.000	0.114
L4	148.0000-143.000	A	1.479	0.000	0.000	4.155	0.000	0.244
	0	B		0.000	0.000	4.155	0.000	0.244
		C		0.000	0.000	4.155	0.000	0.306
L5	143.0000-138.000	A	1.474	0.000	0.000	2.491	0.000	0.146
	0	B		0.000	0.000	2.491	0.000	0.146
		C		0.000	0.000	2.491	0.000	0.209
L6	138.0000-133.000	A	1.468	0.000	0.000	0.000	0.000	0.000
	0	B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.085
L7	133.0000-128.000	A	1.463	0.000	0.000	0.000	0.000	0.000
	0	B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.085
L8	128.0000-123.000	A	1.457	0.000	0.000	6.407	0.000	0.109
	0	B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.085
L9	123.0000-118.000	A	1.451	0.000	0.000	8.002	0.000	0.181
	0	B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.085
L10	118.0000-111.000	A	1.444	0.000	0.000	11.189	0.000	0.507
	0	B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.118
L11	111.0000-109.750	A	1.439	0.000	0.000	1.998	0.000	0.090
	0	B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.021
L12	109.7500-105.250	A	1.435	0.000	0.000	7.855	0.000	0.331
	0	B		0.000	0.000	0.672	0.000	0.008
		C		0.000	0.000	0.000	0.000	0.076
L13	105.2500-105.000	A	1.432	0.000	0.000	0.511	0.000	0.019
	0	B		0.000	0.000	0.112	0.000	0.001
		C		0.000	0.000	0.000	0.000	0.004
L14	105.0000-100.000	A	1.428	0.000	0.000	10.205	0.000	0.384
	0	B		0.000	0.000	2.233	0.000	0.027
		C		0.000	0.000	0.000	0.000	0.085
L15	100.0000-95.0000	A	1.421	0.000	0.000	10.189	0.000	0.382
		B		0.000	0.000	2.226	0.000	0.026
		C		0.000	0.000	0.000	0.000	0.085
L16	95.0000-90.0000	A	1.413	0.000	0.000	10.173	0.000	0.379
		B		0.000	0.000	2.218	0.000	0.026
		C		0.000	0.000	0.000	0.000	0.085
L17	90.0000-85.0000	A	1.406	0.000	0.000	10.155	0.000	0.377
		B		0.000	0.000	2.211	0.000	0.026
		C		0.000	0.000	0.000	0.000	0.085

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
L18	85.0000-76.7500	A	1.395	0.000	0.000	21.072	0.000	0.663
		B		0.000	0.000	3.629	0.000	0.042
		C		0.000	0.000	0.000	0.000	0.140
L19	76.7500-75.7500	A	1.386	0.000	0.000	2.344	0.000	0.078
		B		0.000	0.000	0.110	0.000	0.001
		C		0.000	0.000	0.000	0.000	0.017
L20	75.7500-70.7500	A	1.381	0.000	0.000	14.020	0.000	0.412
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.085
L21	70.7500-70.5000	A	1.376	0.000	0.000	0.825	0.000	0.022
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.004
L22	70.5000-70.2500	A	1.375	0.000	0.000	0.825	0.000	0.022
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.004
L23	70.2500-70.0000	A	1.375	0.000	0.000	0.825	0.000	0.022
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.004
L24	70.0000-69.7500	A	1.374	0.000	0.000	0.825	0.000	0.022
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.004
L25	69.7500-64.7500	A	1.369	0.000	0.000	14.409	0.000	0.416
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.085
L26	64.7500-59.7500	A	1.359	0.000	0.000	12.693	0.000	0.394
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.085
L27	59.7500-54.7500	A	1.347	0.000	0.000	12.656	0.000	0.391
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.085
L28	54.7500-49.7500	A	1.335	0.000	0.000	12.616	0.000	0.386
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.085
L29	49.7500-43.0000	A	1.319	0.000	0.000	16.962	0.000	0.514
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.115
L30	43.0000-42.0000	A	1.308	0.000	0.000	2.345	0.000	0.073
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.017
L31	42.0000-37.0000	A	1.298	0.000	0.000	11.656	0.000	0.360
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.085
L32	37.0000-32.0000	A	1.281	0.000	0.000	11.600	0.000	0.354
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	0.000	0.000	0.085
L33	32.0000-27.8300	A	1.263	0.000	0.000	8.980	0.000	0.286
		B		0.000	0.000	1.371	0.000	0.016
		C		0.000	0.000	0.000	0.000	0.071
L34	27.8300-27.5800	A	1.253	0.000	0.000	0.516	0.000	0.017
		B		0.000	0.000	0.128	0.000	0.001
		C		0.000	0.000	0.000	0.000	0.004
L35	27.5800-27.2500	A	1.252	0.000	0.000	0.680	0.000	0.022
		B		0.000	0.000	0.169	0.000	0.002
		C		0.000	0.000	0.000	0.000	0.006
L36	27.2500-27.0000	A	1.250	0.000	0.000	0.515	0.000	0.017
		B		0.000	0.000	0.128	0.000	0.001
		C		0.000	0.000	0.000	0.000	0.004
L37	27.0000-26.7500	A	1.249	0.000	0.000	0.515	0.000	0.017
		B		0.000	0.000	0.128	0.000	0.001
		C		0.000	0.000	0.000	0.000	0.004
L38	26.7500-21.7500	A	1.236	0.000	0.000	10.274	0.000	0.331

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	2.541	0.000	0.029
		C		0.000	0.000	0.000	0.000	0.085
L39	21.7500-16.7500	A	1.208	0.000	0.000	10.211	0.000	0.322
		B		0.000	0.000	2.513	0.000	0.028
		C		0.000	0.000	0.000	0.000	0.085
L40	16.7500-16.0000	A	1.189	0.000	0.000	1.525	0.000	0.047
		B		0.000	0.000	0.374	0.000	0.004
		C		0.000	0.000	0.000	0.000	0.013
L41	16.0000-15.7500	A	1.185	0.000	0.000	0.508	0.000	0.016
		B		0.000	0.000	0.125	0.000	0.001
		C		0.000	0.000	0.000	0.000	0.004
L42	15.7500-14.8330	A	1.181	0.000	0.000	1.861	0.000	0.057
		B		0.000	0.000	0.456	0.000	0.005
		C		0.000	0.000	0.000	0.000	0.016
L43	14.8330-14.5830	A	1.176	0.000	0.000	0.507	0.000	0.016
		B		0.000	0.000	0.124	0.000	0.001
		C		0.000	0.000	0.000	0.000	0.004
L44	14.5830-12.0000	A	1.164	0.000	0.000	6.211	0.000	0.170
		B		0.000	0.000	1.276	0.000	0.014
		C		0.000	0.000	0.988	0.000	0.055
L45	12.0000-11.7500	A	1.151	0.000	0.000	0.627	0.000	0.017
		B		0.000	0.000	0.123	0.000	0.001
		C		0.000	0.000	0.123	0.000	0.006
L46	11.7500-10.0000	A	1.141	0.000	0.000	4.377	0.000	0.114
		B		0.000	0.000	0.856	0.000	0.009
		C		0.000	0.000	0.856	0.000	0.039
L47	10.0000-9.7500	A	1.130	0.000	0.000	0.624	0.000	0.016
		B		0.000	0.000	0.122	0.000	0.001
		C		0.000	0.000	0.122	0.000	0.006
L48	9.7500-4.7500	A	1.096	0.000	0.000	12.358	0.000	0.311
		B		0.000	0.000	2.401	0.000	0.025
		C		0.000	0.000	2.401	0.000	0.110
L49	4.7500-0.5000	A	0.990	0.000	0.000	10.212	0.000	0.235
		B		0.000	0.000	1.950	0.000	0.018
		C		0.000	0.000	1.950	0.000	0.091
L50	0.5000-0.2500	A	0.815	0.000	0.000	0.572	0.000	0.011
		B		0.000	0.000	0.106	0.000	0.001
		C		0.000	0.000	0.106	0.000	0.005
L51	0.2500-0.0000	A	0.730	0.000	0.000	0.559	0.000	0.010
		B		0.000	0.000	0.102	0.000	0.001
		C		0.000	0.000	0.102	0.000	0.005

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	160.0000-155.0000	0.0000	0.0000	0.0000	0.0000
L2	155.0000-150.0000	0.0000	0.0000	0.0000	0.0000
L3	150.0000-148.0000	0.0000	0.0000	0.0000	0.0000
L4	148.0000-143.0000	0.0000	0.0000	0.0000	0.0000
L5	143.0000-138.0000	0.0000	0.0000	0.0000	0.0000
L6	138.0000-133.0000	0.0000	0.0000	0.0000	0.0000
L7	133.0000-128.0000	0.0000	0.0000	0.0000	0.0000
L8	128.0000-123.0000	0.0000	-4.6673	0.0000	-3.8607
L9	123.0000-118.0000	0.0000	-5.4294	0.0000	-4.4566
L10	118.0000-111.0000	0.0000	-5.4859	0.0000	-4.5185

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L11	111.0000-109.7500	0.0000	-5.4967	0.0000	-4.5299
L12	109.7500-105.2500	0.2871	-5.6046	0.4025	-4.7229
L13	105.2500-105.0000	0.7996	-5.7749	1.0913	-5.0300
L14	105.0000-100.0000	0.8038	-5.8044	1.0977	-5.0630
L15	100.0000-95.0000	0.8116	-5.8592	1.1095	-5.1244
L16	95.0000-90.0000	0.8191	-5.9123	1.1207	-5.1838
L17	90.0000-85.0000	0.8264	-5.9638	1.1313	-5.2414
L18	85.0000-76.7500	0.4592	-6.1335	0.4315	-5.5575
L19	76.7500-75.7500	-0.3094	-5.8536	-0.6855	-5.1574
L20	75.7500-70.7500	-1.0273	-6.1332	-1.5225	-5.5219
L21	70.7500-70.5000	-1.4977	-6.3283	-2.0224	-5.7823
L22	70.5000-70.2500	-1.4990	-6.3338	-2.0240	-5.7873
L23	70.2500-70.0000	-1.4997	-6.3366	-2.0250	-5.7905
L24	70.0000-69.7500	-1.4999	-6.3376	-2.0254	-5.7923
L25	69.7500-64.7500	-1.2802	-6.2864	-1.6398	-5.6439
L26	64.7500-59.7500	-1.0952	-6.2677	-1.2960	-5.5356
L27	59.7500-54.7500	-1.1033	-6.3145	-1.3045	-5.5847
L28	54.7500-49.7500	-1.1112	-6.3602	-1.3123	-5.6319
L29	49.7500-43.0000	-1.1203	-6.4123	-1.3203	-5.6850
L30	43.0000-42.0000	-0.6862	-6.2217	-1.0873	-5.5513
L31	42.0000-37.0000	-0.6889	-6.2449	-1.0848	-5.5708
L32	37.0000-32.0000	-0.6933	-6.2827	-1.0870	-5.6093
L33	32.0000-27.8300	0.6839	-6.5285	0.5780	-5.7851
L34	27.8300-27.5800	1.4051	-6.6569	1.4743	-5.8783
L35	27.5800-27.2500	1.4056	-6.6594	1.4745	-5.8805
L36	27.2500-27.0000	1.4054	-6.6586	1.4741	-5.8800
L37	27.0000-26.7500	1.4065	-6.6640	1.4749	-5.8844
L38	26.7500-21.7500	1.4111	-6.6864	1.4761	-5.9031
L39	21.7500-16.7500	1.4196	-6.7283	1.4767	-5.9359
L40	16.7500-16.0000	1.4244	-6.7519	1.4756	-5.9525
L41	16.0000-15.7500	1.4258	-6.7584	1.4757	-5.9571
L42	15.7500-14.8330	1.4267	-6.7631	1.4752	-5.9600
L43	14.8330-14.5830	1.4274	-6.7665	1.4744	-5.9619
L44	14.5830-12.0000	0.2931	-5.1675	0.3011	-4.3877
L45	12.0000-11.7500	0.0000	-4.7626	0.0000	-3.9918
L46	11.7500-10.0000	0.0000	-4.7694	0.0000	-3.9988
L47	10.0000-9.7500	0.0000	-4.7755	0.0000	-4.0053
L48	9.7500-4.7500	0.0000	-4.7933	0.0000	-4.0237
L49	4.7500-0.5000	0.0000	-4.8244	0.0000	-4.0566
L50	0.5000-0.2500	0.0000	-4.8400	0.0000	-4.0760
L51	0.2500-0.0000	0.0000	-4.8416	0.0000	-4.0799

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	50	(Area) HSS 6x6x1/2	155.00 - 155.50	1.0000	1.0000
L1	51	(Area) HSS 6x6x1/2	155.00 - 155.50	1.0000	1.0000
L1	52	(Area) HSS 6x6x1/2	155.00 - 155.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L2	50	(Area) HSS 6x6x1/2	150.00 - 155.00	1.0000	1.0000
L2	51	(Area) HSS 6x6x1/2	150.00 - 155.00	1.0000	1.0000
L2	52	(Area) HSS 6x6x1/2	150.00 - 155.00	1.0000	1.0000
L3	50	(Area) HSS 6x6x1/2	148.00 - 150.00	1.0000	1.0000
L3	51	(Area) HSS 6x6x1/2	148.00 - 150.00	1.0000	1.0000
L3	52	(Area) HSS 6x6x1/2	148.00 - 150.00	1.0000	1.0000
L4	50	(Area) HSS 6x6x1/2	143.00 - 148.00	1.0000	1.0000
L4	51	(Area) HSS 6x6x1/2	143.00 - 148.00	1.0000	1.0000
L4	52	(Area) HSS 6x6x1/2	143.00 - 148.00	1.0000	1.0000
L5	50	(Area) HSS 6x6x1/2	140.00 - 143.00	1.0000	1.0000
L5	51	(Area) HSS 6x6x1/2	140.00 - 143.00	1.0000	1.0000
L5	52	(Area) HSS 6x6x1/2	140.00 - 143.00	1.0000	1.0000
L8	19	LDF7-50A(1-5/8)	123.00 - 127.00	1.0000	1.0000
L9	19	LDF7-50A(1-5/8)	118.00 - 123.00	1.0000	1.0000
L10	19	LDF7-50A(1-5/8)	111.00 - 118.00	1.0000	1.0000
L12	19	LDF7-50A(1-5/8)	105.25 - 109.75	1.0000	1.0000
L12	47	(Area) Aero MP3-04	105.25 - 106.75	1.0000	1.0000
L12	48	(Area) Aero MP3-04	105.25 - 106.75	1.0000	1.0000
L13	19	LDF7-50A(1-5/8)	105.00 - 105.25	1.0000	1.0000
L13	47	(Area) Aero MP3-04	105.00 - 105.25	1.0000	1.0000
L13	48	(Area) Aero MP3-04	105.00 - 105.25	1.0000	1.0000
L14	19	LDF7-50A(1-5/8)	100.00 - 105.00	1.0000	1.0000
L14	47	(Area) Aero MP3-04	100.00 - 105.00	1.0000	1.0000
L14	48	(Area) Aero MP3-04	100.00 - 105.00	1.0000	1.0000
L15	19	LDF7-50A(1-5/8)	95.00 - 100.00	1.0000	1.0000
L15	47	(Area) Aero MP3-04	95.00 - 100.00	1.0000	1.0000
L15	48	(Area) Aero MP3-04	95.00 - 100.00	1.0000	1.0000
L16	19	LDF7-50A(1-5/8)	90.00 - 95.00	1.0000	1.0000
L16	47	(Area) Aero MP3-04	90.00 - 95.00	1.0000	1.0000
L16	48	(Area) Aero MP3-04	90.00 - 95.00	1.0000	1.0000
L17	19	LDF7-50A(1-5/8)	85.00 - 90.00	1.0000	1.0000
L17	47	(Area) Aero MP3-04	85.00 - 90.00	1.0000	1.0000
L17	48	(Area) Aero MP3-04	85.00 - 90.00	1.0000	1.0000
L18	19	LDF7-50A(1-5/8)	76.75 - 85.00	1.0000	1.0000
L18	44	(Area) CCI-65FP-060100	76.75 - 82.50	1.0000	1.0000
L18	45	(Area) CCI-65FP-060100	76.75 - 82.50	1.0000	1.0000
L18	47	(Area) Aero MP3-04	76.75 - 85.00	1.0000	1.0000
L18	48	(Area) Aero MP3-04	76.75 - 85.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L20	19	LDF7-50A(1-5/8)	70.75 - 75.75	1.0000	1.0000
L20	41	(Area) Aero MP3-05	70.75 - 73.17	1.0000	1.0000
L20	42	(Area) Aero MP3-05	70.75 - 73.17	1.0000	1.0000
L20	44	(Area) CCI-65FP-060100	70.75 - 75.75	1.0000	1.0000
L20	45	(Area) CCI-65FP-060100	70.75 - 75.75	1.0000	1.0000
L21	19	LDF7-50A(1-5/8)	70.50 - 70.75	1.0000	1.0000
L21	41	(Area) Aero MP3-05	70.50 - 70.75	1.0000	1.0000
L21	42	(Area) Aero MP3-05	70.50 - 70.75	1.0000	1.0000
L21	44	(Area) CCI-65FP-060100	70.50 - 70.75	1.0000	1.0000
L21	45	(Area) CCI-65FP-060100	70.50 - 70.75	1.0000	1.0000
L22	19	LDF7-50A(1-5/8)	70.25 - 70.50	1.0000	1.0000
L22	41	(Area) Aero MP3-05	70.25 - 70.50	1.0000	1.0000
L22	42	(Area) Aero MP3-05	70.25 - 70.50	1.0000	1.0000
L22	44	(Area) CCI-65FP-060100	70.25 - 70.50	1.0000	1.0000
L22	45	(Area) CCI-65FP-060100	70.25 - 70.50	1.0000	1.0000
L23	19	LDF7-50A(1-5/8)	70.00 - 70.25	1.0000	1.0000
L23	41	(Area) Aero MP3-05	70.00 - 70.25	1.0000	1.0000
L23	42	(Area) Aero MP3-05	70.00 - 70.25	1.0000	1.0000
L23	44	(Area) CCI-65FP-060100	70.00 - 70.25	1.0000	1.0000
L23	45	(Area) CCI-65FP-060100	70.00 - 70.25	1.0000	1.0000
L24	19	LDF7-50A(1-5/8)	69.75 - 70.00	1.0000	1.0000
L24	41	(Area) Aero MP3-05	69.75 - 70.00	1.0000	1.0000
L24	42	(Area) Aero MP3-05	69.75 - 70.00	1.0000	1.0000
L24	44	(Area) CCI-65FP-060100	69.75 - 70.00	1.0000	1.0000
L24	45	(Area) CCI-65FP-060100	69.75 - 70.00	1.0000	1.0000
L25	19	LDF7-50A(1-5/8)	64.75 - 69.75	1.0000	1.0000
L25	41	(Area) Aero MP3-05	64.75 - 69.75	1.0000	1.0000
L25	42	(Area) Aero MP3-05	64.75 - 69.75	1.0000	1.0000
L25	44	(Area) CCI-65FP-060100	67.50 - 69.75	1.0000	1.0000
L25	45	(Area) CCI-65FP-060100	67.50 - 69.75	1.0000	1.0000
L26	19	LDF7-50A(1-5/8)	59.75 - 64.75	1.0000	1.0000
L26	41	(Area) Aero MP3-05	59.75 - 64.75	1.0000	1.0000
L26	42	(Area) Aero MP3-05	59.75 - 64.75	1.0000	1.0000
L27	19	LDF7-50A(1-5/8)	54.75 - 59.75	1.0000	1.0000
L27	41	(Area) Aero MP3-05	54.75 - 59.75	1.0000	1.0000
L27	42	(Area) Aero MP3-05	54.75 - 59.75	1.0000	1.0000
L28	19	LDF7-50A(1-5/8)	49.75 - 54.75	1.0000	1.0000
L28	41	(Area) Aero MP3-05	49.75 - 54.75	1.0000	1.0000
L28	42	(Area) Aero MP3-05	49.75 - 54.75	1.0000	1.0000
L29	19	LDF7-50A(1-5/8)	43.00 - 49.75	1.0000	1.0000
L29	41	(Area) Aero MP3-05	43.00 - 49.75	1.0000	1.0000
L29	42	(Area) Aero MP3-05	43.00 - 49.75	1.0000	1.0000
L29	38	PL 1.25x6.5	43.00 - 43.00	1.0000	1.0000
L29	39	PL 1.25x6.5	43.00 - 43.00	1.0000	1.0000
L31	19	LDF7-50A(1-5/8)	37.00 - 42.00	1.0000	1.0000
L31	38	PL 1.25x6.5	37.00 - 42.00	1.0000	1.0000
L31	39	PL 1.25x6.5	37.00 - 42.00	1.0000	1.0000
L32	19	LDF7-50A(1-5/8)	32.00 - 37.00	1.0000	1.0000
L32	38	PL 1.25x6.5	32.00 - 37.00	1.0000	1.0000
L32	39	PL 1.25x6.5	32.00 - 37.00	1.0000	1.0000
L33	19	LDF7-50A(1-5/8)	27.83 - 32.00	1.0000	1.0000
L33	31	(Area) Aero MP3-06	27.83 - 30.50	1.0000	1.0000
L33	32	(Area) Aero MP3-06	27.83 - 30.50	1.0000	1.0000
L33	38	PL 1.25x6.5	30.50 - 32.00	1.0000	1.0000
L33	39	PL 1.25x6.5	30.50 - 32.00	1.0000	1.0000
L34	19	LDF7-50A(1-5/8)	27.58 - 27.83	1.0000	1.0000
L34	31	(Area) Aero MP3-06	27.58 - 27.83	1.0000	1.0000
L34	32	(Area) Aero MP3-06	27.58 - 27.83	1.0000	1.0000
L35	19	LDF7-50A(1-5/8)	27.25 - 27.58	1.0000	1.0000
L35	31	(Area) Aero MP3-06	27.25 - 27.58	1.0000	1.0000
L35	32	(Area) Aero MP3-06	27.25 - 27.58	1.0000	1.0000
L36	19	LDF7-50A(1-5/8)	27.00 - 27.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L36	31	(Area) Aero MP3-06	27.00 - 27.25	1.0000	1.0000
L36	32	(Area) Aero MP3-06	27.00 - 27.25	1.0000	1.0000
L37	19	LDF7-50A(1-5/8)	26.75 - 27.00	1.0000	1.0000
L37	31	(Area) Aero MP3-06	26.75 - 27.00	1.0000	1.0000
L37	32	(Area) Aero MP3-06	26.75 - 27.00	1.0000	1.0000
L38	19	LDF7-50A(1-5/8)	21.75 - 26.75	1.0000	1.0000
L38	31	(Area) Aero MP3-06	21.75 - 26.75	1.0000	1.0000
L38	32	(Area) Aero MP3-06	21.75 - 26.75	1.0000	1.0000
L39	19	LDF7-50A(1-5/8)	16.75 - 21.75	1.0000	1.0000
L39	31	(Area) Aero MP3-06	16.75 - 21.75	1.0000	1.0000
L39	32	(Area) Aero MP3-06	16.75 - 21.75	1.0000	1.0000
L40	19	LDF7-50A(1-5/8)	16.00 - 16.75	1.0000	1.0000
L40	31	(Area) Aero MP3-06	16.00 - 16.75	1.0000	1.0000
L40	32	(Area) Aero MP3-06	16.00 - 16.75	1.0000	1.0000
L41	19	LDF7-50A(1-5/8)	15.75 - 16.00	1.0000	1.0000
L41	31	(Area) Aero MP3-06	15.75 - 16.00	1.0000	1.0000
L41	32	(Area) Aero MP3-06	15.75 - 16.00	1.0000	1.0000
L42	19	LDF7-50A(1-5/8)	14.83 - 15.75	1.0000	1.0000
L42	31	(Area) Aero MP3-06	14.83 - 15.75	1.0000	1.0000
L42	32	(Area) Aero MP3-06	14.83 - 15.75	1.0000	1.0000
L43	19	LDF7-50A(1-5/8)	14.58 - 14.83	1.0000	1.0000
L43	31	(Area) Aero MP3-06	14.58 - 14.83	1.0000	1.0000
L43	32	(Area) Aero MP3-06	14.58 - 14.83	1.0000	1.0000
L44	19	LDF7-50A(1-5/8)	12.00 - 14.58	1.0000	1.0000
L44	30	(Area) Aero MP3-06	12.00 - 14.00	1.0000	1.0000
L44	31	(Area) Aero MP3-06	12.00 - 14.58	1.0000	1.0000
L44	32	(Area) Aero MP3-06	12.00 - 14.58	1.0000	1.0000
L44	33	(Area) Aero MP3-06	12.00 - 14.00	1.0000	1.0000
L45	19	LDF7-50A(1-5/8)	11.75 - 12.00	1.0000	1.0000
L45	30	(Area) Aero MP3-06	11.75 - 12.00	1.0000	1.0000
L45	31	(Area) Aero MP3-06	11.75 - 12.00	1.0000	1.0000
L45	32	(Area) Aero MP3-06	11.75 - 12.00	1.0000	1.0000
L45	33	(Area) Aero MP3-06	11.75 - 12.00	1.0000	1.0000
L46	19	LDF7-50A(1-5/8)	10.00 - 11.75	1.0000	1.0000
L46	30	(Area) Aero MP3-06	10.00 - 11.75	1.0000	1.0000
L46	31	(Area) Aero MP3-06	10.00 - 11.75	1.0000	1.0000
L46	32	(Area) Aero MP3-06	10.00 - 11.75	1.0000	1.0000
L46	33	(Area) Aero MP3-06	10.00 - 11.75	1.0000	1.0000
L47	19	LDF7-50A(1-5/8)	9.75 - 10.00	1.0000	1.0000
L47	30	(Area) Aero MP3-06	9.75 - 10.00	1.0000	1.0000
L47	31	(Area) Aero MP3-06	9.75 - 10.00	1.0000	1.0000
L47	32	(Area) Aero MP3-06	9.75 - 10.00	1.0000	1.0000
L47	33	(Area) Aero MP3-06	9.75 - 10.00	1.0000	1.0000
L48	19	LDF7-50A(1-5/8)	4.75 - 9.75	1.0000	1.0000
L48	30	(Area) Aero MP3-06	4.75 - 9.75	1.0000	1.0000
L48	31	(Area) Aero MP3-06	4.75 - 9.75	1.0000	1.0000
L48	32	(Area) Aero MP3-06	4.75 - 9.75	1.0000	1.0000
L48	33	(Area) Aero MP3-06	4.75 - 9.75	1.0000	1.0000
L49	19	LDF7-50A(1-5/8)	0.50 - 4.75	1.0000	1.0000
L49	30	(Area) Aero MP3-06	0.50 - 4.75	1.0000	1.0000
L49	31	(Area) Aero MP3-06	0.50 - 4.75	1.0000	1.0000
L49	32	(Area) Aero MP3-06	0.50 - 4.75	1.0000	1.0000
L49	33	(Area) Aero MP3-06	0.50 - 4.75	1.0000	1.0000
L50	19	LDF7-50A(1-5/8)	0.25 - 0.50	1.0000	1.0000
L50	30	(Area) Aero MP3-06	0.25 - 0.50	1.0000	1.0000
L50	31	(Area) Aero MP3-06	0.25 - 0.50	1.0000	1.0000
L50	32	(Area) Aero MP3-06	0.25 - 0.50	1.0000	1.0000
L50	33	(Area) Aero MP3-06	0.25 - 0.50	1.0000	1.0000
L51	19	LDF7-50A(1-5/8)	0.00 - 0.25	1.0000	1.0000
L51	30	(Area) Aero MP3-06	0.00 - 0.25	1.0000	1.0000
L51	31	(Area) Aero MP3-06	0.00 - 0.25	1.0000	1.0000
L51	32	(Area) Aero MP3-06	0.00 - 0.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L51	33	(Area) Aero MP3-06	0.00 - 0.25	1.0000	1.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
157									
800 10121 w/ Mount Pipe	A	From Leg	4.0000 -2.000 1.000	10.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.3879 5.8131 6.2340 7.1017	4.5996 5.3507 6.0464 7.4752	0.066 0.114 0.168 0.298
800 10121 w/ Mount Pipe	B	From Leg	4.0000 -1.000 1.000	20.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.3879 5.8131 6.2340 7.1017	4.5996 5.3507 6.0464 7.4752	0.066 0.114 0.168 0.298
800 10121 w/ Mount Pipe	C	From Leg	4.0000 -2.000 1.000	20.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.3879 5.8131 6.2340 7.1017	4.5996 5.3507 6.0464 7.4752	0.066 0.114 0.168 0.298
HPA-85R-BUU-H8 w/ Mount Pipe	A	From Leg	4.0000 0.000 1.000	10.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	12.9838 13.6685 14.3572 15.6789	9.3187 10.7901 12.2416 14.4988	0.105 0.199 0.303 0.545
HPA-85R-BUU-H8 w/ Mount Pipe	B	From Leg	4.0000 1.000 1.000	20.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	12.9838 13.6685 14.3572 15.6789	9.3187 10.7901 12.2416 14.4988	0.105 0.199 0.303 0.545
HPA-85R-BUU-H8 w/ Mount Pipe	C	From Leg	4.0000 0.000 1.000	20.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	12.9838 13.6685 14.3572 15.6789	9.3187 10.7901 12.2416 14.4988	0.105 0.199 0.303 0.545
TPA-65R-LCUUUU-H8-K w/ Mount Pipe	A	From Leg	4.0000 2.000 1.000	10.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	13.5353 14.2380 14.9495 16.3081	10.9597 12.4861 14.0367 16.3910	0.127 0.230 0.344 0.605
TPA-65R-LCUUUU-H8-K w/ Mount Pipe	B	From Leg	4.0000 2.000 1.000	20.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	13.5353 14.2380 14.9495 16.3081	10.9597 12.4861 14.0367 16.3910	0.127 0.230 0.344 0.605
TPA-65R-LCUUUU-H8-K w/ Mount Pipe	C	From Leg	4.0000 2.000 1.000	20.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	13.5353 14.2380 14.9495 16.3081	10.9597 12.4861 14.0367 16.3910	0.127 0.230 0.344 0.605
(2) LGP21401	A	From Leg	4.0000 -2.000 1.000	10.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.1040 1.2388 1.3810 1.6877	0.2070 0.2738 0.3475 0.5208	0.014 0.021 0.030 0.055
(2) LGP21401	B	From Leg	4.0000 -1.000 1.000	20.000	157.0000	No Ice 1/2" Ice 1" Ice	1.1040 1.2388 1.3810	0.2070 0.2738 0.3475	0.014 0.021 0.030

