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

May 20, 2019

William Stone
Real Estate Specialist
Crown Castle
3 Corporate Park Drive, Suite 101
Clifton, NY 12065

RE: **EM-T-MOBILE-141-190429** – T-Mobile notice of intent to modify an existing telecommunications facility located at 720 Thompson Road, Thompson, Connecticut.

Dear Mr. Stone:

The Connecticut Siting Council (Council) received a notice of intent to modify the above-referenced facility on April 29, 2019. On April 30, 2019, the Council issued a letter (enclosed) stating that the request for exempt modification was incomplete because the Construction Drawings (CD) and Structural Analysis Report (SA) do not account for the proposed mount modifications, the CD references a wrong SA date and the tower modification drawings referenced in the SA were not provided. The Council recommended that Crown Castle provide an updated CD and SA that accounts for the proposed mount modifications referenced above, a CD that references the correct SA, and the tower reinforcement drawings referenced above, on or before May 31, 2019.

On May 17, 2019, the Council received a SA dated February 10, 2019 and a CD last revised May 7, 2019, which accounts for the proposed mount mods and references the correct SA date. However, the tower reinforcement drawings (PJF, 37518-0348.002.7700) dated July 25, 2018 and referenced in Table 3 on page 4 and item 4.1 on page 6 of the SA were not provided with the response.

Therefore, the exempt modification request remains incomplete at this time. The Council recommends that Crown Castle provide the tower reinforcement drawings referenced in the SA, on or before June 21, 2019. If additional time is needed to gather the requested information, please submit a written request for an extension of time prior to June 21, 2019. **Please provide an electronic version and one hard copy of the response for the incomplete request to be rendered complete and processed.**

This notice of incompletion shall have the effect of tolling the Federal Communications Commission (FCC) 60-day timeframe in accordance with Paragraph 217 of the FCC Wireless Infrastructure Report and Order issued on October 21, 2014 (FCC 14-153).

Thank you for your attention to this matter. Should you have any questions, please feel free to contact me at 860-827-2951.

Sincerely,

Melanie Bachman
Executive Director

MAB/IN/emr

Enclosure: Incomplete Letter dated April 30, 2019

c: The Honorable Ken L. Beausoleil, First Selectman, Town of Thompson
Tyra Penn-Gesek, Director of Planning and Development, Town of Thompson

STATE OF CONNECTICUT

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Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

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April 30, 2019

William Stone
Real Estate Specialist
Crown Castle
3 Corporate Park Drive, Suite 101
Clifton, NY 12065

RE: **EM-T-MOBILE-141-190429** – T-Mobile notice of intent to modify an existing telecommunications facility located at 720 Thompson Road, Thompson, Connecticut.

Dear Mr. Stone:

The Connecticut Siting Council (Council) received the tower share request for the above-referenced facility on April 29, 2019.

According to Section 16-50j-71 of the Regulations of Connecticut State Agencies, "...any modification, as defined in Section 16-50j-2a of the Regulations of Connecticut State Agencies, to an existing tower site, except as specified in Sections 16-50j-72 and 16-50j-88 of the Regulations of Connecticut State Agencies, may have a substantial adverse environmental effect."

Staff has reviewed this exempt modification request for completeness and has identified a deficiency in the Construction Drawings (CD) last revised January 30, 2019 and prepared by Infinigy Engineering. A structural note on sheet T1 of the CD references a Structural Analysis Report (SA) dated July 20, 2018; the SA provided with the request is dated February 10, 2019. Also, the CD and SA do not account for the proposed mount modifications as shown in the Structural Mount Analysis Report prepared by French and Parrello Associates, and dated April 16, 2019.

In addition, item no. 4.1) Recommendations on page 6 of the SA, references tower reinforcement drawings dated July 25, 2018, as shown in Table 3. These modification drawings are not provided with the request for exempt modification.

Therefore, the exempt modification request is incomplete at this time. The Council recommends that Crown Castle provide an updated CD and SA that accounts for the proposed mount modifications referenced above, a CD that references the correct SA, and the tower reinforcement drawings referenced above, on or before May 31, 2019. If additional time is needed to gather the requested information, please submit a written request for an extension of time prior to May 31, 2019. **Please provide an electronic version and one hard copy of the updated CD, Tower Reinforcement drawings and SA for the incomplete request to be rendered complete and processed.**

This notice of incompletion shall have the effect of tolling the Federal Communications Commission (FCC) 60-day timeframe in accordance with Paragraph 217 of the FCC Wireless Infrastructure Report and Order issued on October 21, 2014 (FCC 14-153).

Thank you for your attention to this matter. Should you have any questions, please feel free to contact me at 860-827-2951.

Sincerely,

Melanie A. Bachman
Executive Director

MAB/IN/emr

c: The Honorable Ken L. Beausoleil, First Selectman, Town of Thompson
Tyra Penn-Gesek, Director of Planning and Development, Town of Thompson

PAUL J. FORD & COMPANY

Date: **February 10, 2019**

Denice Nicholson
Crown Castle
46 Broadway
Albany, NY 12204

Paul J. Ford and Company
250 East Broad st., Suite 600
Columbus, OH 43215
(614) 221-6679

Subject:	**Structural Analysis Report**	
Carrier Designation:	***T-Mobile* Co-Locate**	
	Carrier Site Number:	CT11160B
	Carrier Site Name:	Thompson/I-395 X99_1
Crown Castle Designation:	**Crown Castle BU Number:**	828402
	Crown Castle Site Name:	Thompson/ I-395 X99_1
	Crown Castle JDE Job Number:	363294
	Crown Castle Work Order Number:	1691996
	Crown Castle Order Number:	330748 Rev. 15
Engineering Firm Designation:	**Paul J. Ford and Company Project Number:**	37519-0534.001.7805
Site Data:	**720 Thompson Rd, Thompson, Windham County, CT** **Latitude *41° 58' 39.74"*, Longitude *-71° 50' 47.55"*** **156 Foot - Monopole Tower**	

Dear Denice Nicholson,

Paul J. Ford and Company 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:

LC4.7: Modified Structure w/ Proposed Equipment Configuration **Sufficient Capacity**

This analysis utilizes an ultimate 3-second gust wind speed of 130 mph from the 2018 Connecticut State Building Code per section 1609.3 and Appendix N. Applicable Standards referenced and design criteria are listed in Section 2 – Analysis Criteria.

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

Respectfully submitted by:

Udaykiran Yerra
Structural Designer

STATE OF CONNECTICUT
JOSEPH PACHICARAH JACOB
No. PEN 22731
LICENSED
PROFESSIONAL ENGINEER

MAR 21 2019

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 156 ft Monopole tower designed by FRED A. NUDD CORPORATION.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	130 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.5 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)
143.0	143.0	3	ericsson	RADIO 4449 B12/B71	1 12	1 5/8 1 1/4
		3	rfs celwave	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe		
		3	rfs celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		6	rfs celwave	ATMAA1412D-1A20		
		1	tower mounts	Commscope MC-PK12L4-B		

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)
154.0	154.0	2	andrew	RR90-17-VDPL2 w/ Mount Pipe	4	1 5/8
		2	tower mounts	Pipe Mount [PM 602-1]		
150.0	150.0	3	alcatel lucent	PCS 1900MHZ 4X45W-65MHZ	4	1 1/4
		6	alcatel lucent	RRH2X50-800		
		3	alcatel lucent	TD-RRH8X20-25		
		3	commscope	NNVV-65B-R4		
		3	rfs celwave	APXVTM14-ALU-I20		
		2	tower mounts	Pipe Mount [PM 601-3]		
120.0	120.0	2	decibel	980H120T4E-M w/ Mount Pipe	2	1 5/8
		1	tower mounts	Platform Mount [LP 1201-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH, 1424JV1600, 3/25/2014	4726392	CCISITES
4-POST-MODIFICATION INSPECTION	Robert E. Adar, P.E., 10/11/2005	3675131	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	Fred A. Nudd, 98-5979-1, 4/29/1998	3918434	CCISITES
4-TOWER MANUFACTURER MAPPING	FDH, 1424CT1500, 3/21/2014	3508519	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	APT, CT107593, 5/6/2005	3675126	CCISITES
4-PROPOSED TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37518-0348.002.7700, 7/25/2018	7744596	CCISITES

3.1) Analysis Method

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

3.2) Assumptions

1) Tower and structures were built in accordance with the manufacturer's specifications.
2) The tower and structures have been maintained in accordance with the manufacturer's specification.
3) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) The monopole manufacturer drawings did not match the geometry of the FDH tower mapping (CCI Ref# 3508519). We have based our geometry off the FDH tower mapping; we have also assumed the pole shaft and base plate steel yield strength(s) (Fy) as shown in the attached calculations. Anchor rods are assumed to be 2.0" diam, (Fu = 58 ksi, Fy = 42 ksi).
5) Monopole was modified in conformance with the referenced modification drawings.
6) Monopole will be modified in conformance with the referenced proposed modification drawings.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L1	156 - 151	Pole	TP10.75x10.75x0.365	Pole	3.2%	Pass
L2	151 - 146	Pole	TP10.75x10.75x0.365	Pole	24.9%	Pass
L3	146 - 144.5	Pole	TP10.75x10.75x0.365	Pole	32.0%	Pass
L4	144.5 - 144	Pole	TP18x10.75x0.365	Pole	12.0%	Pass
L5	144 - 139	Pole	TP18.944x18x0.25	Pole	38.5%	Pass
L6	139 - 134	Pole	TP19.887x18.944x0.25	Pole	58.9%	Pass
L7	134 - 129	Pole	TP20.831x19.887x0.25	Pole	76.2%	Pass
L8	129 - 128.25	Pole	TP20.972x20.831x0.25	Pole	78.6%	Pass
L9	128.25 - 128	Pole + Reinf.	TP21.019x20.972x0.575	Pole	35.8%	Pass
L10	128 - 123	Pole + Reinf.	TP21.963x21.019x0.5625	Pole	43.6%	Pass
L11	123 - 118	Pole + Reinf.	TP22.906x21.963x0.55	Pole	51.5%	Pass
L12	118 - 113	Pole + Reinf.	TP23.85x22.906x0.525	Pole	59.7%	Pass
L13	113 - 108	Pole + Reinf.	TP24.793x23.85x0.5125	Pole	67.2%	Pass
L14	108 - 103	Pole + Reinf.	TP25.737x24.793x0.5	Pole	74.2%	Pass
L15	103 - 98	Pole + Reinf.	TP26.68x25.737x0.4938	Pole	80.7%	Pass
L16	98 - 96.5	Pole + Reinf.	TP27.624x26.68x0.4875	Pole	82.5%	Pass
L17	96.5 - 92	Pole + Reinf.	TP27.313x26.464x0.7	Pole	64.9%	Pass
L18	92 - 87	Pole + Reinf.	TP28.257x27.313x0.675	Pole	70.0%	Pass
L19	87 - 82	Pole + Reinf.	TP29.201x28.257x0.65	Pole	75.1%	Pass
L20	82 - 77.5	Pole + Reinf.	TP30.05x29.201x0.6375	Pole	79.6%	Pass
L21	77.5 - 72.5	Pole + Reinf.	TP30.994x30.05x0.6875	Pole	74.0%	Pass
L22	72.5 - 70.58	Pole + Reinf.	TP31.356x30.994x0.6875	Pole	75.3%	Pass
L23	70.58 - 70.33	Pole + Reinf.	TP31.403x31.356x0.6875	Pole	75.4%	Pass
L24	70.33 - 67.08	Pole + Reinf.	TP32.016x31.403x0.675	Pole	77.5%	Pass
L25	67.08 - 66.83	Pole + Reinf.	TP32.063x32.016x0.975	Pole	55.6%	Pass
L26	66.83 - 61.83	Pole + Reinf.	TP33.007x32.063x0.95	Pole	58.1%	Pass
L27	61.83 - 61.75	Pole + Reinf.	TP33.824x33.007x0.95	Pole	58.1%	Pass
L28	61.75 - 56.75	Pole + Reinf.	TP33.341x32.397x0.9375	Pole	62.1%	Pass
L29	56.75 - 51.75	Pole + Reinf.	TP34.284x33.341x0.9125	Pole	64.4%	Pass
L30	51.75 - 46.75	Pole + Reinf.	TP35.228x34.284x0.9	Pole	67.2%	Pass
L31	46.75 - 41.75	Pole + Reinf.	TP36.171x35.228x0.8875	Pole	70.0%	Pass
L32	41.75 - 39.8	Pole + Reinf.	TP36.539x36.171x0.875	Pole	71.1%	Pass
L33	39.8 - 39.33	Pole + Reinf.	TP36.628x36.539x0.95	Pole	65.2%	Pass
L34	39.33 - 39.08	Pole + Reinf.	TP36.675x36.628x0.9375	Pole	65.3%	Pass
L35	39.08 - 38.33	Pole + Reinf.	TP36.816x36.675x0.9375	Pole	65.6%	Pass
L36	38.33 - 38.08	Pole + Reinf.	TP36.864x36.816x0.8875	Pole	70.8%	Pass
L37	38.08 - 33.08	Pole + Reinf.	TP37.807x36.864x0.875	Pole	72.7%	Pass
L38	33.08 - 30.75	Pole + Reinf.	TP38.247x37.807x0.8625	Pole	73.6%	Pass
L39	30.75 - 30.5	Pole + Reinf.	TP38.294x38.247x0.9375	Pole	68.0%	Pass
L40	30.5 - 25.5	Pole + Reinf.	TP39.238x38.294x0.925	Pole	69.8%	Pass
L41	25.5 - 20.5	Pole + Reinf.	TP40.182x39.238x0.9	Pole	71.5%	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L42	20.5 - 15.5	Pole + Reinf.	TP41.125x40.182x0.8875	Pole	73.1%	Pass
L43	15.5 - 15.05	Pole + Reinf.	TP42.201x41.125x0.8875	Pole	73.3%	Pass
L44	15.05 - 8.8	Pole + Reinf.	TP41.639x40.46x0.875	Pole	77.4%	Pass
L45	8.8 - 8.25	Pole + Reinf.	TP41.743x41.639x0.875	Pole	77.6%	Pass
L46	8.25 - 8	Pole + Reinf.	TP41.79x41.743x0.875	Pole	78.3%	Pass
L47	8 - 4.25	Pole + Reinf.	TP42.498x41.79x0.875	Pole	79.8%	Pass
L48	4.25 - 4	Pole + Reinf.	TP42.545x42.498x1.05	Pole	66.8%	Pass
L49	4 - 3	Pole + Reinf.	TP42.734x42.545x1.05	Pole	67.2%	Pass
L50	3 - 2.75	Pole + Reinf.	TP42.781x42.734x1.15	Pole	62.2%	Pass
L51	2.75 - 0	Pole + Reinf.	TP43.3x42.781x1.125	Pole	63.2%	Pass
					Summary	
				Pole	82.5%	Pass
				Reinforcement	71.2%	Pass
				Overall	82.5%	Pass

Table 5 - Tower Component Stresses vs. Capacity

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	89.9	Pass
1	Base Plate	0	89.6	Pass
1	Base Foundation Steel	0	91.9	Pass
1	Base Foundation Soil Interaction	0	28.8	Pass
1	Flange Connection	144	9.8	Pass

Structure Rating (max from all components) =	91.9%

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

4.1) Recommendations

The monopole and its foundation will have sufficient capacity to carry the proposed loading configuration once the proposed modifications are installed.

- Install the proposed modifications per the referenced proposed drawings.

APPENDIX A

TNXTOWER OUTPUT

Tower Input Data

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

- Tower is located in Windham County, Connecticut.
- Tower base elevation above sea level: 622.0000 ft.
- Basic wind speed of 130 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height 0.0000 ft.
- Nominal ice thickness of 1.2750 in.
- Ice thickness is considered to increase with height.
- Ice density of 56.00 pcf.
- A wind speed of 50 mph is used in combination with ice.
- Temperature drop of 50 °F.
- Deflections calculated using a wind speed of 60 mph.
- 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*	*Section Length*	*Splice Length*	*Number of Sides*	*Top Diameter*	*Bottom Diameter*	*Wall Thickness*	*Bend Radius*	*Pole Grade*
	ft	*ft*	*ft*		*in*	*in*	*in*	*in*	
L1	156.0000-	5.0000	0.00	Round	10.7500	10.7500	0.3650		A53-B-35