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
						2" Ice	1.6877	0.5208	0.055
(2) LGP21401	C	From Leg	4.0000 -2.000 1.000	20.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.1040 1.2388 1.3810 1.6877	0.2070 0.2738 0.3475 0.5208	0.014 0.021 0.030 0.055
RRUS-11	A	From Leg	4.0000 2.000 1.000	10.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7908 2.9984 3.2134 3.6656	1.1923 1.3395 1.4957 1.8390	0.051 0.072 0.095 0.153
RRUS-11	B	From Leg	4.0000 2.000 1.000	20.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7908 2.9984 3.2134 3.6656	1.1923 1.3395 1.4957 1.8390	0.051 0.072 0.095 0.153
RRUS-11	C	From Leg	4.0000 2.000 1.000	20.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7908 2.9984 3.2134 3.6656	1.1923 1.3395 1.4957 1.8390	0.051 0.072 0.095 0.153
RRUS 32	A	From Leg	4.0000 0.000 1.000	10.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.8571 3.0830 3.3163 3.8052	1.7766 1.9677 2.1658 2.5829	0.055 0.077 0.103 0.165
RRUS 32	B	From Leg	4.0000 1.000 1.000	20.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.8571 3.0830 3.3163 3.8052	1.7766 1.9677 2.1658 2.5829	0.055 0.077 0.103 0.165
RRUS 32	C	From Leg	4.0000 0.000 1.000	20.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.8571 3.0830 3.3163 3.8052	1.7766 1.9677 2.1658 2.5829	0.055 0.077 0.103 0.165
RRUS 32 B2	A	From Leg	4.0000 0.000 1.000	10.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7313 2.9531 3.1823 3.6628	1.6681 1.8552 2.0493 2.4585	0.053 0.074 0.098 0.157
RRUS 32 B2	B	From Leg	4.0000 1.000 1.000	20.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7313 2.9531 3.1823 3.6628	1.6681 1.8552 2.0493 2.4585	0.053 0.074 0.098 0.157
RRUS 32 B2	C	From Leg	4.0000 0.000 1.000	20.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7313 2.9531 3.1823 3.6628	1.6681 1.8552 2.0493 2.4585	0.053 0.074 0.098 0.157
DC6-48-60-18-8F	A	From Leg	4.0000 0.000 1.000	10.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.2117 1.8924 2.1051 2.5703	1.2117 1.8924 2.1051 2.5703	0.033 0.055 0.080 0.138
TME-DC6-48-60-18-8F w/ Mount Pipe	B	From Leg	4.0000 -2.000 1.000	-20.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.3942 2.6549 2.9260 3.4997	2.7826 3.1683 3.5706 4.4252	0.030 0.060 0.095 0.180
Side Arm Mount [SO 102-3]	C	None		0.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.0000 3.4800 3.9600 4.9200	3.0000 3.4800 3.9600 4.9200	0.081 0.111 0.141 0.201
T-Arm Mount [TA 702-3]	C	None		0.000	157.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.6400 6.5500 7.4600 9.2800	5.6400 6.5500 7.4600 9.2800	0.339 0.429 0.519 0.699

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
150									
800MHZ 2X50W RRH W/FILTER	A	From Leg	1.0000 0.000 -2.000	-15.000	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0583 2.2398 2.4287 2.8287	1.9317 2.1087 2.2931 2.6843	0.064 0.086 0.111 0.172
800MHZ 2X50W RRH W/FILTER	B	From Leg	1.0000 0.000 -2.000	35.000	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0583 2.2398 2.4287 2.8287	1.9317 2.1087 2.2931 2.6843	0.064 0.086 0.111 0.172
800MHZ 2X50W RRH W/FILTER	C	From Leg	1.0000 0.000 -2.000	-5.000	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.0583 2.2398 2.4287 2.8287	1.9317 2.1087 2.2931 2.6843	0.064 0.086 0.111 0.172
PCS 1900MHZ 4X45W-65MHZ	A	From Leg	1.0000 0.000 -2.000	-15.000	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.3218 2.5266 2.7388 3.1855	2.2381 2.4407 2.6507 3.0929	0.060 0.083 0.110 0.173
PCS 1900MHZ 4X45W-65MHZ	B	From Leg	1.0000 0.000 -2.000	35.000	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.3218 2.5266 2.7388 3.1855	2.2381 2.4407 2.6507 3.0929	0.060 0.083 0.110 0.173
PCS 1900MHZ 4X45W-65MHZ	C	From Leg	1.0000 0.000 -2.000	5.000	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.3218 2.5266 2.7388 3.1855	2.2381 2.4407 2.6507 3.0929	0.060 0.083 0.110 0.173
Side Arm Mount [SO 103-3]	C	None		0.000	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.5000 11.8000 14.1000 18.7000	9.5000 11.8000 14.1000 18.7000	0.224 0.317 0.410 0.596
148									
APXVSPP18-C-A20 w/ Mount Pipe	A	From Centroid-Leg	4.0000 0.000 0.000	-15.000	148.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.2619 8.8215 9.3462 10.4181	6.9458 8.1266 9.0212 10.8440	0.083 0.151 0.227 0.406
APXVSPP18-C-A20 w/ Mount Pipe	B	From Centroid-Leg	4.0000 0.000 0.000	35.000	148.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.2619 8.8215 9.3462 10.4181	6.9458 8.1266 9.0212 10.8440	0.083 0.151 0.227 0.406
APXVSPP18-C-A20 w/ Mount Pipe	C	From Centroid-Leg	4.0000 0.000 0.000	-5.000	148.0000	No Ice 1/2" Ice 1" Ice 2" Ice	8.2619 8.8215 9.3462 10.4181	6.9458 8.1266 9.0212 10.8440	0.083 0.151 0.227 0.406
APXVTM14-C-120 w/ Mount Pipe	A	From Centroid-Leg	4.0000 0.000 0.000	-15.000	148.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.3424 6.7164 7.0974 7.8804	3.6074 3.9666 4.3332 5.0713	0.056 0.096 0.140 0.245
APXVTM14-C-120 w/ Mount Pipe	B	From Centroid-Leg	4.0000 0.000 0.000	35.000	148.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.3424 6.7164 7.0974 7.8804	3.6074 3.9666 4.3332 5.0713	0.056 0.096 0.140 0.245
APXVTM14-C-120 w/ Mount Pipe	C	From Centroid-Leg	4.0000 0.000 0.000	-5.000	148.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.3424 6.7164 7.0974 7.8804	3.6074 3.9666 4.3332 5.0713	0.056 0.096 0.140 0.245
IBC1900BB-1	A	From Centroid-Leg	4.0000 0.000 0.000	-15.000	148.0000	No Ice 1/2" Ice 1" Ice	0.9660 1.0908 1.2230	0.4635 0.5576 0.6599	0.022 0.030 0.039

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
						2" Ice	1.5097	0.8927	0.065
IBC1900BB-1	B	From Centroid-Leg	4.0000 0.000 0.000	35.000	148.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.9660 1.0908 1.2230 1.5097	0.4635 0.5576 0.6599 0.8927	0.022 0.030 0.039 0.065
IBC1900BB-1	C	From Centroid-Leg	4.0000 0.000 0.000	-5.000	148.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.9660 1.0908 1.2230 1.5097	0.4635 0.5576 0.6599 0.8927	0.022 0.030 0.039 0.065
IBC1900HG-2A	A	From Centroid-Leg	4.0000 0.000 0.000	-15.000	148.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.9660 1.0908 1.2230 1.5097	0.4635 0.5576 0.6599 0.8927	0.022 0.030 0.039 0.065
IBC1900HG-2A	B	From Centroid-Leg	4.0000 0.000 0.000	35.000	148.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.9660 1.0908 1.2230 1.5097	0.4635 0.5576 0.6599 0.8927	0.022 0.030 0.039 0.065
IBC1900HG-2A	C	From Centroid-Leg	4.0000 0.000 0.000	-5.000	148.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.9660 1.0908 1.2230 1.5097	0.4635 0.5576 0.6599 0.8927	0.022 0.030 0.039 0.065
(3) TD-RRH8X20-25	A	From Centroid-Leg	4.0000 0.000 0.000	-15.000	148.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.7042 3.9462 4.1956 4.7168	1.2939 1.4646 1.6424 2.0188	0.066 0.090 0.117 0.183
Platform Mount [LP 1201-1]	C	None		0.000	148.0000	No Ice 1/2" Ice 1" Ice 2" Ice	23.1000 26.8000 30.5000 37.9000	23.1000 26.8000 30.5000 37.9000	2.100 2.500 2.900 3.700
139 - TBR **138**									
(2) LPA-80063-6CF-EDIN-2	A	From Centroid-Face	4.0000 -3.000 0.000	-60.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.7324 10.2002 10.6750 11.6456	8.6033 9.0605 9.5248 10.4742	0.027 0.102 0.183 0.367
(2) LPA-80063-6CF-EDIN-2	B	From Centroid-Face	4.0000 -1.000 0.000	-60.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.7324 10.2002 10.6750 11.6456	8.6033 9.0605 9.5248 10.4742	0.027 0.102 0.183 0.367
LPA-80063-6CF-EDIN-2	B	From Centroid-Face	4.0000 6.000 0.000	60.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.7324 10.2002 10.6750 11.6456	8.6033 9.0605 9.5248 10.4742	0.027 0.102 0.183 0.367
LPA-80063-6CF-EDIN-2	C	From Centroid-Face	4.0000 0.000 0.000	-60.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	9.7324 10.2002 10.6750 11.6456	8.6033 9.0605 9.5248 10.4742	0.027 0.102 0.183 0.367
KS24019-L112A	C	From Centroid-Face	4.0000 3.000 4.000	60.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.0815 0.1333 0.1944 0.3500	0.0815 0.1333 0.1944 0.3500	0.005 0.006 0.008 0.015
(2) NNHH-65B-R4 w/ Mount Pipe	B	From Centroid-Face	4.0000 -4.500 0.000	-60.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	12.5086 13.1075 13.6715 14.8221	7.4125 8.5976 9.4965 11.3279	0.104 0.194 0.294 0.521
(2) NNHH-65B-R4 w/ Mount Pipe	B	From Centroid-Fa	4.0000 1.500	50.000	138.0000	No Ice 1/2" Ice	12.5086 13.1075	7.4125 8.5976	0.104 0.194

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
		ce	0.000			1" Ice	13.6715	9.4965	0.294
						2" Ice	14.8221	11.3279	0.521
NNHH-65B-R4	B	From Centroid-Face	4.0000 6.000 0.000	-40.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	12.2711 12.7660 13.2679 14.2927	5.7500 6.2069 6.6713 7.6222	0.078 0.150 0.229 0.407
NNHH-65B-R4 w/ Mount Pipe	C	From Centroid-Face	4.0000 -6.000 0.000	20.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	12.5086 13.1075 13.6715 14.8221	7.4125 8.5976 9.4965 11.3279	0.104 0.194 0.294 0.521
(2) RFV01U-D2A	B	From Centroid-Face	4.0000 -4.500 0.000	-60.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8750 2.0454 2.2231 2.6009	1.0125 1.1445 1.2840 1.5851	0.070 0.087 0.106 0.153
RFV01U-D2A	B	From Centroid-Face	4.0000 0.000 0.000	50.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8750 2.0454 2.2231 2.6009	1.0125 1.1445 1.2840 1.5851	0.070 0.087 0.106 0.153
RFV01U-D1A	B	From Centroid-Face	4.0000 3.000 0.000	50.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8750 2.0454 2.2231 2.6009	1.2500 1.3926 1.5426 1.8648	0.084 0.103 0.124 0.175
RFV01U-D1A	B	From Centroid-Face	4.0000 6.000 0.000	-40.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8750 2.0454 2.2231 2.6009	1.2500 1.3926 1.5426 1.8648	0.084 0.103 0.124 0.175
RFV01U-D1A	C	From Centroid-Face	4.0000 -6.000 0.000	20.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.8750 2.0454 2.2231 2.6009	1.2500 1.3926 1.5426 1.8648	0.084 0.103 0.124 0.175
RVZDC-6627-PF-48	C	From Centroid-Face	4.0000 -3.000 0.000	0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.7922 4.0441 4.3033 4.8439	2.5137 2.7270 2.9472 3.4168	0.032 0.063 0.099 0.181
Miscellaneous [NA 509-3]	C	None		0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	11.8400 16.9600 22.0800 32.3200	11.8400 16.9600 22.0800 32.3200	0.275 0.296 0.317 0.360
Platform Mount [LP 301-1]	C	None		0.000	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	30.1000 40.8000 51.5000 72.9000	30.1000 40.8000 51.5000 72.9000	1.589 2.029 2.470 3.351
127									
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Centroid-Leg	4.0000 -6.000 2.000	30.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.3292 6.7751 7.2137 8.1168	5.6424 6.4259 7.1313 8.5907	0.112 0.169 0.233 0.383
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Centroid-Leg	4.0000 -6.000 2.000	40.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.3292 6.7751 7.2137 8.1168	5.6424 6.4259 7.1313 8.5907	0.112 0.169 0.233 0.383
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Centroid-Leg	4.0000 -6.000 2.000	-20.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.3292 6.7751 7.2137 8.1168	5.6424 6.4259 7.1313 8.5907	0.112 0.169 0.233 0.383
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	A	From Centroid-Le	4.0000 6.000	30.000	127.0000	No Ice 1/2" Ice	6.3292 6.7751	5.6424 6.4259	0.112 0.169

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
		g	2.000			1" Ice	7.2137	7.1313	0.233
						2" Ice	8.1168	8.5907	0.383
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	B	From Centroid-Le g	4.0000 6.000 2.000	40.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.3292 6.7751 7.2137 8.1168	5.6424 6.4259 7.1313 8.5907	0.112 0.169 0.233 0.383
ERICSSON AIR 21 B4A B2P w/ Mount Pipe	C	From Centroid-Le g	4.0000 6.000 2.000	-20.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.3292 6.7751 7.2137 8.1168	5.6424 6.4259 7.1313 8.5907	0.112 0.169 0.233 0.383
LNX-6515DS-VTM w/ Mount Pipe	A	From Centroid-Le g	4.0000 -2.000 2.000	30.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	11.6828 12.4043 13.1351 14.5120	9.8418 11.3657 12.9138 15.2672	0.083 0.173 0.273 0.506
LNX-6515DS-VTM w/ Mount Pipe	B	From Centroid-Le g	4.0000 -2.000 2.000	40.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	11.6828 12.4043 13.1351 14.5120	9.8418 11.3657 12.9138 15.2672	0.083 0.173 0.273 0.506
LNX-6515DS-VTM w/ Mount Pipe	C	From Centroid-Le g	4.0000 -2.000 2.000	-20.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	11.6828 12.4043 13.1351 14.5120	9.8418 11.3657 12.9138 15.2672	0.083 0.173 0.273 0.506
KRY 112 144/1	A	From Centroid-Le g	4.0000 -6.000 2.000	30.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3523 0.4284 0.5119 0.7011	0.1617 0.2195 0.2846 0.4372	0.011 0.014 0.018 0.032
KRY 112 144/1	B	From Centroid-Le g	4.0000 -6.000 2.000	40.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3523 0.4284 0.5119 0.7011	0.1617 0.2195 0.2846 0.4372	0.011 0.014 0.018 0.032
KRY 112 144/1	C	From Centroid-Le g	4.0000 -6.000 2.000	-20.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.3523 0.4284 0.5119 0.7011	0.1617 0.2195 0.2846 0.4372	0.011 0.014 0.018 0.032
RRUS 11 B12	A	From Centroid-Le g	4.0000 -2.000 2.000	30.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7908 2.9984 3.2134 3.6656	1.1923 1.3395 1.4957 1.8390	0.051 0.072 0.095 0.153
RRUS 11 B12	B	From Centroid-Le g	4.0000 -2.000 2.000	40.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7908 2.9984 3.2134 3.6656	1.1923 1.3395 1.4957 1.8390	0.051 0.072 0.095 0.153
RRUS 11 B12	C	From Centroid-Le g	4.0000 -2.000 2.000	-20.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7908 2.9984 3.2134 3.6656	1.1923 1.3395 1.4957 1.8390	0.051 0.072 0.095 0.153
Platform Mount [LP 1201-1]	C	None		0.000	127.0000	No Ice 1/2" Ice 1" Ice 2" Ice	23.1000 26.8000 30.5000 37.9000	23.1000 26.8000 30.5000 37.9000	2.100 2.500 2.900 3.700
119									
HBX-6516DS-VTM w/ Mount Pipe	A	From Leg	4.0000 -2.000 0.000	30.000	119.0000	No Ice 1/2" Ice 1" Ice 2" Ice	3.7677 4.2436 4.6781 5.5662	3.4108 4.2258 4.9172 6.3500	0.032 0.067 0.108 0.211
HBX-6516DS-VTM w/ Mount Pipe	B	From Leg	4.0000 -2.000	20.000	119.0000	No Ice 1/2" Ice	3.7677 4.2436	3.4108 4.2258	0.032 0.067

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	4.6781	4.9172	0.108
						2" Ice	5.5662	6.3500	0.211
HBX-6516DS-VTM w/ Mount Pipe	C	From Leg	4.0000	30.000	119.0000	No Ice	3.7677	3.4108	0.032
			-2.000			1/2" Ice	4.2436	4.2258	0.067
			0.000			1" Ice	4.6781	4.9172	0.108
						2" Ice	5.5662	6.3500	0.211
2.4" Dia. x 6-ft	A	From Leg	4.0000	0.000	119.0000	No Ice	1.4250	1.4250	0.022
			2.000			1/2" Ice	1.9250	1.9250	0.033
			0.000			1" Ice	2.2939	2.2939	0.048
						2" Ice	3.0596	3.0596	0.090
2.4" Dia. x 6-ft	B	From Leg	4.0000	0.000	119.0000	No Ice	1.4250	1.4250	0.022
			2.000			1/2" Ice	1.9250	1.9250	0.033
			0.000			1" Ice	2.2939	2.2939	0.048
						2" Ice	3.0596	3.0596	0.090
2.4" Dia. x 6-ft	C	From Leg	4.0000	0.000	119.0000	No Ice	1.4250	1.4250	0.022
			2.000			1/2" Ice	1.9250	1.9250	0.033
			0.000			1" Ice	2.2939	2.2939	0.048
						2" Ice	3.0596	3.0596	0.090
Side Arm Mount [SO 102-3]	C	None		0.000	119.0000	No Ice	3.0000	3.0000	0.081
						1/2" Ice	3.4800	3.4800	0.111
						1" Ice	3.9600	3.9600	0.141
						2" Ice	4.9200	4.9200	0.201
T-Arm Mount [TA 601-3]	C	None		0.000	119.0000	No Ice	10.9000	10.9000	0.726
						1/2" Ice	14.6500	14.6500	0.926
						1" Ice	18.4000	18.4000	1.125
						2" Ice	25.9000	25.9000	1.524
48 KS24019-L112A	A	From Leg	4.0000	0.000	48.0000	No Ice	0.0815	0.0815	0.005
			0.000			1/2" Ice	0.1333	0.1333	0.006
			2.000			1" Ice	0.1944	0.1944	0.008
						2" Ice	0.3500	0.3500	0.015
Side Arm Mount [SO 701-1]	A	None		0.000	48.0000	No Ice	0.8500	1.6700	0.065
						1/2" Ice	1.1400	2.3400	0.079
						1" Ice	1.4300	3.0100	0.093
						2" Ice	2.0100	4.3500	0.121

Tower Pressures - No Ice

$G_H = 1.100$

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1	157.5000	1.125	0.040	4.479	A	0.000	4.479	4.479	100.00	0.177	0.000
160.0000-155.0000					B	0.000	4.479		100.00	0.177	0.000
					C	0.000	4.479		100.00	0.177	0.000
L2	152.5000	1.115	0.040	4.479	A	0.000	4.479	4.479	100.00	1.777	0.000
155.0000-150.0000					B	0.000	4.479		100.00	1.777	0.000
					C	0.000	4.479		100.00	1.777	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L3	149.0000	1.107	0.040	1.792	A	0.000	1.792	1.792	100.00	0.713	0.000
150.0000-148.0000					B	0.000	1.792		100.00	0.713	0.000
					C	0.000	1.792		100.00	0.713	0.000
L4	145.4856	1.1	0.040	9.886	A	0.000	9.886	9.886	100.00	1.789	0.000
148.0000-143.0000					B	0.000	9.886		100.00	1.789	0.000
					C	0.000	9.886		100.00	1.789	0.000
L5	140.4861	1.089	0.039	10.229	A	0.000	10.229	10.229	100.00	1.078	0.000
143.0000-138.0000					B	0.000	10.229		100.00	1.078	0.000
					C	0.000	10.229		100.00	1.078	0.000
L6	135.4865	1.078	0.039	10.572	A	0.000	10.572	10.572	100.00	0.000	0.000
138.0000-133.0000					B	0.000	10.572		100.00	0.000	0.000
					C	0.000	10.572		100.00	0.000	0.000
L7	130.4869	1.066	0.038	10.915	A	0.000	10.915	10.915	100.00	0.000	0.000
133.0000-128.0000					B	0.000	10.915		100.00	0.000	0.000
					C	0.000	10.915		100.00	0.000	0.000
L8	125.4873	1.054	0.038	11.257	A	0.000	11.257	11.257	100.00	3.960	0.000
128.0000-123.0000					B	0.000	11.257		100.00	0.000	0.000
					C	0.000	11.257		100.00	0.000	0.000
L9	120.4877	1.042	0.037	11.600	A	0.000	11.600	11.600	100.00	4.950	0.000
123.0000-118.0000					B	0.000	11.600		100.00	0.000	0.000
					C	0.000	11.600		100.00	0.000	0.000
L10	114.4767	1.027	0.037	16.816	A	0.000	16.816	16.816	100.00	6.930	0.000
118.0000-111.0000					B	0.000	16.816		100.00	0.000	0.000
					C	0.000	16.816		100.00	0.000	0.000
L11	110.3743	1.016	0.037	3.020	A	0.000	3.020	3.020	100.00	1.238	0.000
111.0000-109.7500					B	0.000	3.020		100.00	0.000	0.000
					C	0.000	3.020		100.00	0.000	0.000
L12	107.4906	1.009	0.036	11.048	A	0.000	11.048	11.048	100.00	4.697	0.000
109.7500-105.2500					B	0.000	11.048		100.00	0.241	0.000
					C	0.000	11.048		100.00	0.000	0.000
L13	105.1250	1.002	0.036	0.621	A	0.000	0.621	0.621	100.00	0.288	0.000
105.2500-105.0000					B	0.000	0.621		100.00	0.040	0.000
					C	0.000	0.621		100.00	0.000	0.000
L14	102.4887	0.995	0.036	12.608	A	0.000	12.608	12.608	100.00	5.755	0.000
105.0000-100.0000					B	0.000	12.608		100.00	0.805	0.000
					C	0.000	12.608		100.00	0.000	0.000
L15	97.4890	0.981	0.035	12.951	A	0.000	12.951	12.951	100.00	5.755	0.000
100.0000-95.0000					B	0.000	12.951		100.00	0.805	0.000
					C	0.000	12.951		100.00	0.000	0.000
L16	92.4893	0.966	0.035	13.294	A	0.000	13.294	13.294	100.00	5.755	0.000
95.0000-90.0000					B	0.000	13.294		100.00	0.805	0.000
					C	0.000	13.294		100.00	0.000	0.000
L17	87.4896	0.951	0.034	13.637	A	0.000	13.637	13.637	100.00	5.755	0.000
90.0000-85.0000					B	0.000	13.637		100.00	0.805	0.000
					C	0.000	13.637		100.00	0.000	0.000
L18	80.8475	0.93	0.033	23.252	A	0.000	23.252	23.252	100.00	10.646	0.000
85.0000-76.7500					B	0.000	23.252		100.00	1.328	0.000
					C	0.000	23.252		100.00	0.000	0.000
L19	76.2496	0.915	0.033	2.828	A	0.000	2.828	2.828	100.00	1.190	0.000
76.7500-75.7500					B	0.000	2.828		100.00	0.040	0.000
					C	0.000	2.828		100.00	0.000	0.000
L20	73.2401	0.904	0.032	14.346	A	0.000	14.346	14.346	100.00	6.960	0.000
75.7500-70.7500					B	0.000	14.346		100.00	0.000	0.000
					C	0.000	14.346		100.00	0.000	0.000
L21	70.6250	0.895	0.032	0.726	A	0.000	0.726	0.726	100.00	0.402	0.000
70.7500-70.5000					B	0.000	0.726		100.00	0.000	0.000
					C	0.000	0.726		100.00	0.000	0.000
L22	70.3750	0.894	0.032	0.727	A	0.000	0.727	0.727	100.00	0.402	0.000
70.5000-70.2500					B	0.000	0.727		100.00	0.000	0.000
					C	0.000	0.727		100.00	0.000	0.000

Section Elevation ft	z ft	Kz	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L23	70.1250	0.893	0.032	0.727	A	0.000	0.727	0.727	100.00	0.402	0.000
70.2500-70.00					B	0.000	0.727		100.00	0.000	0.000
00					C	0.000	0.727		100.00	0.000	0.000
L24	69.8750	0.892	0.032	0.729	A	0.000	0.729	0.729	100.00	0.402	0.000
70.0000-69.75					B	0.000	0.729		100.00	0.000	0.000
00					C	0.000	0.729		100.00	0.000	0.000
L25	67.2403	0.882	0.032	14.754	A	0.000	14.754	14.754	100.00	7.490	0:000
69.7500-64.75					B	0.000	14.754		100.00	0.000	0.000
00					C	0.000	14.754		100.00	0.000	0.000
L26	62.2406	0.863	0.031	15.097	A	0.000	15.097	15.097	100.00	7.040	0.000
64.7500-59.75					B	0.000	15.097		100.00	0.000	0.000
00					C	0.000	15.097		100.00	0.000	0.000
L27	57.2408	0.843	0.030	15.440	A	0.000	15.440	15.440	100.00	7.040	0.000
59.7500-54.75					B	0.000	15.440		100.00	0.000	0.000
00					C	0.000	15.440		100.00	0.000	0.000
L28	52.2410	0.821	0.029	15.783	A	0.000	15.783	15.783	100.00	7.040	0.000
54.7500-49.75					B	0.000	15.783		100.00	0.000	0.000
00					C	0.000	15.783		100.00	0.000	0.000
L29	46.3590	0.793	0.029	21.851	A	0.000	21.851	21.851	100.00	9.504	0.000
49.7500-43.00					B	0.000	21.851		100.00	0.000	0.000
00					C	0.000	21.851		100.00	0.000	0.000
L30	42.4996	0.774	0.028	3.225	A	0.000	3.225	3.225	100.00	1.240	0.000
43.0000-42.00					B	0.000	3.225		100.00	0.000	0.000
00					C	0.000	3.225		100.00	0.000	0.000
L31	39.4913	0.758	0.027	16.332	A	0.000	16.332	16.332	100.00	6.200	0.000
42.0000-37.00					B	0.000	16.332		100.00	0.000	0.000
00					C	0.000	16.332		100.00	0.000	0.000
L32	34.4915	0.729	0.026	16.675	A	0.000	16.675	16.675	100.00	6.200	0.000
37.0000-32.00					B	0.000	16.675		100.00	0.000	0.000
00					C	0.000	16.675		100.00	0.000	0.000
L33	29.9092	0.7	0.025	14.169	A	0.000	14.169	14.169	100.00	5.200	0.000
32.0000-27.83					B	0.000	14.169		100.00	0.697	0.000
00					C	0.000	14.169		100.00	0.000	0.000
L34	27.7050	0.7	0.025	0.857	A	0.000	0.857	0.857	100.00	0.313	0.000
27.8300-27.58					B	0.000	0.857		100.00	0.065	0.000
00					C	0.000	0.857		100.00	0.000	0.000
L35	27.4150	0.7	0.025	1.133	A	0.000	1.133	1.133	100.00	0.413	0.000
27.5800-27.25					B	0.000	1.133		100.00	0.086	0.000
00					C	0.000	1.133		100.00	0.000	0.000
L36	27.1250	0.7	0.025	0.860	A	0.000	0.860	0.860	100.00	0.313	0.000
27.2500-27.00					B	0.000	0.860		100.00	0.065	0.000
00					C	0.000	0.860		100.00	0.000	0.000
L37	26.8750	0.7	0.025	0.860	A	0.000	0.860	0.860	100.00	0.313	0.000
27.0000-26.75					B	0.000	0.860		100.00	0.065	0.000
00					C	0.000	0.860		100.00	0.000	0.000
L38	24.2418	0.7	0.025	17.377	A	0.000	17.377	17.377	100.00	6.255	0.000
26.7500-21.75					B	0.000	17.377		100.00	1.305	0.000
00					C	0.000	17.377		100.00	0.000	0.000
L39	19.2420	0.7	0.025	17.720	A	0.000	17.720	17.720	100.00	6.255	0.000
21.7500-16.75					B	0.000	17.720		100.00	1.305	0.000
00					C	0.000	17.720		100.00	0.000	0.000
L40	16.3748	0.7	0.025	2.688	A	0.000	2.688	2.688	100.00	0.938	0.000
16.7500-16.00					B	0.000	2.688		100.00	0.196	0.000
00					C	0.000	2.688		100.00	0.000	0.000
L41	15.8750	0.7	0.025	0.897	A	0.000	0.897	0.897	100.00	0.313	0.000
16.0000-15.75					B	0.000	0.897		100.00	0.065	0.000
00					C	0.000	0.897		100.00	0.000	0.000
L42	15.2912	0.7	0.025	3.298	A	0.000	3.298	3.298	100.00	1.147	0.000
15.7500-14.83					B	0.000	3.298		100.00	0.239	0.000
30					C	0.000	3.298		100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L43	14.7080	0.7	0.025	0.901	A	0.000	0.901	0.901	100.00	0.313	0.000
14.8330-14.58					B	0.000	0.901		100.00	0.065	0.000
30					C	0.000	0.901		100.00	0.000	0.000
L44	13.2894	0.7	0.025	9.363	A	0.000	9.363	9.363	100.00	3.753	0.000
14.5830-12.00					B	0.000	9.363		100.00	0.674	0.000
00					C	0.000	9.363		100.00	0.522	0.000
L45	11.8750	0.7	0.025	0.911	A	0.000	0.911	0.911	100.00	0.378	0.000
12.0000-11.75					B	0.000	0.911		100.00	0.065	0.000
00					C	0.000	0.911		100.00	0.065	0.000
L46	10.8740	0.7	0.025	6.399	A	0.000	6.399	6.399	100.00	2.646	0.000
11.7500-10.00					B	0.000	6.399		100.00	0.457	0.000
00					C	0.000	6.399		100.00	0.457	0.000
L47	9.8750	0.7	0.025	0.918	A	0.000	0.918	0.918	100.00	0.378	0.000
10.0000-9.750					B	0.000	0.918		100.00	0.065	0.000
0					C	0.000	0.918		100.00	0.065	0.000
L48	7.2423	0.7	0.025	18.539	A	0.000	18.539	18.539	100.00	7.560	0.000
9.7500-4.7500					B	0.000	18.539		100.00	1.305	0.000
					C	0.000	18.539		100.00	1.305	0.000
L49	2.6195	0.7	0.025	16.027	A	0.000	16.027	16.027	100.00	6.426	0.000
4.7500-0.5000					B	0.000	16.027		100.00	1.109	0.000
					C	0.000	16.027		100.00	1.109	0.000
L50	0.3750	0.7	0.025	0.950	A	0.000	0.950	0.950	100.00	0.378	0.000
0.5000-0.2500					B	0.000	0.950		100.00	0.065	0.000
					C	0.000	0.950		100.00	0.065	0.000
L51	0.1250	0.7	0.025	0.951	A	0.000	0.951	0.951	100.00	0.378	0.000
0.2500-0.0000					B	0.000	0.951		100.00	0.065	0.000
					C	0.000	0.951		100.00	0.065	0.000

Tower Pressure - With Ice

$G_H = 1.100$

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1	157.5000	1.125	0.006	1.4907	5.721	A	0.000	5.721	5.721	100.00	0.416	0.000
160.0000-155.00						B	0.000	5.721		100.00	0.416	0.000
00						C	0.000	5.721		100.00	0.416	0.000
L2	152.5000	1.115	0.006	1.4859	5.717	A	0.000	5.717	5.717	100.00	4.159	0.000
155.0000-150.00						B	0.000	5.717		100.00	4.159	0.000
00						C	0.000	5.717		100.00	4.159	0.000
L3	149.0000	1.107	0.006	1.4824	2.286	A	0.000	2.286	2.286	100.00	1.663	0.000
150.0000-148.00						B	0.000	2.286		100.00	1.663	0.000
00						C	0.000	2.286		100.00	1.663	0.000
L4	145.4856	1.1	0.006	1.4789	11.119	A	0.000	11.119	11.119	100.00	4.155	0.000
148.0000-143.00						B	0.000	11.119		100.00	4.155	0.000
00						C	0.000	11.119		100.00	4.155	0.000
L5	140.4861	1.089	0.006	1.4737	11.457	A	0.000	11.457	11.457	100.00	2.491	0.000
143.0000-138.00						B	0.000	11.457		100.00	2.491	0.000
00						C	0.000	11.457		100.00	2.491	0.000
L6	135.4865	1.078	0.006	1.4684	11.796	A	0.000	11.796	11.796	100.00	0.000	0.000
138.0000-133.00						B	0.000	11.796		100.00	0.000	0.000
00						C	0.000	11.796		100.00	0.000	0.000
L7	130.4869	1.066	0.006	1.4629	12.134	A	0.000	12.134	12.134	100.00	0.000	0.000
133.0000-128.00						B	0.000	12.134		100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
00						C	0.000	12.134		100.00	0.000	0.000
L8	125.4873	1.054	0.006	1.4572	12.472	A	0.000	12.472	12.472	100.00	6.407	0.000
128.0000-123.00						B	0.000	12.472		100.00	0.000	0.000
00						C	0.000	12.472		100.00	0.000	0.000
L9	120.4877	1.042	0.006	1.4513	12.809	A	0.000	12.809	12.809	100.00	8.002	0.000
123.0000-118.00						B	0.000	12.809		100.00	0.000	0.000
00						C	0.000	12.809		100.00	0.000	0.000
L10	114.4767	1.027	0.006	1.4439	18.500	A	0.000	18.500	18.500	100.00	11.189	0.000
118.0000-111.00						B	0.000	18.500		100.00	0.000	0.000
00						C	0.000	18.500		100.00	0.000	0.000
L11	110.3743	1.016	0.006	1.4386	3.320	A	0.000	3.320	3.320	100.00	1.998	0.000
111.0000-109.75						B	0.000	3.320		100.00	0.000	0.000
00						C	0.000	3.320		100.00	0.000	0.000
L12	107.4906	1.009	0.006	1.4348	12.124	A	0.000	12.124	12.124	100.00	7.855	0.000
109.7500-105.25						B	0.000	12.124		100.00	0.672	0.000
00						C	0.000	12.124		100.00	0.000	0.000
L13	105.1250	1.002	0.006	1.4316	0.681	A	0.000	0.681	0.681	100.00	0.511	0.000
105.2500-105.00						B	0.000	0.681		100.00	0.112	0.000
00						C	0.000	0.681		100.00	0.000	0.000
L14	102.4887	0.995	0.006	1.4280	13.798	A	0.000	13.798	13.798	100.00	10.205	0.000
105.0000-100.00						B	0.000	13.798		100.00	2.233	0.000
00						C	0.000	13.798		100.00	0.000	0.000
L15	97.4890	0.981	0.006	1.4209	14.136	A	0.000	14.136	14.136	100.00	10.189	0.000
100.0000-95.000						B	0.000	14.136		100.00	2.226	0.000
0						C	0.000	14.136		100.00	0.000	0.000
L16	92.4893	0.966	0.006	1.4134	14.472	A	0.000	14.472	14.472	100.00	10.173	0.000
95.0000-90.0000						B	0.000	14.472		100.00	2.218	0.000
						C	0.000	14.472		100.00	0.000	0.000
L17	87.4896	0.951	0.005	1.4056	14.809	A	0.000	14.809	14.809	100.00	10.155	0.000
90.0000-85.0000						B	0.000	14.809		100.00	2.211	0.000
						C	0.000	14.809		100.00	0.000	0.000
L18	80.8475	0.93	0.005	1.3945	25.169	A	0.000	25.169	25.169	100.00	21.072	0.000
85.0000-76.7500						B	0.000	25.169		100.00	3.629	0.000
						C	0.000	25.169		100.00	0.000	0.000
L19	76.2496	0.915	0.005	1.3864	3.061	A	0.000	3.061	3.061	100.00	2.344	0.000
76.7500-75.7500						B	0.000	3.061		100.00	0.110	0.000
						C	0.000	3.061		100.00	0.000	0.000
L20	73.2401	0.904	0.005	1.3808	15.497	A	0.000	15.497	15.497	100.00	14.020	0.000
75.7500-70.7500						B	0.000	15.497		100.00	0.000	0.000
						C	0.000	15.497		100.00	0.000	0.000
L21	70.6250	0.895	0.005	1.3758	0.784	A	0.000	0.784	0.784	100.00	0.825	0.000
70.7500-70.5000						B	0.000	0.784		100.00	0.000	0.000
						C	0.000	0.784		100.00	0.000	0.000
L22	70.3750	0.894	0.005	1.3753	0.784	A	0.000	0.784	0.784	100.00	0.825	0.000
70.5000-70.2500						B	0.000	0.784		100.00	0.000	0.000
						C	0.000	0.784		100.00	0.000	0.000
L23	70.1250	0.893	0.005	1.3748	0.785	A	0.000	0.785	0.785	100.00	0.825	0.000
70.2500-70.0000						B	0.000	0.785		100.00	0.000	0.000
						C	0.000	0.785		100.00	0.000	0.000
L24	69.8750	0.892	0.005	1.3743	0.786	A	0.000	0.786	0.786	100.00	0.825	0.000
70.0000-69.7500						B	0.000	0.786		100.00	0.000	0.000
						C	0.000	0.786		100.00	0.000	0.000
L25	67.2403	0.882	0.005	1.3691	15.895	A	0.000	15.895	15.895	100.00	14.409	0.000
69.7500-64.7500						B	0.000	15.895		100.00	0.000	0.000
						C	0.000	15.895		100.00	0.000	0.000
L26	62.2406	0.863	0.005	1.3585	16.229	A	0.000	16.229	16.229	100.00	12.693	0.000
64.7500-59.7500						B	0.000	16.229		100.00	0.000	0.000
						C	0.000	16.229		100.00	0.000	0.000
L27	57.2408	0.843	0.005	1.3472	16.563	A	0.000	16.563	16.563	100.00	12.656	0.000
59.7500-54.7500						B	0.000	16.563		100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						C	0.000	16.563		100.00	0.000	0.000
L28	52.2410	0.821	0.005	1.3349	16.896	A	0.000	16.896	16.896	100.00	12.616	0.000
54.7500-49.7500						B	0.000	16.896		100.00	0.000	0.000
						C	0.000	16.896		100.00	0.000	0.000
L29	46.3590	0.793	0.005	1.3191	23.335	A	0.000	23.335	23.335	100.00	16.962	0.000
49.7500-43.0000						B	0.000	23.335		100.00	0.000	0.000
						C	0.000	23.335		100.00	0.000	0.000
L30	42.4996	0.774	0.004	1.3077	3.445	A	0.000	3.445	3.445	100.00	2.345	0.000
43.0000-42.0000						B	0.000	3.445		100.00	0.000	0.000
						C	0.000	3.445		100.00	0.000	0.000
L31	39.4913	0.758	0.004	1.2981	17.413	A	0.000	17.413	17.413	100.00	11.656	0.000
42.0000-37.0000						B	0.000	17.413		100.00	0.000	0.000
						C	0.000	17.413		100.00	0.000	0.000
L32	34.4915	0.729	0.004	1.2806	17.742	A	0.000	17.742	17.742	100.00	11.600	0.000
37.0000-32.0000						B	0.000	17.742		100.00	0.000	0.000
						C	0.000	17.742		100.00	0.000	0.000
L33	29.9092	0.7	0.004	1.2625	15.046	A	0.000	15.046	15.046	100.00	8.980	0.000
32.0000-27.8300						B	0.000	15.046		100.00	1.371	0.000
						C	0.000	15.046		100.00	0.000	0.000
L34	27.7050	0.7	0.004	1.2529	0.909	A	0.000	0.909	0.909	100.00	0.516	0.000
27.8300-27.5800						B	0.000	0.909		100.00	0.128	0.000
						C	0.000	0.909		100.00	0.000	0.000
L35	27.4150	0.7	0.004	1.2516	1.201	A	0.000	1.201	1.201	100.00	0.680	0.000
27.5800-27.2500						B	0.000	1.201		100.00	0.169	0.000
						C	0.000	1.201		100.00	0.000	0.000
L36	27.1250	0.7	0.004	1.2502	0.912	A	0.000	0.912	0.912	100.00	0.515	0.000
27.2500-27.0000						B	0.000	0.912		100.00	0.128	0.000
						C	0.000	0.912		100.00	0.000	0.000
L37	26.8750	0.7	0.004	1.2491	0.912	A	0.000	0.912	0.912	100.00	0.515	0.000
27.0000-26.7500						B	0.000	0.912		100.00	0.128	0.000
						C	0.000	0.912		100.00	0.000	0.000
L38	24.2418	0.7	0.004	1.2363	18.407	A	0.000	18.407	18.407	100.00	10.274	0.000
26.7500-21.7500						B	0.000	18.407		100.00	2.541	0.000
						C	0.000	18.407		100.00	0.000	0.000
L39	19.2420	0.7	0.004	1.2080	18.727	A	0.000	18.727	18.727	100.00	10.211	0.000
21.7500-16.7500						B	0.000	18.727		100.00	2.513	0.000
						C	0.000	18.727		100.00	0.000	0.000
L40	16.3748	0.7	0.004	1.1887	2.836	A	0.000	2.836	2.836	100.00	1.525	0.000
16.7500-16.0000						B	0.000	2.836		100.00	0.374	0.000
						C	0.000	2.836		100.00	0.000	0.000
L41	15.8750	0.7	0.004	1.1850	0.946	A	0.000	0.946	0.946	100.00	0.508	0.000
16.0000-15.7500						B	0.000	0.946		100.00	0.125	0.000
						C	0.000	0.946		100.00	0.000	0.000
L42	15.2912	0.7	0.004	1.1806	3.478	A	0.000	3.478	3.478	100.00	1.861	0.000
15.7500-14.8330						B	0.000	3.478		100.00	0.456	0.000
						C	0.000	3.478		100.00	0.000	0.000
L43	14.7080	0.7	0.004	1.1760	0.950	A	0.000	0.950	0.950	100.00	0.507	0.000
14.8330-14.5830						B	0.000	0.950		100.00	0.124	0.000
						C	0.000	0.950		100.00	0.000	0.000
L44	13.2894	0.7	0.004	1.1642	9.864	A	0.000	9.864	9.864	100.00	6.211	0.000
14.5830-12.0000						B	0.000	9.864		100.00	1.276	0.000
						C	0.000	9.864		100.00	0.988	0.000
L45	11.8750	0.7	0.004	1.1511	0.959	A	0.000	0.959	0.959	100.00	0.627	0.000
12.0000-11.7500						B	0.000	0.959		100.00	0.123	0.000
						C	0.000	0.959		100.00	0.123	0.000
L46	10.8740	0.7	0.004	1.1410	6.732	A	0.000	6.732	6.732	100.00	4.377	0.000
11.7500-10.0000						B	0.000	6.732		100.00	0.856	0.000
						C	0.000	6.732		100.00	0.856	0.000
L47	9.8750	0.7	0.004	1.1301	0.965	A	0.000	0.965	0.965	100.00	0.624	0.000
10.0000-9.7500						B	0.000	0.965		100.00	0.122	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						C	0.000	0.965		100.00	0.122	0.000
L48	7.2423	0.7	0.004	1.0956	19.452	A	0.000	19.452	19.452	100.00	12.358	0.000
9.7500-4.7500						B	0.000	19.452		100.00	2.401	0.000
						C	0.000	19.452		100.00	2.401	0.000
L49	2.6195	0.7	0.004	0.9896	16.728	A	0.000	16.728	16.728	100.00	10.212	0.000
4.7500-0.5000						B	0.000	16.728		100.00	1.950	0.000
						C	0.000	16.728		100.00	1.950	0.000
L50	0.3750	0.7	0.004	0.8148	0.984	A	0.000	0.984	0.984	100.00	0.572	0.000
0.5000-0.2500						B	0.000	0.984		100.00	0.106	0.000
						C	0.000	0.984		100.00	0.106	0.000
L51	0.1250	0.7	0.004	0.7300	0.982	A	0.000	0.982	0.982	100.00	0.559	0.000
0.2500-0.0000						B	0.000	0.982		100.00	0.102	0.000
						C	0.000	0.982		100.00	0.102	0.000