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
	151.0000								(35 ksi)
L2	151.0000-146.0000	5.0000	0.00	Round	10.7500	10.7500	0.3650		A53-B-35 (35 ksi)
L3	146.0000-144.5000	1.5000	0.00	Round	10.7500	10.7500	0.3650		A53-B-35 (35 ksi)
L4	144.5000-144.0000	0.5000	0.00	Round	10.7500	18.0000	0.3650		A53-B-35 (35 ksi)
L5	144.0000-139.0000	5.0000	0.00	12	18.0000	18.9435	0.2500	1.0000	A36 (36 ksi)
L6	139.0000-134.0000	5.0000	0.00	12	18.9435	19.8871	0.2500	1.0000	A36 (36 ksi)
L7	134.0000-129.0000	5.0000	0.00	12	19.8871	20.8306	0.2500	1.0000	A36 (36 ksi)
L8	129.0000-128.2500	0.7500	0.00	12	20.8306	20.9721	0.2500	1.0000	A36 (36 ksi)
L9	128.2500-128.0000	0.2500	0.00	12	20.9721	21.0193	0.5750	2.3000	A36 (36 ksi)
L10	128.0000-123.0000	5.0000	0.00	12	21.0193	21.9628	0.5625	2.2500	A36 (36 ksi)
L11	123.0000-118.0000	5.0000	0.00	12	21.9628	22.9064	0.5500	2.2000	A36 (36 ksi)
L12	118.0000-113.0000	5.0000	0.00	12	22.9064	23.8499	0.5250	2.1000	A36 (36 ksi)
L13	113.0000-108.0000	5.0000	0.00	12	23.8499	24.7934	0.5125	2.0500	A36 (36 ksi)
L14	108.0000-103.0000	5.0000	0.00	12	24.7934	25.7369	0.5000	2.0000	A36 (36 ksi)
L15	103.0000-98.0000	5.0000	0.00	12	25.7369	26.6805	0.4938	1.9750	A36 (36 ksi)
L16	98.0000-93.0000	5.0000	3.50	12	26.6805	27.6240	0.4875	1.9500	A36 (36 ksi)
L17	93.0000-92.0000	4.5000	0.00	12	26.4635	27.3130	0.7000	2.8000	A36 (36 ksi)
L18	92.0000-87.0000	5.0000	0.00	12	27.3130	28.2568	0.6750	2.7000	A36 (36 ksi)
L19	87.0000-82.0000	5.0000	0.00	12	28.2568	29.2006	0.6500	2.6000	A36 (36 ksi)
L20	82.0000-77.5000	4.5000	0.00	12	29.2006	30.0500	0.6375	2.5500	A36 (36 ksi)
L21	77.5000-72.5000	5.0000	0.00	12	30.0500	30.9935	0.6875	2.7500	A36 (36 ksi)
L22	72.5000-70.5800	1.9200	0.00	12	30.9935	31.3558	0.6875	2.7500	A36 (36 ksi)
L23	70.5800-70.3300	0.2500	0.00	12	31.3558	31.4030	0.6875	2.7500	A36 (36 ksi)
L24	70.3300-67.0800	3.2500	0.00	12	31.4030	32.0163	0.6750	2.7000	A36 (36 ksi)
L25	67.0800-66.8300	0.2500	0.00	12	32.0163	32.0634	0.9750	3.9000	A36 (36 ksi)
L26	66.8300-61.8300	5.0000	0.00	12	32.0634	33.0069	0.9500	3.8000	A36 (36 ksi)
L27	61.8300-57.5000	4.3300	4.25	12	33.0069	33.8240	0.9500	3.8000	A36 (36 ksi)
L28	57.5000-56.7500	5.0000	0.00	12	32.3970	33.3405	0.9375	3.7500	A36 (36 ksi)
L29	56.7500-51.7500	5.0000	0.00	12	33.3405	34.2840	0.9125	3.6500	A36 (36 ksi)
L30	51.7500-46.7500	5.0000	0.00	12	34.2840	35.2275	0.9000	3.6000	A36 (36 ksi)
L31	46.7500-41.7500	5.0000	0.00	12	35.2275	36.1710	0.8875	3.5500	A36 (36 ksi)
L32	41.7500-39.8000	1.9500	0.00	12	36.1710	36.5390	0.8750	3.5000	A36 (36 ksi)
L33	39.8000-39.3300	0.4700	0.00	12	36.5390	36.6277	0.9500	3.8000	A36 (36 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L34	39.3300-39.0800	0.2500	0.00	12	36.6277	36.6749	0.9375	3.7500	A36 (36 ksi)
L35	39.0800-38.3300	0.7500	0.00	12	36.6749	36.8164	0.9375	3.7500	A36 (36 ksi)
L36	38.3300-38.0800	0.2500	0.00	12	36.8164	36.8636	0.8875	3.5500	A36 (36 ksi)
L37	38.0800-33.0800	5.0000	0.00	12	36.8636	37.8073	0.8750	3.5000	A36 (36 ksi)
L38	33.0800-30.7500	2.3300	0.00	12	37.8073	38.2470	0.8625	3.4500	A36 (36 ksi)
L39	30.7500-30.5000	0.2500	0.00	12	38.2470	38.2942	0.9375	3.7500	A36 (36 ksi)
L40	30.5000-25.5000	5.0000	0.00	12	38.2942	39.2379	0.9250	3.7000	A36 (36 ksi)
L41	25.5000-20.5000	5.0000	0.00	12	39.2379	40.1816	0.9000	3.6000	A36 (36 ksi)
L42	20.5000-15.5000	5.0000	0.00	12	40.1816	41.1252	0.8875	3.5500	A36 (36 ksi)
L43	15.5000-9.8000	5.7000	5.25	12	41.1252	42.2010	0.8875	3.5500	A36 (36 ksi)
L44	9.8000-8.8000	6.2500	0.00	12	40.4601	41.6395	0.8750	3.5000	A36 (36 ksi)
L45	8.8000-8.2500	0.5500	0.00	12	41.6395	41.7433	0.8750	3.5000	A36 (36 ksi)
L46	8.2500-8.0000	0.2500	0.00	12	41.7433	41.7904	0.8750	3.5000	A36 (36 ksi)
L47	8.0000-4.2500	3.7500	0.00	12	41.7904	42.4980	0.8750	3.5000	A36 (36 ksi)
L48	4.2500-4.0000	0.2500	0.00	12	42.4980	42.5452	1.0500	4.2000	A36 (36 ksi)
L49	4.0000-3.0000	1.0000	0.00	12	42.5452	42.7339	1.0500	4.2000	A36 (36 ksi)
L50	3.0000-2.7500	0.2500	0.00	12	42.7339	42.7811	1.1500	4.6000	A36 (36 ksi)
L51	2.7500-0.0000	2.7500		12	42.7811	43.3000	1.1250	4.5000	A36 (36 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	11.9083	160.7342	3.6739	5.3750	29.9040	321.4685	5.9506	0.0000	0
	10.7500	11.9083	160.7342	3.6739	5.3750	29.9040	321.4685	5.9506	0.0000	0
L2	10.7500	11.9083	160.7342	3.6739	5.3750	29.9040	321.4685	5.9506	0.0000	0
	10.7500	11.9083	160.7342	3.6739	5.3750	29.9040	321.4685	5.9506	0.0000	0
L3	10.7500	11.9083	160.7342	3.6739	5.3750	29.9040	321.4685	5.9506	0.0000	0
	10.7500	11.9083	160.7342	3.6739	5.3750	29.9040	321.4685	5.9506	0.0000	0
L4	10.7500	11.9083	160.7342	3.6739	5.3750	29.9040	321.4685	5.9506	0.0000	0
	18.0000	20.2217	786.4392	6.2362	9.0000	87.3821	1572.8784	10.1048	0.0000	0
L5	18.5468	14.2888	574.6149	6.3545	9.3240	61.6275	1164.3256	7.0325	4.1540	16.616
	19.5236	15.0483	671.2058	6.6923	9.8127	68.4014	1360.0450	7.4063	4.4069	17.627
L6	19.5236	15.0483	671.2058	6.6923	9.8127	68.4014	1360.0450	7.4063	4.4069	17.627
	20.5004	15.8078	778.0566	7.0301	10.3015	75.5285	1576.5535	7.7801	4.6597	18.639
L7	20.5004	15.8078	778.0566	7.0301	10.3015	75.5285	1576.5535	7.7801	4.6597	18.639
	21.4772	16.5674	895.6847	7.3679	10.7902	83.0088	1814.9001	8.1540	4.9126	19.65
L8	21.4772	16.5674	895.6847	7.3679	10.7902	83.0088	1814.9001	8.1540	4.9126	19.65
	21.6237	16.6813	914.2906	7.4185	10.8636	84.1613	1852.6006	8.2100	4.9505	19.802
L9	21.5091	37.7653	2005.4696	7.3022	10.8636	184.6052	4063.6252	18.5869	4.0795	7.095
	21.5579	37.8526	2019.4171	7.3191	10.8880	185.4719	4091.8864	18.6299	4.0922	7.117
L10	21.5623	37.0524	1979.1425	7.3235	10.8880	181.7729	4010.2793	18.2360	4.1257	7.335
	22.5392	38.7613	2265.8199	7.6613	11.3767	199.1624	4591.1655	19.0772	4.3785	7.784

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
L11	22.5436	37.9221	2219.3528	7.6658	11.3767	195.0781	4497.0106	18.6641	4.4120	8.022
	23.5204	39.5931	2525.8490	8.0036	11.8655	212.8735	5118.0549	19.4865	4.6649	8.482
L12	23.5292	37.8357	2419.1352	8.0125	11.8655	203.8799	4901.8237	18.6216	4.7319	9.013
	24.5060	39.4307	2738.1642	8.3503	12.3542	221.6376	5548.2631	19.4066	4.9848	9.495
L13	24.5104	38.5125	2677.2695	8.3548	12.3542	216.7086	5424.8739	18.9547	5.0183	9.792
	25.4872	40.0696	3015.3010	8.6926	12.8430	234.7819	6109.8174	19.7210	5.2711	10.285
L14	25.4916	39.1124	2946.3028	8.6970	12.8430	229.4095	5970.0082	19.2499	5.3046	10.609
	26.4685	40.6315	3303.1018	9.0348	13.3317	247.7623	6692.9798	19.9976	5.5575	11.115
L15	26.4707	40.1335	3264.2371	9.0371	13.3317	244.8471	6614.2293	19.7525	5.5743	11.29
	27.4475	41.6336	3644.1168	9.3748	13.8205	263.6751	7383.9687	20.4908	5.8271	11.802
L16	27.4497	41.1164	3600.5656	9.3771	13.8205	260.5238	7295.7221	20.2362	5.8439	11.987
	28.4265	42.5975	4003.8513	9.7149	14.3092	279.8090	8112.8882	20.9652	6.0967	12.506
L17	27.8341	58.0710	4919.8959	9.2233	13.7081	358.9041	9969.0430	28.5808	5.2162	7.452
	28.0295	59.9856	5422.7459	9.5274	14.1481	383.2841	10987.9535	29.5231	5.4439	7.777
L18	28.0383	57.8976	5243.8268	9.5364	14.1481	370.6379	10625.4147	28.4954	5.5109	8.164
	29.0154	59.9490	5821.1898	9.8743	14.6370	397.7036	11795.3086	29.5051	5.7638	8.539
L19	29.0243	57.7810	5620.8466	9.8832	14.6370	384.0162	11389.3591	28.4380	5.8308	8.97
	30.0014	59.7563	6217.2691	10.2211	15.1259	411.0347	12597.8728	29.4103	6.0838	9.36
L20	30.0058	58.6328	6105.7188	10.2256	15.1259	403.6600	12371.8417	28.8573	6.1173	9.596
	30.8852	60.3765	6666.8062	10.5297	15.5659	428.2956	13508.7569	29.7155	6.3449	9.953
L21	30.8675	65.0012	7153.0888	10.5118	15.5659	459.5358	14494.0971	31.9916	6.2109	9.034
	31.8443	67.0899	7865.0300	10.8495	16.0546	489.8916	15936.6830	33.0196	6.4638	9.402
L22	31.8443	67.0899	7865.0300	10.8495	16.0546	489.8916	15936.6830	33.0196	6.4638	9.402
	32.2194	67.8920	8150.4916	10.9793	16.2423	501.8063	16515.1056	33.4144	6.5609	9.543
L23	32.2194	67.8920	8150.4916	10.9793	16.2423	501.8063	16515.1056	33.4144	6.5609	9.543
	32.2682	67.9964	8188.1615	10.9961	16.2667	503.3682	16591.4352	33.4658	6.5735	9.561
L24	32.2726	66.7873	8049.1049	11.0006	16.2667	494.8197	16309.6687	32.8707	6.6070	9.788
	32.9076	68.1202	8540.7243	11.2202	16.5844	514.9848	17305.8229	33.5267	6.7714	10.032
L25	32.8017	97.4540	11985.7223	11.1128	16.5844	722.7098	24286.3228	47.9639	5.9674	6.12
	32.8506	97.6021	12040.4513	11.1297	16.6089	724.9416	24397.2187	48.0368	5.9800	6.133
L26	32.8594	95.1760	11760.0470	11.1386	16.6089	708.0588	23829.0436	46.8427	6.0470	6.365
	33.8362	98.0621	12862.6713	11.4764	17.0976	752.3091	26063.2594	48.2632	6.2999	6.631
L27	33.8362	98.0621	12862.6713	11.4764	17.0976	752.3091	26063.2594	48.2632	6.2999	6.631
	34.6821	100.5616	13871.4889	11.7689	17.5208	791.7141	28107.3973	49.4933	6.5188	6.862
L28	34.0394	94.9684	11996.9150	11.2625	16.7817	714.8825	24309.0023	46.7406	6.1699	6.581
	34.1859	97.8166	13109.0085	11.6003	17.2704	759.0452	26562.4053	48.1424	6.4228	6.851
L29	34.1948	95.2817	12788.9907	11.6092	17.2704	740.5153	25913.9625	46.8947	6.4898	7.112
	35.1715	98.0539	13938.0831	11.9470	17.7591	784.8405	28242.3352	48.2591	6.7426	7.389
L30	35.1760	96.7469	13762.6041	11.9515	17.7591	774.9595	27886.7672	47.6159	6.7761	7.529
	36.1527	99.4812	14962.772	12.2893	18.2479	819.9740	30318.633	48.9616	7.0290	7.81

Section	Tip Dia. in	Area in²	I in⁴	r in	C in	I/C in³	J in⁴	It/Q in²	w in	w/t
			5				7			
L31	36.1571	98.1352	14771.080	12.2937	18.2479	809.4691	29930.214	48.2992	7.0625	7.958
			7				1			
	37.1339	100.8315	16022.357	12.6315	18.7366	855.1371	32465.640	49.6262	7.3153	8.243
			4				1			
L32	37.1383	99.4466	15813.485	12.6360	18.7366	843.9893	32042.408	48.9446	7.3488	8.399
			4				7			
	37.5193	100.4833	16313.232	12.7677	18.9272	861.8935	33055.032	49.4548	7.4475	8.511
			6				0			
L33	37.4928	108.8668	17600.004	12.7409	18.9272	929.8788	35662.381	53.5809	7.2465	7.628
			6				0			
	37.5847	109.1381	17731.936	12.7726	18.9732	934.5804	35929.709	53.7145	7.2702	7.653
			1				9			
L34	37.5891	107.7398	17517.020	12.7771	18.9732	923.2531	35494.231	53.0263	7.3037	7.791
			0				6			
	37.6379	107.8822	17586.585	12.7940	18.9976	925.7271	35635.189	53.0964	7.3164	7.804
			2				6			
L35	37.6379	107.8822	17586.585	12.7940	18.9976	925.7271	35635.189	53.0964	7.3164	7.804
			2				6			
	37.7845	108.3095	17796.386	12.8447	19.0709	933.1690	36060.304	53.3067	7.3543	7.845
			8				6			
L36	37.8021	102.6759	16917.778	12.8626	19.0709	887.0984	34280.005	50.5340	7.4883	8.438
			1				1			
	37.8510	102.8108	16984.516	12.8795	19.0954	889.4580	34415.235	50.6003	7.5010	8.452
			5				2			
L37	37.8554	101.3979	16762.758	12.8839	19.0954	877.8448	33965.893	49.9050	7.5345	8.611
			7				7			
	38.8323	104.0567	18116.258	13.2218	19.5842	925.0458	36708.451	51.2136	7.7874	8.9
			8				8			
L38	38.8367	102.6049	17875.593	13.2262	19.5842	912.7570	36220.798	50.4990	7.8209	9.068
			2				1			
	39.2920	103.8262	18521.533	13.3837	19.8120	934.8661	37529.648	51.1001	7.9387	9.204
			6				6			
L39	39.2655	112.6282	20011.179	13.3568	19.8120	1010.0552	40548.074	55.4322	7.7377	8.254
			0				0			
	39.3144	112.7706	20087.195	13.3737	19.8364	1012.6429	40702.104	55.5023	7.7504	8.267
			7				3			
L40	39.3188	111.3042	19839.268	13.3782	19.8364	1000.1443	40199.736	54.7806	7.7839	8.415
			4				5			
	40.2957	114.1149	21380.516	13.7160	20.3252	1051.9203	43322.722	56.1639	8.0368	8.688
			4				8			
L41	40.3046	111.1032	20843.413	13.7250	20.3252	1025.4948	42234.407	54.6816	8.1038	9.004
			8				3			
	41.2815	113.8379	22420.757	14.0628	20.8140	1077.1937	45430.533	56.0276	8.3567	9.285
			4				0			
L42	41.2859	112.2926	22130.471	14.0673	20.8140	1063.2470	44842.334	55.2670	8.3902	9.454
			3				8			
	42.2629	114.9893	23763.492	14.4051	21.3029	1115.5070	48151.279	56.5943	8.6431	9.739
			9				2			
L43	42.2629	114.9893	23763.492	14.4051	21.3029	1115.5070	48151.279	56.5943	8.6431	9.739
			9				2			
	43.3766	118.0637	25720.899	14.7902	21.8601	1176.6130	52117.515	58.1073	8.9314	10.064
			4				5			
L44	42.6044	111.5312	22307.287	14.1715	20.9584	1064.3624	45200.611	54.8922	8.4983	9.712
			3				8			
	42.7997	114.8540	24361.045	14.5937	21.5693	1129.4337	49362.081	56.5276	8.8144	10.074
			0				9			
L45	42.7997	114.8540	24361.045	14.5937	21.5693	1129.4337	49362.081	56.5276	8.8144	10.074
			0				9			
	42.9071	115.1464	24547.580	14.6308	21.6230	1135.2525	49740.054	56.6715	8.8422	10.105
			9				1			
L46	42.9071	115.1464	24547.580	14.6308	21.6230	1135.2525	49740.054	56.6715	8.8422	10.105
			9				1			
	42.9560	115.2793	24632.682	14.6477	21.6475	1137.9023	49912.493	56.7369	8.8548	10.12
			7				3			
L47	42.9560	115.2793	24632.682	14.6477	21.6475	1137.9023	49912.493	56.7369	8.8548	10.12

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
			7				3			
	43.6886	117.2729	25932.927	14.9011	22.0140	1178.0204	52547.141	57.7182	9.0445	10.337
			5				9			
L48	43.6268	140.1359	30728.644	14.8384	22.0140	1395.8689	62264.564	68.9706	8.5755	8.167
			2				1			
	43.6757	140.2953	30833.684	14.8553	22.0384	1399.0875	62477.405	69.0491	8.5881	8.179
			9				0			
L49	43.6757	140.2953	30833.684	14.8553	22.0384	1399.0875	62477.405	69.0491	8.5881	8.179
			9				0			
	43.8710	140.9333	31256.236	14.9228	22.1362	1411.9985	63333.609	69.3631	8.6387	8.227
			8				7			
L50	43.8357	153.9852	33987.236	14.8870	22.1362	1535.3712	68867.354	75.7869	8.3707	7.279
			1				7			
	43.8846	154.1599	34103.035	14.9039	22.1606	1538.9036	69101.996	75.8728	8.3833	7.29
			7				0			
L51	43.8934	150.8992	33421.803	14.9129	22.1606	1508.1630	67721.635	74.2680	8.4503	7.511
			7				5			
	44.4306	152.7789	34686.431	15.0986	22.4294	1546.4716	70284.113	75.1931	8.5894	7.635
			2				5			

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 156.0000-151.0000				1	1	1			
L2 151.0000-146.0000				1	1	1			
L3 146.0000-144.5000				1	1	1			
L4 144.5000-144.0000				1	1	1			
L5 144.0000-139.0000				1	1	1			
L6 139.0000-134.0000				1	1	1			
L7 134.0000-129.0000				1	1	1			
L8 129.0000-128.2500				1	1	1			
L9 128.2500-128.0000				1	1	0.917905			
L10 128.0000-123.0000				1	1	0.915981			
L11 123.0000-118.0000				1	1	0.915921			
L12 118.0000-113.0000				1	1	0.938956			
L13 113.0000-108.0000				1	1	0.942941			
L14 108.0000-103.0000				1	1	0.948594			
L15 103.0000-98.0000				1	1	0.944005			
L16 98.0000-93.0000				1	1	0.951143			
L17 93.0000-92.0000				1	1	0.895321			

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
L18 92.0000-87.0000				1	1	0.908542			
L19 87.0000-82.0000				1	1	0.924185			
L20 82.0000-77.5000				1	1	0.926017			
L21 77.5000-72.5000				1	1	0.93596			
L22 72.5000-70.5800				1	1	0.930273			
L23 70.5800-70.3300				1	1	0.929542			
L24 70.3300-67.0800				1	1	0.936911			
L25 67.0800-66.8300				1	1	0.904489			
L26 66.8300-61.8300				1	1	0.909927			
L27 61.8300-57.5000				1	1	0.909654			
L28 57.5000-56.7500				1	1	0.915643			
L29 56.7500-51.7500				1	1	0.92311			
L30 51.7500-46.7500				1	1	0.919409			
L31 46.7500-41.7500				1	1	0.916512			
L32 41.7500-39.8000				1	1	0.923373			
L33 39.8000-39.3300				1	1	0.91724			
L34 39.3300-39.0800				1	1	0.928445			
L35 39.0800-38.3300				1	1	0.92636			
L36 38.3300-38.0800				1	1	0.952109			
L37 38.0800-33.0800				1	1	0.951659			
L38 33.0800-30.7500				1	1	0.958886			
L39 30.7500-30.5000				1	1	0.94994			
L40 30.5000-25.5000				1	1	0.948734			
L41 25.5000-20.5000				1	1	0.961052			
L42 20.5000-15.5000				1	1	0.961339			
L43 15.5000-9.8000				1	1	0.960204			
L44 9.8000-8.8000				1	1	0.967879			
L45 8.8000-8.2500				1	1	0.966509			
L46 8.2500-8.0000				1	1	1.03647			
L47 8.0000-4.2500				1	1	1.02614			
L48 4.2500-4.0000				1	1	0.938457			
L49 4.0000-				1	1	0.935825			

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
3.0000 L50 3.0000-2.7500				1	1	0.904623			
L51 2.7500-0.0000				1	1	0.916902			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
1 1/4" Flat Reinforcement	B	No	No	CaAa (Out Of Face)	100.6600 - 0.0000	1	No Ice	0.2083	0.00
							1/2" Ice	0.3194	0.00
							1" Ice	0.4306	0.00
							2" Ice	0.6528	0.00
1" Flat Reinforcement	B	No	No	CaAa (Out Of Face)	130.7500 - 100.6600	1	No Ice	0.1667	0.00
							1/2" Ice	0.2778	0.00
							1" Ice	0.3889	0.00
							2" Ice	0.6111	0.00
1 1/4" Flat Reinforcement	B	No	No	CaAa (Out Of Face)	65.5833 - 0.0000	1	No Ice	0.2083	0.00
							1/2" Ice	0.3194	0.00
							1" Ice	0.4306	0.00
							2" Ice	0.6528	0.00
****									
LDF7-50A(1-5/8)	B	No	No	Inside Pole	154.0000 - 0.0000	4	No Ice	0.0000	0.82
							1/2" Ice	0.0000	0.82
							1" Ice	0.0000	0.82
							2" Ice	0.0000	0.82
HB114-1-0813U4-M5J(1-1/4)	B	No	No	Inside Pole	150.0000 - 0.0000	3	No Ice	0.0000	1.20
							1/2" Ice	0.0000	1.20
							1" Ice	0.0000	1.20
							2" Ice	0.0000	1.20
HB114-13U3M12-XXXF(1-1/4)	B	No	No	Inside Pole	150.0000 - 0.0000	1	No Ice	0.0000	0.99
							1/2" Ice	0.0000	0.99
							1" Ice	0.0000	0.99
							2" Ice	0.0000	0.99
HB114-U6S12-XXX-LI(1-1/4)	B	No	No	Inside Pole	143.0000 - 0.0000	12	No Ice	0.0000	1.70
							1/2" Ice	0.0000	1.70
							1" Ice	0.0000	1.70
							2" Ice	0.0000	1.70
LDF7-50A(1-5/8)	B	No	No	Inside Pole	143.0000 - 0.0000	1	No Ice	0.0000	0.82
							1/2" Ice	0.0000	0.82
							1" Ice	0.0000	0.82
							2" Ice	0.0000	0.82

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	156.0000-151.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L2	151.0000-146.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.03
		C	0.000	0.000	0.000	0.000	0.00
L3	146.0000-144.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.00
L4	144.5000-144.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L5	144.0000-139.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.12
		C	0.000	0.000	0.000	0.000	0.00
L6	139.0000-134.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.15
		C	0.000	0.000	0.000	0.000	0.00
L7	134.0000-129.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.292	0.15
		C	0.000	0.000	0.000	0.000	0.00
L8	129.0000-128.2500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.125	0.02
		C	0.000	0.000	0.000	0.000	0.00
L9	128.2500-128.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.042	0.01
		C	0.000	0.000	0.000	0.000	0.00
L10	128.0000-123.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.833	0.15
		C	0.000	0.000	0.000	0.000	0.00
L11	123.0000-118.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.833	0.15
		C	0.000	0.000	0.000	0.000	0.00
L12	118.0000-113.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.833	0.15
		C	0.000	0.000	0.000	0.000	0.00
L13	113.0000-108.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.833	0.15
		C	0.000	0.000	0.000	0.000	0.00
L14	108.0000-103.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.833	0.15
		C	0.000	0.000	0.000	0.000	0.00
L15	103.0000-98.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.944	0.15
		C	0.000	0.000	0.000	0.000	0.00
L16	98.0000-93.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.042	0.15
		C	0.000	0.000	0.000	0.000	0.00
L17	93.0000-92.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.208	0.03
		C	0.000	0.000	0.000	0.000	0.00
L18	92.0000-87.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.042	0.15
		C	0.000	0.000	0.000	0.000	0.00
L19	87.0000-82.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.042	0.15
		C	0.000	0.000	0.000	0.000	0.00
L20	82.0000-77.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.937	0.13
		C	0.000	0.000	0.000	0.000	0.00
L21	77.5000-72.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.042	0.15
		C	0.000	0.000	0.000	0.000	0.00
L22	72.5000-70.5800	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.400	0.06
		C	0.000	0.000	0.000	0.000	0.00
L23	70.5800-70.3300	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.052	0.01

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	0.000	0.000	0.00
L24	70.3300-67.0800	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.677	0.09
		C	0.000	0.000	0.000	0.000	0.00
L25	67.0800-66.8300	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.052	0.01
		C	0.000	0.000	0.000	0.000	0.00
L26	66.8300-61.8300	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.824	0.15
		C	0.000	0.000	0.000	0.000	0.00
L27	61.8300-57.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.804	0.13
		C	0.000	0.000	0.000	0.000	0.00
L28	57.5000-56.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.312	0.02
		C	0.000	0.000	0.000	0.000	0.00
L29	56.7500-51.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.083	0.15
		C	0.000	0.000	0.000	0.000	0.00
L30	51.7500-46.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.083	0.15
		C	0.000	0.000	0.000	0.000	0.00
L31	46.7500-41.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.083	0.15
		C	0.000	0.000	0.000	0.000	0.00
L32	41.7500-39.8000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.812	0.06
		C	0.000	0.000	0.000	0.000	0.00
L33	39.8000-39.3300	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.196	0.01
		C	0.000	0.000	0.000	0.000	0.00
L34	39.3300-39.0800	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.104	0.01
		C	0.000	0.000	0.000	0.000	0.00
L35	39.0800-38.3300	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.312	0.02
		C	0.000	0.000	0.000	0.000	0.00
L36	38.3300-38.0800	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.104	0.01
		C	0.000	0.000	0.000	0.000	0.00
L37	38.0800-33.0800	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.083	0.15
		C	0.000	0.000	0.000	0.000	0.00
L38	33.0800-30.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.971	0.07
		C	0.000	0.000	0.000	0.000	0.00
L39	30.7500-30.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.104	0.01
		C	0.000	0.000	0.000	0.000	0.00
L40	30.5000-25.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.083	0.15
		C	0.000	0.000	0.000	0.000	0.00
L41	25.5000-20.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.083	0.15
		C	0.000	0.000	0.000	0.000	0.00
L42	20.5000-15.5000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.083	0.15
		C	0.000	0.000	0.000	0.000	0.00
L43	15.5000-9.8000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	2.375	0.17
		C	0.000	0.000	0.000	0.000	0.00
L44	9.8000-8.8000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.417	0.03
		C	0.000	0.000	0.000	0.000	0.00
L45	8.8000-8.2500	A	0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	0.000	0.229	0.02
		C	0.000	0.000	0.000	0.000	0.00
L46	8.2500-8.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.104	0.01
		C	0.000	0.000	0.000	0.000	0.00
L47	8.0000-4.2500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.562	0.11
		C	0.000	0.000	0.000	0.000	0.00
L48	4.2500-4.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.104	0.01
		C	0.000	0.000	0.000	0.000	0.00
L49	4.0000-3.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.417	0.03
		C	0.000	0.000	0.000	0.000	0.00
L50	3.0000-2.7500	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.104	0.01
		C	0.000	0.000	0.000	0.000	0.00
L51	2.7500-0.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	1.146	0.08
		C	0.000	0.000	0.000	0.000	0.00

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	156.0000-	A	1.487	0.000	0.000	0.000	0.000	0.00
	151.0000	B		0.000	0.000	0.000	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.00
L2	151.0000-	A	1.482	0.000	0.000	0.000	0.000	0.00
	146.0000	B		0.000	0.000	0.000	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.00
L3	146.0000-	A	1.479	0.000	0.000	0.000	0.000	0.00
	144.5000	B		0.000	0.000	0.000	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.00
L4	144.5000-	A	1.478	0.000	0.000	0.000	0.000	0.00
	144.0000	B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L5	144.0000-	A	1.475	0.000	0.000	0.000	0.000	0.00
	139.0000	B		0.000	0.000	0.000	0.000	0.12
		C		0.000	0.000	0.000	0.000	0.00
L6	139.0000-	A	1.469	0.000	0.000	0.000	0.000	0.00
	134.0000	B		0.000	0.000	0.000	0.000	0.15
		C		0.000	0.000	0.000	0.000	0.00
L7	134.0000-	A	1.464	0.000	0.000	0.000	0.000	0.00
	129.0000	B		0.000	0.000	0.000	0.861	0.15
		C		0.000	0.000	0.000	0.000	0.00
L8	129.0000-	A	1.461	0.000	0.000	0.000	0.000	0.00
	128.2500	B		0.000	0.000	0.000	0.368	0.02
		C		0.000	0.000	0.000	0.000	0.00
L9	128.2500-	A	1.460	0.000	0.000	0.000	0.000	0.00
	128.0000	B		0.000	0.000	0.000	0.123	0.01
		C		0.000	0.000	0.000	0.000	0.00
L10	128.0000-	A	1.457	0.000	0.000	0.000	0.000	0.00
	123.0000	B		0.000	0.000	0.000	2.452	0.15
		C		0.000	0.000	0.000	0.000	0.00
L11	123.0000-	A	1.451	0.000	0.000	0.000	0.000	0.00
	118.0000	B		0.000	0.000	0.000	2.446	0.15
		C		0.000	0.000	0.000	0.000	0.00
L12	118.0000-	A	1.445	0.000	0.000	0.000	0.000	0.00
	113.0000	B		0.000	0.000	0.000	2.439	0.15
		C		0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L13	113.0000-108.0000	A	1.439	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	2.432	0.15
		C		0.000	0.000	0.000	0.000	0.00
L14	108.0000-103.0000	A	1.432	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	2.425	0.15
		C		0.000	0.000	0.000	0.000	0.00
L15	103.0000-98.0000	A	1.425	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	2.528	0.15
		C		0.000	0.000	0.000	0.000	0.00
L16	98.0000-93.0000	A	1.418	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	2.617	0.15
		C		0.000	0.000	0.000	0.000	0.00
L17	93.0000-92.0000	A	1.413	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.523	0.03
		C		0.000	0.000	0.000	0.000	0.00
L18	92.0000-87.0000	A	1.409	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	2.607	0.15
		C		0.000	0.000	0.000	0.000	0.00
L19	87.0000-82.0000	A	1.401	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	2.598	0.15
		C		0.000	0.000	0.000	0.000	0.00
L20	82.0000-77.5000	A	1.393	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	2.330	0.13
		C		0.000	0.000	0.000	0.000	0.00
L21	77.5000-72.5000	A	1.384	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	2.580	0.15
		C		0.000	0.000	0.000	0.000	0.00
L22	72.5000-70.5800	A	1.378	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.988	0.06
		C		0.000	0.000	0.000	0.000	0.00
L23	70.5800-70.3300	A	1.375	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.128	0.01
		C		0.000	0.000	0.000	0.000	0.00
L24	70.3300-67.0800	A	1.372	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	1.668	0.09
		C		0.000	0.000	0.000	0.000	0.00
L25	67.0800-66.8300	A	1.368	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.128	0.01
		C		0.000	0.000	0.000	0.000	0.00
L26	66.8300-61.8300	A	1.363	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	4.475	0.15
		C		0.000	0.000	0.000	0.000	0.00
L27	61.8300-57.5000	A	1.353	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	4.408	0.13
		C		0.000	0.000	0.000	0.000	0.00
L28	57.5000-56.7500	A	1.347	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.763	0.02
		C		0.000	0.000	0.000	0.000	0.00
L29	56.7500-51.7500	A	1.340	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	5.061	0.15
		C		0.000	0.000	0.000	0.000	0.00
L30	51.7500-46.7500	A	1.327	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	5.032	0.15
		C		0.000	0.000	0.000	0.000	0.00
L31	46.7500-41.7500	A	1.313	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	5.001	0.15
		C		0.000	0.000	0.000	0.000	0.00
L32	41.7500-39.8000	A	1.302	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	1.941	0.06
		C		0.000	0.000	0.000	0.000	0.00
L33	39.8000-39.3300	A	1.298	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.467	0.01
		C		0.000	0.000	0.000	0.000	0.00
L34	39.3300-39.0800	A	1.297	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.248	0.01

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	0.000	0.000	0.00
L35	39.0800-38.3300	A	1.295	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.744	0.02
		C		0.000	0.000	0.000	0.000	0.00
L36	38.3300-38.0800	A	1.294	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.248	0.01
		C		0.000	0.000	0.000	0.000	0.00
L37	38.0800-33.0800	A	1.285	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	4.938	0.15
		C		0.000	0.000	0.000	0.000	0.00
L38	33.0800-30.7500	A	1.271	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	2.287	0.07
		C		0.000	0.000	0.000	0.000	0.00
L39	30.7500-30.5000	A	1.266	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.245	0.01
		C		0.000	0.000	0.000	0.000	0.00
L40	30.5000-25.5000	A	1.254	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	4.870	0.15
		C		0.000	0.000	0.000	0.000	0.00
L41	25.5000-20.5000	A	1.230	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	4.816	0.15
		C		0.000	0.000	0.000	0.000	0.00
L42	20.5000-15.5000	A	1.200	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	4.750	0.15
		C		0.000	0.000	0.000	0.000	0.00
L43	15.5000-9.8000	A	1.158	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	5.309	0.17
		C		0.000	0.000	0.000	0.000	0.00
L44	9.8000-8.8000	A	1.123	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.931	0.03
		C		0.000	0.000	0.000	0.000	0.00
L45	8.8000-8.2500	A	1.114	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.501	0.02
		C		0.000	0.000	0.000	0.000	0.00
L46	8.2500-8.0000	A	1.108	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.227	0.01
		C		0.000	0.000	0.000	0.000	0.00
L47	8.0000-4.2500	A	1.077	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	3.358	0.11
		C		0.000	0.000	0.000	0.000	0.00
L48	4.2500-4.0000	A	1.036	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.219	0.01
		C		0.000	0.000	0.000	0.000	0.00
L49	4.0000-3.0000	A	1.019	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.869	0.03
		C		0.000	0.000	0.000	0.000	0.00
L50	3.0000-2.7500	A	0.999	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.215	0.01
		C		0.000	0.000	0.000	0.000	0.00
L51	2.7500-0.0000	A	0.928	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	2.280	0.08
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	156.0000-151.0000	0.0000	0.0000	0.0000	0.0000
L2	151.0000-	0.0000	0.0000	0.0000	0.0000

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
	146.0000				
L3	146.0000-144.5000	0.0000	0.0000	0.0000	0.0000
L4	144.5000-144.0000	0.0000	0.0000	0.0000	0.0000
L5	144.0000-139.0000	0.0000	0.0000	0.0000	0.0000
L6	139.0000-134.0000	0.0000	0.0000	0.0000	0.0000
L7	134.0000-129.0000	0.3035	0.1752	0.6010	0.3470
L8	129.0000-128.2500	0.8055	0.4650	1.5132	0.8736
L9	128.2500-128.0000	0.8097	0.4675	1.5206	0.8779
L10	128.0000-123.0000	0.8110	0.4683	1.5281	0.8822
L11	123.0000-118.0000	0.8136	0.4697	1.5416	0.8900
L12	118.0000-113.0000	0.8158	0.4710	1.5535	0.8969
L13	113.0000-108.0000	0.8180	0.4723	1.5646	0.9033
L14	108.0000-103.0000	0.8201	0.4735	1.5745	0.9090
L15	103.0000-98.0000	0.9234	0.5331	1.6462	0.9504
L16	98.0000-93.0000	1.0121	0.5843	1.7091	0.9867
L17	93.0000-92.0000	1.0148	0.5859	1.7136	0.9893
L18	92.0000-87.0000	1.0161	0.5867	1.7159	0.9907
L19	87.0000-82.0000	1.0184	0.5880	1.7232	0.9949
L20	82.0000-77.5000	1.0206	0.5892	1.7294	0.9985
L21	77.5000-72.5000	1.0233	0.5908	1.7357	1.0021
L22	72.5000-70.5800	1.0248	0.5917	1.7392	1.0041
L23	70.5800-70.3300	1.0253	0.5919	1.7401	1.0047
L24	70.3300-67.0800	1.0259	0.5923	1.7414	1.0054
L25	67.0800-66.8300	1.0297	0.5945	1.7473	1.0088
L26	66.8300-61.8300	1.7127	0.9888	2.8048	1.6193
L27	61.8300-57.5000	1.9269	1.1125	3.1241	1.8037
L28	57.5000-56.7500	1.9256	1.1117	3.1202	1.8015
L29	56.7500-51.7500	1.9290	1.1137	3.1209	1.8019
L30	51.7500-46.7500	1.9353	1.1174	3.1307	1.8075
L31	46.7500-41.7500	1.9413	1.1208	3.1378	1.8116
L32	41.7500-39.8000	1.9453	1.1231	3.1412	1.8136
L33	39.8000-39.3300	1.9479	1.1246	3.1437	1.8150
L34	39.3300-39.0800	1.9481	1.1247	3.1437	1.8150
L35	39.0800-38.3300	1.9487	1.1251	3.1440	1.8152
L36	38.3300-38.0800	1.9485	1.1249	3.1431	1.8147
L37	38.0800-33.0800	1.9512	1.1265	3.1437	1.8150
L38	33.0800-30.7500	1.9551	1.1288	3.1429	1.8145
L39	30.7500-30.5000	1.9576	1.1302	3.1438	1.8151
L40	30.5000-25.5000	1.9602	1.1317	3.1410	1.8135
L41	25.5000-20.5000	1.9650	1.1345	3.1318	1.8081
L42	20.5000-15.5000	1.9697	1.1372	3.1156	1.7988
L43	15.5000-9.8000	1.9747	1.1401	3.0862	1.7818
L44	9.8000-8.8000	1.9740	1.1397	3.0841	1.7806
L45	8.8000-8.2500	1.9747	1.1401	3.0366	1.7532
L46	8.2500-8.0000	1.9750	1.1403	3.0317	1.7503
L47	8.0000-4.2500	1.9769	1.1413	3.0022	1.7333
L48	4.2500-4.0000	1.9812	1.1438	2.9631	1.7108
L49	4.0000-3.0000	1.9817	1.1441	2.9452	1.7004
L50	3.0000-2.7500	1.9837	1.1453	2.9256	1.6891
L51	2.7500-0.0000	1.9846	1.1458	2.8449	1.6425