Tower Pressure - Service

$G_H = 1.100$

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1	157.5000	1.125	0.008	4.479	A	0.000	4.479	4.479	100.00	0.177	0.000
160.0000-155.					B	0.000	4.479		100.00	0.177	0.000
0000					C	0.000	4.479		100.00	0.177	0.000
L2	152.5000	1.115	0.008	4.479	A	0.000	4.479	4.479	100.00	1.777	0.000
155.0000-150.					B	0.000	4.479		100.00	1.777	0.000
0000					C	0.000	4.479		100.00	1.777	0.000
L3	149.0000	1.107	0.008	1.792	A	0.000	1.792	1.792	100.00	0.713	0.000
150.0000-148.					B	0.000	1.792		100.00	0.713	0.000
0000					C	0.000	1.792		100.00	0.713	0.000
L4	145.4856	1.1	0.008	9.886	A	0.000	9.886	9.886	100.00	1.789	0.000
148.0000-143.					B	0.000	9.886		100.00	1.789	0.000
0000					C	0.000	9.886		100.00	1.789	0.000
L5	140.4861	1.089	0.008	10.229	A	0.000	10.229	10.229	100.00	1.078	0.000
143.0000-138.					B	0.000	10.229		100.00	1.078	0.000
0000					C	0.000	10.229		100.00	1.078	0.000
L6	135.4865	1.078	0.008	10.572	A	0.000	10.572	10.572	100.00	0.000	0.000
138.0000-133.					B	0.000	10.572		100.00	0.000	0.000
0000					C	0.000	10.572		100.00	0.000	0.000
L7	130.4869	1.066	0.008	10.915	A	0.000	10.915	10.915	100.00	0.000	0.000
133.0000-128.					B	0.000	10.915		100.00	0.000	0.000
0000					C	0.000	10.915		100.00	0.000	0.000
L8	125.4873	1.054	0.008	11.257	A	0.000	11.257	11.257	100.00	3.960	0.000
128.0000-123.					B	0.000	11.257		100.00	0.000	0.000
0000					C	0.000	11.257		100.00	0.000	0.000
L9	120.4877	1.042	0.008	11.600	A	0.000	11.600	11.600	100.00	4.950	0.000
123.0000-118.					B	0.000	11.600		100.00	0.000	0.000
0000					C	0.000	11.600		100.00	0.000	0.000
L10	114.4767	1.027	0.008	16.816	A	0.000	16.816	16.816	100.00	6.930	0.000
118.0000-111.					B	0.000	16.816		100.00	0.000	0.000
0000					C	0.000	16.816		100.00	0.000	0.000
L11	110.3743	1.016	0.008	3.020	A	0.000	3.020	3.020	100.00	1.238	0.000
111.0000-109.					B	0.000	3.020		100.00	0.000	0.000
7500					C	0.000	3.020		100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L12	107.4906	1.009	0.007	11.048	A	0.000	11.048	11.048	100.00	4.697	0.000
109.7500-105.2500					B	0.000	11.048		100.00	0.241	0.000
					C	0.000	11.048		100.00	0.000	0.000
L13	105.1250	1.002	0.007	0.621	A	0.000	0.621	0.621	100.00	0.288	0.000
105.2500-105.0000					B	0.000	0.621		100.00	0.040	0.000
					C	0.000	0.621		100.00	0.000	0.000
L14	102.4887	0.995	0.007	12.608	A	0.000	12.608	12.608	100.00	5.755	0.000
105.0000-100.0000					B	0.000	12.608		100.00	0.805	0.000
					C	0.000	12.608		100.00	0.000	0.000
L15	97.4890	0.981	0.007	12.951	A	0.000	12.951	12.951	100.00	5.755	0.000
100.0000-95.0000					B	0.000	12.951		100.00	0.805	0.000
					C	0.000	12.951		100.00	0.000	0.000
L16	92.4893	0.966	0.007	13.294	A	0.000	13.294	13.294	100.00	5.755	0.000
95.0000-90.0000					B	0.000	13.294		100.00	0.805	0.000
					C	0.000	13.294		100.00	0.000	0.000
L17	87.4896	0.951	0.007	13.637	A	0.000	13.637	13.637	100.00	5.755	0.000
90.0000-85.0000					B	0.000	13.637		100.00	0.805	0.000
					C	0.000	13.637		100.00	0.000	0.000
L18	80.8475	0.93	0.007	23.252	A	0.000	23.252	23.252	100.00	10.646	0.000
85.0000-76.7500					B	0.000	23.252		100.00	1.328	0.000
					C	0.000	23.252		100.00	0.000	0.000
L19	76.2496	0.915	0.007	2.828	A	0.000	2.828	2.828	100.00	1.190	0.000
76.7500-75.7500					B	0.000	2.828		100.00	0.040	0.000
					C	0.000	2.828		100.00	0.000	0.000
L20	73.2401	0.904	0.007	14.346	A	0.000	14.346	14.346	100.00	6.960	0.000
75.7500-70.7500					B	0.000	14.346		100.00	0.000	0.000
					C	0.000	14.346		100.00	0.000	0.000
L21	70.6250	0.895	0.007	0.726	A	0.000	0.726	0.726	100.00	0.402	0.000
70.7500-70.5000					B	0.000	0.726		100.00	0.000	0.000
					C	0.000	0.726		100.00	0.000	0.000
L22	70.3750	0.894	0.007	0.727	A	0.000	0.727	0.727	100.00	0.402	0.000
70.5000-70.2500					B	0.000	0.727		100.00	0.000	0.000
					C	0.000	0.727		100.00	0.000	0.000
L23	70.1250	0.893	0.007	0.727	A	0.000	0.727	0.727	100.00	0.402	0.000
70.2500-70.0000					B	0.000	0.727		100.00	0.000	0.000
					C	0.000	0.727		100.00	0.000	0.000
L24	69.8750	0.892	0.007	0.729	A	0.000	0.729	0.729	100.00	0.402	0.000
70.0000-69.7500					B	0.000	0.729		100.00	0.000	0.000
					C	0.000	0.729		100.00	0.000	0.000
L25	67.2403	0.882	0.007	14.754	A	0.000	14.754	14.754	100.00	7.490	0.000
69.7500-64.7500					B	0.000	14.754		100.00	0.000	0.000
					C	0.000	14.754		100.00	0.000	0.000
L26	62.2406	0.863	0.006	15.097	A	0.000	15.097	15.097	100.00	7.040	0.000
64.7500-59.7500					B	0.000	15.097		100.00	0.000	0.000
					C	0.000	15.097		100.00	0.000	0.000
L27	57.2408	0.843	0.006	15.440	A	0.000	15.440	15.440	100.00	7.040	0.000
59.7500-54.7500					B	0.000	15.440		100.00	0.000	0.000
					C	0.000	15.440		100.00	0.000	0.000
L28	52.2410	0.821	0.006	15.783	A	0.000	15.783	15.783	100.00	7.040	0.000
54.7500-49.7500					B	0.000	15.783		100.00	0.000	0.000
					C	0.000	15.783		100.00	0.000	0.000
L29	46.3590	0.793	0.006	21.851	A	0.000	21.851	21.851	100.00	9.504	0.000
49.7500-43.0000					B	0.000	21.851		100.00	0.000	0.000
					C	0.000	21.851		100.00	0.000	0.000
L30	42.4996	0.774	0.006	3.225	A	0.000	3.225	3.225	100.00	1.240	0.000
43.0000-42.0000					B	0.000	3.225		100.00	0.000	0.000
					C	0.000	3.225		100.00	0.000	0.000
L31	39.4913	0.758	0.006	16.332	A	0.000	16.332	16.332	100.00	6.200	0.000
42.0000-37.0000					B	0.000	16.332		100.00	0.000	0.000
					C	0.000	16.332		100.00	0.000	0.000

Section Elevation ft	z ft	Kz	q_z ksf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L32	34.4915	0.729	0.005	16.675	A	0.000	16.675	16.675	100.00	6.200	0.000
37.0000-32.00					B	0.000	16.675		100.00	0.000	0.000
00					C	0.000	16.675		100.00	0.000	0.000
L33	29.9092	0.7	0.005	14.169	A	0.000	14.169	14.169	100.00	5.200	0.000
32.0000-27.83					B	0.000	14.169		100.00	0.697	0.000
00					C	0.000	14.169		100.00	0.000	0.000
L34	27.7050	0.7	0.005	0.857	A	0.000	0.857	0.857	100.00	0.313	0.000
27.8300-27.58					B	0.000	0.857		100.00	0.065	0.000
00					C	0.000	0.857		100.00	0.000	0.000
L35	27.4150	0.7	0.005	1.133	A	0.000	1.133	1.133	100.00	0.413	0.000
27.5800-27.25					B	0.000	1.133		100.00	0.086	0.000
00					C	0.000	1.133		100.00	0.000	0.000
L36	27.1250	0.7	0.005	0.860	A	0.000	0.860	0.860	100.00	0.313	0.000
27.2500-27.00					B	0.000	0.860		100.00	0.065	0.000
00					C	0.000	0.860		100.00	0.000	0.000
L37	26.8750	0.7	0.005	0.860	A	0.000	0.860	0.860	100.00	0.313	0.000
27.0000-26.75					B	0.000	0.860		100.00	0.065	0.000
00					C	0.000	0.860		100.00	0.000	0.000
L38	24.2418	0.7	0.005	17.377	A	0.000	17.377	17.377	100.00	6.255	0.000
26.7500-21.75					B	0.000	17.377		100.00	1.305	0.000
00					C	0.000	17.377		100.00	0.000	0.000
L39	19.2420	0.7	0.005	17.720	A	0.000	17.720	17.720	100.00	6.255	0.000
21.7500-16.75					B	0.000	17.720		100.00	1.305	0.000
00					C	0.000	17.720		100.00	0.000	0.000
L40	16.3748	0.7	0.005	2.688	A	0.000	2.688	2.688	100.00	0.938	0.000
16.7500-16.00					B	0.000	2.688		100.00	0.196	0.000
00					C	0.000	2.688		100.00	0.000	0.000
L41	15.8750	0.7	0.005	0.897	A	0.000	0.897	0.897	100.00	0.313	0.000
16.0000-15.75					B	0.000	0.897		100.00	0.065	0.000
00					C	0.000	0.897		100.00	0.000	0.000
L42	15.2912	0.7	0.005	3.298	A	0.000	3.298	3.298	100.00	1.147	0.000
15.7500-14.83					B	0.000	3.298		100.00	0.239	0.000
30					C	0.000	3.298		100.00	0.000	0.000
L43	14.7080	0.7	0.005	0.901	A	0.000	0.901	0.901	100.00	0.313	0.000
14.8330-14.58					B	0.000	0.901		100.00	0.065	0.000
30					C	0.000	0.901		100.00	0.000	0.000
L44	13.2894	0.7	0.005	9.363	A	0.000	9.363	9.363	100.00	3.753	0.000
14.5830-12.00					B	0.000	9.363		100.00	0.674	0.000
00					C	0.000	9.363		100.00	0.522	0.000
L45	11.8750	0.7	0.005	0.911	A	0.000	0.911	0.911	100.00	0.378	0.000
12.0000-11.75					B	0.000	0.911		100.00	0.065	0.000
00					C	0.000	0.911		100.00	0.065	0.000
L46	10.8740	0.7	0.005	6.399	A	0.000	6.399	6.399	100.00	2.646	0.000
11.7500-10.00					B	0.000	6.399		100.00	0.457	0.000
00					C	0.000	6.399		100.00	0.457	0.000
L47	9.8750	0.7	0.005	0.918	A	0.000	0.918	0.918	100.00	0.378	0.000
10.0000-9.750					B	0.000	0.918		100.00	0.065	0.000
0					C	0.000	0.918		100.00	0.065	0.000
L48	7.2423	0.7	0.005	18.539	A	0.000	18.539	18.539	100.00	7.560	0.000
9.7500-4.7500					B	0.000	18.539		100.00	1.305	0.000
					C	0.000	18.539		100.00	1.305	0.000
L49	2.6195	0.7	0.005	16.027	A	0.000	16.027	16.027	100.00	6.426	0.000
4.7500-0.5000					B	0.000	16.027		100.00	1.109	0.000
					C	0.000	16.027		100.00	1.109	0.000
L50	0.3750	0.7	0.005	0.950	A	0.000	0.950	0.950	100.00	0.378	0.000
0.5000-0.2500					B	0.000	0.950		100.00	0.065	0.000
					C	0.000	0.950		100.00	0.065	0.000
L51	0.1250	0.7	0.005	0.951	A	0.000	0.951	0.951	100.00	0.378	0.000
0.2500-0.0000					B	0.000	0.951		100.00	0.065	0.000
					C	0.000	0.951		100.00	0.065	0.000

Load Combinations

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	160 - 155	Pole	Max Tension	9	0.000	0.000	0.000
			Max. Compression	26	-6.642	-0.191	-0.466
			Max. Mx	20	-1.961	14.727	0.165
			Max. My	14	-1.907	-0.205	-15.196
			Max. Vy	8	5.154	-14.714	-0.258
			Max. Vx	2	-5.262	0.220	14.877
			Max. Torque	6			-0.850
L2	155 - 150	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-7.873	-0.265	-0.435
			Max. Mx	8	-2.866	-41.064	-0.612
			Max. My	14	-2.819	-0.626	-42.095
			Max. Vy	8	5.385	-41.064	-0.612
			Max. Vx	2	-5.500	0.515	41.785
			Max. Torque	6			-0.850
L3	150 - 148	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-9.824	-0.303	-0.417
			Max. Mx	8	-3.835	-52.922	-0.753
			Max. My	14	-3.781	-0.799	-54.189
			Max. Vy	8	6.418	-52.922	-0.753
			Max. Vx	2	-6.547	0.633	53.883
			Max. Torque	6			-0.851
L4	148 - 143	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-17.461	-0.470	1.601
			Max. Mx	8	-7.949	-100.832	-0.748
			Max. My	2	-7.812	1.457	105.615
			Max. Vy	8	9.804	-100.832	-0.748
			Max. Vx	2	-10.381	1.457	105.615
			Max. Torque	15			0.999
L5	143 - 138	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-18.660	-0.649	1.680
			Max. Mx	8	-8.767	-150.859	-1.574
			Max. My	2	-8.630	2.177	158.540
			Max. Vy	8	10.211	-150.859	-1.574
			Max. Vx	2	-10.793	2.177	158.540
			Max. Torque	15			0.999
L6	138 - 133	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-28.164	-14.922	3.935
			Max. Mx	8	-12.255	-239.414	-1.445
			Max. My	2	-12.014	-0.802	248.312
			Max. Vy	8	16.861	-239.414	-1.445
			Max. Vx	2	-17.944	-0.802	248.312
			Max. Torque	14			13.005
L7	133 - 128	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-28.927	-15.153	4.044
			Max. Mx	8	-12.796	-324.554	-2.209
			Max. My	2	-12.560	-0.172	338.873
			Max. Vy	8	17.205	-324.554	-2.209
			Max. Vx	2	-18.290	-0.172	338.873
			Max. Torque	14			13.000
L8	128 - 123	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.123	-15.312	4.246
			Max. Mx	8	-16.836	-431.312	-2.410
			Max. My	2	-16.555	-0.122	452.623
			Max. Vy	8	21.324	-431.312	-2.410
			Max. Vx	2	-22.672	-0.122	452.623
			Max. Torque	2			-13.128
L9	123 - 118	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.440	-15.429	4.523
			Max. Mx	8	-18.541	-539.821	-2.647
			Max. My	2	-18.266	0.045	567.921
			Max. Vy	8	22.820	-539.821	-2.647

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-24.169	0.045	567.921
			Max. Torque	2			-13.119
L10	118 - 111	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-41.214	-15.495	4.848
			Max. Mx	8	-19.007	-614.239	-2.788
			Max. My	2	-18.742	0.165	646.771
			Max. Vy	8	23.011	-614.239	-2.788
			Max. Vx	2	-24.360	0.165	646.771
			Max. Torque	2			-13.095
L11	111 - 109.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-43.066	-15.581	5.346
			Max. Mx	8	-20.129	-730.218	-3.005
			Max. My	2	-19.871	0.351	769.575
			Max. Vy	8	23.399	-730.218	-3.005
			Max. Vx	2	-24.750	0.351	769.575
			Max. Torque	2			-13.081
L12	109.75 - 105.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-44.272	-15.643	5.806
			Max. Mx	8	-20.901	-836.013	-3.200
			Max. My	2	-20.657	0.539	881.514
			Max. Vy	8	23.663	-836.013	-3.200
			Max. Vx	2	-25.012	0.539	881.514
			Max. Torque	2			-13.078
L13	105.25 - 105	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-44.354	-15.649	5.834
			Max. Mx	8	-20.969	-841.925	-3.211
			Max. My	2	-20.728	0.551	887.768
			Max. Vy	8	23.668	-841.925	-3.211
			Max. Vx	2	-25.016	0.551	887.768
			Max. Torque	2			-13.067
L14	105 - 100	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.999	-15.694	6.370
			Max. Mx	8	-22.044	-961.095	-3.425
			Max. My	2	-21.812	0.764	1013.763
			Max. Vy	8	24.025	-961.095	-3.425
			Max. Vx	2	-25.375	0.764	1013.763
			Max. Torque	2			-13.065
L15	100 - 95	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.664	-15.728	6.913
			Max. Mx	8	-23.153	-1081.989	-3.638
			Max. My	2	-22.933	0.988	1141.483
			Max. Vy	8	24.366	-1081.989	-3.638
			Max. Vx	2	-25.715	0.988	1141.483
			Max. Torque	2			-13.055
L16	95 - 90	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.349	-15.746	7.460
			Max. Mx	8	-24.287	-1204.556	-3.849
			Max. My	2	-24.080	1.221	1270.874
			Max. Vy	8	24.696	-1204.556	-3.849
			Max. Vx	2	-26.044	1.221	1270.874
			Max. Torque	2			-13.045
L17	90 - 85	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.052	-15.750	8.011
			Max. Mx	8	-25.447	-1328.740	-4.059
			Max. My	2	-25.252	1.464	1401.876
			Max. Vy	8	25.016	-1328.740	-4.059
			Max. Vx	2	-26.361	1.464	1401.876
			Max. Torque	2			-13.035
L18	85 - 76.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.453	-15.712	8.473

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	-26.393	-1429.208	-4.225
			Max. My	2	-26.210	1.664	1507.792
			Max. Vy	8	25.260	-1429.208	-4.225
			Max. Vx	2	-26.603	1.664	1507.792
			Max. Torque	2			-13.024
L19	76.75 - 75.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.589	-15.657	9.072
			Max. Mx	8	-28.626	-1562.957	-4.442
			Max. My	2	-28.450	1.923	1648.696
			Max. Vy	8	25.709	-1562.957	-4.442
			Max. Vx	2	-27.056	1.923	1648.696
			Max. Torque	2			-13.012
L20	75.75 - 70.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.593	-15.543	9.640
			Max. Mx	8	-30.077	-1692.146	-4.649
			Max. My	2	-29.915	2.183	1784.696
			Max. Vy	8	26.009	-1692.146	-4.649
			Max. Vx	2	-27.353	2.183	1784.696
			Max. Torque	2			-13.010
L21	70.75 - 70.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.696	-15.538	9.671
			Max. Mx	8	-30.161	-1698.644	-4.659
			Max. My	2	-30.001	2.198	1791.534
			Max. Vy	8	26.013	-1698.644	-4.659
			Max. Vx	2	-27.355	2.198	1791.534
			Max. Torque	2			-13.001
L22	70.5 - 70.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.816	-15.532	9.702
			Max. Mx	8	-30.251	-1705.147	-4.669
			Max. My	2	-30.092	2.211	1798.377
			Max. Vy	8	26.029	-1705.147	-4.669
			Max. Vx	2	-27.371	2.211	1798.377
			Max. Torque	2			-13.001
L23	70.25 - 70	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-57.935	-15.524	9.731
			Max. Mx	8	-30.340	-1711.654	-4.679
			Max. My	2	-30.181	2.224	1805.224
			Max. Vy	8	26.047	-1711.654	-4.679
			Max. Vx	2	-27.389	2.224	1805.224
			Max. Torque	2			-13.000
L24	70 - 69.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-58.037	-15.515	9.760
			Max. Mx	8	-30.412	-1718.165	-4.690
			Max. My	2	-30.253	2.237	1812.075
			Max. Vy	8	26.063	-1718.165	-4.690
			Max. Vx	2	-27.404	2.237	1812.075
			Max. Torque	2			-13.000
L25	69.75 - 64.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.053	-15.371	10.335
			Max. Mx	8	-31.850	-1849.165	-4.894
			Max. My	2	-31.703	2.501	1949.871
			Max. Vy	8	26.371	-1849.165	-4.894
			Max. Vx	2	-27.710	2.501	1949.871
			Max. Torque	2			-12.999
L26	64.75 - 59.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-62.072	-15.242	10.899
			Max. Mx	8	-33.322	-1981.614	-5.095
			Max. My	2	-33.188	2.772	2089.097
			Max. Vy	8	26.654	-1981.614	-5.095
			Max. Vx	2	-27.989	2.772	2089.097
			Max. Torque	2			-12.991