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

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
NNVV-65B-R4	A	From Leg	4.0000 0.00 0.00	0.00	150.0000	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	0.08 0.15 0.23 0.41
NNVV-65B-R4	B	From Leg	4.0000 0.00 0.00	0.00	150.0000	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	0.08 0.15 0.23 0.41
NNVV-65B-R4	C	From Leg	4.0000 0.00 0.00	0.00	150.0000	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	0.08 0.15 0.23 0.41
APXVTM14-ALU-I20	A	From Leg	4.0000 0.00 0.00	0.00	150.0000	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	0.06 0.10 0.14 0.25
APXVTM14-ALU-I20	B	From Leg	4.0000 0.00 0.00	0.00	150.0000	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	0.06 0.10 0.14 0.25
APXVTM14-ALU-I20	C	From Leg	4.0000 0.00 0.00	0.00	150.0000	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	0.06 0.10 0.14 0.25
TD-RRH8X20-25	A	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20
TD-RRH8X20-25	A	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20
TD-RRH8X20-25	B	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.0455 4.2975 4.5570 5.0981	1.5345 1.7142 1.9008 2.2951	0.07 0.10 0.13 0.20

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
PCS 1900MHZ 4X45W-65MHZ	A	From Leg	4.0000 0.00 0.00	0.00	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	0.06 0.08 0.11 0.17
PCS 1900MHZ 4X45W-65MHZ	A	From Leg	4.0000 0.00 0.00	0.00	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	0.06 0.08 0.11 0.17
PCS 1900MHZ 4X45W-65MHZ	B	From Leg	4.0000 0.00 0.00	0.00	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	0.06 0.08 0.11 0.17
(2) RRH2X50-800	A	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.7008 1.8640 2.0345 2.3979	1.2822 1.4275 1.5803 1.9081	0.05 0.07 0.09 0.14
(2) RRH2X50-800	A	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.7008 1.8640 2.0345 2.3979	1.2822 1.4275 1.5803 1.9081	0.05 0.07 0.09 0.14
(2) RRH2X50-800	B	From Leg	4.0000 0.00 0.00	0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.7008 1.8640 2.0345 2.3979	1.2822 1.4275 1.5803 1.9081	0.05 0.07 0.09 0.14
(2) Pipe Mount [PM 601-3]	A	None		0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.3900 5.4800 6.5700 8.7500	4.3900 5.4800 6.5700 8.7500	0.20 0.24 0.28 0.36
***									
RR90-17-VDPL2 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	0.00	154.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.5931 5.0183 5.4362 6.2979	3.3421 4.1118 4.8076 6.2492	0.03 0.07 0.12 0.22
RR90-17-VDPL2 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	0.00	154.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.5931 5.0183 5.4362 6.2979	3.3421 4.1118 4.8076 6.2492	0.03 0.07 0.12 0.22
Pipe Mount [PM 602-1]	A	From Leg	4.0000 0.00 0.00	0.00	154.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.2500 6.5000 7.7500 10.2500	1.5800 1.9500 2.3200 3.0600	0.09 0.12 0.14 0.19
Pipe Mount [PM 602-1]	C	From Leg	4.0000 0.00 0.00	0.00	154.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.2500 6.5000 7.7500 10.2500	1.5800 1.9500 2.3200 3.0600	0.09 0.12 0.14 0.19
***									
(2) ATMAA1412D-1A20	A	From Leg	4.0000 0.00 0.00	-30.00	143.0000	No Ice 1/2" Ice 1" Ice	1.0000 1.1259 1.2593 1.5481	0.4074 0.4965 0.5926 0.8148	0.01 0.02 0.03 0.06

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			
(2) ATMAA1412D-1A20	B	From Leg	4.0000 0.00 0.00	-30.00	143.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.0000 1.1259 1.2593 1.5481	0.4074 0.4965 0.5926 0.8148	0.01 0.02 0.03 0.06
(2) ATMAA1412D-1A20	C	From Leg	4.0000 0.00 0.00	-30.00	143.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.0000 1.1259 1.2593 1.5481	0.4074 0.4965 0.5926 0.8148	0.01 0.02 0.03 0.06
RADIO 4449 B12/B71	A	From Leg	4.0000 0.00 0.00	-30.00	143.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6500 1.8104 1.9781 2.3359	1.1625 1.3012 1.4473 1.7618	0.07 0.09 0.11 0.16
RADIO 4449 B12/B71	B	From Leg	4.0000 0.00 0.00	-30.00	143.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6500 1.8104 1.9781 2.3359	1.1625 1.3012 1.4473 1.7618	0.07 0.09 0.11 0.16
RADIO 4449 B12/B71	C	From Leg	4.0000 0.00 0.00	-30.00	143.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.6500 1.8104 1.9781 2.3359	1.1625 1.3012 1.4473 1.7618	0.07 0.09 0.11 0.16
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	-30.00	143.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.8239 7.2751 7.7192 8.6333	3.4938 4.2631 4.9598 6.4031	0.06 0.11 0.16 0.30
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	-30.00	143.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.8239 7.2751 7.7192 8.6333	3.4938 4.2631 4.9598 6.4031	0.06 0.11 0.16 0.30
APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	-30.00	143.0000	No Ice 1/2" Ice 1" Ice 2" Ice	6.8239 7.2751 7.7192 8.6333	3.4938 4.2631 4.9598 6.4031	0.06 0.11 0.16 0.30
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Leg	4.0000 0.00 0.00	-30.00	143.0000	No Ice 1/2" Ice 1" Ice 2" Ice	20.5042 21.2552 22.0151 23.4705	10.8819 12.4078 13.9578 16.3111	0.13 0.27 0.42 0.75
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	-30.00	143.0000	No Ice 1/2" Ice 1" Ice 2" Ice	20.5042 21.2552 22.0151 23.4705	10.8819 12.4078 13.9578 16.3111	0.13 0.27 0.42 0.75
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	4.0000 0.00 0.00	-30.00	143.0000	No Ice 1/2" Ice 1" Ice 2" Ice	20.5042 21.2552 22.0151 23.4705	10.8819 12.4078 13.9578 16.3111	0.13 0.27 0.42 0.75
MC-PK12L4-B	B	None		0.00	143.0000	No Ice 1/2" Ice 1" Ice 2" Ice	59.1500 71.1200 83.0900 107.0300	59.1500 71.1200 83.0900 107.0300	2.75 3.42 4.10 5.45

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
**********									
(2) 980H120T4E-M w/ Mount Pipe	B	From Leg	4.0000 0.00 0.00	0.00	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.1333 4.5970 5.0462 5.9710	3.7167 4.5791 5.3180 6.8458	0.03 0.07 0.11 0.22
Platform Mount [LP 1201-1]	B	None		0.00	120.0000	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	2.10 2.50 2.90 3.70
6' x 2.375" Pipe Mount	B	From Leg	4.0000 0.00 0.00	0.00	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.02 0.03 0.05 0.09
(3) 6' x 2.375" Pipe Mount	A	From Leg	4.0000 0.00 0.00	0.00	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.02 0.03 0.05 0.09
(3) 6' x 2.375" Pipe Mount	C	From Leg	4.0000 0.00 0.00	0.00	120.0000	No Ice 1/2" Ice 1" Ice 2" Ice	1.4250 1.9250 2.2939 3.0596	1.4250 1.9250 2.2939 3.0596	0.02 0.03 0.05 0.09
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Tower Pressures - No Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z psf	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 156.0000-151.0000	153.5000	1.385	52.88	4.479	A	0.000	4.479	4.479	100.00	0.000	0.000
					B	0.000	4.479		100.00	0.000	0.000
					C	0.000	4.479		100.00	0.000	0.000
L2 151.0000-146.0000	148.5000	1.375	52.51	4.479	A	0.000	4.479	4.479	100.00	0.000	0.000
					B	0.000	4.479		100.00	0.000	0.000
					C	0.000	4.479		100.00	0.000	0.000
L3 146.0000-144.5000	145.2500	1.369	52.27	1.344	A	0.000	1.344	1.344	100.00	0.000	0.000
					B	0.000	1.344		100.00	0.000	0.000
					C	0.000	1.344		100.00	0.000	0.000
L4 144.5000-144.0000	144.2290	1.367	52.19	0.599	A	0.000	0.599	0.599	100.00	0.000	0.000
					B	0.000	0.599		100.00	0.000	0.000
					C	0.000	0.599		100.00	0.000	0.000
L5 144.0000-139.0000	141.4787	1.362	51.98	7.931	A	0.000	7.931	7.931	100.00	0.000	0.000
					B	0.000	7.931		100.00	0.000	0.000
					C	0.000	7.931		100.00	0.000	0.000
L6 139.0000-134.0000	136.4798	1.351	51.59	8.338	A	0.000	8.338	8.338	100.00	0.000	0.000
					B	0.000	8.338		100.00	0.000	0.000
					C	0.000	8.338		100.00	0.000	0.000
L7 134.0000-	131.4807	1.341	51.18	8.745	A	0.000	8.745	8.745	100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	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
129.0000					B	0.000	8.745		100.00	0.000	0.292
					C	0.000	8.745		100.00	0.000	0.000
L8 129.0000-128.2500	128.6246	1.334	50.95	1.347	A	0.000	1.347	1.347	100.00	0.000	0.000
					B	0.000	1.347		100.00	0.000	0.125
					C	0.000	1.347		100.00	0.000	0.000
L9 128.2500-128.0000	128.1250	1.333	50.90	0.449	A	0.000	0.449	0.449	100.00	0.000	0.000
					B	0.000	0.449		100.00	0.000	0.042
					C	0.000	0.449		100.00	0.000	0.000
L10 128.0000-123.0000	125.4817	1.328	50.68	9.188	A	0.000	9.188	9.188	100.00	0.000	0.000
					B	0.000	9.188		100.00	0.000	0.833
					C	0.000	9.188		100.00	0.000	0.000
L11 123.0000-118.0000	120.4825	1.316	50.25	9.597	A	0.000	9.597	9.597	100.00	0.000	0.000
					B	0.000	9.597		100.00	0.000	0.833
					C	0.000	9.597		100.00	0.000	0.000
L12 118.0000-113.0000	115.4832	1.305	49.80	10.007	A	0.000	10.007	10.007	100.00	0.000	0.000
					B	0.000	10.007		100.00	0.000	0.833
					C	0.000	10.007		100.00	0.000	0.000
L13 113.0000-108.0000	110.4838	1.292	49.34	10.416	A	0.000	10.416	10.416	100.00	0.000	0.000
					B	0.000	10.416		100.00	0.000	0.833
					C	0.000	10.416		100.00	0.000	0.000
L14 108.0000-103.0000	105.4844	1.28	48.86	10.825	A	0.000	10.825	10.825	100.00	0.000	0.000
					B	0.000	10.825		100.00	0.000	0.833
					C	0.000	10.825		100.00	0.000	0.000
L15 103.0000-98.0000	100.4850	1.267	48.37	11.233	A	0.000	11.233	11.233	100.00	0.000	0.000
					B	0.000	11.233		100.00	0.000	0.944
					C	0.000	11.233		100.00	0.000	0.000
L16 98.0000-93.0000	95.4855	1.253	47.85	11.641	A	0.000	11.641	11.641	100.00	0.000	0.000
					B	0.000	11.641		100.00	0.000	1.042
					C	0.000	11.641		100.00	0.000	0.000
L17 93.0000-92.0000	92.4994	1.245	47.53	2.328	A	0.000	2.328	2.328	100.00	0.000	0.000
					B	0.000	2.328		100.00	0.000	0.208
					C	0.000	2.328		100.00	0.000	0.000
L18 92.0000-87.0000	89.4858	1.236	47.20	11.886	A	0.000	11.886	11.886	100.00	0.000	0.000
					B	0.000	11.886		100.00	0.000	1.042
					C	0.000	11.886		100.00	0.000	0.000
L19 87.0000-82.0000	84.4863	1.221	46.63	12.297	A	0.000	12.297	12.297	100.00	0.000	0.000
					B	0.000	12.297		100.00	0.000	1.042
					C	0.000	12.297		100.00	0.000	0.000
L20 82.0000-77.5000	79.7392	1.207	46.07	11.417	A	0.000	11.417	11.417	100.00	0.000	0.000
					B	0.000	11.417		100.00	0.000	0.937
					C	0.000	11.417		100.00	0.000	0.000
L21 77.5000-72.5000	74.9871	1.191	45.48	13.065	A	0.000	13.065	13.065	100.00	0.000	0.000
					B	0.000	13.065		100.00	0.000	1.042
					C	0.000	13.065		100.00	0.000	0.000
L22 72.5000-70.5800	71.5381	1.179	45.03	5.125	A	0.000	5.125	5.125	100.00	0.000	0.000
					B	0.000	5.125		100.00	0.000	0.400
					C	0.000	5.125		100.00	0.000	0.000
L23 70.5800-70.3300	70.4550	1.176	44.88	0.672	A	0.000	0.672	0.672	100.00	0.000	0.000
					B	0.000	0.672		100.00	0.000	0.052
					C	0.000	0.672		100.00	0.000	0.000
L24 70.3300-67.0800	68.6998	1.169	44.64	8.826	A	0.000	8.826	8.826	100.00	0.000	0.000
					B	0.000	8.826		100.00	0.000	0.677
					C	0.000	8.826		100.00	0.000	0.000
L25 67.0800-66.8300	66.9550	1.163	44.40	0.684	A	0.000	0.684	0.684	100.00	0.000	0.000
					B	0.000	0.684		100.00	0.000	0.052
					C	0.000	0.684		100.00	0.000	0.000
L26 66.8300-61.8300	64.3179	1.153	44.03	13.895	A	0.000	13.895	13.895	100.00	0.000	0.000
					B	0.000	13.895		100.00	0.000	1.824
					C	0.000	13.895		100.00	0.000	0.000
L27 61.8300-57.5000	59.6562	1.135	43.34	12.362	A	0.000	12.362	12.362	100.00	0.000	0.000
					B	0.000	12.362		100.00	0.000	1.804
					C	0.000	12.362		100.00	0.000	0.000
L28 57.5000-56.7500	57.1247	1.125	42.94	2.132	A	0.000	2.132	2.132	100.00	0.000	0.000
					B	0.000	2.132		100.00	0.000	0.312

Section Elevation	z	K_Z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
					C	0.000	2.132		100.00	0.000	0.000
L29 56.7500-51.7500	54.2384	1.113	42.48	14.451	A	0.000	14.451	14.451	100.00	0.000	0.000
					B	0.000	14.451		100.00	0.000	2.083
					C	0.000	14.451		100.00	0.000	0.000
L30 51.7500-46.7500	49.2387	1.09	41.62	14.860	A	0.000	14.860	14.860	100.00	0.000	0.000
					B	0.000	14.860		100.00	0.000	2.083
					C	0.000	14.860		100.00	0.000	0.000
L31 46.7500-41.7500	44.2390	1.066	40.69	15.269	A	0.000	15.269	15.269	100.00	0.000	0.000
					B	0.000	15.269		100.00	0.000	2.083
					C	0.000	15.269		100.00	0.000	0.000
L32 41.7500-39.8000	40.7734	1.048	40.00	6.066	A	0.000	6.066	6.066	100.00	0.000	0.000
					B	0.000	6.066		100.00	0.000	0.812
					C	0.000	6.066		100.00	0.000	0.000
L33 39.8000-39.3300	39.5649	1.041	39.75	1.470	A	0.000	1.470	1.470	100.00	0.000	0.000
					B	0.000	1.470		100.00	0.000	0.196
					C	0.000	1.470		100.00	0.000	0.000
L34 39.3300-39.0800	39.2050	1.039	39.67	0.784	A	0.000	0.784	0.784	100.00	0.000	0.000
					B	0.000	0.784		100.00	0.000	0.104
					C	0.000	0.784		100.00	0.000	0.000
L35 39.0800-38.3300	38.7048	1.036	39.57	2.357	A	0.000	2.357	2.357	100.00	0.000	0.000
					B	0.000	2.357		100.00	0.000	0.312
					C	0.000	2.357		100.00	0.000	0.000
L36 38.3300-38.0800	38.2050	1.034	39.46	0.788	A	0.000	0.788	0.788	100.00	0.000	0.000
					B	0.000	0.788		100.00	0.000	0.104
					C	0.000	0.788		100.00	0.000	0.000
L37 38.0800-33.0800	35.5695	1.018	38.87	15.977	A	0.000	15.977	15.977	100.00	0.000	0.000
					B	0.000	15.977		100.00	0.000	2.083
					C	0.000	15.977		100.00	0.000	0.000
L38 33.0800-30.7500	31.9128	0.995	37.99	7.585	A	0.000	7.585	7.585	100.00	0.000	0.000
					B	0.000	7.585		100.00	0.000	0.971
					C	0.000	7.585		100.00	0.000	0.000
L39 30.7500-30.5000	30.6250	0.987	37.66	0.819	A	0.000	0.819	0.819	100.00	0.000	0.000
					B	0.000	0.819		100.00	0.000	0.104
					C	0.000	0.819		100.00	0.000	0.000
L40 30.5000-25.5000	27.9899	0.968	36.96	16.586	A	0.000	16.586	16.586	100.00	0.000	0.000
					B	0.000	16.586		100.00	0.000	2.083
					C	0.000	16.586		100.00	0.000	0.000
L41 25.5000-20.5000	22.9901	0.929	35.46	16.997	A	0.000	16.997	16.997	100.00	0.000	0.000
					B	0.000	16.997		100.00	0.000	2.083
					C	0.000	16.997		100.00	0.000	0.000
L42 20.5000-15.5000	17.9903	0.882	33.67	17.406	A	0.000	17.406	17.406	100.00	0.000	0.000
					B	0.000	17.406		100.00	0.000	2.083
					C	0.000	17.406		100.00	0.000	0.000
L43 15.5000-9.8000	12.6377	0.85	32.45	20.339	A	0.000	20.339	20.339	100.00	0.000	0.000
					B	0.000	20.339		100.00	0.000	2.375
					C	0.000	20.339		100.00	0.000	0.000
L44 9.8000-8.8000	9.2996	0.85	32.45	3.559	A	0.000	3.559	3.559	100.00	0.000	0.000
					B	0.000	3.559		100.00	0.000	0.417
					C	0.000	3.559		100.00	0.000	0.000
L45 8.8000-8.2500	8.5249	0.85	32.45	1.964	A	0.000	1.964	1.964	100.00	0.000	0.000
					B	0.000	1.964		100.00	0.000	0.229
					C	0.000	1.964		100.00	0.000	0.000
L46 8.2500-8.0000	8.1250	0.85	32.45	0.894	A	0.000	0.894	0.894	100.00	0.000	0.000
					B	0.000	0.894		100.00	0.000	0.104
					C	0.000	0.894		100.00	0.000	0.000
L47 8.0000-4.2500	6.1198	0.85	32.45	13.538	A	0.000	13.538	13.538	100.00	0.000	0.000
					B	0.000	13.538		100.00	0.000	1.562
					C	0.000	13.538		100.00	0.000	0.000
L48 4.2500-4.0000	4.1250	0.85	32.45	0.909	A	0.000	0.909	0.909	100.00	0.000	0.000
					B	0.000	0.909		100.00	0.000	0.104
					C	0.000	0.909		100.00	0.000	0.000
L49 4.0000-3.0000	3.4996	0.85	32.45	3.648	A	0.000	3.648	3.648	100.00	0.000	0.000
					B	0.000	3.648		100.00	0.000	0.417
					C	0.000	3.648		100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	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
L50 3.0000-2.7500	2.8750	0.85	32.45	0.914	A	0.000	0.914	0.914	100.00	0.000	0.000
					B	0.000	0.914		100.00	0.000	0.104
					C	0.000	0.914		100.00	0.000	0.000
L51 2.7500-0.0000	1.3722	0.85	32.45	10.120	A	0.000	10.120	10.120	100.00	0.000	0.000
					B	0.000	10.120		100.00	0.000	1.146
					C	0.000	10.120		100.00	0.000	0.000

Tower Pressure - With Ice

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z psf	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 156.0000-151.0000	153.5000	1.385	7.82	1.4869	5.718	A	0.000	5.718	5.718	100.00	0.000	0.000
						B	0.000	5.718		100.00	0.000	0.000
						C	0.000	5.718		100.00	0.000	0.000
L2 151.0000-146.0000	148.5000	1.375	7.77	1.4819	5.714	A	0.000	5.714	5.714	100.00	0.000	0.000
						B	0.000	5.714		100.00	0.000	0.000
						C	0.000	5.714		100.00	0.000	0.000
L3 146.0000-144.5000	145.2500	1.369	7.73	1.4787	1.713	A	0.000	1.713	1.713	100.00	0.000	0.000
						B	0.000	1.713		100.00	0.000	0.000
						C	0.000	1.713		100.00	0.000	0.000
L4 144.5000-144.0000	144.2290	1.367	7.72	1.4776	0.722	A	0.000	0.722	0.722	100.00	0.000	0.000
						B	0.000	0.722		100.00	0.000	0.000
						C	0.000	0.722		100.00	0.000	0.000
L5 144.0000-139.0000	141.4787	1.362	7.69	1.4748	9.160	A	0.000	9.160	9.160	100.00	0.000	0.000
						B	0.000	9.160		100.00	0.000	0.000
						C	0.000	9.160		100.00	0.000	0.000
L6 139.0000-134.0000	136.4798	1.351	7.63	1.4695	9.563	A	0.000	9.563	9.563	100.00	0.000	0.000
						B	0.000	9.563		100.00	0.000	0.000
						C	0.000	9.563		100.00	0.000	0.000
L7 134.0000-129.0000	131.4807	1.341	7.57	1.4640	9.965	A	0.000	9.965	9.965	100.00	0.000	0.000
						B	0.000	9.965		100.00	0.000	0.861
						C	0.000	9.965		100.00	0.000	0.000
L8 129.0000-128.2500	128.6246	1.334	7.54	1.4608	1.530	A	0.000	1.530	1.530	100.00	0.000	0.000
						B	0.000	1.530		100.00	0.000	0.368
						C	0.000	1.530		100.00	0.000	0.000
L9 128.2500-128.0000	128.1250	1.333	7.53	1.4602	0.509	A	0.000	0.509	0.509	100.00	0.000	0.000
						B	0.000	0.509		100.00	0.000	0.123
						C	0.000	0.509		100.00	0.000	0.000
L10 128.0000-123.0000	125.4817	1.328	7.50	1.4572	10.402	A	0.000	10.402	10.402	100.00	0.000	0.000
						B	0.000	10.402		100.00	0.000	2.452
						C	0.000	10.402		100.00	0.000	0.000
L11 123.0000-118.0000	120.4825	1.316	7.43	1.4513	10.806	A	0.000	10.806	10.806	100.00	0.000	0.000
						B	0.000	10.806		100.00	0.000	2.446
						C	0.000	10.806		100.00	0.000	0.000
L12 118.0000-113.0000	115.4832	1.305	7.37	1.4451	11.212	A	0.000	11.212	11.212	100.00	0.000	0.000
						B	0.000	11.212		100.00	0.000	2.439
						C	0.000	11.212		100.00	0.000	0.000
L13 113.0000-108.0000	110.4838	1.292	7.30	1.4388	11.615	A	0.000	11.615	11.615	100.00	0.000	0.000
						B	0.000	11.615		100.00	0.000	2.432
						C	0.000	11.615		100.00	0.000	0.000
L14 108.0000-103.0000	105.4844	1.28	7.23	1.4321	12.018	A	0.000	12.018	12.018	100.00	0.000	0.000
						B	0.000	12.018		100.00	0.000	2.425
						C	0.000	12.018		100.00	0.000	0.000
L15 103.0000-98.0000	100.4850	1.267	7.15	1.4252	12.421	A	0.000	12.421	12.421	100.00	0.000	0.000
						B	0.000	12.421		100.00	0.000	2.528
						C	0.000	12.421		100.00	0.000	0.000
L16 98.0000-	95.4855	1.253	7.08	1.4179	12.822	A	0.000	12.822	12.822	100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	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
93.0000						B	0.000	12.822		100.00	0.000	2.617
						C	0.000	12.822		100.00	0.000	0.000
L17 93.0000-92.0000	92.4994	1.245	7.03	1.4134	2.564	A	0.000	2.564	2.564	100.00	0.000	0.000
						B	0.000	2.564		100.00	0.000	0.523
						C	0.000	2.564		100.00	0.000	0.000
L18 92.0000-87.0000	89.4858	1.236	6.98	1.4088	13.060	A	0.000	13.060	13.060	100.00	0.000	0.000
						B	0.000	13.060		100.00	0.000	2.607
						C	0.000	13.060		100.00	0.000	0.000
L19 87.0000-82.0000	84.4863	1.221	6.90	1.4007	13.464	A	0.000	13.464	13.464	100.00	0.000	0.000
						B	0.000	13.464		100.00	0.000	2.598
						C	0.000	13.464		100.00	0.000	0.000
L20 82.0000-77.5000	79.7392	1.207	6.81	1.3926	12.461	A	0.000	12.461	12.461	100.00	0.000	0.000
						B	0.000	12.461		100.00	0.000	2.330
						C	0.000	12.461		100.00	0.000	0.000
L21 77.5000-72.5000	74.9871	1.191	6.73	1.3841	14.218	A	0.000	14.218	14.218	100.00	0.000	0.000
						B	0.000	14.218		100.00	0.000	2.580
						C	0.000	14.218		100.00	0.000	0.000
L22 72.5000-70.5800	71.5381	1.179	6.66	1.3776	5.566	A	0.000	5.566	5.566	100.00	0.000	0.000
						B	0.000	5.566		100.00	0.000	0.988
						C	0.000	5.566		100.00	0.000	0.000
L23 70.5800-70.3300	70.4550	1.176	6.64	1.3755	0.729	A	0.000	0.729	0.729	100.00	0.000	0.000
						B	0.000	0.729		100.00	0.000	0.128
						C	0.000	0.729		100.00	0.000	0.000
L24 70.3300-67.0800	68.6998	1.169	6.60	1.3720	9.570	A	0.000	9.570	9.570	100.00	0.000	0.000
						B	0.000	9.570		100.00	0.000	1.668
						C	0.000	9.570		100.00	0.000	0.000
L25 67.0800-66.8300	66.9550	1.163	6.57	1.3685	0.741	A	0.000	0.741	0.741	100.00	0.000	0.000
						B	0.000	0.741		100.00	0.000	0.128
						C	0.000	0.741		100.00	0.000	0.000
L26 66.8300-61.8300	64.3179	1.153	6.51	1.3630	15.031	A	0.000	15.031	15.031	100.00	0.000	0.000
						B	0.000	15.031		100.00	0.000	4.475
						C	0.000	15.031		100.00	0.000	0.000
L27 61.8300-57.5000	59.6562	1.135	6.41	1.3528	13.338	A	0.000	13.338	13.338	100.00	0.000	0.000
						B	0.000	13.338		100.00	0.000	4.408
						C	0.000	13.338		100.00	0.000	0.000
L28 57.5000-56.7500	57.1247	1.125	6.35	1.3469	2.301	A	0.000	2.301	2.301	100.00	0.000	0.000
						B	0.000	2.301		100.00	0.000	0.763
						C	0.000	2.301		100.00	0.000	0.000
L29 56.7500-51.7500	54.2384	1.113	6.28	1.3400	15.568	A	0.000	15.568	15.568	100.00	0.000	0.000
						B	0.000	15.568		100.00	0.000	5.061
						C	0.000	15.568		100.00	0.000	0.000
L30 51.7500-46.7500	49.2387	1.09	6.16	1.3271	15.966	A	0.000	15.966	15.966	100.00	0.000	0.000
						B	0.000	15.966		100.00	0.000	5.032
						C	0.000	15.966		100.00	0.000	0.000
L31 46.7500-41.7500	44.2390	1.066	6.02	1.3129	16.363	A	0.000	16.363	16.363	100.00	0.000	0.000
						B	0.000	16.363		100.00	0.000	5.001
						C	0.000	16.363		100.00	0.000	0.000
L32 41.7500-39.8000	40.7734	1.048	5.92	1.3023	6.489	A	0.000	6.489	6.489	100.00	0.000	0.000
						B	0.000	6.489		100.00	0.000	1.941
						C	0.000	6.489		100.00	0.000	0.000
L33 39.8000-39.3300	39.5649	1.041	5.88	1.2983	1.572	A	0.000	1.572	1.572	100.00	0.000	0.000
						B	0.000	1.572		100.00	0.000	0.467
						C	0.000	1.572		100.00	0.000	0.000
L34 39.3300-39.0800	39.2050	1.039	5.87	1.2972	0.838	A	0.000	0.838	0.838	100.00	0.000	0.000
						B	0.000	0.838		100.00	0.000	0.248
						C	0.000	0.838		100.00	0.000	0.000
L35 39.0800-38.3300	38.7048	1.036	5.85	1.2955	2.519	A	0.000	2.519	2.519	100.00	0.000	0.000
						B	0.000	2.519		100.00	0.000	0.744
						C	0.000	2.519		100.00	0.000	0.000
L36 38.3300-38.0800	38.2050	1.034	5.84	1.2938	0.842	A	0.000	0.842	0.842	100.00	0.000	0.000
						B	0.000	0.842		100.00	0.000	0.248
						C	0.000	0.842		100.00	0.000	0.000
L37 38.0800-33.0800	35.5695	1.018	5.75	1.2846	17.047	A	0.000	17.047	17.047	100.00	0.000	0.000
						B	0.000	17.047		100.00	0.000	4.938

Section Elevation ft	z ft	K_Z	q_z psf	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	17.047		100.00	0.000	0.000
L38 33.0800-30.7500	31.9128	0.995	5.62	1.2707	8.078	A	0.000	8.078	8.078	100.00	0.000	0.000
						B	0.000	8.078		100.00	0.000	2.287
						C	0.000	8.078		100.00	0.000	0.000
L39 30.7500-30.5000	30.6250	0.987	5.57	1.2655	0.871	A	0.000	0.871	0.871	100.00	0.000	0.000
						B	0.000	0.871		100.00	0.000	0.245
						C	0.000	0.871		100.00	0.000	0.000
L40 30.5000-25.5000	27.9899	0.968	5.47	1.2542	17.632	A	0.000	17.632	17.632	100.00	0.000	0.000
						B	0.000	17.632		100.00	0.000	4.870
						C	0.000	17.632		100.00	0.000	0.000
L41 25.5000-20.5000	22.9901	0.929	5.24	1.2297	18.022	A	0.000	18.022	18.022	100.00	0.000	0.000
						B	0.000	18.022		100.00	0.000	4.816
						C	0.000	18.022		100.00	0.000	0.000
L42 20.5000-15.5000	17.9903	0.882	4.98	1.1999	18.406	A	0.000	18.406	18.406	100.00	0.000	0.000
						B	0.000	18.406		100.00	0.000	4.750
						C	0.000	18.406		100.00	0.000	0.000
L43 15.5000-9.8000	12.6377	0.85	4.80	1.1583	21.440	A	0.000	21.440	21.440	100.00	0.000	0.000
						B	0.000	21.440		100.00	0.000	5.309
						C	0.000	21.440		100.00	0.000	0.000
L44 9.8000-8.8000	9.2996	0.85	4.80	1.1233	3.752	A	0.000	3.752	3.752	100.00	0.000	0.000
						B	0.000	3.752		100.00	0.000	0.931
						C	0.000	3.752		100.00	0.000	0.000
L45 8.8000-8.2500	8.5249	0.85	4.80	1.1136	2.066	A	0.000	2.066	2.066	100.00	0.000	0.000
						B	0.000	2.066		100.00	0.000	0.501
						C	0.000	2.066		100.00	0.000	0.000
L46 8.2500-8.0000	8.1250	0.85	4.80	1.1083	0.941	A	0.000	0.941	0.941	100.00	0.000	0.000
						B	0.000	0.941		100.00	0.000	0.227
						C	0.000	0.941		100.00	0.000	0.000
L47 8.0000-4.2500	6.1198	0.85	4.80	1.0773	14.212	A	0.000	14.212	14.212	100.00	0.000	0.000
						B	0.000	14.212		100.00	0.000	3.358
						C	0.000	14.212		100.00	0.000	0.000
L48 4.2500-4.0000	4.1250	0.85	4.80	1.0356	0.953	A	0.000	0.953	0.953	100.00	0.000	0.000
						B	0.000	0.953		100.00	0.000	0.219
						C	0.000	0.953		100.00	0.000	0.000
L49 4.0000-3.0000	3.4996	0.85	4.80	1.0187	3.818	A	0.000	3.818	3.818	100.00	0.000	0.000
						B	0.000	3.818		100.00	0.000	0.869
						C	0.000	3.818		100.00	0.000	0.000
L50 3.0000-2.7500	2.8750	0.85	4.80	0.9989	0.955	A	0.000	0.955	0.955	100.00	0.000	0.000
						B	0.000	0.955		100.00	0.000	0.215
						C	0.000	0.955		100.00	0.000	0.000
L51 2.7500-0.0000	1.3722	0.85	4.80	0.9277	10.546	A	0.000	10.546	10.546	100.00	0.000	0.000
						B	0.000	10.546		100.00	0.000	2.280
						C	0.000	10.546		100.00	0.000	0.000

Tower Pressure - Service

G_H = 1.100

Section Elevation ft	z ft	K_Z	q_z psf	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 156.0000-151.0000	153.5000	1.385	10.08	4.479	A	0.000	4.479	4.479	100.00	0.000	0.000
					B	0.000	4.479		100.00	0.000	0.000
					C	0.000	4.479		100.00	0.000	0.000
L2 151.0000-146.0000	148.5000	1.375	10.01	4.479	A	0.000	4.479	4.479	100.00	0.000	0.000
					B	0.000	4.479		100.00	0.000	0.000
					C	0.000	4.479		100.00	0.000	0.000
L3 146.0000-	145.2500	1.369	9.96	1.344	A	0.000	1.344	1.344	100.00	0.000	0.000

Section Elevation	z	K_Z	q_z	A_G	Face	A_F	A_R	A_{leg}	Leg %	C_AA_A In Face	C_AA_A Out Face
ft	ft		psf	ft^2		ft^2	ft^2	ft^2		ft^2	ft^2
144.5000					B	0.000	1.344		100.00	0.000	0.000
					C	0.000	1.344		100.00	0.000	0.000
L4 144.5000-144.0000	144.2290	1.367	9.95	0.599	A	0.000	0.599	0.599	100.00	0.000	0.000
					B	0.000	0.599		100.00	0.000	0.000
					C	0.000	0.599		100.00	0.000	0.000
L5 144.0000-139.0000	141.4787	1.362	9.91	7.931	A	0.000	7.931	7.931	100.00	0.000	0.000
					B	0.000	7.931		100.00	0.000	0.000
					C	0.000	7.931		100.00	0.000	0.000
L6 139.0000-134.0000	136.4798	1.351	9.83	8.338	A	0.000	8.338	8.338	100.00	0.000	0.000
					B	0.000	8.338		100.00	0.000	0.000
					C	0.000	8.338		100.00	0.000	0.000
L7 134.0000-129.0000	131.4807	1.341	9.76	8.745	A	0.000	8.745	8.745	100.00	0.000	0.000
					B	0.000	8.745		100.00	0.000	0.292
					C	0.000	8.745		100.00	0.000	0.000
L8 129.0000-128.2500	128.6246	1.334	9.71	1.347	A	0.000	1.347	1.347	100.00	0.000	0.000
					B	0.000	1.347		100.00	0.000	0.125
					C	0.000	1.347		100.00	0.000	0.000
L9 128.2500-128.0000	128.1250	1.333	9.70	0.449	A	0.000	0.449	0.449	100.00	0.000	0.000
					B	0.000	0.449		100.00	0.000	0.042
					C	0.000	0.449		100.00	0.000	0.000
L10 128.0000-123.0000	125.4817	1.328	9.66	9.188	A	0.000	9.188	9.188	100.00	0.000	0.000
					B	0.000	9.188		100.00	0.000	0.833
					C	0.000	9.188		100.00	0.000	0.000
L11 123.0000-118.0000	120.4825	1.316	9.58	9.597	A	0.000	9.597	9.597	100.00	0.000	0.000
					B	0.000	9.597		100.00	0.000	0.833
					C	0.000	9.597		100.00	0.000	0.000
L12 118.0000-113.0000	115.4832	1.305	9.49	10.007	A	0.000	10.007	10.007	100.00	0.000	0.000
					B	0.000	10.007		100.00	0.000	0.833
					C	0.000	10.007		100.00	0.000	0.000
L13 113.0000-108.0000	110.4838	1.292	9.40	10.416	A	0.000	10.416	10.416	100.00	0.000	0.000
					B	0.000	10.416		100.00	0.000	0.833
					C	0.000	10.416		100.00	0.000	0.000
L14 108.0000-103.0000	105.4844	1.28	9.31	10.825	A	0.000	10.825	10.825	100.00	0.000	0.000
					B	0.000	10.825		100.00	0.000	0.833
					C	0.000	10.825		100.00	0.000	0.000
L15 103.0000-98.0000	100.4850	1.267	9.22	11.233	A	0.000	11.233	11.233	100.00	0.000	0.000
					B	0.000	11.233		100.00	0.000	0.944
					C	0.000	11.233		100.00	0.000	0.000
L16 98.0000-93.0000	95.4855	1.253	9.12	11.641	A	0.000	11.641	11.641	100.00	0.000	0.000
					B	0.000	11.641		100.00	0.000	1.042
					C	0.000	11.641		100.00	0.000	0.000
L17 93.0000-92.0000	92.4994	1.245	9.06	2.328	A	0.000	2.328	2.328	100.00	0.000	0.000
					B	0.000	2.328		100.00	0.000	0.208
					C	0.000	2.328		100.00	0.000	0.000
L18 92.0000-87.0000	89.4858	1.236	9.00	11.886	A	0.000	11.886	11.886	100.00	0.000	0.000
					B	0.000	11.886		100.00	0.000	1.042
					C	0.000	11.886		100.00	0.000	0.000
L19 87.0000-82.0000	84.4863	1.221	8.89	12.297	A	0.000	12.297	12.297	100.00	0.000	0.000
					B	0.000	12.297		100.00	0.000	1.042
					C	0.000	12.297		100.00	0.000	0.000
L20 82.0000-77.5000	79.7392	1.207	8.78	11.417	A	0.000	11.417	11.417	100.00	0.000	0.000
					B	0.000	11.417		100.00	0.000	0.937
					C	0.000	11.417		100.00	0.000	0.000
L21 77.5000-72.5000	74.9871	1.191	8.67	13.065	A	0.000	13.065	13.065	100.00	0.000	0.000
					B	0.000	13.065		100.00	0.000	1.042
					C	0.000	13.065		100.00	0.000	0.000
L22 72.5000-70.5800	71.5381	1.179	8.58	5.125	A	0.000	5.125	5.125	100.00	0.000	0.000
					B	0.000	5.125		100.00	0.000	0.400
					C	0.000	5.125		100.00	0.000	0.000
L23 70.5800-70.3300	70.4550	1.176	8.55	0.672	A	0.000	0.672	0.672	100.00	0.000	0.000
					B	0.000	0.672		100.00	0.000	0.052
					C	0.000	0.672		100.00	0.000	0.000
L24 70.3300-67.0800	68.6998	1.169	8.51	8.826	A	0.000	8.826	8.826	100.00	0.000	0.000
					B	0.000	8.826		100.00	0.000	0.677