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L27	59.75 - 54.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.111	-15.100	11.462
			Max. Mx	8	-34.818	-2115.439	-5.295
			Max. My	2	-34.697	3.048	2229.675
			Max. Vy	8	26.923	-2115.439	-5.295
			Max. Vx	2	-28.252	3.048	2229.675
			Max. Torque	2			-12.983
L28	54.75 - 49.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-66.169	-14.947	12.025
			Max. Mx	8	-36.339	-2250.560	-5.492
			Max. My	2	-36.231	3.329	2371.525
			Max. Vy	8	27.175	-2250.560	-5.492
			Max. Vx	2	-28.499	3.329	2371.525
			Max. Torque	2			-12.976
L29	49.75 - 43	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-66.895	-14.890	12.221
			Max. Mx	8	-36.867	-2298.144	-5.559
			Max. My	2	-36.764	3.427	2421.457
			Max. Vy	8	27.272	-2298.144	-5.559
			Max. Vx	2	-28.594	3.427	2421.457
			Max. Torque	2			-12.970
L30	43 - 42	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-71.452	-14.698	12.957
			Max. Mx	8	-40.360	-2463.284	-5.759
			Max. My	2	-40.265	3.760	2594.679
			Max. Vy	8	27.753	-2463.284	-5.759
			Max. Vx	2	-29.074	3.760	2594.679
			Max. Torque	2			-12.966
L31	42 - 37	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-73.822	-14.550	13.496
			Max. Mx	8	-42.204	-2602.514	-5.952
			Max. My	2	-42.122	4.046	2740.598
			Max. Vy	8	27.988	-2602.514	-5.952
			Max. Vx	2	-29.303	4.046	2740.598
			Max. Torque	2			-12.965
L32	37 - 32	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-76.211	-14.394	14.031
			Max. Mx	8	-44.075	-2742.863	-6.142
			Max. My	2	-44.004	4.336	2887.604
			Max. Vy	8	28.202	-2742.863	-6.142
			Max. Vx	2	-29.510	4.336	2887.604
			Max. Torque	2			-12.960
L33	32 - 27.83	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.229	-14.288	14.483
			Max. Mx	8	-45.655	-2860.692	-6.299
			Max. My	2	-45.594	4.579	3010.960
			Max. Vy	8	28.364	-2860.692	-6.299
			Max. Vx	2	-29.666	4.579	3010.960
			Max. Torque	2			-12.956
L34	27.83 - 27.58	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.360	-14.285	14.511
			Max. Mx	8	-45.769	-2867.777	-6.308
			Max. My	2	-45.709	4.595	3018.376
			Max. Vy	8	28.359	-2867.777	-6.308
			Max. Vx	2	-29.659	4.595	3018.376
			Max. Torque	2			-12.954
L35	27.58 - 27.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.532	-14.277	14.547
			Max. Mx	8	-45.905	-2877.133	-6.321
			Max. My	2	-45.846	4.614	3028.168
			Max. Vy	8	28.373	-2877.133	-6.321

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-29.673	4.614	3028.168
			Max. Torque	2			-12.954
L36	27.25 - 27	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.638	-14.272	14.574
			Max. Mx	8	-45.986	-2884.224	-6.330
			Max. My	2	-45.928	4.629	3035.589
			Max. Vy	8	28.379	-2884.224	-6.330
			Max. Vx	2	-29.678	4.629	3035.589
			Max. Torque	2			-12.954
L37	27 - 26.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.761	-14.267	14.602
			Max. Mx	8	-46.084	-2891.316	-6.339
			Max. My	2	-46.027	4.644	3043.011
			Max. Vy	8	28.387	-2891.316	-6.339
			Max. Vx	2	-29.685	4.644	3043.011
			Max. Torque	2			-12.953
L38	26.75 - 21.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.225	-14.150	15.139
			Max. Mx	8	-48.017	-3033.655	-6.524
			Max. My	2	-47.970	4.937	3191.932
			Max. Vy	8	28.589	-3033.655	-6.524
			Max. Vx	2	-29.880	4.937	3191.932
			Max. Torque	2			-12.953
L39	21.75 - 16.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-83.701	-14.010	15.644
			Max. Mx	8	-49.983	-3176.910	-6.705
			Max. My	2	-49.948	5.234	3341.728
			Max. Vy	8	28.769	-3176.910	-6.705
			Max. Vx	2	-30.051	5.234	3341.728
			Max. Torque	2			-12.950
L40	16.75 - 16	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.074	-13.988	15.718
			Max. Mx	8	-50.283	-3198.475	-6.732
			Max. My	2	-50.250	5.280	3364.271
			Max. Vy	8	28.790	-3198.475	-6.732
			Max. Vx	2	-30.071	5.280	3364.271
			Max. Torque	2			-12.948
L41	16 - 15.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.217	-13.982	15.743
			Max. Mx	8	-50.406	-3205.668	-6.741
			Max. My	2	-50.374	5.295	3371.789
			Max. Vy	8	28.790	-3205.668	-6.741
			Max. Vx	2	-30.070	5.295	3371.789
			Max. Torque	2			-12.948
L42	15.75 - 14.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.740	-13.954	15.832
			Max. Mx	8	-50.828	-3232.075	-6.774
			Max. My	2	-50.797	5.349	3399.390
			Max. Vy	8	28.841	-3232.075	-6.774
			Max. Vx	2	-30.120	5.349	3399.390
			Max. Torque	2			-12.948
L43	14.833 - 14.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-84.874	-13.948	15.858
			Max. Mx	8	-50.943	-3239.281	-6.783
			Max. My	2	-50.913	5.364	3406.921
			Max. Vy	8	28.840	-3239.281	-6.783
			Max. Vx	2	-30.118	5.364	3406.921
			Max. Torque	2			-12.948
L44	14.583 - 12	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.279	-13.854	16.098

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	-52.058	-3313.870	-6.875
			Max. My	2	-52.032	5.517	3484.864
			Max. Vy	8	28.960	-3313.870	-6.875
			Max. Vx	2	-30.234	5.517	3484.864
			Max. Torque	2			-12.948
L45	12 - 11.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.434	-13.846	16.122
			Max. Mx	8	-52.196	-3321.103	-6.884
			Max. My	2	-52.172	5.533	3492.421
			Max. Vy	8	28.950	-3321.103	-6.884
			Max. Vx	2	-30.223	5.533	3492.421
			Max. Torque	2			-12.947
L46	11.75 - 10	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-87.510	-13.779	16.280
			Max. Mx	8	-53.065	-3371.811	-6.946
			Max. My	2	-53.043	5.635	3545.393
			Max. Vy	8	29.052	-3371.811	-6.946
			Max. Vx	2	-30.323	5.635	3545.393
			Max. Torque	2			-12.947
L47	10 - 9.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-87.646	-13.770	16.303
			Max. Mx	8	-53.188	-3379.065	-6.955
			Max. My	2	-53.167	5.652	3552.971
			Max. Vy	8	29.036	-3379.065	-6.955
			Max. Vx	2	-30.306	5.652	3552.971
			Max. Torque	2			-12.947
L48	9.75 - 4.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-90.342	-13.586	16.739
			Max. Mx	8	-55.363	-3524.643	-7.129
			Max. My	2	-55.353	5.951	3704.989
			Max. Vy	8	29.236	-3524.643	-7.129
			Max. Vx	2	-30.497	5.951	3704.989
			Max. Torque	2			-12.947
L49	4.75 - 0.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-92.595	-13.441	17.073
			Max. Mx	8	-57.239	-3649.099	-7.275
			Max. My	2	-57.237	6.207	3834.881
			Max. Vy	8	29.389	-3649.099	-7.275
			Max. Vx	2	-30.642	6.207	3834.881
			Max. Torque	2			-12.946
L50	0.5 - 0.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-92.729	-13.433	17.089
			Max. Mx	8	-57.365	-3656.440	-7.283
			Max. My	2	-57.364	6.223	3842.541
			Max. Vy	8	29.382	-3656.440	-7.283
			Max. Vx	2	-30.633	6.223	3842.541
			Max. Torque	2			-12.946
L51	0.25 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-92.861	-13.426	17.104
			Max. Mx	8	-57.484	-3663.782	-7.292
			Max. My	2	-57.484	6.239	3850.201
			Max. Vy	9	29.387	-3601.814	-8.011
			Max. Vx	15	30.637	-14.000	-3780.127
			Max. Torque	2			-12.946

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	92.861	-0.000	0.000
	Max. H_x	20	57.484	29.387	0.049
	Max. H_z	3	43.113	0.049	30.637
	Max. M_x	2	3850.201	0.049	30.637
	Max. M_z	8	3663.782	-29.387	-0.049
	Max. Torsion	14	12.907	-0.049	-30.637
	Min. Vert	9	43.113	-29.387	-0.049
	Min. H_x	9	43.113	-29.387	-0.049
	Min. H_z	15	43.113	-0.049	-30.637
	Min. M_x	14	-3843.036	-0.049	-30.637
	Min. M_z	20	-3654.040	29.387	0.049
	Min. Torsion	2	-12.946	0.049	30.637

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	47.904	0.000	-0.000	-2.917	-3.935	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	57.484	-0.049	-30.637	-3850.201	6.239	12.946
0.9 Dead+1.0 Wind 0 deg - No Ice	43.113	-0.049	-30.637	-3785.373	7.274	12.781
1.2 Dead+1.0 Wind 30 deg - No Ice	57.484	14.651	-26.508	-3329.814	-1824.371	10.590
0.9 Dead+1.0 Wind 30 deg - No Ice	43.113	14.651	-26.508	-3273.613	-1793.004	10.477
1.2 Dead+1.0 Wind 60 deg - No Ice	57.484	25.425	-15.276	-1918.022	-3167.916	5.390
0.9 Dead+1.0 Wind 60 deg - No Ice	43.113	25.425	-15.276	-1885.275	-3114.223	5.358
1.2 Dead+1.0 Wind 90 deg - No Ice	57.484	29.387	0.049	7.292	-3663.782	-1.256
0.9 Dead+1.0 Wind 90 deg - No Ice	43.113	29.387	0.049	8.011	-3601.814	-1.197
1.2 Dead+1.0 Wind 120 deg - No Ice	57.484	25.474	15.361	1929.613	-3178.675	-7.547
0.9 Dead+1.0 Wind 120 deg - No Ice	43.113	25.474	15.361	1898.374	-3124.747	-7.414
1.2 Dead+1.0 Wind 150 deg - No Ice	57.484	14.736	26.557	3333.388	-1843.148	-11.801
0.9 Dead+1.0 Wind 150 deg - No Ice	43.113	14.736	26.557	3278.876	-1811.364	-11.630
1.2 Dead+1.0 Wind 180 deg - No Ice	57.484	0.049	30.637	3843.036	-15.523	-12.907
0.9 Dead+1.0 Wind 180 deg - No Ice	43.113	0.049	30.637	3780.127	-14.000	-12.743
1.2 Dead+1.0 Wind 210 deg - No Ice	57.484	-14.651	26.508	3322.461	1814.976	-10.582
0.9 Dead+1.0 Wind 210 deg - No Ice	43.113	-14.651	26.508	3268.234	1786.200	-10.468
1.2 Dead+1.0 Wind 240 deg - No Ice	57.484	-25.425	15.276	1910.657	3158.293	-5.420
0.9 Dead+1.0 Wind 240 deg - No Ice	43.113	-25.425	15.276	1879.887	3107.256	-5.387
1.2 Dead+1.0 Wind 270 deg - No Ice	57.484	-29.387	-0.049	-14.480	3654.040	1.219

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
0.9 Dead+1.0 Wind 270 deg - No Ice	43.113	-29.387	-0.049	-13.273	3594.765	1.161
1.2 Dead+1.0 Wind 300 deg - No Ice	57.484	-25.474	-15.361	-1936.612	3169.043	7.541
0.9 Dead+1.0 Wind 300 deg - No Ice	43.113	-25.474	-15.361	-1903.503	3117.775	7.408
1.2 Dead+1.0 Wind 330 deg - No Ice	57.484	-14.736	-26.557	-3340.376	1833.746	11.832
0.9 Dead+1.0 Wind 330 deg - No Ice	43.113	-14.736	-26.557	-3283.996	1804.555	11.660
1.2 Dead+1.0 Ice+1.0 Temp	92.861	0.000	-0.000	-17.104	-13.426	0.005
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	92.861	-0.012	-7.520	-990.994	-11.110	2.815
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	92.861	3.669	-6.507	-859.368	-485.171	2.266
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	92.861	6.367	-3.750	-502.068	-832.847	1.110
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	92.861	7.359	0.012	-14.827	-960.965	-0.342
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	92.861	6.380	3.771	471.789	-835.188	-1.700
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	92.861	3.690	6.519	827.381	-489.226	-2.602
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	92.861	0.012	7.520	956.671	-15.789	-2.805
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	92.861	-3.669	6.507	825.027	458.265	-2.255
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	92.861	-6.367	3.750	467.723	805.920	-1.100
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	92.861	-7.359	-0.012	-19.505	934.025	0.351
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	92.861	-6.380	-3.771	-506.102	808.255	1.710
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	92.861	-3.690	-6.519	-861.689	462.313	2.612
Dead+Wind 0 deg - Service	47.904	-0.010	-6.338	-792.748	-1.785	2.701
Dead+Wind 30 deg - Service	47.904	3.031	-5.484	-685.834	-377.696	2.213
Dead+Wind 60 deg - Service	47.904	5.260	-3.160	-395.943	-653.483	1.132
Dead+Wind 90 deg - Service	47.904	6.080	0.010	-0.748	-755.242	-0.252
Dead+Wind 120 deg - Service	47.904	5.271	3.178	393.852	-655.702	-1.568
Dead+Wind 150 deg - Service	47.904	3.049	5.494	682.119	-381.540	-2.463
Dead+Wind 180 deg - Service	47.904	0.010	6.338	786.815	-6.224	-2.699
Dead+Wind 210 deg - Service	47.904	-3.031	5.484	679.894	369.684	-2.212
Dead+Wind 240 deg - Service	47.904	-5.260	3.160	390.002	645.463	-1.133
Dead+Wind 270 deg - Service	47.904	-6.080	-0.010	-5.186	747.218	0.251
Dead+Wind 300 deg - Service	47.904	-5.271	-3.178	-399.780	647.682	1.568
Dead+Wind 330 deg - Service	47.904	-3.049	-5.494	-688.045	373.527	2.465

Solution Summary

Load Comb.	Sum of Applied Forces PX	PY	PZ	Sum of Reactions PX	PY	PZ	% Error
	K	K	K	K	K	K	
1	0.000	-47.904	0.000	-0.000	47.904	0.000	0.000%
2	-0.049	-57.484	-30.637	0.049	57.484	30.637	0.000%
3	-0.049	-43.113	-30.637	0.049	43.113	30.637	0.000%
4	14.651	-57.484	-26.508	-14.651	57.484	26.508	0.000%
5	14.651	-43.113	-26.508	-14.651	43.113	26.508	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
6	25.425	-57.484	-15.276	-25.425	57.484	15.276	0.000%
7	25.425	-43.113	-15.276	-25.425	43.113	15.276	0.000%
8	29.387	-57.484	0.049	-29.387	57.484	-0.049	0.000%
9	29.387	-43.113	0.049	-29.387	43.113	-0.049	0.000%
10	25.474	-57.484	15.361	-25.474	57.484	-15.361	0.000%
11	25.474	-43.113	15.361	-25.474	43.113	-15.361	0.000%
12	14.736	-57.484	26.557	-14.736	57.484	-26.557	0.000%
13	14.736	-43.113	26.557	-14.736	43.113	-26.557	0.000%
14	0.049	-57.484	30.637	-0.049	57.484	-30.637	0.000%
15	0.049	-43.113	30.637	-0.049	43.113	-30.637	0.000%
16	-14.651	-57.484	26.508	14.651	57.484	-26.508	0.000%
17	-14.651	-43.113	26.508	14.651	43.113	-26.508	0.000%
18	-25.425	-57.484	15.276	25.425	57.484	-15.276	0.000%
19	-25.425	-43.113	15.276	25.425	43.113	-15.276	0.000%
20	-29.387	-57.484	-0.049	29.387	57.484	0.049	0.000%
21	-29.387	-43.113	-0.049	29.387	43.113	0.049	0.000%
22	-25.474	-57.484	-15.361	25.474	57.484	15.361	0.000%
23	-25.474	-43.113	-15.361	25.474	43.113	15.361	0.000%
24	-14.736	-57.484	-26.557	14.736	57.484	26.557	0.000%
25	-14.736	-43.113	-26.557	14.736	43.113	26.557	0.000%
26	0.000	-92.861	0.000	-0.000	92.861	0.000	0.000%
27	-0.012	-92.861	-7.520	0.012	92.861	7.520	0.000%
28	3.669	-92.861	-6.507	-3.669	92.861	6.507	0.000%
29	6.367	-92.861	-3.749	-6.367	92.861	3.750	0.000%
30	7.359	-92.861	0.012	-7.359	92.861	-0.012	0.000%
31	6.379	-92.861	3.771	-6.380	92.861	-3.771	0.000%
32	3.690	-92.861	6.519	-3.690	92.861	-6.519	0.000%
33	0.012	-92.861	7.520	-0.012	92.861	-7.520	0.000%
34	-3.669	-92.861	6.507	3.669	92.861	-6.507	0.000%
35	-6.367	-92.861	3.749	6.367	92.861	-3.750	0.000%
36	-7.359	-92.861	-0.012	7.359	92.861	0.012	0.000%
37	-6.379	-92.861	-3.771	6.380	92.861	3.771	0.000%
38	-3.690	-92.861	-6.519	3.690	92.861	6.519	0.000%
39	-0.010	-47.904	-6.338	0.010	47.904	6.338	0.000%
40	3.031	-47.904	-5.484	-3.031	47.904	5.484	0.000%
41	5.260	-47.904	-3.160	-5.260	47.904	3.160	0.000%
42	6.080	-47.904	0.010	-6.080	47.904	-0.010	0.000%
43	5.271	-47.904	3.178	-5.271	47.904	-3.178	0.000%
44	3.049	-47.904	5.494	-3.049	47.904	-5.494	0.000%
45	0.010	-47.904	6.338	-0.010	47.904	-6.338	0.000%
46	-3.031	-47.904	5.484	3.031	47.904	-5.484	0.000%
47	-5.260	-47.904	3.160	5.260	47.904	-3.160	0.000%
48	-6.080	-47.904	-0.010	6.080	47.904	0.010	0.000%
49	-5.271	-47.904	-3.178	5.271	47.904	3.178	0.000%
50	-3.049	-47.904	-5.494	3.049	47.904	5.494	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00002669
2	Yes	7	0.00000001	0.00009807
3	Yes	6	0.00000001	0.00044578
4	Yes	7	0.00000001	0.00042203
5	Yes	7	0.00000001	0.00009888
6	Yes	7	0.00000001	0.00033894

7	Yes	7	0.00000001	0.00007718
8	Yes	6	0.00000001	0.00011190
9	Yes	5	0.00000001	0.00063502
10	Yes	7	0.00000001	0.00033485
11	Yes	7	0.00000001	0.00007583
12	Yes	7	0.00000001	0.00043058
13	Yes	7	0.00000001	0.00010069
14	Yes	7	0.00000001	0.00010428
15	Yes	6	0.00000001	0.00047327
16	Yes	7	0.00000001	0.00031496
17	Yes	7	0.00000001	0.00007096
18	Yes	7	0.00000001	0.00038063
19	Yes	7	0.00000001	0.00008911
20	Yes	6	0.00000001	0.00018688
21	Yes	6	0.00000001	0.00006063
22	Yes	7	0.00000001	0.00039591
23	Yes	7	0.00000001	0.00009240
24	Yes	7	0.00000001	0.00031674
25	Yes	7	0.00000001	0.00007083
26	Yes	5	0.00000001	0.00079778
27	Yes	7	0.00000001	0.00049067
28	Yes	7	0.00000001	0.00063688
29	Yes	7	0.00000001	0.00060336
30	Yes	7	0.00000001	0.00046456
31	Yes	7	0.00000001	0.00057940
32	Yes	7	0.00000001	0.00061805
33	Yes	7	0.00000001	0.00047092
34	Yes	7	0.00000001	0.00054075
35	Yes	7	0.00000001	0.00054710
36	Yes	7	0.00000001	0.00043092
37	Yes	7	0.00000001	0.00058371
38	Yes	7	0.00000001	0.00056927
39	Yes	5	0.00000001	0.00083120
40	Yes	6	0.00000001	0.00008608
41	Yes	5	0.00000001	0.00070034
42	Yes	5	0.00000001	0.00014188
43	Yes	5	0.00000001	0.00070849
44	Yes	6	0.00000001	0.00008978
45	Yes	5	0.00000001	0.00083132
46	Yes	5	0.00000001	0.00070050
47	Yes	5	0.00000001	0.00089413
48	Yes	5	0.00000001	0.00014322
49	Yes	6	0.00000001	0.00007011
50	Yes	5	0.00000001	0.00075420

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 155	29.095	39	1.712	0.027
L2	155 - 150	27.303	39	1.705	0.027
L3	150 - 148	25.541	39	1.652	0.026
L4	148 - 143	24.856	39	1.616	0.026
L5	143 - 138	23.173	39	1.597	0.026
L6	138 - 133	21.515	39	1.568	0.026
L7	133 - 128	19.892	39	1.528	0.022
L8	128 - 123	18.319	39	1.476	0.020
L9	123 - 118	16.805	39	1.413	0.017
L10	118 - 111	15.364	39	1.338	0.014

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L11	114.75 - 109.75	14.472	39	1.284	0.013
L12	109.75 - 105.25	13.149	39	1.234	0.012
L13	105.25 - 105	12.020	39	1.161	0.010
L14	105 - 100	11.959	39	1.158	0.010
L15	100 - 95	10.777	39	1.099	0.009
L16	95 - 90	9.659	39	1.036	0.008
L17	90 - 85	8.608	39	0.971	0.007
L18	85 - 76.75	7.626	39	0.904	0.007
L19	81 - 75.75	6.892	39	0.848	0.006
L20	75.75 - 70.75	5.980	39	0.806	0.005
L21	70.75 - 70.5	5.171	39	0.739	0.005
L22	70.5 - 70.25	5.132	39	0.736	0.005
L23	70.25 - 70	5.094	39	0.733	0.005
L24	70 - 69.75	5.055	39	0.730	0.005
L25	69.75 - 64.75	5.017	39	0.727	0.005
L26	64.75 - 59.75	4.288	39	0.666	0.004
L27	59.75 - 54.75	3.622	39	0.604	0.004
L28	54.75 - 49.75	3.022	39	0.542	0.003
L29	49.75 - 43	2.488	39	0.479	0.003
L30	48 - 42	2.316	39	0.457	0.003
L31	42 - 37	1.764	39	0.418	0.002
L32	37 - 32	1.354	39	0.365	0.002
L33	32 - 27.83	1.000	39	0.311	0.002
L34	27.83 - 27.58	0.748	39	0.267	0.001
L35	27.58 - 27.25	0.734	39	0.264	0.001
L36	27.25 - 27	0.716	39	0.261	0.001
L37	27 - 26.75	0.702	39	0.257	0.001
L38	26.75 - 21.75	0.689	39	0.255	0.001
L39	21.75 - 16.75	0.449	39	0.203	0.001
L40	16.75 - 16	0.264	39	0.151	0.001
L41	16 - 15.75	0.241	39	0.143	0.001
L42	15.75 - 14.833	0.234	39	0.141	0.001
L43	14.833 - 14.583	0.207	39	0.133	0.001
L44	14.583 - 12	0.200	39	0.131	0.001
L45	12 - 11.75	0.136	39	0.107	0.000
L46	11.75 - 10	0.130	39	0.105	0.000
L47	10 - 9.75	0.094	39	0.091	0.000
L48	9.75 - 4.75	0.090	39	0.089	0.000
L49	4.75 - 0.5	0.021	39	0.043	0.000
L50	0.5 - 0.25	0.000	39	0.000	0.000
L51	0.25 - 0	0.000	1	0.000	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
157.0000	800 10121 w/ Mount Pipe	39	28.018	1.711	0.027	9510
150.0000	800MHZ 2X50W RRH W/FILTER	39	25.541	1.652	0.026	4548
148.0000	APXVSPP18-C-A20 w/ Mount Pipe	39	24.856	1.616	0.026	5647
138.0000	(2) LPA-80063-6CF-EDIN-2	39	21.515	1.568	0.026	8428
127.0000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	39	18.011	1.464	0.019	4783
119.0000	HBX-6516DS-VTM w/ Mount Pipe	39	15.646	1.355	0.015	3737
48.0000	KS24019-L112A	39	2.316	0.457	0.003	6402