Section Elevation ft	z ft	K_Z	q_z psf	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	8.826		100.00	0.000	0.000
L25 67.0800-66.8300	66.9550	1.163	8.46	0.684	A	0.000	0.684	0.684	100.00	0.000	0.000
					B	0.000	0.684		100.00	0.000	0.052
					C	0.000	0.684		100.00	0.000	0.000
L26 66.8300-61.8300	64.3179	1.153	8.39	13.895	A	0.000	13.895	13.895	100.00	0.000	0.000
					B	0.000	13.895		100.00	0.000	1.824
					C	0.000	13.895		100.00	0.000	0.000
L27 61.8300-57.5000	59.6562	1.135	8.26	12.362	A	0.000	12.362	12.362	100.00	0.000	0.000
					B	0.000	12.362		100.00	0.000	1.804
					C	0.000	12.362		100.00	0.000	0.000
L28 57.5000-56.7500	57.1247	1.125	8.18	2.132	A	0.000	2.132	2.132	100.00	0.000	0.000
					B	0.000	2.132		100.00	0.000	0.312
					C	0.000	2.132		100.00	0.000	0.000
L29 56.7500-51.7500	54.2384	1.113	8.10	14.451	A	0.000	14.451	14.451	100.00	0.000	0.000
					B	0.000	14.451		100.00	0.000	2.083
					C	0.000	14.451		100.00	0.000	0.000
L30 51.7500-46.7500	49.2387	1.09	7.93	14.860	A	0.000	14.860	14.860	100.00	0.000	0.000
					B	0.000	14.860		100.00	0.000	2.083
					C	0.000	14.860		100.00	0.000	0.000
L31 46.7500-41.7500	44.2390	1.066	7.76	15.269	A	0.000	15.269	15.269	100.00	0.000	0.000
					B	0.000	15.269		100.00	0.000	2.083
					C	0.000	15.269		100.00	0.000	0.000
L32 41.7500-39.8000	40.7734	1.048	7.62	6.066	A	0.000	6.066	6.066	100.00	0.000	0.000
					B	0.000	6.066		100.00	0.000	0.812
					C	0.000	6.066		100.00	0.000	0.000
L33 39.8000-39.3300	39.5649	1.041	7.58	1.470	A	0.000	1.470	1.470	100.00	0.000	0.000
					B	0.000	1.470		100.00	0.000	0.196
					C	0.000	1.470		100.00	0.000	0.000
L34 39.3300-39.0800	39.2050	1.039	7.56	0.784	A	0.000	0.784	0.784	100.00	0.000	0.000
					B	0.000	0.784		100.00	0.000	0.104
					C	0.000	0.784		100.00	0.000	0.000
L35 39.0800-38.3300	38.7048	1.036	7.54	2.357	A	0.000	2.357	2.357	100.00	0.000	0.000
					B	0.000	2.357		100.00	0.000	0.312
					C	0.000	2.357		100.00	0.000	0.000
L36 38.3300-38.0800	38.2050	1.034	7.52	0.788	A	0.000	0.788	0.788	100.00	0.000	0.000
					B	0.000	0.788		100.00	0.000	0.104
					C	0.000	0.788		100.00	0.000	0.000
L37 38.0800-33.0800	35.5695	1.018	7.41	15.977	A	0.000	15.977	15.977	100.00	0.000	0.000
					B	0.000	15.977		100.00	0.000	2.083
					C	0.000	15.977		100.00	0.000	0.000
L38 33.0800-30.7500	31.9128	0.995	7.24	7.585	A	0.000	7.585	7.585	100.00	0.000	0.000
					B	0.000	7.585		100.00	0.000	0.971
					C	0.000	7.585		100.00	0.000	0.000
L39 30.7500-30.5000	30.6250	0.987	7.18	0.819	A	0.000	0.819	0.819	100.00	0.000	0.000
					B	0.000	0.819		100.00	0.000	0.104
					C	0.000	0.819		100.00	0.000	0.000
L40 30.5000-25.5000	27.9899	0.968	7.04	16.586	A	0.000	16.586	16.586	100.00	0.000	0.000
					B	0.000	16.586		100.00	0.000	2.083
					C	0.000	16.586		100.00	0.000	0.000
L41 25.5000-20.5000	22.9901	0.929	6.76	16.997	A	0.000	16.997	16.997	100.00	0.000	0.000
					B	0.000	16.997		100.00	0.000	2.083
					C	0.000	16.997		100.00	0.000	0.000
L42 20.5000-15.5000	17.9903	0.882	6.42	17.406	A	0.000	17.406	17.406	100.00	0.000	0.000
					B	0.000	17.406		100.00	0.000	2.083
					C	0.000	17.406		100.00	0.000	0.000
L43 15.5000-9.8000	12.6377	0.85	6.18	20.339	A	0.000	20.339	20.339	100.00	0.000	0.000
					B	0.000	20.339		100.00	0.000	2.375
					C	0.000	20.339		100.00	0.000	0.000
L44 9.8000-8.8000	9.2996	0.85	6.18	3.559	A	0.000	3.559	3.559	100.00	0.000	0.000
					B	0.000	3.559		100.00	0.000	0.417
					C	0.000	3.559		100.00	0.000	0.000
L45 8.8000-8.2500	8.5249	0.85	6.18	1.964	A	0.000	1.964	1.964	100.00	0.000	0.000
					B	0.000	1.964		100.00	0.000	0.229
					C	0.000	1.964		100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	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
L46 8.2500-8.0000	8.1250	0.85	6.18	0.894	A	0.000	0.894	0.894	100.00	0.000	0.000
					B	0.000	0.894		100.00	0.000	0.104
					C	0.000	0.894		100.00	0.000	0.000
L47 8.0000-4.2500	6.1198	0.85	6.18	13.538	A	0.000	13.538	13.538	100.00	0.000	0.000
					B	0.000	13.538		100.00	0.000	1.562
					C	0.000	13.538		100.00	0.000	0.000
L48 4.2500-4.0000	4.1250	0.85	6.18	0.909	A	0.000	0.909	0.909	100.00	0.000	0.000
					B	0.000	0.909		100.00	0.000	0.104
					C	0.000	0.909		100.00	0.000	0.000
L49 4.0000-3.0000	3.4996	0.85	6.18	3.648	A	0.000	3.648	3.648	100.00	0.000	0.000
					B	0.000	3.648		100.00	0.000	0.417
					C	0.000	3.648		100.00	0.000	0.000
L50 3.0000-2.7500	2.8750	0.85	6.18	0.914	A	0.000	0.914	0.914	100.00	0.000	0.000
					B	0.000	0.914		100.00	0.000	0.104
					C	0.000	0.914		100.00	0.000	0.000
L51 2.7500-0.0000	1.3722	0.85	6.18	10.120	A	0.000	10.120	10.120	100.00	0.000	0.000
					B	0.000	10.120		100.00	0.000	1.146
					C	0.000	10.120		100.00	0.000	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

Comb. No.	Description
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	156 - 151	Pole	Max Tension	39	0.00	0.00	-0.00
			Max. Compression	26	-1.09	1.38	0.81
			Max. Mx	20	-0.46	3.20	-0.08
			Max. My	2	-0.44	0.11	3.37
			Max. Vy	20	-0.91	3.20	-0.08
			Max. Vx	2	-1.04	0.11	3.37
			Max. Torque	4			1.16
L2	151 - 146	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-5.53	-0.84	4.68
			Max. Mx	8	-2.18	-22.57	2.60
			Max. My	2	-2.12	-1.15	26.31
			Max. Vy	8	4.70	-22.57	2.60
			Max. Vx	2	-5.08	-1.15	26.31
			Max. Torque	8			2.71
L3	146 - 144.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-5.65	-0.84	4.68
			Max. Mx	8	-2.26	-29.66	2.69
			Max. My	2	-2.21	-1.23	33.97
			Max. Vy	8	4.76	-29.66	2.69
			Max. Vx	2	-5.13	-1.23	33.97
			Max. Torque	8			2.71
L4	144.5 - 144	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-5.70	-0.84	4.69
			Max. Mx	8	-2.30	-32.05	2.71
			Max. My	2	-2.25	-1.25	36.55
			Max. Vy	8	4.78	-32.05	2.71
			Max. Vx	2	-5.16	-1.25	36.55
			Max. Torque	8			2.71
L5	144 - 139	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-14.84	-0.86	4.74
			Max. Mx	8	-6.36	-85.22	3.01
			Max. My	2	-6.29	-1.52	91.67
			Max. Vy	8	12.27	-85.22	3.01
			Max. Vx	2	-12.67	-1.52	91.67
			Max. Torque	8			2.71
L6	139 - 134	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-15.52	-0.87	4.80
			Max. Mx	8	-6.85	-147.75	3.30
			Max. My	2	-6.78	-1.79	156.15
			Max. Vy	8	12.74	-147.75	3.30
			Max. Vx	2	-13.13	-1.79	156.15
			Max. Torque	8			2.71
L7	134 - 129	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16.23	-0.88	4.84
			Max. Mx	8	-7.38	-212.67	3.58

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-7.32	-2.06	223.02
			Max. Vy	8	13.23	-212.67	3.58
			Max. Vx	2	-13.62	-2.06	223.02
			Max. Torque	8			2.71
L8	129 - 128.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16.34	-0.89	4.84
			Max. Mx	8	-7.46	-222.63	3.62
			Max. My	2	-7.40	-2.10	233.27
			Max. Vy	8	13.31	-222.63	3.62
			Max. Vx	2	-13.70	-2.10	233.27
			Max. Torque	8			2.70
L9	128.25 - 128	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16.39	-0.89	4.85
			Max. Mx	8	-7.51	-225.96	3.64
			Max. My	2	-7.45	-2.11	236.69
			Max. Vy	8	13.34	-225.96	3.64
			Max. Vx	2	-13.73	-2.11	236.69
			Max. Torque	8			2.70
L10	128 - 123	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-17.48	-0.90	4.88
			Max. Mx	8	-8.39	-294.09	3.91
			Max. My	2	-8.32	-2.38	306.78
			Max. Vy	8	13.92	-294.09	3.91
			Max. Vx	2	-14.31	-2.38	306.78
			Max. Torque	8			2.70
L11	123 - 118	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-23.11	-1.72	4.45
			Max. Mx	8	-11.86	-370.05	4.14
			Max. My	2	-11.80	-2.65	384.51
			Max. Vy	8	16.91	-370.05	4.14
			Max. Vx	2	-17.29	-2.65	384.51
			Max. Torque	8			2.68
L12	118 - 113	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-24.25	-1.74	4.49
			Max. Mx	8	-12.80	-456.03	4.34
			Max. My	2	-12.74	-2.84	472.39
			Max. Vy	8	17.50	-456.03	4.34
			Max. Vx	2	-17.88	-2.84	472.39
			Max. Torque	22			-2.46
L13	113 - 108	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.41	-1.75	4.52
			Max. Mx	8	-13.76	-544.96	4.54
			Max. My	2	-13.70	-3.03	563.21
			Max. Vy	8	18.09	-544.96	4.54
			Max. Vx	2	-18.47	-3.03	563.21
			Max. Torque	22			-2.46
L14	108 - 103	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26.60	-1.76	4.55
			Max. Mx	8	-14.75	-636.85	4.74
			Max. My	2	-14.70	-3.22	656.99
			Max. Vy	8	18.68	-636.85	4.74
			Max. Vx	2	-19.06	-3.22	656.99
			Max. Torque	22			-2.46
L15	103 - 98	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.81	-1.77	4.58
			Max. Mx	8	-15.76	-731.73	4.93
			Max. My	2	-15.71	-3.40	753.77
			Max. Vy	8	19.29	-731.73	4.93
			Max. Vx	2	-19.67	-3.40	753.77
			Max. Torque	22			-2.46
L16	98 - 93	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.17	-1.78	4.59
			Max. Mx	8	-16.07	-760.79	4.99
			Max. My	2	-16.02	-3.45	783.39
			Max. Vy	8	19.47	-760.79	4.99

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	-19.85	-3.45	783.39
			Max. Torque	22			-2.46
L17	93 - 92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.28	-1.79	4.61
			Max. Mx	8	-17.79	-849.83	5.17
			Max. My	2	-17.74	-3.62	874.13
			Max. Vy	8	20.10	-849.83	5.17
			Max. Vx	2	-20.48	-3.62	874.13
			Max. Torque	22			-2.45
L18	92 - 87	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.81	-1.80	4.64
			Max. Mx	8	-19.10	-951.89	5.36
			Max. My	2	-19.05	-3.80	978.08
			Max. Vy	8	20.74	-951.89	5.36
			Max. Vx	2	-21.12	-3.80	978.08
			Max. Torque	22			-2.45
L19	87 - 82	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.35	-1.80	4.66
			Max. Mx	8	-20.43	-1057.13	5.55
			Max. My	2	-20.39	-3.99	1085.21
			Max. Vy	8	21.37	-1057.13	5.55
			Max. Vx	2	-21.75	-3.99	1085.21
			Max. Torque	22			-2.45
L20	82 - 77.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.77	-1.81	4.68
			Max. Mx	8	-21.66	-1154.56	5.72
			Max. My	2	-21.62	-4.15	1184.34
			Max. Vy	8	21.95	-1154.56	5.72
			Max. Vx	2	-22.32	-4.15	1184.34
			Max. Torque	22			-2.45
L21	77.5 - 72.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-36.48	-1.82	4.70
			Max. Mx	8	-23.15	-1265.85	5.90
			Max. My	2	-23.12	-4.33	1297.51
			Max. Vy	8	22.59	-1265.85	5.90
			Max. Vx	2	-22.97	-4.33	1297.51
			Max. Torque	22			-2.45
L22	72.5 - 70.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.15	-1.82	4.70
			Max. Mx	8	-23.73	-1309.45	5.98
			Max. My	2	-23.69	-4.40	1341.83
			Max. Vy	8	22.85	-1309.45	5.98
			Max. Vx	2	-23.22	-4.40	1341.83
			Max. Torque	22			-2.45
L23	70.58 - 70.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.23	-1.82	4.70
			Max. Mx	8	-23.82	-1315.16	5.98
			Max. My	2	-23.78	-4.41	1347.64
			Max. Vy	8	22.87	-1315.16	5.98
			Max. Vx	2	-23.24	-4.41	1347.64
			Max. Torque	22			-2.45
L24	70.33 - 67.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.37	-1.82	4.70
			Max. Mx	8	-24.80	-1390.14	6.10
			Max. My	2	-24.77	-4.52	1423.84
			Max. Vy	8	23.29	-1390.14	6.10
			Max. Vx	2	-23.67	-4.52	1423.84
			Max. Torque	22			-2.45
L25	67.08 - 66.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.48	-1.82	4.70
			Max. Mx	8	-24.91	-1395.96	6.11
			Max. My	2	-24.88	-4.53	1429.76

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vy	8	23.32	-1395.96	6.11
			Max. Vx	2	-23.69	-4.53	1429.76
			Max. Torque	22			-2.45
L26	66.83 - 61.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.74	-1.82	4.70
			Max. Mx	8	-26.92	-1514.34	6.30
			Max. My	2	-26.89	-4.71	1550.00
			Max. Vy	8	24.04	-1514.34	6.30
			Max. Vx	2	-24.42	-4.71	1550.00
			Max. Torque	22			-2.45
L27	61.83 - 57.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.78	-1.82	4.71
			Max. Mx	8	-26.96	-1516.26	6.30
			Max. My	2	-26.93	-4.71	1551.95
			Max. Vy	8	24.06	-1516.26	6.30
			Max. Vx	2	-24.44	-4.71	1551.95
			Max. Torque	22			-2.45
L28	57.5 - 56.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-44.87	-1.82	4.70
			Max. Mx	8	-30.51	-1638.57	6.49
			Max. My	2	-30.49	-4.89	1676.14
			Max. Vy	8	24.87	-1638.57	6.49
			Max. Vx	2	-25.24	-4.89	1676.14
			Max. Torque	22			-2.45
L29	56.75 - 51.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.16	-1.82	4.70
			Max. Mx	8	-32.56	-1764.61	6.67
			Max. My	2	-32.54	-5.07	1804.06
			Max. Vy	8	25.57	-1764.61	6.67
			Max. Vx	2	-25.95	-5.07	1804.06
			Max. Torque	24			-2.51
L30	51.75 - 46.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.47	-1.82	4.70
			Max. Mx	8	-34.64	-1894.13	6.85
			Max. My	2	-34.62	-5.24	1935.45
			Max. Vy	8	26.26	-1894.13	6.85
			Max. Vx	2	-26.64	-5.24	1935.45
			Max. Torque	24			-2.58
L31	46.75 - 41.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.81	-1.82	4.70
			Max. Mx	8	-36.74	-2027.08	7.03
			Max. My	2	-36.72	-5.42	2070.26
			Max. Vy	8	26.94	-2027.08	7.03
			Max. Vx	2	-27.31	-5.42	2070.26
			Max. Torque	24			-2.65
L32	41.75 - 39.8	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.74	-1.82	4.70
			Max. Mx	8	-37.56	-2079.85	7.10
			Max. My	2	-37.54	-5.48	2123.76
			Max. Vy	8	27.21	-2079.85	7.10
			Max. Vx	2	-27.59	-5.48	2123.76
			Max. Torque	24			-2.68
L33	39.8 - 39.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.97	-1.82	4.70
			Max. Mx	8	-37.79	-2092.64	7.12
			Max. My	2	-37.77	-5.50	2136.73
			Max. Vy	8	27.26	-2092.64	7.12
			Max. Vx	2	-27.63	-5.50	2136.73
			Max. Torque	24			-2.68
L34	39.33 - 39.08	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-53.10	-1.82	4.70
			Max. Mx	8	-37.91	-2099.46	7.13
			Max. My	2	-37.89	-5.51	2143.64
			Max. Vy	8	27.29	-2099.46	7.13
			Max. Vx	2	-27.67	-5.51	2143.64
			Max. Torque	24			-2.69
L35	39.08 - 38.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.48	-1.82	4.70
			Max. Mx	8	-38.25	-2119.97	7.16
			Max. My	2	-38.23	-5.54	2164.42
			Max. Vy	8	27.40	-2119.97	7.16
			Max. Vx	2	-27.77	-5.54	2164.42
			Max. Torque	24			-2.70
L36	38.33 - 38.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.60	-1.82	4.70
			Max. Mx	8	-38.36	-2126.82	7.16
			Max. My	2	-38.34	-5.54	2171.37
			Max. Vy	8	27.43	-2126.82	7.16
			Max. Vx	2	-27.80	-5.54	2171.37
			Max. Torque	24			-2.70
L37	38.08 - 33.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.08	-1.82	4.70
			Max. Mx	8	-40.60	-2265.58	7.34
			Max. My	2	-40.58	-5.72	2311.98
			Max. Vy	8	28.09	-2265.58	7.34
			Max. Vx	2	-28.46	-5.72	2311.98
			Max. Torque	24			-2.77
L38	33.08 - 30.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.25	-1.82	4.70
			Max. Mx	8	-41.65	-2331.35	7.42
			Max. My	2	-41.64	-5.80	2378.61
			Max. Vy	8	28.39	-2331.35	7.42
			Max. Vx	2	-28.76	-5.80	2378.61
			Max. Torque	24			-2.80
L39	30.75 - 30.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-57.39	-1.82	4.70
			Max. Mx	8	-41.78	-2338.45	7.43
			Max. My	2	-41.77	-5.81	2385.80
			Max. Vy	8	28.42	-2338.45	7.43
			Max. Vx	2	-28.78	-5.81	2385.80
			Max. Torque	24			-2.81
L40	30.5 - 25.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.06	-1.82	4.70
			Max. Mx	8	-44.21	-2482.09	7.61
			Max. My	2	-44.20	-5.98	2531.28
			Max. Vy	8	29.06	-2482.09	7.61
			Max. Vx	2	-29.43	-5.98	2531.28
			Max. Torque	24			-2.87
L41	25.5 - 20.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.76	-1.82	4.70
			Max. Mx	8	-46.67	-2628.83	7.78
			Max. My	2	-46.66	-6.15	2679.85
			Max. Vy	8	29.66	-2628.83	7.78
			Max. Vx	2	-30.03	-6.15	2679.85
			Max. Torque	24			-2.94
L42	20.5 - 15.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.47	-1.82	4.70
			Max. Mx	8	-49.15	-2778.50	7.95
			Max. My	2	-49.15	-6.31	2831.34
			Max. Vy	8	30.24	-2778.50	7.95
			Max. Vx	2	-30.60	-6.31	2831.34

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	24			-3.01
L43	15.5 - 9.8	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.72	-1.82	4.70
			Max. Mx	8	-49.38	-2792.12	7.97
			Max. My	2	-49.38	-6.33	2845.12
			Max. Vy	8	30.28	-2792.12	7.97
			Max. Vx	2	-30.64	-6.33	2845.12
			Max. Torque	24			-3.01
L44	9.8 - 8.8	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-71.84	-1.82	4.70
			Max. Mx	8	-54.86	-2983.77	8.18
			Max. My	2	-54.85	-6.54	3039.03
			Max. Vy	8	31.06	-2983.77	8.18
			Max. Vx	2	-31.42	-6.54	3039.03
			Max. Torque	24			-3.09
L45	8.8 - 8.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.14	-1.82	4.70
			Max. Mx	8	-55.14	-3000.85	8.20
			Max. My	2	-55.13	-6.56	3056.31
			Max. Vy	8	31.11	-3000.85	8.20
			Max. Vx	2	-31.47	-6.56	3056.31
			Max. Torque	24			-3.10
L46	8.25 - 8	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.29	-1.82	4.70
			Max. Mx	8	-55.28	-3008.63	8.20
			Max. My	2	-55.27	-6.56	3064.18
			Max. Vy	8	31.13	-3008.63	8.20
			Max. Vx	2	-31.49	-6.56	3064.18
			Max. Torque	24			-3.10
L47	8 - 4.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.46	-1.82	4.70
			Max. Mx	8	-57.29	-3126.08	8.33
			Max. My	2	-57.29	-6.69	3182.97
			Max. Vy	8	31.54	-3126.08	8.33
			Max. Vx	2	-31.90	-6.69	3182.97
			Max. Torque	24			-3.15
L48	4.25 - 4	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.62	-1.82	4.70
			Max. Mx	8	-57.45	-3133.96	8.34
			Max. My	2	-57.45	-6.69	3190.95
			Max. Vy	8	31.55	-3133.96	8.34
			Max. Vx	2	-31.91	-6.69	3190.95
			Max. Torque	24			-3.16
L49	4 - 3	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.25	-1.82	4.70
			Max. Mx	8	-58.03	-3165.56	8.37
			Max. My	2	-58.03	-6.73	3222.90
			Max. Vy	8	31.67	-3165.56	8.37
			Max. Vx	2	-32.03	-6.73	3222.90
			Max. Torque	24			-3.17
L50	3 - 2.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-75.41	-1.82	4.70
			Max. Mx	8	-58.19	-3173.48	8.38
			Max. My	2	-58.19	-6.74	3230.91
			Max. Vy	8	31.69	-3173.48	8.38
			Max. Vx	2	-32.04	-6.74	3230.91
			Max. Torque	24			-3.17
L51	2.75 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-77.21	-1.82	4.70
			Max. Mx	8	-59.89	-3261.03	8.47
			Max. My	2	-59.89	-6.83	3319.44
			Max. Vy	8	32.01	-3261.03	8.47
			Max. Vx	2	-32.37	-6.83	3319.44
			Max. Torque	24			-3.21

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

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	77.21	0.00	-0.00
	Max. H_x	20	59.90	31.99	-0.03
	Max. H_z	3	44.92	-0.03	32.35
	Max. M_x	2	3319.44	-0.03	32.35
	Max. M_z	8	3261.03	-31.99	0.03
	Max. Torsion	12	3.21	-15.97	-28.00
	Min. Vert	21	44.92	31.99	-0.03
	Min. H_x	9	44.92	-31.99	0.03
	Min. H_z	15	44.92	0.03	-32.35
	Min. M_x	14	-3314.88	0.03	-32.35
	Min. M_z	20	-3259.74	31.99	-0.03
	Min. Torsion	24	-3.21	15.97	28.00

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	49.91	-0.00	0.00	-1.73	-0.49	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	59.90	0.03	-32.35	-3319.44	-6.83	3.11
0.9 Dead+1.0 Wind 0 deg - No Ice	44.92	0.03	-32.35	-3287.47	-6.58	3.10
1.2 Dead+1.0 Wind 30 deg - No Ice	59.90	16.02	-28.03	-2878.17	-1636.13	2.18
0.9 Dead+1.0 Wind 30 deg - No Ice	44.92	16.02	-28.03	-2850.35	-1620.53	2.19
1.2 Dead+1.0 Wind 60 deg - No Ice	59.90	27.72	-16.20	-1666.30	-2827.28	0.66
0.9 Dead+1.0 Wind 60 deg - No Ice	44.92	27.72	-16.20	-1649.93	-2800.47	0.70
1.2 Dead+1.0 Wind 90 deg - No Ice	59.90	31.99	-0.03	-8.47	-3261.03	-1.03
0.9 Dead+1.0 Wind 90 deg - No Ice	44.92	31.99	-0.03	-7.78	-3230.15	-0.97
1.2 Dead+1.0 Wind 120 deg - No Ice	59.90	27.69	16.15	1651.03	-2821.12	-2.45
0.9 Dead+1.0 Wind 120 deg - No Ice	44.92	27.69	16.15	1636.02	-2794.39	-2.39
1.2 Dead+1.0 Wind 150 deg - No Ice	59.90	15.97	28.00	2867.45	-1625.42	-3.21
0.9 Dead+1.0 Wind 150 deg - No Ice	44.92	15.97	28.00	2840.93	-1609.97	-3.17
1.2 Dead+1.0 Wind 180 deg - No Ice	59.90	-0.03	32.35	3314.88	5.56	-3.11
0.9 Dead+1.0 Wind 180 deg - No Ice	44.92	-0.03	32.35	3284.13	5.64	-3.10
1.2 Dead+1.0 Wind 210 deg - No Ice	59.90	-16.02	28.03	2873.60	1634.85	-2.18
0.9 Dead+1.0 Wind 210 deg - No Ice	44.92	-16.02	28.03	2847.00	1619.60	-2.19

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 240 deg - No Ice	59.90	-27.72	16.20	1661.73	2825.99	-0.67
0.9 Dead+1.0 Wind 240 deg - No Ice	44.92	-27.72	16.20	1646.58	2799.53	-0.71
1.2 Dead+1.0 Wind 270 deg - No Ice	59.90	-31.99	0.03	3.91	3259.74	1.03
0.9 Dead+1.0 Wind 270 deg - No Ice	44.92	-31.99	0.03	4.44	3229.19	0.97
1.2 Dead+1.0 Wind 300 deg - No Ice	59.90	-27.69	-16.15	-1655.59	2819.84	2.45
0.9 Dead+1.0 Wind 300 deg - No Ice	44.92	-27.69	-16.15	-1639.36	2793.45	2.39
1.2 Dead+1.0 Wind 330 deg - No Ice	59.90	-15.97	-28.00	-2872.00	1624.15	3.21
0.9 Dead+1.0 Wind 330 deg - No Ice	44.92	-15.97	-28.00	-2844.27	1609.03	3.17
1.2 Dead+1.0 Ice+1.0 Temp	77.21	-0.00	0.00	-4.70	-1.82	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	77.21	0.02	-7.06	-748.06	-4.67	0.99
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	77.21	3.51	-6.13	-649.89	-370.13	0.83
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	77.21	6.06	-3.55	-378.87	-636.91	0.45
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	77.21	6.99	-0.02	-7.64	-733.54	-0.06
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	77.21	6.05	3.52	364.35	-634.12	-0.55
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	77.21	3.48	6.11	637.42	-365.28	-0.89
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	77.21	-0.02	7.06	738.39	0.93	-0.99
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	77.21	-3.51	6.13	640.21	366.38	-0.83
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	77.21	-6.06	3.55	369.20	633.17	-0.45
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	77.21	-6.99	0.02	-2.04	729.79	0.06
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	77.21	-6.05	-3.52	-374.02	630.37	0.55
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	77.21	-3.48	-6.11	-647.09	361.54	0.89
Dead+Wind 0 deg - Service	49.91	0.01	-6.18	-633.43	-1.70	0.59
Dead+Wind 30 deg - Service	49.91	3.06	-5.36	-549.43	-311.94	0.42
Dead+Wind 60 deg - Service	49.91	5.30	-3.10	-318.69	-538.74	0.13
Dead+Wind 90 deg - Service	49.91	6.11	-0.01	-3.06	-621.29	-0.19
Dead+Wind 120 deg - Service	49.91	5.29	3.09	312.88	-537.56	-0.46
Dead+Wind 150 deg - Service	49.91	3.05	5.35	544.49	-309.91	-0.61
Dead+Wind 180 deg - Service	49.91	-0.01	6.18	629.66	0.64	-0.59
Dead+Wind 210 deg - Service	49.91	-3.06	5.36	545.66	310.87	-0.42
Dead+Wind 240 deg - Service	49.91	-5.30	3.10	314.91	537.67	-0.13
Dead+Wind 270 deg - Service	49.91	-6.11	0.01	-0.71	620.22	0.19
Dead+Wind 300 deg - Service	49.91	-5.29	-3.09	-316.66	536.50	0.46
Dead+Wind 330 deg - Service	49.91	-3.05	-5.35	-548.26	308.84	0.61

Solution Summary

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
1	0.00	-49.91	0.00	0.00	49.91	-0.00	0.002%
2	0.03	-59.90	-32.35	-0.03	59.90	32.35	0.000%
3	0.03	-44.92	-32.35	-0.03	44.92	32.35	0.000%
4	16.02	-59.90	-28.03	-16.02	59.90	28.03	0.000%
5	16.02	-44.92	-28.03	-16.02	44.92	28.03	0.000%
6	27.72	-59.90	-16.20	-27.72	59.90	16.20	0.000%
7	27.72	-44.92	-16.20	-27.72	44.92	16.20	0.000%
8	31.99	-59.90	-0.03	-31.99	59.90	0.03	0.000%
9	31.99	-44.92	-0.03	-31.99	44.92	0.03	0.000%
10	27.69	-59.90	16.15	-27.69	59.90	-16.15	0.000%
11	27.69	-44.92	16.15	-27.69	44.92	-16.15	0.000%
12	15.97	-59.90	28.00	-15.97	59.90	-28.00	0.000%
13	15.97	-44.92	28.00	-15.97	44.92	-28.00	0.000%
14	-0.03	-59.90	32.35	0.03	59.90	-32.35	0.000%
15	-0.03	-44.92	32.35	0.03	44.92	-32.35	0.000%
16	-16.02	-59.90	28.03	16.02	59.90	-28.03	0.000%
17	-16.02	-44.92	28.03	16.02	44.92	-28.03	0.000%
18	-27.72	-59.90	16.20	27.72	59.90	-16.20	0.000%
19	-27.72	-44.92	16.20	27.72	44.92	-16.20	0.000%
20	-31.99	-59.90	0.03	31.99	59.90	-0.03	0.000%
21	-31.99	-44.92	0.03	31.99	44.92	-0.03	0.000%
22	-27.69	-59.90	-16.15	27.69	59.90	16.15	0.000%
23	-27.69	-44.92	-16.15	27.69	44.92	16.15	0.000%
24	-15.97	-59.90	-28.00	15.97	59.90	28.00	0.000%
25	-15.97	-44.92	-28.00	15.97	44.92	28.00	0.000%
26	0.00	-77.21	0.00	0.00	77.21	-0.00	0.000%
27	0.02	-77.21	-7.06	-0.02	77.21	7.06	0.000%
28	3.51	-77.21	-6.13	-3.51	77.21	6.13	0.000%
29	6.06	-77.21	-3.55	-6.06	77.21	3.55	0.000%
30	6.99	-77.21	-0.02	-6.99	77.21	0.02	0.000%
31	6.05	-77.21	3.52	-6.05	77.21	-3.52	0.000%
32	3.48	-77.21	6.11	-3.48	77.21	-6.11	0.000%
33	-0.02	-77.21	7.06	0.02	77.21	-7.06	0.000%
34	-3.51	-77.21	6.13	3.51	77.21	-6.13	0.000%
35	-6.06	-77.21	3.55	6.06	77.21	-3.55	0.000%
36	-6.99	-77.21	0.02	6.99	77.21	-0.02	0.000%
37	-6.05	-77.21	-3.52	6.05	77.21	3.52	0.000%
38	-3.48	-77.21	-6.11	3.48	77.21	6.11	0.000%
39	0.01	-49.91	-6.18	-0.01	49.91	6.18	0.001%
40	3.06	-49.91	-5.36	-3.06	49.91	5.36	0.000%
41	5.30	-49.91	-3.10	-5.30	49.91	3.10	0.000%
42	6.11	-49.91	-0.01	-6.11	49.91	0.01	0.001%
43	5.29	-49.91	3.09	-5.29	49.91	-3.09	0.000%
44	3.05	-49.91	5.35	-3.05	49.91	-5.35	0.000%
45	-0.01	-49.91	6.18	0.01	49.91	-6.18	0.001%
46	-3.06	-49.91	5.36	3.06	49.91	-5.36	0.000%
47	-5.30	-49.91	3.10	5.30	49.91	-3.10	0.000%
48	-6.11	-49.91	0.01	6.11	49.91	-0.01	0.001%
49	-5.29	-49.91	-3.09	5.29	49.91	3.09	0.000%
50	-3.05	-49.91	-5.35	3.05	49.91	5.35	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00002245
2	Yes	21	0.00000001	0.00014185
3	Yes	21	0.00000001	0.00010992

4	Yes	25	0.00000001	0.00010287
5	Yes	25	0.00000001	0.00000000
6	Yes	25	0.00000001	0.00010010
7	Yes	24	0.00000001	0.00014708
8	Yes	21	0.00000001	0.00010321
9	Yes	21	0.00000001	0.00007708
10	Yes	25	0.00000001	0.00009375
11	Yes	24	0.00000001	0.00013789
12	Yes	25	0.00000001	0.00010447
13	Yes	25	0.00000001	0.00000000
14	Yes	21	0.00000001	0.00012659
15	Yes	21	0.00000001	0.00009819
16	Yes	25	0.00000001	0.00009756
17	Yes	24	0.00000001	0.00014338
18	Yes	25	0.00000001	0.00009862
19	Yes	24	0.00000001	0.00014532
20	Yes	21	0.00000001	0.00008890
21	Yes	20	0.00000001	0.00012920
22	Yes	25	0.00000001	0.00010318
23	Yes	25	0.00000001	0.00000000
24	Yes	25	0.00000001	0.00009406
25	Yes	24	0.00000001	0.00013806
26	Yes	17	0.00000001	0.00009361
27	Yes	23	0.00000001	0.00012822
28	Yes	23	0.00000001	0.00013703
29	Yes	23	0.00000001	0.00013523
30	Yes	23	0.00000001	0.00012409
31	Yes	23	0.00000001	0.00013067
32	Yes	23	0.00000001	0.00013136
33	Yes	23	0.00000001	0.00012342
34	Yes	23	0.00000001	0.00013124
35	Yes	23	0.00000001	0.00013061
36	Yes	23	0.00000001	0.00012243
37	Yes	23	0.00000001	0.00013263
38	Yes	23	0.00000001	0.00013434
39	Yes	17	0.00000001	0.00010424
40	Yes	18	0.00000001	0.00013383
41	Yes	18	0.00000001	0.00012483
42	Yes	17	0.00000001	0.00008633
43	Yes	18	0.00000001	0.00011069
44	Yes	18	0.00000001	0.00014490
45	Yes	17	0.00000001	0.00010130
46	Yes	18	0.00000001	0.00011476
47	Yes	18	0.00000001	0.00011859
48	Yes	17	0.00000001	0.00008494
49	Yes	18	0.00000001	0.00014188
50	Yes	18	0.00000001	0.00011218