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 155	140.892	2	8.292	0.133
L2	155 - 150	132.245	2	8.256	0.132
L3	150 - 148	123.743	2	7.996	0.129
L4	148 - 143	120.439	2	7.821	0.127
L5	143 - 138	112.317	2	7.730	0.126
L6	138 - 133	104.314	2	7.595	0.124
L7	133 - 128	96.477	2	7.405	0.109
L8	128 - 123	88.869	2	7.157	0.095
L9	123 - 118	81.547	2	6.852	0.082
L10	118 - 111	74.571	2	6.493	0.070
L11	114.75 - 109.75	70.247	2	6.235	0.063
L12	109.75 - 105.25	63.837	2	5.993	0.057
L13	105.25 - 105	58.364	2	5.638	0.050
L14	105 - 100	58.070	2	5.624	0.050
L15	100 - 95	52.337	2	5.338	0.045
L16	95 - 90	46.912	2	5.035	0.040
L17	90 - 85	41.810	2	4.719	0.036
L18	85 - 76.75	37.044	2	4.392	0.032
L19	81 - 75.75	33.481	2	4.122	0.028
L20	75.75 - 70.75	29.051	2	3.916	0.026
L21	70.75 - 70.5	25.123	2	3.591	0.023
L22	70.5 - 70.25	24.935	2	3.575	0.023
L23	70.25 - 70	24.749	2	3.563	0.023
L24	70 - 69.75	24.563	2	3.550	0.023
L25	69.75 - 64.75	24.377	2	3.536	0.023
L26	64.75 - 59.75	20.833	2	3.238	0.020
L27	59.75 - 54.75	17.601	2	2.937	0.017
L28	54.75 - 49.75	14.686	2	2.634	0.015
L29	49.75 - 43	12.088	2	2.329	0.013
L30	48 - 42	11.254	2	2.223	0.012
L31	42 - 37	8.569	2	2.031	0.011
L32	37 - 32	6.578	2	1.772	0.009
L33	32 - 27.83	4.859	2	1.513	0.008
L34	27.83 - 27.58	3.632	2	1.297	0.006
L35	27.58 - 27.25	3.565	2	1.285	0.006
L36	27.25 - 27	3.476	2	1.268	0.006
L37	27 - 26.75	3.411	2	1.250	0.006
L38	26.75 - 21.75	3.345	2	1.237	0.006
L39	21.75 - 16.75	2.182	2	0.985	0.005
L40	16.75 - 16	1.283	2	0.733	0.003
L41	16 - 15.75	1.171	2	0.696	0.003
L42	15.75 - 14.833	1.135	2	0.686	0.003
L43	14.833 - 14.583	1.007	2	0.648	0.003
L44	14.583 - 12	0.973	2	0.637	0.003
L45	12 - 11.75	0.660	2	0.520	0.002
L46	11.75 - 10	0.633	2	0.510	0.002
L47	10 - 9.75	0.459	2	0.441	0.002
L48	9.75 - 4.75	0.436	2	0.430	0.002
L49	4.75 - 0.5	0.102	2	0.208	0.001
L50	0.5 - 0.25	0.001	2	0.020	0.000
L51	0.25 - 0	0.000	2	0.010	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
157.0000	800 10121 w/ Mount Pipe	2	135.697	8.285	0.132	2105
150.0000	800MHZ 2X50W RRH W/FILTER	2	123.743	7.996	0.129	993
148.0000	APXVSPP18-C-A20 w/ Mount Pipe	2	120.439	7.821	0.127	1225
138.0000	(2) LPA-80063-6CF-EDIN-2	2	104.314	7.595	0.124	1846
127.0000	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	2	87.380	7.100	0.092	1032
119.0000	HBX-6516DS-VTM w/ Mount Pipe	2	75.934	6.573	0.072	796
48.0000	KS24019-L112A	2	11.254	2.223	0.012	1321

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)	TP10.75x10.75x0.349	5.0000	0.0000	0.0	11.4038	-1.906	359.220	0.005
L2	155 - 150 (2)	TP10.75x10.75x0.349	5.0000	0.0000	0.0	11.4038	-2.818	359.220	0.008
L3	150 - 148 (3)	TP10.75x10.75x0.349	2.0000	0.0000	0.0	11.4038	-3.781	359.220	0.011
L4	148 - 143 (4)	TP23.81x23x0.25	5.0000	0.0000	0.0	18.6949	-7.826	1282.090	0.006
L5	143 - 138 (5)	TP24.62x23.81x0.25	5.0000	0.0000	0.0	19.3376	-8.644	1326.170	0.007
L6	138 - 133 (6)	TP25.43x24.62x0.25	5.0000	0.0000	0.0	19.9803	-12.014	1363.850	0.009
L7	133 - 128 (7)	TP26.24x25.43x0.25	5.0000	0.0000	0.0	20.6231	-12.560	1396.680	0.009
L8	128 - 123 (8)	TP27.05x26.24x0.25	5.0000	0.0000	0.0	21.2658	-16.555	1428.820	0.012
L9	123 - 118 (9)	TP27.86x27.05x0.25	5.0000	0.0000	0.0	21.9085	-18.266	1460.280	0.013
L10	118 - 111 (10)	TP28.994x27.86x0.25	7.0000	0.0000	0.0	22.3263	-18.742	1480.360	0.013
L11	111 - 109.75 (11)	TP28.6964x27.8865x0.3125	5.0000	0.0000	0.0	28.1533	-19.871	1930.750	0.010
L12	109.75 - 105.25 (12)	TP29.4254x28.6964x0.3125	4.5000	0.0000	0.0	28.8763	-20.657	1980.340	0.010
L13	105.25 - 105 (13)	TP29.4659x29.4254x0.4625	0.2500	0.0000	0.0	42.5762	-20.728	2919.880	0.007
L14	105 - 100 (14)	TP30.2758x29.4659x0.4625	5.0000	0.0000	0.0	43.7652	-21.812	3001.420	0.007
L15	100 - 95 (15)	TP31.0857x30.2758x0.4575	5.0000	0.0000	0.0	44.4754	-22.933	3050.120	0.008
L16	95 - 90 (16)	TP31.8957x31.0857x0.4525	5.0000	0.0000	0.0	45.1598	-24.080	3097.060	0.008
L17	90 - 85 (17)	TP32.7056x31.8957x0.4475	5.0000	0.0000	0.0	45.8183	-25.252	3142.220	0.008
L18	85 - 76.75 (18)	TP34.042x32.7056x0.4425	8.2500	0.0000	0.0	46.2234	-26.210	3170.000	0.008
L19	76.75 - 75.75 (19)	TP33.579x32.7286x0.495	5.2500	0.0000	0.0	51.9792	-28.450	3861.800	0.007
L20	75.75 - 70.75 (20)	TP34.3889x33.579x0.5	5.0000	0.0000	0.0	53.7817	-29.915	3995.710	0.007
L21	70.75 - 70.5 (21)	TP34.4294x34.3889x0.5	0.2500	0.0000	0.0	53.8460	-30.001	4000.490	0.007
L22	70.5 - 70.25 (22)	TP34.4699x34.4294x0.665	0.2500	0.0000	0.0	71.3523	-30.092	5301.120	0.006
L23	70.25 - 70 (23)	TP34.5104x34.4699x0.665	0.2500	0.0000	0.0	71.4378	-30.181	5307.470	0.006
L24	70 - 69.75 (24)	TP34.5509x34.5104x0.555	0.2500	0.0000	0.0	59.8861	-30.253	4449.240	0.007
L25	69.75 - 64.75 (25)	TP35.3608x34.5509x0.55	5.0000	0.0000	0.0	60.7692	-31.703	4514.850	0.007
L26	64.75 - 59.75 (26)	TP36.1707x35.3608x0.545	5.0000	0.0000	0.0	61.6265	-33.188	4578.540	0.007

Section No.	Elevation ft	Size	L ft	L_u ft	KL/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L27	59.75 - 54.75 (27)	TP36.9807x36.1707x0.54	5.0000	0.0000	0.0	62.4579	-34.697	4640.310	0.007
L28	54.75 - 49.75 (28)	TP37.7906x36.9807x0.535	5.0000	0.0000	0.0	63.2634	-36.231	4700.150	0.008
L29	49.75 - 43 (29)	TP38.884x37.7906x0.535	6.7500	0.0000	0.0	63.7447	-36.764	4735.910	0.008
L30	43 - 42 (30)	TP38.2961x37.3241x0.6675	6.0000	0.0000	0.0	79.7216	-40.265	5922.910	0.007
L31	42 - 37 (31)	TP39.1061x38.2961x0.6625	5.0000	0.0000	0.0	80.8382	-42.122	6005.870	0.007
L32	37 - 32 (32)	TP39.916x39.1061x0.6575	5.0000	0.0000	0.0	81.9289	-44.004	6086.910	0.007
L33	32 - 27.83 (33)	TP40.5916x39.916x0.6525	4.1700	0.0000	0.0	82.7152	-45.594	6145.330	0.007
L34	27.83 - 27.58 (34)	TP40.6321x40.5916x0.6675	0.2500	0.0000	0.0	84.6708	-45.709	6290.610	0.007
L35	27.58 - 27.25 (35)	TP40.6855x40.6321x0.6675	0.3300	0.0000	0.0	84.7840	-45.846	6299.030	0.007
L36	27.25 - 27 (36)	TP40.726x40.6855x0.4525	0.2500	0.0000	0.0	57.8423	-45.928	4297.390	0.011
L37	27 - 26.75 (37)	TP40.7665x40.726x0.6625	0.2500	0.0000	0.0	84.3298	-46.027	6265.280	0.007
L38	26.75 - 21.75 (38)	TP41.5765x40.7665x0.6575	5.0000	0.0000	0.0	85.3941	-47.970	6344.360	0.008
L39	21.75 - 16.75 (39)	TP42.3865x41.5765x0.6525	5.0000	0.0000	0.0	86.4326	-49.948	6421.510	0.008
L40	16.75 - 16 (40)	TP42.508x42.3865x0.6525	0.7500	0.0000	0.0	86.6843	-50.250	6440.210	0.008
L41	16 - 15.75 (41)	TP42.5485x42.508x0.8075	0.2500	0.0000	0.0	106.9820	-50.374	7948.260	0.006
L42	15.75 - 14.833 (42)	TP42.6971x42.5485x0.8025	0.9170	0.0000	0.0	106.7110	-50.797	7928.100	0.006
L43	14.833 - 14.583 (43)	TP42.7376x42.6971x0.7175	0.2500	0.0000	0.0	95.6942	-50.913	7109.600	0.007
L44	14.583 - 12 (44)	TP43.156x42.7376x0.7175	2.5830	0.0000	0.0	96.6471	-52.032	7180.400	0.007
L45	12 - 11.75 (45)	TP43.1965x43.156x0.8225	0.2500	0.0000	0.0	110.6220	-52.172	8218.680	0.006
L46	11.75 - 10 (46)	TP43.48x43.1965x0.8175	1.7500	0.0000	0.0	110.6980	-53.043	8224.330	0.006
L47	10 - 9.75 (47)	TP43.5205x43.48x0.7275	0.2500	0.0000	0.0	98.8127	-53.167	7341.290	0.007
L48	9.75 - 4.75 (48)	TP44.3305x43.5205x0.7175	5.0000	0.0000	0.0	99.3219	-55.353	7379.120	0.008
L49	4.75 - 0.5 (49)	TP45.019x44.3305x0.7125	4.2500	0.0000	0.0	100.1980	-57.237	7444.210	0.008
L50	0.5 - 0.25 (50)	TP45.0595x45.019x0.7825	0.2500	0.0000	0.0	109.9690	-57.364	8170.130	0.007
L51	0.25 - 0 (51)	TP45.1x45.0595x0.7825	0.2500	0.0000	0.0	110.0690	-57.484	8177.600	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)	TP10.75x10.75x0.349	15.276	99.144	0.154	0.000	99.144	0.000
L2	155 - 150 (2)	TP10.75x10.75x0.349	42.347	99.144	0.427	0.000	99.144	0.000
L3	150 - 148 (3)	TP10.75x10.75x0.349	54.507	99.144	0.550	0.000	99.144	0.000
L4	148 - 143 (4)	TP23.81x23x0.25	105.836	619.446	0.171	0.000	619.446	0.000
L5	143 - 138 (5)	TP24.62x23.81x0.25	158.748	663.003	0.239	0.000	663.003	0.000
L6	138 - 133 (6)	TP25.43x24.62x0.25	248.313	704.731	0.352	0.000	704.731	0.000
L7	133 - 128 (7)	TP26.24x25.43x0.25	338.873	745.141	0.455	0.000	745.141	0.000
L8	128 - 123 (8)	TP27.05x26.24x0.25	452.623	786.274	0.576	0.000	786.274	0.000
L9	123 - 118 (9)	TP27.86x27.05x0.25	567.922	828.096	0.686	0.000	828.096	0.000
L10	118 - 111 (10)	TP28.994x27.86x0.25	646.771	855.633	0.756	0.000	855.633	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 $\frac{M_{uy}}{\phi M_{ny}}$
L11	111 - 109.75 (11)	TP28.6964x27.8865x0.3125	769.575	1123.408	0.685	0.000	1123.408	0.000
L12	109.75 - 105.25 (12)	TP29.4254x28.6964x0.3125	881.517	1182.167	0.746	0.000	1182.167	0.000
L13	105.25 - 105 (13)	TP29.4659x29.4254x0.4625	887.767	1727.567	0.514	0.000	1727.567	0.000
L14	105 - 100 (14)	TP30.2758x29.4659x0.4625	1013.767	1826.175	0.555	0.000	1826.175	0.000
L15	100 - 95 (15)	TP31.0857x30.2758x0.4575	1141.483	1907.625	0.598	0.000	1907.625	0.000
L16	95 - 90 (16)	TP31.8957x31.0857x0.4525	1270.875	1989.583	0.639	0.000	1989.583	0.000
L17	90 - 85 (17)	TP32.7056x31.8957x0.4475	1401.875	2071.975	0.677	0.000	2071.975	0.000
L18	85 - 76.75 (18)	TP34.042x32.7056x0.4425	1507.792	2133.500	0.707	0.000	2133.500	0.000
L19	76.75 - 75.75 (19)	TP33.579x32.7286x0.495	1648.700	2608.858	0.632	0.000	2608.858	0.000
L20	75.75 - 70.75 (20)	TP34.3889x33.579x0.5	1784.700	2765.558	0.645	0.000	2765.558	0.000
L21	70.75 - 70.5 (21)	TP34.4294x34.3889x0.5	1791.533	2772.225	0.646	0.000	2772.225	0.000
L22	70.5 - 70.25 (22)	TP34.4699x34.4294x0.665	1798.375	3642.333	0.494	0.000	3642.333	0.000
L23	70.25 - 70 (23)	TP34.5104x34.4699x0.665	1805.225	3651.150	0.494	0.000	3651.150	0.000
L24	70 - 69.75 (24)	TP34.5509x34.5104x0.555	1812.075	3084.408	0.587	0.000	3084.408	0.000
L25	69.75 - 64.75 (25)	TP35.3608x34.5509x0.55	1949.875	3206.583	0.608	0.000	3206.583	0.000
L26	64.75 - 59.75 (26)	TP36.1707x35.3608x0.545	2089.100	3329.583	0.627	0.000	3329.583	0.000
L27	59.75 - 54.75 (27)	TP36.9807x36.1707x0.54	2229.675	3453.325	0.646	0.000	3453.325	0.000
L28	54.75 - 49.75 (28)	TP37.7906x36.9807x0.535	2371.525	3577.700	0.663	0.000	3577.700	0.000
L29	49.75 - 43 (29)	TP38.884x37.7906x0.535	2421.458	3632.742	0.667	0.000	3632.742	0.000
L30	43 - 42 (30)	TP38.2961x37.3241x0.6675	2594.683	4538.467	0.572	0.000	4538.467	0.000
L31	42 - 37 (31)	TP39.1061x38.2961x0.6625	2740.600	4704.042	0.583	0.000	4704.042	0.000
L32	37 - 32 (32)	TP39.916x39.1061x0.6575	2887.608	4870.908	0.593	0.000	4870.908	0.000
L33	32 - 27.83 (33)	TP40.5916x39.916x0.6525	3010.967	5004.925	0.602	0.000	5004.925	0.000
L34	27.83 - 27.58 (34)	TP40.6321x40.5916x0.6675	3018.375	5124.683	0.589	0.000	5124.683	0.000
L35	27.58 - 27.25 (35)	TP40.6855x40.6321x0.6675	3028.175	5138.517	0.589	0.000	5138.517	0.000
L36	27.25 - 27 (36)	TP40.726x40.6855x0.4525	3035.592	3547.033	0.856	0.000	3547.033	0.000
L37	27 - 26.75 (37)	TP40.7665x40.726x0.6625	3043.017	5122.775	0.594	0.000	5122.775	0.000
L38	26.75 - 21.75 (38)	TP41.5765x40.7665x0.6575	3191.933	5295.200	0.603	0.000	5295.200	0.000
L39	21.75 - 16.75 (39)	TP42.3865x41.5765x0.6525	3341.733	5468.683	0.611	0.000	5468.683	0.000
L40	16.75 - 16 (40)	TP42.508x42.3865x0.6525	3364.275	5500.817	0.612	0.000	5500.817	0.000
L41	16 - 15.75 (41)	TP42.5485x42.508x0.8075	3371.792	6745.375	0.500	0.000	6745.375	0.000
L42	15.75 - 14.833 (42)	TP42.6971x42.5485x0.8025	3399.392	6754.283	0.503	0.000	6754.283	0.000
L43	14.833 - 14.583 (43)	TP42.7376x42.6971x0.7175	3406.925	6087.533	0.560	0.000	6087.533	0.000
L44	14.583 - 12 (44)	TP43.156x42.7376x0.7175	3484.867	6210.408	0.561	0.000	6210.408	0.000
L45	12 - 11.75 (45)	TP43.1965x43.156x0.8225	3492.425	7080.191	0.493	0.000	7080.191	0.000
L46	11.75 - 10 (46)	TP43.48x43.1965x0.8175	3545.400	7135.041	0.497	0.000	7135.041	0.000
L47	10 - 9.75 (47)	TP43.5205x43.48x0.7275	3552.975	6402.017	0.555	0.000	6402.017	0.000
L48	9.75 - 4.75 (48)	TP44.3305x43.5205x0.7175	3704.992	6561.850	0.565	0.000	6561.850	0.000
L49	4.75 - 0.5 (49)	TP45.019x44.3305x0.7125	3834.883	6727.450	0.570	0.000	6727.450	0.000
L50	0.5 - 0.25 (50)	TP45.0595x45.019x0.7825	3842.542	7367.017	0.522	0.000	7367.017	0.000
L51	0.25 - 0 (51)	TP45.1x45.0595x0.7825	3850.208	7380.617	0.522	0.000	7380.617	0.000

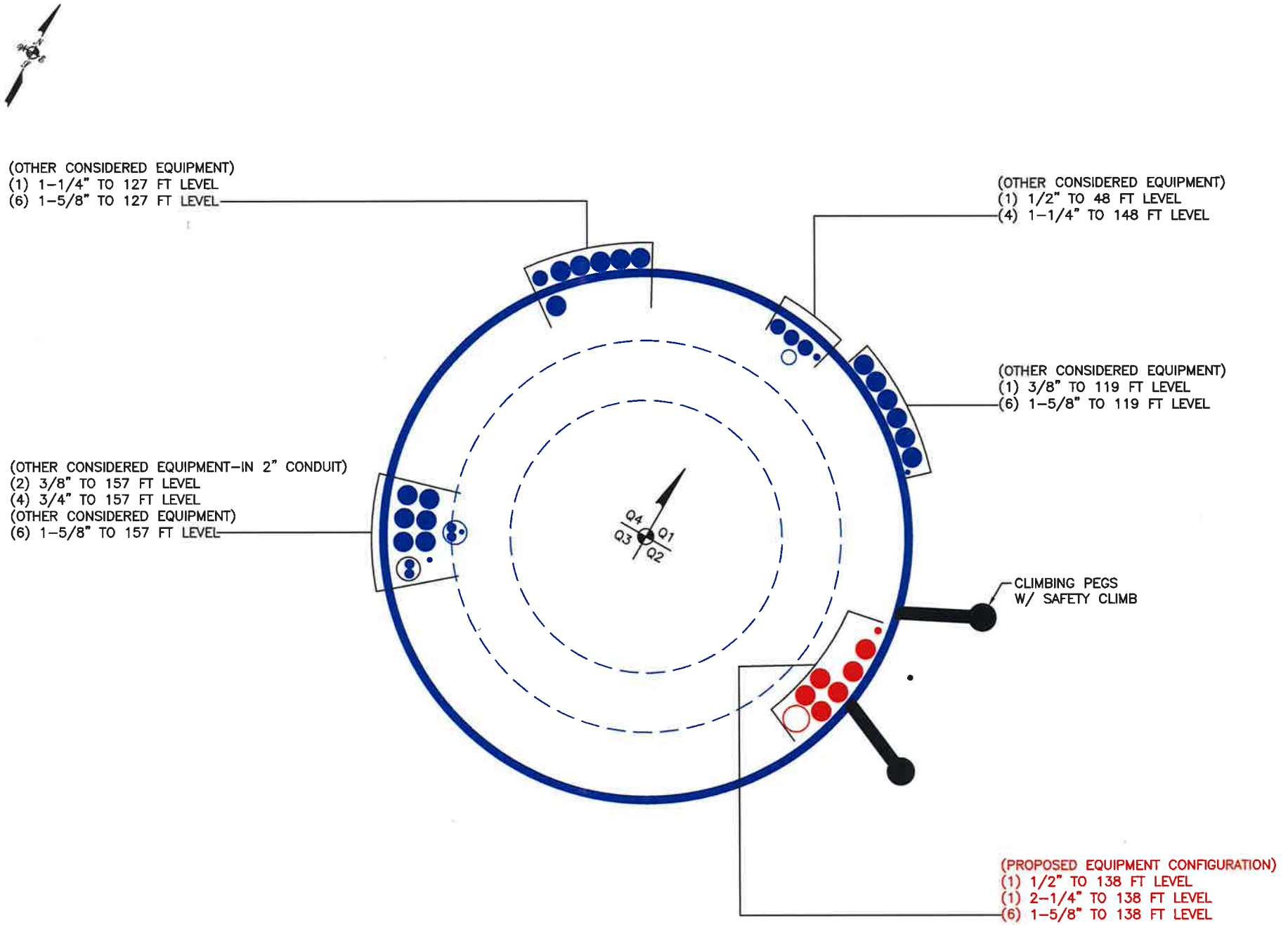
Pole Shear Design Data

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)	TP10.75x10.75x0.349	5.296	107.766	0.049	0.208	98.546	0.002
L2	155 - 150 (2)	TP10.75x10.75x0.349	5.532	107.766	0.051	0.208	98.546	0.002
L3	150 - 148 (3)	TP10.75x10.75x0.349	6.577	107.766	0.061	0.201	98.546	0.002
L4	148 - 143 (4)	TP23.81x23x0.25	10.380	302.857	0.034	0.929	611.683	0.002
L5	143 - 138 (5)	TP24.62x23.81x0.25	10.791	313.269	0.034	0.928	654.933	0.001
L6	138 - 133 (6)	TP25.43x24.62x0.25	17.944	321.599	0.056	12.988	699.659	0.019
L7	133 - 128 (7)	TP26.24x25.43x0.25	18.291	332.011	0.055	12.981	745.863	0.017
L8	128 - 123 (8)	TP27.05x26.24x0.25	22.672	342.424	0.066	13.121	793.544	0.017
L9	123 - 118 (9)	TP27.86x27.05x0.25	24.169	352.836	0.069	13.098	842.700	0.016
L10	118 - 111 (10)	TP28.994x27.86x0.25	24.360	359.430	0.068	13.089	875.450	0.015
L11	111 - 109.75 (11)	TP28.6964x27.8865x0.3125	24.750	452.830	0.055	13.081	1108.875	0.012
L12	109.75 - 105.25 (12)	TP29.4254x28.6964x0.3125	25.012	464.868	0.054	13.068	1167.208	0.011
L13	105.25 - 105 (13)	TP29.4659x29.4254x0.4625	25.016	688.772	0.036	13.067	1696.475	0.008
L14	105 - 100 (14)	TP30.2758x29.4659x0.4625	25.375	705.144	0.036	13.057	1794.133	0.007
L15	100 - 95 (15)	TP31.0857x30.2758x0.4575	25.715	716.691	0.036	13.047	1875.275	0.007
L16	95 - 90 (16)	TP31.8957x31.0857x0.4525	26.044	727.820	0.036	13.037	1956.967	0.007
L17	90 - 85 (17)	TP32.7056x31.8957x0.4475	26.361	738.529	0.036	13.026	2039.100	0.006
L18	85 - 76.75 (18)	TP34.042x32.7056x0.4425	26.603	745.134	0.036	13.018	2100.592	0.006
L19	76.75 - 75.75 (19)	TP33.579x32.7286x0.495	27.056	907.769	0.030	13.012	2564.550	0.005
L20	75.75 - 70.75 (20)	TP34.3889x33.579x0.5	27.353	939.357	0.029	13.002	2719.183	0.005
L21	70.75 - 70.5 (21)	TP34.4294x34.3889x0.5	27.355	943.869	0.029	13.001	2725.783	0.005
L22	70.5 - 70.25 (22)	TP34.4699x34.4294x0.665	27.371	1252.230	0.022	13.001	3562.775	0.004
L23	70.25 - 70 (23)	TP34.5104x34.4699x0.665	27.389	1253.730	0.022	13.000	3571.483	0.004
L24	70 - 69.75 (24)	TP34.5509x34.5104x0.555	27.404	1049.750	0.026	13.000	3027.700	0.004
L25	69.75 - 64.75 (25)	TP35.3608x34.5509x0.55	27.710	1061.540	0.026	12.992	3149.358	0.004
L26	64.75 - 59.75 (26)	TP36.1707x35.3608x0.545	27.989	1076.630	0.026	12.985	3271.883	0.004
L27	59.75 - 54.75 (27)	TP36.9807x36.1707x0.54	28.252	1096.140	0.026	12.978	3395.183	0.004
L28	54.75 - 49.75 (28)	TP37.7906x36.9807x0.535	28.499	1110.270	0.026	12.971	3519.150	0.004
L29	49.75 - 43 (29)	TP38.884x37.7906x0.535	28.594	1118.720	0.026	12.970	3573.692	0.004
L30	43 - 42 (30)	TP38.2961x37.3241x0.6675	29.074	1399.110	0.021	12.966	4448.408	0.003
L31	42 - 37 (31)	TP39.1061x38.2961x0.6625	29.303	1418.710	0.021	12.961	4613.158	0.003
L32	37 - 32 (32)	TP39.916x39.1061x0.6575	29.510	1437.850	0.021	12.957	4779.233	0.003
L33	32 - 27.83 (33)	TP40.5916x39.916x0.6525	29.666	1451.650	0.020	12.954	4912.842	0.003
L34	27.83 - 27.58 (34)	TP40.6321x40.5916x0.6675	29.659	1485.970	0.020	12.954	5028.467	0.003
L35	27.58 - 27.25 (35)	TP40.6855x40.6321x0.6675	29.673	1487.960	0.020	12.954	5042.158	0.003
L36	27.25 - 27 (36)	TP40.726x40.6855x0.4525	29.678	1015.130	0.029	12.954	3500.325	0.004
L37	27 - 26.75 (37)	TP40.7665x40.726x0.6625	29.685	1479.990	0.020	12.953	5027.567	0.003
L38	26.75 - 21.75 (38)	TP41.5765x40.7665x0.6575	29.880	1498.670	0.020	12.951	5199.250	0.002
L39	21.75 - 16.75 (39)	TP42.3865x41.5765x0.6525	30.051	1516.890	0.020	12.949	5372.025	0.002
L40	16.75 - 16 (40)	TP42.508x42.3865x0.6525	30.071	1521.310	0.020	12.948	5403.842	0.002

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 $\frac{T_u}{\phi T_n}$
L41	16 - 15.75 (41)	TP42.5485x42.508x0.8075	30.070	1877.540	0.016	12.948	6600.317	0.002
L42	15.75 - 14.833 (42)	TP42.6971x42.5485x0.8025	30.120	1872.780	0.016	12.948	6610.367	0.002
L43	14.833 - 14.583 (43)	TP42.7376x42.6971x0.7175	30.118	1679.430	0.018	12.948	5970.908	0.002
L44	14.583 - 12 (44)	TP43.156x42.7376x0.7175	30.234	1696.160	0.018	12.947	6092.500	0.002
L45	12 - 11.75 (45)	TP43.1965x43.156x0.8225	30.223	1941.420	0.016	12.947	6927.458	0.002
L46	11.75 - 10 (46)	TP43.48x43.1965x0.8175	30.323	1942.760	0.016	12.947	6982.958	0.002
L47	10 - 9.75 (47)	TP43.5205x43.48x0.7275	30.306	1734.160	0.017	12.947	6279.850	0.002
L48	9.75 - 4.75 (48)	TP44.3305x43.5205x0.7175	30.497	1743.100	0.017	12.946	6440.350	0.002
L49	4.75 - 0.5 (49)	TP45.019x44.3305x0.7125	30.642	1758.480	0.017	12.946	6605.450	0.002
L50	0.5 - 0.25 (50)	TP45.0595x45.019x0.7825	30.633	1929.950	0.016	12.946	7221.325	0.002
L51	0.25 - 0 (51)	TP45.1x45.0595x0.7825	30.637	1931.720	0.016	12.946	7234.783	0.002

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876313 TOWER ID: C_BASELEVEL

APPENDIX C

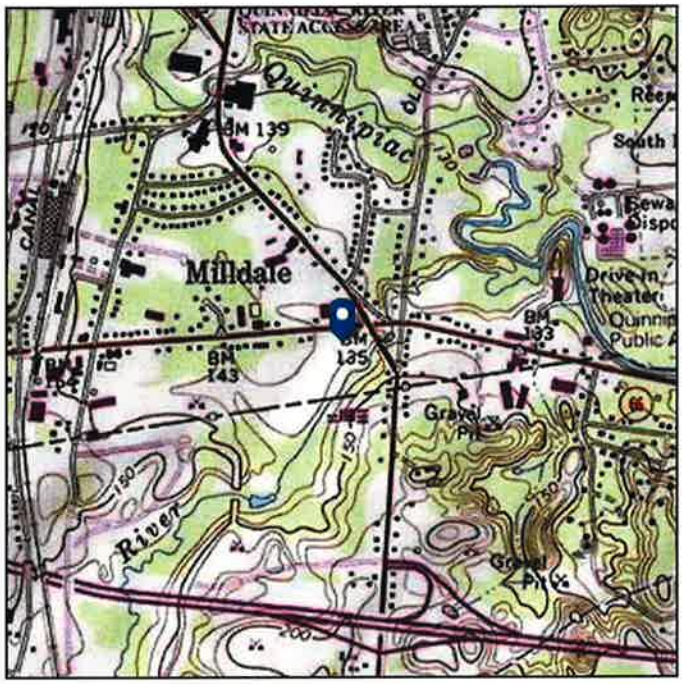
ADDITIONAL CALCULATIONS

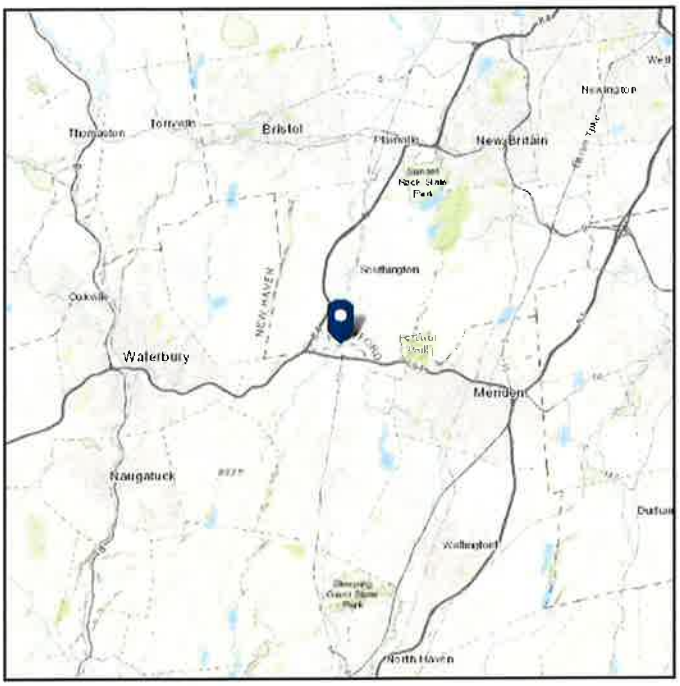
ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 133.13 ft (NAVD 88)
Latitude: 41.56428
Longitude: -72.89186





Wind

Results:

Wind Speed:	122 Vmph	*Southington requires 125 Vmph
10-year MRI	76 Vmph	
25-year MRI	86 Vmph	
50-year MRI	92 Vmph	
100-year MRI	99 Vmph	

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

Date Accessed: Fri Sep 28 2018

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

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

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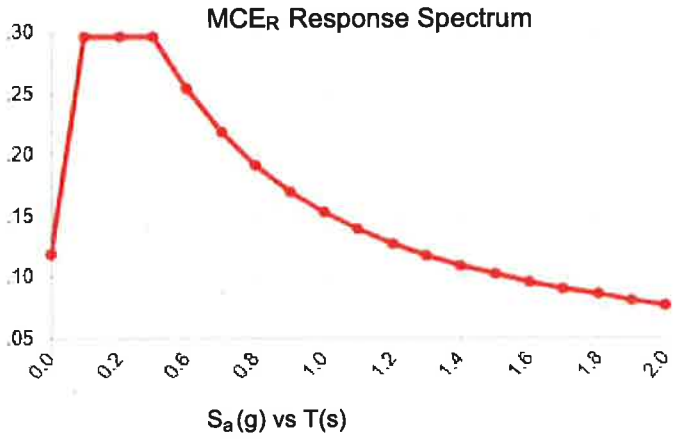
Seismic

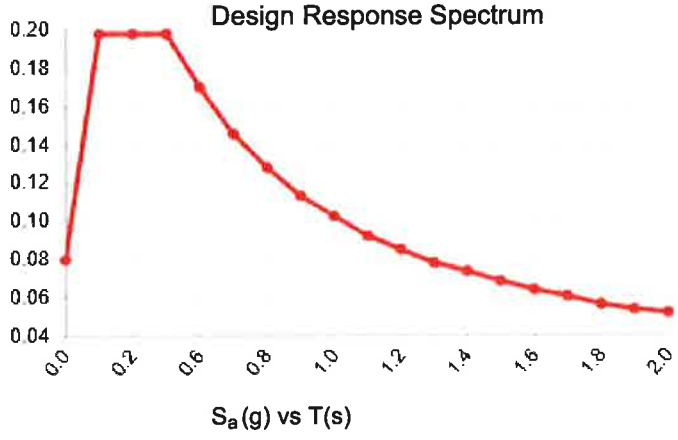
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.185	S_{DS} :	0.197
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.600	T_L :	6.000
F_v :	2.400	PGA :	0.095
S_{MS} :	0.296	PGA_M :	0.152
S_{M1} :	0.152	F_{PGA} :	1.600
		I_e :	1

Seismic Design Category B





Data Accessed: Fri Sep 28 2018

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

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Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Fri Sep 28 2018

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

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

CCIpole

per TIA-222- H

Site BU: 876313

Work Order: 1625408

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	12	0	0	10.75	10.75	0.349		A53-B-35
2	148	37	3.75	18	23.00	28.994	0.25	Auto	A607-60
3	114.75	38	4.25	18	27.89	34.042	0.3125	Auto	A607-60
4	81	38	5	18	32.73	38.884	0.375	Auto	A607-65
5	48	48	0	18	37.32	45.1	0.4375	Auto	A607-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0.5	27	channel	P3-06 (1.875in) - Weld	2			x						x									
2	0.5	12	channel	P3-06 (1.875in) - Weld	2													x				x	
3	14.833	27.83	channel	MP3-06 (1.875in) - MO	1															x			
4	45.5	70.5	channel	MP3-05 (1.1875in)	3			x						x						x			
5	78.25	105.25	channel	MP3-04 (1.1875in)	3			x						x						x			
6	27.25	46.75	plate	6.5x1.25 (65ksi)	3						x						x						x
7	10	16	plate	CCI-SFP-060100	3						x						x						x
8	70	80	plate	CCI-AFP-060100	3	x						x				x							
9	0	0.5	plate	(TS) 1.25x4.5 (65ksi)	8	2	-2			0.63		-0.6			2	-2			0.63		-0.6		
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_u (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	6.89	2.61	8.47	0.93	n/a	41.000	24.000	7.670	1.1875	A572-65
2	6.89	2.61	8.47	0.93	n/a	41.000	24.000	7.670	1.1875	A572-65
3	6.89	2.61	8.47	0.93	38.000	41.000	24.000	7.670	1.1875	A572-65
4	5.33	2.09	5.65	0.79	29.000	29.000	18.000	5.025	1.1875	A572-65
5	4.78	1.61	4.13	0.61	17.000	17.000	18.000	3.593	1.1875	A572-65
6	6.5	1.25	8.125	0.625	33.000	33.000	19.250	6.563	1.1875	A572-65
7	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
8	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
9	1.25	4	5	2.5	n/a	n/a	0.500	5.000	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	10.750	10.750	0.349	A53-B-35	1.000
2	155 - 150	5		0	10.750	10.750	0.349	A53-B-35	1.000
3	150 - 148	2	0	0	10.750	10.750	0.349	A53-B-35	1.000
4	148 - 143	5		18	23.000	23.810	0.25	A607-60	1.000
5	143 - 138	5		18	23.810	24.620	0.25	A607-60	1.000
6	138 - 133	5		18	24.620	25.430	0.25	A607-60	1.000
7	133 - 128	5		18	25.430	26.240	0.25	A607-60	1.000
8	128 - 123	5		18	26.240	27.050	0.25	A607-60	1.000
9	123 - 118	5		18	27.050	27.860	0.25	A607-60	1.000
10	118 - 114.75	7	3.75	18	27.860	28.994	0.25	A607-60	1.000
11	114.75 - 109.75	5		18	27.887	28.696	0.3125	A607-60	1.000
12	109.75 - 105.25	4.5		18	28.696	29.425	0.3125	A607-60	1.000
13	105.25 - 105	0.25		18	29.425	29.466	0.4625	A607-60	0.970
14	105 - 100	5		18	29.466	30.276	0.4625	A607-60	0.962
15	100 - 95	5		18	30.276	31.086	0.4575	A607-60	0.965
16	95 - 90	5		18	31.086	31.896	0.4525	A607-60	0.968
17	90 - 85	5		18	31.896	32.706	0.4475	A607-60	0.972
18	85 - 81	8.25	4.25	18	32.706	34.042	0.4425	A607-60	0.977
19	81 - 75.75	5.25		18	32.729	33.579	0.495	A607-65	1.107
20	75.75 - 70.75	5		18	33.579	34.389	0.5	A607-65	1.087
21	70.75 - 70.5	0.25		18	34.389	34.429	0.5	A607-65	1.087
22	70.5 - 70.25	0.25		18	34.429	34.470	0.665	A607-65	1.059
23	70.25 - 70	0.25		18	34.470	34.510	0.665	A607-65	1.058
24	70 - 69.75	0.25		18	34.510	34.551	0.555	A607-65	0.962
25	69.75 - 64.75	5		18	34.551	35.361	0.55	A607-65	0.964
26	64.75 - 59.75	5		18	35.361	36.171	0.545	A607-65	0.966
27	59.75 - 54.75	5		18	36.171	36.981	0.54	A607-65	0.969
28	54.75 - 49.75	5		18	36.981	37.791	0.535	A607-65	0.972
29	49.75 - 48	6.75	5	18	37.791	38.884	0.535	A607-65	0.970
30	48 - 42	6		18	37.324	38.296	0.6675	A607-65	0.965
31	42 - 37	5		18	38.296	39.106	0.6625	A607-65	0.966
32	37 - 32	5		18	39.106	39.916	0.6575	A607-65	0.967
33	32 - 27.83	4.17		18	39.916	40.592	0.6525	A607-65	0.969
34	27.83 - 27.58	0.25		18	40.592	40.632	0.6675	A607-65	1.047
35	27.58 - 27.25	0.33		18	40.632	40.686	0.6675	A607-65	1.047
36	27.25 - 27	0.25		18	40.686	40.726	0.4525	A607-65	1.114
37	27 - 26.75	0.25		18	40.726	40.767	0.6625	A607-65	0.965
38	26.75 - 21.75	5		18	40.767	41.577	0.6575	A607-65	0.967
39	21.75 - 16.75	5		18	41.577	42.387	0.6525	A607-65	0.968
40	16.75 - 16	0.75		18	42.387	42.508	0.6525	A607-65	0.967
41	16 - 15.75	0.25		18	42.508	42.549	0.8075	A607-65	0.952
42	15.75 - 14.833	0.917		18	42.549	42.697	0.8025	A607-65	0.957
43	14.833 - 14.583	0.25		18	42.697	42.738	0.7175	A607-65	0.979
44	14.583 - 12	2.583		18	42.738	43.156	0.7175	A607-65	0.975
45	12 - 11.75	0.25		18	43.156	43.197	0.8225	A607-65	1.006
46	11.75 - 10	1.75		18	43.197	43.480	0.8175	A607-65	1.009
47	10 - 9.75	0.25		18	43.480	43.521	0.7275	A607-65	0.948
48	9.75 - 4.75	5		18	43.521	44.331	0.7175	A607-65	0.955
49	4.75 - 0.5	4.25		18	44.331	45.019	0.7125	A607-65	0.956
50	0.5 - 0.25	0.25		18	45.019	45.060	0.7825	A607-65	0.927
51	0.25 - 0	0.25		18	45.060	45.100	0.7825	A607-65	0.927

TNX Section Forces

Increment (ft): 5

	Section Height (ft)	TNX Output P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	160 - 155	1.91	15.28	5.30
2	155 - 150	2.82	42.35	5.53
3	150 - 148	3.78	54.51	6.58
4	148 - 143	7.83	105.84	10.38
5	143 - 138	8.64	158.75	10.79
6	138 - 133	12.03	248.31	17.93
7	133 - 128	12.58	338.87	18.28
8	128 - 123	16.58	452.62	22.65
9	123 - 118	18.30	567.92	24.14
10	118 - 114.75	18.74	646.77	24.36
11	114.75 - 109.75	19.91	769.58	24.72
12	109.75 - 105.25	20.66	881.51	25.01
13	105.25 - 105	20.73	887.77	25.02
14	105 - 100	21.84	1013.76	25.35
15	100 - 95	22.96	1141.48	25.69
16	95 - 90	24.11	1270.87	26.02
17	90 - 85	25.28	1401.88	26.33
18	85 - 81	26.21	1507.79	26.60
19	81 - 75.75	28.48	1648.70	27.02
20	75.75 - 70.75	29.92	1784.70	27.35
21	70.75 - 70.5	30.00	1791.54	27.35
22	70.5 - 70.25	30.09	1798.38	27.37
23	70.25 - 70	30.18	1805.23	27.39
24	70 - 69.75	30.25	1812.08	27.40
25	69.75 - 64.75	31.73	1949.87	27.68
26	64.75 - 59.75	33.22	2089.10	27.95
27	59.75 - 54.75	34.73	2229.68	28.22
28	54.75 - 49.75	36.27	2371.53	28.45
29	49.75 - 48	36.76	2421.46	28.59
30	48 - 42	40.27	2594.68	29.07
31	42 - 37	42.12	2740.60	29.30
32	37 - 32	44.00	2887.61	29.51
33	32 - 27.83	45.59	3010.96	29.67
34	27.83 - 27.58	45.71	3018.38	29.66
35	27.58 - 27.25	45.85	3028.17	29.67
36	27.25 - 27	45.93	3035.59	29.68
37	27 - 26.75	46.03	3043.01	29.69
38	26.75 - 21.75	47.97	3191.94	29.88
39	21.75 - 16.75	49.95	3341.73	30.05
40	16.75 - 16	50.25	3364.27	30.07
41	16 - 15.75	50.37	3371.79	30.07
42	15.75 - 14.833	50.80	3399.39	30.12
43	14.833 - 14.583	50.91	3406.93	30.12
44	14.583 - 12	52.03	3484.87	30.23
45	12 - 11.75	52.17	3492.43	30.22
46	11.75 - 10	53.04	3545.40	30.32
47	10 - 9.75	53.17	3552.98	30.31
48	9.75 - 4.75	55.35	3704.99	30.50
49	4.75 - 0.5	57.24	3834.89	30.64
50	0.5 - 0.25	57.36	3842.55	30.63
51	0.25 - 0	57.48	3850.21	30.64

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
160 - 155	Pole	TP10.75x10.75x0.349	Pole	15.3%	Pass
155 - 150	Pole	TP10.75x10.75x0.349	Pole	41.5%	Pass
150 - 148	Pole	TP10.75x10.75x0.349	Pole	53.5%	Pass
148 - 143	Pole	TP23.81x23x0.25	Pole	16.9%	Pass
143 - 138	Pole	TP24.62x23.81x0.25	Pole	23.4%	Pass
138 - 133	Pole	TP25.43x24.62x0.25	Pole	34.5%	Pass
133 - 128	Pole	TP26.24x25.43x0.25	Pole	44.2%	Pass
128 - 123	Pole	TP27.05x26.24x0.25	Pole	56.0%	Pass
123 - 118	Pole	TP27.86x27.05x0.25	Pole	66.6%	Pass
118 - 114.75	Pole	TP28.994x27.86x0.25	Pole	73.3%	Pass
114.75 - 109.75	Pole	TP28.696x27.887x0.3125	Pole	66.3%	Pass
109.75 - 105.25	Pole	TP29.425x28.696x0.3125	Pole	72.0%	Pass
105.25 - 105	Pole + Reinf.	TP29.466x29.425x0.4625	Reinf. 5 Tension Rupture	68.8%	Pass
105 - 100	Pole + Reinf.	TP30.276x29.466x0.4625	Reinf. 5 Tension Rupture	75.0%	Pass
100 - 95	Pole + Reinf.	TP31.086x30.276x0.4575	Reinf. 5 Tension Rupture	80.6%	Pass
95 - 90	Pole + Reinf.	TP31.896x31.086x0.4525	Reinf. 5 Tension Rupture	85.8%	Pass
90 - 85	Pole + Reinf.	TP32.706x31.896x0.4475	Reinf. 5 Tension Rupture	90.6%	Pass
85 - 81	Pole + Reinf.	TP34.042x32.706x0.4425	Reinf. 5 Tension Rupture	94.2%	Pass
81 - 75.75	Pole + Reinf.	TP33.579x32.729x0.495	Reinf. 8 Tension Rupture	85.7%	Pass
75.75 - 70.75	Pole + Reinf.	TP34.389x33.579x0.5	Reinf. 8 Tension Rupture	89.0%	Pass
70.75 - 70.5	Pole + Reinf.	TP34.429x34.389x0.5	Reinf. 8 Tension Rupture	89.1%	Pass
70.5 - 70.25	Pole + Reinf.	TP34.47x34.429x0.665	Reinf. 4 Tension Rupture	72.1%	Pass
70.25 - 70	Pole + Reinf.	TP34.51x34.47x0.665	Reinf. 4 Tension Rupture	72.2%	Pass
70 - 69.75	Pole + Reinf.	TP34.551x34.51x0.555	Reinf. 4 Tension Rupture	83.0%	Pass
69.75 - 64.75	Pole + Reinf.	TP35.361x34.551x0.55	Reinf. 4 Tension Rupture	85.8%	Pass
64.75 - 59.75	Pole + Reinf.	TP36.171x35.361x0.545	Reinf. 4 Tension Rupture	88.4%	Pass
59.75 - 54.75	Pole + Reinf.	TP36.981x36.171x0.54	Reinf. 4 Tension Rupture	90.8%	Pass
54.75 - 49.75	Pole + Reinf.	TP37.791x36.981x0.535	Reinf. 4 Tension Rupture	93.1%	Pass
49.75 - 48	Pole + Reinf.	TP38.884x37.791x0.535	Reinf. 4 Tension Rupture	93.8%	Pass
48 - 42	Pole + Reinf.	TP38.296x37.324x0.6675	Reinf. 6 Tension Rupture	85.2%	Pass
42 - 37	Pole + Reinf.	TP39.106x38.296x0.6625	Reinf. 6 Tension Rupture	86.9%	Pass
37 - 32	Pole + Reinf.	TP39.916x39.106x0.6575	Reinf. 6 Tension Rupture	88.4%	Pass
32 - 27.83	Pole + Reinf.	TP40.592x39.916x0.6525	Reinf. 6 Tension Rupture	89.6%	Pass
27.83 - 27.58	Pole + Reinf.	TP40.632x40.592x0.6675	Reinf. 6 Tension Rupture	83.3%	Pass
27.58 - 27.25	Pole + Reinf.	TP40.686x40.632x0.6675	Reinf. 6 Tension Rupture	83.3%	Pass
27.25 - 27	Pole + Reinf.	TP40.726x40.686x0.4525	Pole	86.0%	Pass
27 - 26.75	Pole + Reinf.	TP40.767x40.726x0.6625	Reinf. 3 Tension Rupture	81.6%	Pass
26.75 - 21.75	Pole + Reinf.	TP41.577x40.767x0.6575	Reinf. 3 Tension Rupture	82.8%	Pass
21.75 - 16.75	Pole + Reinf.	TP42.387x41.577x0.6525	Reinf. 3 Tension Rupture	83.9%	Pass
16.75 - 16	Pole + Reinf.	TP42.508x42.387x0.6525	Reinf. 3 Tension Rupture	84.0%	Pass
16 - 15.75	Pole + Reinf.	TP42.549x42.508x0.8075	Reinf. 7 Tension Rupture	75.3%	Pass
15.75 - 14.83	Pole + Reinf.	TP42.697x42.549x0.8025	Reinf. 7 Tension Rupture	75.5%	Pass
14.83 - 14.58	Pole + Reinf.	TP42.738x42.697x0.7175	Reinf. 7 Tension Rupture	86.2%	Pass
14.58 - 12	Pole + Reinf.	TP43.156x42.738x0.7175	Reinf. 7 Tension Rupture	86.8%	Pass
12 - 11.75	Pole + Reinf.	TP43.197x43.156x0.8225	Reinf. 7 Tension Rupture	77.2%	Pass
11.75 - 10	Pole + Reinf.	TP43.48x43.197x0.8175	Reinf. 7 Tension Rupture	77.6%	Pass
10 - 9.75	Pole + Reinf.	TP43.521x43.48x0.7275	Reinf. 1 Compression	76.1%	Pass
9.75 - 4.75	Pole + Reinf.	TP44.331x43.521x0.7175	Reinf. 1 Compression	77.0%	Pass
4.75 - 0.5	Pole + Reinf.	TP45.019x44.331x0.7125	Reinf. 1 Compression	77.7%	Pass
0.5 - 0.25	Pole + Reinf.	TP45.06x45.019x0.7825	Reinf. 9 Compression	69.2%	Pass
0.25 - 0	Pole + Reinf.	TP45.1x45.06x0.7825	Reinf. 9 Compression	69.2%	Pass
				Summary	
			Pole	86.0%	Pass
			Reinforcement	94.2%	Pass
			Overall	94.2%	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
160 - 155	154	n/a	154	11.40	n/a	11.40	15.3%									
155 - 150	154	n/a	154	11.40	n/a	11.40	41.5%									
150 - 148	154	n/a	154	11.40	n/a	11.40	53.5%									
148 - 143	1311	n/a	1311	18.69	n/a	18.69	16.9%									
143 - 138	1450	n/a	1450	19.34	n/a	19.34	23.4%									
138 - 133	1600	n/a	1600	19.98	n/a	19.98	34.5%									
133 - 128	1759	n/a	1759	20.62	n/a	20.62	44.2%									
128 - 123	1929	n/a	1929	21.27	n/a	21.27	56.0%									
123 - 118	2109	n/a	2109	21.91	n/a	21.91	66.6%									
118 - 114.75	2232	n/a	2232	22.33	n/a	22.33	73.3%									
114.75 - 109.75	2865	n/a	2865	28.15	n/a	28.15	66.3%									
109.75 - 105.25	3091	n/a	3091	28.88	n/a	28.88	72.0%									
105.25 - 105	3104	1465	4569	28.92	12.39	41.31	48.5%					68.8%				
105 - 100	3370	1543	4913	29.72	12.39	42.11	52.9%					75.0%				
100 - 95	3651	1623	5274	30.52	12.39	42.91	56.9%					80.6%				
95 - 90	3946	1705	5652	31.33	12.39	43.72	61.0%					85.8%				
90 - 85	4258	1789	6047	32.13	12.39	44.52	64.8%					90.6%				
85 - 81	4519	1858	6377	32.77	12.39	45.16	67.8%					94.2%				
81 - 75.75	5552	1722	7275	39.52	18.00	57.52	63.8%								85.7%	
75.75 - 70.75	5971	1942	7913	40.48	18.00	58.48	65.4%								89.0%	
70.75 - 70.5	5992	1946	7938	40.53	18.00	58.53	65.5%								89.1%	
70.5 - 70.25	5983	4421	10404	40.58	34.95	75.53	49.1%				72.1%				67.3%	
70.25 - 70	6005	4431	10436	40.63	34.95	75.58	49.2%				72.2%				67.4%	
70 - 69.75	6000	2777	8777	40.68	16.95	57.63	55.6%				83.0%					
69.75 - 64.75	6437	2902	9339	41.64	16.95	58.59	57.6%				85.8%					
64.75 - 59.75	6895	3030	9925	42.60	16.95	59.55	59.4%				88.4%					
59.75 - 54.75	7373	3161	10535	43.57	16.95	60.52	61.4%				90.8%					
54.75 - 49.75	7874	3295	11169	44.53	16.95	61.48	63.3%				93.1%					
49.75 - 48	8054	3342	11397	44.87	16.95	61.82	64.0%				93.8%					
48 - 42	9516	4809	14326	52.57	24.38	76.94	54.1%						85.2%			
42 - 37	10140	5007	15147	53.69	24.38	78.07	55.2%						86.9%			
37 - 32	10791	5208	15999	54.82	24.38	79.19	56.2%						88.4%			
32 - 27.83	11354	5379	16733	55.76	24.38	80.13	57.0%						89.6%			
27.83 - 27.58	11416	5780	17196	55.81	32.85	88.66	58.3%			62.5%			83.3%			
27.58 - 27.25	11461	5795	17256	55.89	32.85	88.73	58.4%			62.6%			83.3%			
27.25 - 27	11520	352	11872	55.94	8.47	64.41	86.0%			82.7%						
27 - 26.75	11503	5797	17300	56.00	25.41	81.41	56.0%	80.0%		81.6%						
26.75 - 21.75	12211	6018	18229	57.12	25.41	82.53	56.8%	81.2%		82.6%						
21.75 - 16.75	12946	6244	19190	58.25	25.41	83.66	57.8%	82.2%		83.9%						
16.75 - 16	13059	6278	19337	58.42	25.41	83.83	57.9%	82.4%		84.0%						
16 - 15.75	13097	10584	23681	58.47	43.41	101.88	47.5%	67.5%		68.9%				75.3%		
15.75 - 14.83	13236	10656	23891	58.68	43.41	102.09	47.7%	67.7%		69.0%				75.5%		
14.83 - 14.58	13393	8251	21644	58.74	34.94	93.68	56.8%	68.4%						86.2%		
14.58 - 12	13793	8409	22202	59.32	34.94	94.26	57.4%	68.9%						86.8%		
12 - 11.75	13760	11513	25273	59.37	51.88	111.25	48.9%	63.0%	61.8%					77.2%		
11.75 - 10	14035	11659	25694	59.77	51.88	111.65	49.2%	63.3%	62.1%					77.6%		
10 - 9.75	14054	8927	22981	59.82	33.88	93.70	55.5%	76.1%	74.2%							
9.75 - 4.75	14861	9248	24108	60.95	33.88	94.83	56.5%	77.0%	75.1%							
4.75 - 0.5	15571	9525	25095	61.90	33.88	95.78	57.2%	77.7%	75.8%							
0.5 - 0.25	15582	11903	27485	61.96	40.00	101.96	50.1%									69.2%
0.25 - 0	15624	11922	27546	62.02	40.00	102.02	50.2%									69.2%

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

TOWER ENGINEERING PROFESSIONALS

West Johnson Ave Burnt House (BU 876313)

TEP #: 25560.180578

Analysis: CJB 9/28/2018

Check: TLI 9/28/2018

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

Elevation: 148.00-ft

Loads	
Axial:	3.8 k
Moment:	54.5 k·ft
Shear:	6.6 k
Torsion:	0.2 k·ft

Equivalent Loads to Pole	
Axial:	0.0 k
Moment:	0.0 k·ft
Shear:	0.0 k
Torsion:	0.0 k·ft

Pole Info

OD: 10.75 in

t: 0.3490 in

Pole A_G: 0.00 in²

Pole I_G: 0.0 in⁴

Controlling

Angle: 120.00°

I_G: 6,025.5 in⁴

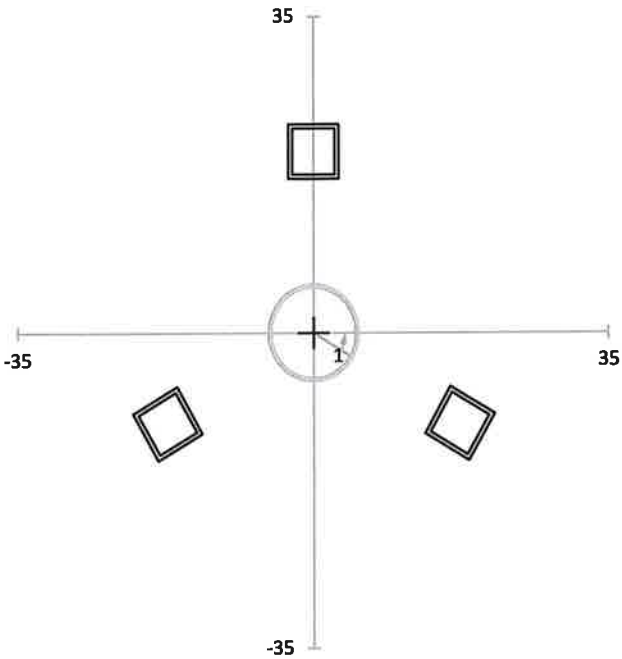
A_G: 29.22 in²

Minimum

Angle: 127.40°

I_{MIN}: 6,025.5 in⁴

t_{EFF}: 5.3750 in



Pole Segment: L1, F_Y = 35 ksi

POLE CAPACITY

Angle (°)	y_{CONT} (in)	I (in⁴)	σ_A (ksi)	σ_B (ksi)	σ_V (ksi)	σ_T (ksi)	ϕF_A (ksi)	ϕF_B (ksi)	ϕF_V (ksi)	ϕF_T (ksi)	Capacity
121.75	5.38	6025.5	0.000	0.000	0.000	0.000	31.500	41.422	15.750	31.500	0.0%

MODIFICATION CAPACITIES

Mod Number	#	Angle (°)	$\bar{y}_{CONT}$ (in)	I (in⁴)	σ_A (ksi)	σ_B (ksi)	σ_V (ksi)	ϕF_A (ksi)	ϕF_B (ksi)	ϕF_V (ksi)	Capacity
10	1	0.00	20.06	6025.5	0.129	2.178	0.225	27.988	27.988	20.700	7.9%
10	2	120.00	20.06	6025.5	0.129	2.178	0.225	27.988	27.988	20.700	7.9%
10	3	240.00	20.06	6025.5	0.129	2.178	0.225	27.988	27.988	20.700	7.9%

Tower Engineering Professionals, Inc.

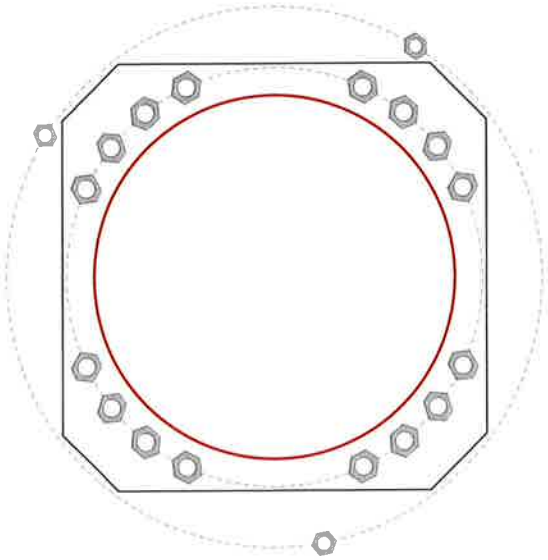
326 Tryon Road | Raleigh, NC 27603-3530 | Office: (919) 661-6351 | Fax: (919) 661-6350 | www.tepgroup.net

Monopole Base Plate Connection

Site Info	
BU #	876313
Site Name	t Johnson Ave Burnt H
Order #	446437 Rev. 5

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{er} (in)	1.75

Applied Loads	
Moment (kip-ft)	3850.00
Axial Force (kips)	57.00
Shear Force (kips)	31.00



Connection Properties

Anchor Rod Data

GROUP 1: (16) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 52" BC

GROUP 2: (3) 1-3/4" ø bolts (R71 150ksi 1-3/4" N; Fy=120 ksi, Fu=125 ksi) on 67.1" BC

pos. (deg): 58.3, 148.3, 280.3

Base Plate Data

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

Stiffener Data

N/A

Pole Data

45.1" x 0.4375" 18-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

GROUP 1:		
Pu = 191.98	ϕPn = 243.75	**Stress Rating**
Vu = 1.94	ϕVn = 73.13	**75.1%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu = 186.35	ϕPn = 269.14	**Stress Rating**
Vu = 0	ϕVn = 93.6	**65.9%**
Mu = 0	ϕMn = 108.42	**Pass**

Base Plate Summary

Max Stress (ksi):	28.06	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**59.4%**	**Pass**

Drilled Pier Foundation

BU # :	876313
Site Name:	West Johnson Ave Bur
Order Number:	446437 Rev. 5

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	3850	
Axial Force (kips)	57	
Shear Force (kips)	31	

Material Properties		
Concrete Strength, f'c:	5	ksi
Rebar Strength, Fy:	60	ksi

Pier Design Data		
Depth	25.5	ft
Ext. Above Grade	0.5	ft
Pier Section 1		
From 0.5' above grade to 6.5' below grade		
Pier Diameter	11	ft
Rebar Quantity	20	
Rebar Size	11	
Rebar Cage Diameter	73.34	in
Tie Size	5	
Pier Section 2		
From 6.5' below grade to 25.5' below grade		
Pier Diameter	7	ft
Rebar Quantity	20	
Rebar Size	11	
Rebar Cage Diameter	73.34	in
Tie Size	5	

Analysis Results	Compression	Uplift
Soil Lateral Capacity		
$D_{v=0}$ (ft from TOC)	5.29	-
Soil Safety Factor	1.91	-
Max Moment (kip-ft)	3996.59	-
Rating*	*66.4%*	-
Soil Vertical Capacity	*Compression*	*Uplift*
Skin Friction (kips)	238.26	-
End Bearing (kips)	170.77	-
Weight of Concrete (kips)	206.61	-
Total Capacity (kips)	409.03	-
Axial (kips)	263.61	-
Rating*	*61.4%*	-
Reinforced Concrete Capacity	*Compression*	*Uplift*
Critical Depth (ft from TOC)	7.01	-
Critical Moment (kip-ft)	3940.43	-
Critical Moment Capacity	5356.11	-
Rating*	*70.1%*	-

Soil Interaction Rating*	**66.4%**
Structural Foundation Rating*	**70.1%**

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

*Rating per TIA-222-H Section 15.5

Soil Profile

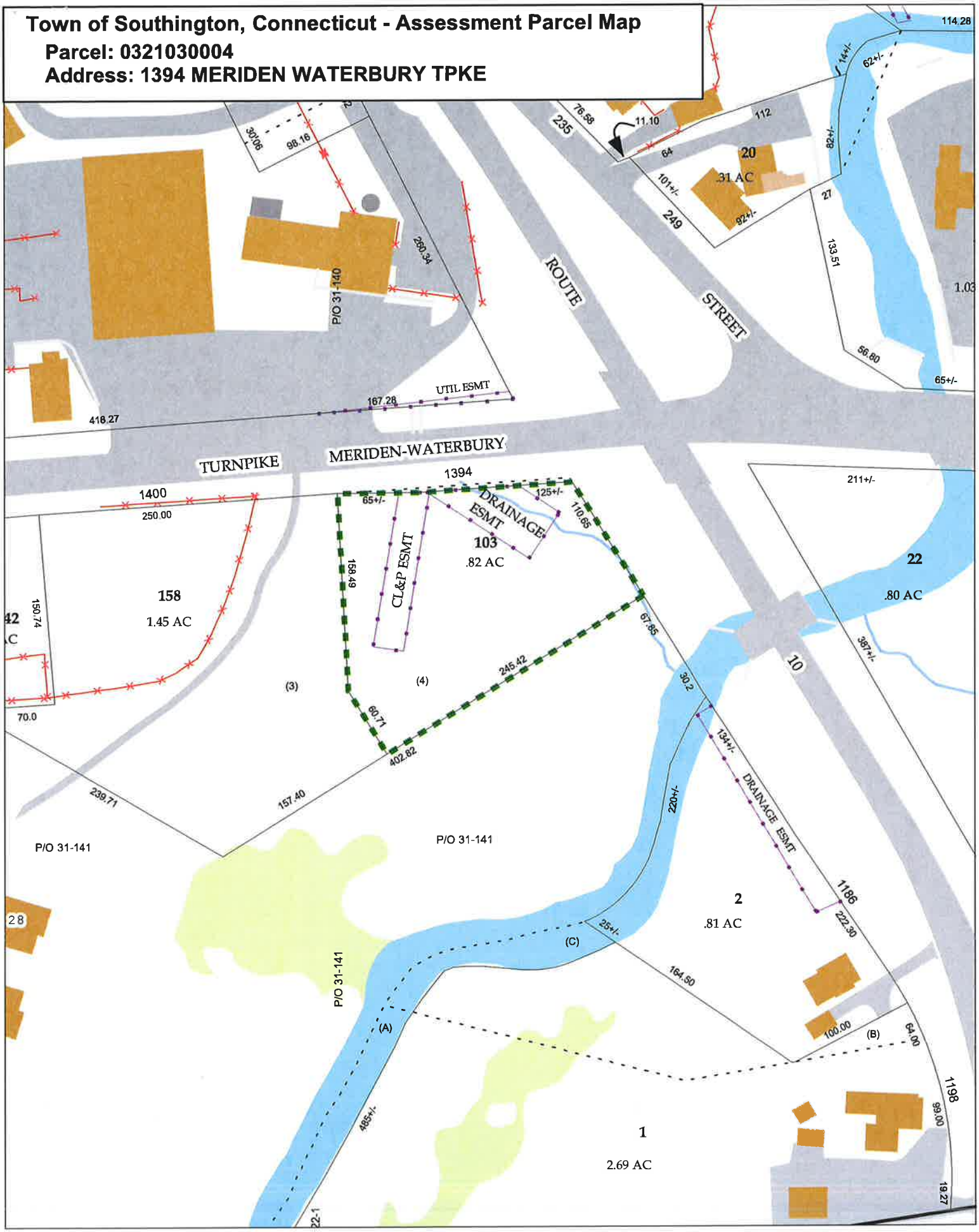
Groundwater Depth	10 ft	# of Layers	11

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	105	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
2	2	3.5	1.5	110	150	0	0	0.000	0.000	0.00	0.00			Cohesionless
3	3.5	4	0.5	110	150	0	31	0.000	0.000	0.00	0.00			Cohesionless
4	4	4.7	0.7	110	150	0	31	0.000	0.000	0.10	0.08			Cohesionless
5	4.7	6	1.3	110	150	0	31	0.000	0.000	0.10	0.08			Cohesionless
6	6	6.5	0.5	120	150	2.5	0	1.375	1.375	1.48	1.48			Cohesive
7	6.5	8	1.5	120	150	2.5	0	1.38	1.38	1.48	1.48			Cohesive
8	8	10	2	115	150	2.25	0	1.24	1.24	1.23	1.23			Cohesive
9	10	15	5	48	87.6	1	0	0.55	0.55	0.55	0.55			Cohesive
10	15	20	5	48	87.6	1.25	0	0.69	0.69	0.66	0.66			Cohesive
11	20	25.5	5.5	43	87.6	0.75	0	0.41	0.41	0.41	0.41	5.9165		Cohesive

ATTACHMENT 4

Town of Southington, Connecticut - Assessment Parcel Map

Parcel: 0321030004
Address: 1394 MERIDEN WATERBURY TPKE



Approximate Scale:

20 0 20 40 60 80 Feet

Disclaimer: This map is for informational purposes only.
All information is subject to verification by any user.
The Town of Southington and its mapping contractors
assume no legal responsibility for the information contained herein.

Map Produced November 2016

Town of Southington, CT
Property Listing Report

GIS PIN 0321030004 Account 18522

Property Information

Property Location	1394 MERIDEN WATERBURY TPKE
Owner	SOUTHINGTON TOWER DEVELOPMENT LLC
Co-Owner	%GLOBAL SIGNAL
Mailing Address	PMB331 CANONSBURG PA 15317-252
Land Use	391 Vac Com Lnd wAcc
Land Class	C
Water Service	

Sewer Service	
Census Tract	4303
Neighborhood	1135
Zoning Code	B
Acreage	0.83
Book / Page	997/1112
Lot Setting/Desc	Level
Trash Day	

Photo

No Photo Available

Sketch

Primary Construction Details

Year Built	
Stories	
Building Style	
Building Use	
Building Condition	
Floors	
Total Rooms	

Bedrooms	0
Full Bathrooms	
Half Bathrooms	
Bath Style	
Kitchen Style	
Roof Style	
Roof Cover	

Exterior Walls	
Interior Walls	
Heating Type	
Heating Fuel	
AC Type	
Gross Bldg Area	0
Total Living Area	0

Report Created On 3/28/2017

Town of Southington, CT
Property Listing Report

GIS PIN 0321030004 Account 18522

Valuation Summary (Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings		0
Outbuildings	0	0
Improvements	0	0
Extras	0	0
Land	204320	143020
Total	204320	143020

Outbuilding and Extra Items

Type	Description

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
Total Area	0	0

Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
SOUTHINGTON TOWER DEVELOPMENT LLC	997/1112	2005-01-18	90000

Report Created On 3/28/2017

ATTACHMENT 5

UNITED STATES POSTAL SERVICE®

Certificate of Mailing — Firm

Name and Address of Sender	TOTAL NO. of Pieces Listed by Sender	TOTAL NO. of Pieces Received at Post Office™	Affix Stamp Here *Postmark with Date of Receipt.*
Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	3	3	neopost 10/29/2018 US POSTAGE $002.38⁰ ZIP 06103 041L12203380
	Postmaster, per *(name of receiving employee)*		HARTFORD, CT ANN ST OCT 29 2018

USPS® Tracking Number / Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Mark Sciota, Town Manager Town of Southington 75 Main Street Southington, CT 06489				
2.	Robert Phillips, Southington Director of Planning Community Development Town of Southington 196 North Main Street Southington, CT 06489				
3.	Southington Tower Development LLC c/o Global Signal PMB 331 4017 Washington Road Canonsburg, PA 15317				
4.					
5.					
6.					