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	156 - 151	18.28	39	1.18	0.01
L2	151 - 146	17.04	39	1.18	0.01
L3	146 - 144.5	15.81	39	1.15	0.01
L4	144.5 - 144	15.45	39	1.13	0.01
L5	144 - 139	15.34	39	1.13	0.01
L6	139 - 134	14.17	39	1.10	0.01
L7	134 - 129	13.04	39	1.05	0.00
L8	129 - 128.25	11.98	39	0.98	0.00
L9	128.25 - 128	11.83	39	0.97	0.00
L10	128 - 123	11.77	39	0.97	0.00
L11	123 - 118	10.78	39	0.94	0.00

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L12	118 - 113	9.82	39	0.90	0.00
L13	113 - 108	8.90	39	0.85	0.00
L14	108 - 103	8.04	39	0.80	0.00
L15	103 - 98	7.23	39	0.75	0.00
L16	98 - 93	6.47	39	0.69	0.00
L17	96.5 - 92	6.26	39	0.67	0.00
L18	92 - 87	5.64	39	0.65	0.00
L19	87 - 82	4.98	39	0.60	0.00
L20	82 - 77.5	4.38	39	0.55	0.00
L21	77.5 - 72.5	3.88	39	0.51	0.00
L22	72.5 - 70.58	3.36	39	0.47	0.00
L23	70.58 - 70.33	3.18	39	0.45	0.00
L24	70.33 - 67.08	3.16	39	0.45	0.00
L25	67.08 - 66.83	2.86	39	0.42	0.00
L26	66.83 - 61.83	2.84	39	0.41	0.00
L27	61.83 - 57.5	2.42	39	0.38	0.00
L28	61.75 - 56.75	2.42	39	0.38	0.00
L29	56.75 - 51.75	2.03	39	0.36	0.00
L30	51.75 - 46.75	1.67	39	0.33	0.00
L31	46.75 - 41.75	1.34	39	0.29	0.00
L32	41.75 - 39.8	1.06	39	0.26	0.00
L33	39.8 - 39.33	0.96	39	0.24	0.00
L34	39.33 - 39.08	0.93	39	0.24	0.00
L35	39.08 - 38.33	0.92	39	0.24	0.00
L36	38.33 - 38.08	0.88	39	0.23	0.00
L37	38.08 - 33.08	0.87	39	0.23	0.00
L38	33.08 - 30.75	0.65	39	0.20	0.00
L39	30.75 - 30.5	0.56	39	0.18	0.00
L40	30.5 - 25.5	0.55	39	0.18	0.00
L41	25.5 - 20.5	0.38	39	0.15	0.00
L42	20.5 - 15.5	0.24	39	0.11	0.00
L43	15.5 - 9.8	0.14	39	0.08	0.00
L44	15.05 - 8.8	0.13	39	0.08	0.00
L45	8.8 - 8.25	0.05	39	0.05	0.00
L46	8.25 - 8	0.04	39	0.05	0.00
L47	8 - 4.25	0.04	39	0.05	0.00
L48	4.25 - 4	0.01	39	0.02	0.00
L49	4 - 3	0.01	39	0.02	0.00
L50	3 - 2.75	0.00	39	0.02	0.00
L51	2.75 - 0	0.00	39	0.01	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
154.0000	RR90-17-VDPL2 w/ Mount Pipe	39	17.78	1.18	0.01	19300
150.0000	NNVV-65B-R4	39	16.79	1.18	0.01	13161
143.0000	(2) ATMAA1412D-1A20	39	15.10	1.12	0.01	8228
120.0000	(2) 980H120T4E-M w/ Mount Pipe	39	10.19	0.91	0.00	6982

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	156 - 151	95.01	2	6.04	0.07
L2	151 - 146	88.69	2	6.03	0.07
L3	146 - 144.5	82.43	2	5.91	0.05
L4	144.5 - 144	80.59	2	5.83	0.04
L5	144 - 139	79.98	2	5.83	0.04
L6	139 - 134	73.95	2	5.69	0.03
L7	134 - 129	68.12	2	5.45	0.02
L8	129 - 128.25	62.59	2	5.12	0.02
L9	128.25 - 128	61.79	2	5.07	0.02
L10	128 - 123	61.52	2	5.06	0.02
L11	123 - 118	56.32	2	4.88	0.01
L12	118 - 113	51.32	2	4.67	0.01
L13	113 - 108	46.55	2	4.44	0.01
L14	108 - 103	42.04	2	4.18	0.01
L15	103 - 98	37.82	2	3.90	0.01
L16	98 - 93	33.88	2	3.61	0.01
L17	96.5 - 92	32.76	2	3.52	0.01
L18	92 - 87	29.50	2	3.39	0.01
L19	87 - 82	26.08	2	3.15	0.01
L20	82 - 77.5	22.92	2	2.90	0.00
L21	77.5 - 72.5	20.30	2	2.67	0.00
L22	72.5 - 70.58	17.62	2	2.44	0.00
L23	70.58 - 70.33	16.66	2	2.35	0.00
L24	70.33 - 67.08	16.54	2	2.34	0.00
L25	67.08 - 66.83	15.00	2	2.18	0.00
L26	66.83 - 61.83	14.89	2	2.17	0.00
L27	61.83 - 57.5	12.70	2	2.00	0.00
L28	61.75 - 56.75	12.67	2	2.00	0.00
L29	56.75 - 51.75	10.62	2	1.90	0.00
L30	51.75 - 46.75	8.74	2	1.71	0.00
L31	46.75 - 41.75	7.04	2	1.53	0.00
L32	41.75 - 39.8	5.54	2	1.34	0.00
L33	39.8 - 39.33	5.01	2	1.27	0.00
L34	39.33 - 39.08	4.89	2	1.25	0.00
L35	39.08 - 38.33	4.82	2	1.24	0.00
L36	38.33 - 38.08	4.63	2	1.22	0.00
L37	38.08 - 33.08	4.56	2	1.21	0.00
L38	33.08 - 30.75	3.39	2	1.03	0.00
L39	30.75 - 30.5	2.91	2	0.94	0.00
L40	30.5 - 25.5	2.86	2	0.93	0.00
L41	25.5 - 20.5	1.98	2	0.76	0.00
L42	20.5 - 15.5	1.27	2	0.59	0.00
L43	15.5 - 9.8	0.74	2	0.42	0.00
L44	15.05 - 8.8	0.70	2	0.41	0.00
L45	8.8 - 8.25	0.24	2	0.28	0.00
L46	8.25 - 8	0.21	2	0.26	0.00
L47	8 - 4.25	0.20	2	0.25	0.00
L48	4.25 - 4	0.05	2	0.12	0.00
L49	4 - 3	0.05	2	0.11	0.00
L50	3 - 2.75	0.03	2	0.08	0.00
L51	2.75 - 0	0.02	2	0.08	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
154.0000	RR90-17-VDPL2 w/ Mount Pipe	2	92.48	6.04	0.07	5801
150.0000	NNVV-65B-R4	2	87.43	6.03	0.07	3766
143.0000	(2) ATMAA1412D-1A20	2	78.76	5.81	0.04	1925
120.0000	(2) 980H120T4E-M w/ Mount	2	53.30	4.76	0.01	1380

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

Compression Checks

Pole Design Data

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u
	ft		ft	ft		in^2	K
L1	156 - 151 (1)	TP10.75x10.75x0.365	5.0000	0.0000	0.0	11.9083	-0.44
L2	151 - 146 (2)	TP10.75x10.75x0.365	5.0000	0.0000	0.0	11.9083	-2.13
L3	146 - 144.5 (3)	TP10.75x10.75x0.365	1.5000	0.0000	0.0	11.9083	-2.21
L4	144.5 - 144 (4)	TP18x10.75x0.365	0.5000	0.0000	0.0	11.9083	-2.22
L5	144 - 139 (5)	TP18.9435x18x0.25	5.0000	0.0000	0.0	15.0483	-6.29
L6	139 - 134 (6)	TP19.8871x18.9435x0.25	5.0000	0.0000	0.0	15.8078	-6.78
L7	134 - 129 (7)	TP20.8306x19.8871x0.25	5.0000	0.0000	0.0	16.5674	-7.32
L8	129 - 128.25 (8)	TP20.9721x20.8306x0.25	0.7500	0.0000	0.0	16.6813	-7.40
L9	128.25 - 128 (9)	TP21.0193x20.9721x0.575	0.2500	0.0000	0.0	37.8526	-7.45
L10	128 - 123 (10)	TP21.9628x21.0193x0.5625	5.0000	0.0000	0.0	38.7613	-8.32
L11	123 - 118 (11)	TP22.9064x21.9628x0.55	5.0000	0.0000	0.0	39.5931	-11.80
L12	118 - 113 (12)	TP23.8499x22.9064x0.525	5.0000	0.0000	0.0	39.4307	-12.74
L13	113 - 108 (13)	TP24.7934x23.8499x0.5125	5.0000	0.0000	0.0	40.0696	-13.70
L14	108 - 103 (14)	TP25.7369x24.7934x0.5	5.0000	0.0000	0.0	40.6315	-14.70
L15	103 - 98 (15)	TP26.6805x25.7369x0.4938	5.0000	0.0000	0.0	41.6336	-15.71
L16	98 - 93 (16)	TP27.624x26.6805x0.4875	5.0000	0.0000	0.0	41.5607	-16.02
L17	93 - 92 (17)	TP27.313x26.4635x0.7	4.5000	0.0000	0.0	59.9856	-17.74
L18	92 - 87 (18)	TP28.2568x27.313x0.675	5.0000	0.0000	0.0	59.9490	-19.05
L19	87 - 82 (19)	TP29.2006x28.2568x0.65	5.0000	0.0000	0.0	59.7563	-20.39
L20	82 - 77.5 (20)	TP30.05x29.2006x0.6375	4.5000	0.0000	0.0	60.3765	-21.62
L21	77.5 - 72.5 (21)	TP30.9935x30.05x0.6875	5.0000	0.0000	0.0	67.0899	-23.12
L22	72.5 - 70.58 (22)	TP31.3558x30.9935x0.6875	1.9200	0.0000	0.0	67.8920	-23.69
L23	70.58 - 70.33 (23)	TP31.403x31.3558x0.6875	0.2500	0.0000	0.0	67.9964	-23.78
L24	70.33 - 67.08 (24)	TP32.0163x31.403x0.675	3.2500	0.0000	0.0	68.1202	-24.77
L25	67.08 - 66.83 (25)	TP32.0634x32.0163x0.975	0.2500	0.0000	0.0	97.6021	-24.88

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u
	ft		ft	ft		in^2	K
L26	66.83 - 61.83 (26)	TP33.0069x32.0634x0.95	5.0000	0.0000	0.0	98.0621	-26.89
L27	61.83 - 57.5 (27)	TP33.824x33.0069x0.95	4.3300	0.0000	0.0	98.1083	-26.93
L28	57.5 - 56.75 (28)	TP33.3405x32.397x0.9375	5.0000	0.0000	0.0	97.8166	-30.49
L29	56.75 - 51.75 (29)	TP34.284x33.3405x0.9125	5.0000	0.0000	0.0	98.0539	-32.54
L30	51.75 - 46.75 (30)	TP35.2275x34.284x0.9	5.0000	0.0000	0.0	99.4812	-34.62
L31	46.75 - 41.75 (31)	TP36.171x35.2275x0.8875	5.0000	0.0000	0.0	100.8320	-36.72
L32	41.75 - 39.8 (32)	TP36.539x36.171x0.875	1.9500	0.0000	0.0	100.4830	-37.54
L33	39.8 - 39.33 (33)	TP36.6277x36.539x0.95	0.4700	0.0000	0.0	109.1380	-37.77
L34	39.33 - 39.08 (34)	TP36.6749x36.6277x0.9375	0.2500	0.0000	0.0	107.8820	-37.89
L35	39.08 - 38.33 (35)	TP36.8164x36.6749x0.9375	0.7500	0.0000	0.0	108.3100	-38.23
L36	38.33 - 38.08 (36)	TP36.8636x36.8164x0.8875	0.2500	0.0000	0.0	102.8110	-38.34
L37	38.08 - 33.08 (37)	TP37.8073x36.8636x0.875	5.0000	0.0000	0.0	104.0570	-40.58
L38	33.08 - 30.75 (38)	TP38.247x37.8073x0.8625	2.3300	0.0000	0.0	103.8260	-41.64
L39	30.75 - 30.5 (39)	TP38.2942x38.247x0.9375	0.2500	0.0000	0.0	112.7710	-41.77
L40	30.5 - 25.5 (40)	TP39.2379x38.2942x0.925	5.0000	0.0000	0.0	114.1150	-44.20
L41	25.5 - 20.5 (41)	TP40.1816x39.2379x0.9	5.0000	0.0000	0.0	113.8380	-46.66
L42	20.5 - 15.5 (42)	TP41.1252x40.1816x0.8875	5.0000	0.0000	0.0	114.9890	-49.15
L43	15.5 - 9.8 (43)	TP42.201x41.1252x0.8875	5.7000	0.0000	0.0	115.2320	-49.38
L44	9.8 - 8.8 (44)	TP41.6395x40.4602x0.875	6.2500	0.0000	0.0	114.8540	-54.85
L45	8.8 - 8.25 (45)	TP41.7433x41.6395x0.875	0.5500	0.0000	0.0	115.1460	-55.13
L46	8.25 - 8 (46)	TP41.7904x41.7433x0.875	0.2500	0.0000	0.0	115.2790	-55.27
L47	8 - 4.25 (47)	TP42.498x41.7904x0.875	3.7500	0.0000	0.0	117.2730	-57.29
L48	4.25 - 4 (48)	TP42.5452x42.498x1.05	0.2500	0.0000	0.0	140.2950	-57.45
L49	4 - 3 (49)	TP42.7339x42.5452x1.05	1.0000	0.0000	0.0	140.9330	-58.03
L50	3 - 2.75 (50)	TP42.7811x42.7339x1.15	0.2500	0.0000	0.0	154.1600	-58.19
L51	2.75 - 0 (51)	TP43.3x42.7811x1.125	2.7500	0.0000	0.0	152.7790	-59.88

Pole Bending Design Data

Section No.	Elevation	Size	M_{ux}
	ft		kip-ft
L1	156 - 151 (1)	TP10.75x10.75x0.365	3.37
L2	151 - 146 (2)	TP10.75x10.75x0.365	26.36
L3	146 - 144.5	TP10.75x10.75x0.365	33.94

Section No.	Elevation	Size	M_{ux}
	ft		kip-ft
	(3)		
L4	144.5 - 144	TP18x10.75x0.365	33.94
	(4)		
L5	144 - 139 (5)	TP18.9435x18x0.25	91.68
L6	139 - 134 (6)	TP19.8871x18.9435x0.25	156.16
L7	134 - 129 (7)	TP20.8306x19.8871x0.25	223.03
L8	129 - 128.25	TP20.9721x20.8306x0.25	233.28
	(8)		
L9	128.25 - 128	TP21.0193x20.9721x0.57	236.70
	(9)	5	
L10	128 - 123 (10)	TP21.9628x21.0193x0.56	306.79
		25	
L11	123 - 118 (11)	TP22.9064x21.9628x0.55	384.52
L12	118 - 113 (12)	TP23.8499x22.9064x0.52	472.39
		5	
L13	113 - 108 (13)	TP24.7934x23.8499x0.51	563.22
		25	
L14	108 - 103 (14)	TP25.7369x24.7934x0.5	657.00
L15	103 - 98 (15)	TP26.6805x25.7369x0.49	753.77
		38	
L16	98 - 93 (16)	TP27.624x26.6805x0.487	783.40
		5	
L17	93 - 92 (17)	TP27.313x26.4635x0.7	874.13
L18	92 - 87 (18)	TP28.2568x27.313x0.675	978.09
L19	87 - 82 (19)	TP29.2006x28.2568x0.65	1085.22
L20	82 - 77.5 (20)	TP30.05x29.2006x0.6375	1184.34
L21	77.5 - 72.5	TP30.9935x30.05x0.6875	1297.52
	(21)		
L22	72.5 - 70.58	TP31.3558x30.9935x0.68	1341.84
	(22)	75	
L23	70.58 - 70.33	TP31.403x31.3558x0.687	1347.64
	(23)	5	
L24	70.33 - 67.08	TP32.0163x31.403x0.675	1423.84
	(24)		
L25	67.08 - 66.83	TP32.0634x32.0163x0.97	1429.76
	(25)	5	
L26	66.83 - 61.83	TP33.0069x32.0634x0.95	1550.01
	(26)		
L27	61.83 - 57.5	TP33.824x33.0069x0.95	1551.96
	(27)		
L28	57.5 - 56.75	TP33.3405x32.397x0.937	1676.14
	(28)	5	
L29	56.75 - 51.75	TP34.284x33.3405x0.912	1804.07
	(29)	5	
L30	51.75 - 46.75	TP35.2275x34.284x0.9	1935.46
	(30)		
L31	46.75 - 41.75	TP36.171x35.2275x0.887	2070.27
	(31)	5	
L32	41.75 - 39.8	TP36.539x36.171x0.875	2123.77
	(32)		
L33	39.8 - 39.33	TP36.6277x36.539x0.95	2136.73
	(33)		
L34	39.33 - 39.08	TP36.6749x36.6277x0.93	2143.65
	(34)	75	
L35	39.08 - 38.33	TP36.8164x36.6749x0.93	2164.43
	(35)	75	
L36	38.33 - 38.08	TP36.8636x36.8164x0.88	2171.38
	(36)	75	
L37	38.08 - 33.08	TP37.8073x36.8636x0.87	2311.98
	(37)	5	
L38	33.08 - 30.75	TP38.247x37.8073x0.862	2378.62
	(38)	5	
L39	30.75 - 30.5	TP38.2942x38.247x0.937	2385.81
	(39)	5	
L40	30.5 - 25.5	TP39.2379x38.2942x0.92	2531.28

Section No.	Elevation ft	Size	M_{ux} kip-ft
	(40)	5	
L41	25.5 - 20.5 (41)	TP40.1816x39.2379x0.9	2679.85
L42	20.5 - 15.5 (42)	TP41.1252x40.1816x0.8875	2831.35
L43	15.5 - 9.8 (43)	TP42.201x41.1252x0.8875	2845.13
L44	9.8 - 8.8 (44)	TP41.6395x40.4602x0.875	3039.03
L45	8.8 - 8.25 (45)	TP41.7433x41.6395x0.875	3056.32
L46	8.25 - 8 (46)	TP41.7904x41.7433x0.875	3064.18
L47	8 - 4.25 (47)	TP42.498x41.7904x0.875	3182.98
L48	4.25 - 4 (48)	TP42.5452x42.498x1.05	3190.95
L49	4 - 3 (49)	TP42.7339x42.5452x1.05	3222.91
L50	3 - 2.75 (50)	TP42.7811x42.7339x1.15	3230.92
L51	2.75 - 0 (51)	TP43.3x42.7811x1.125	3319.45

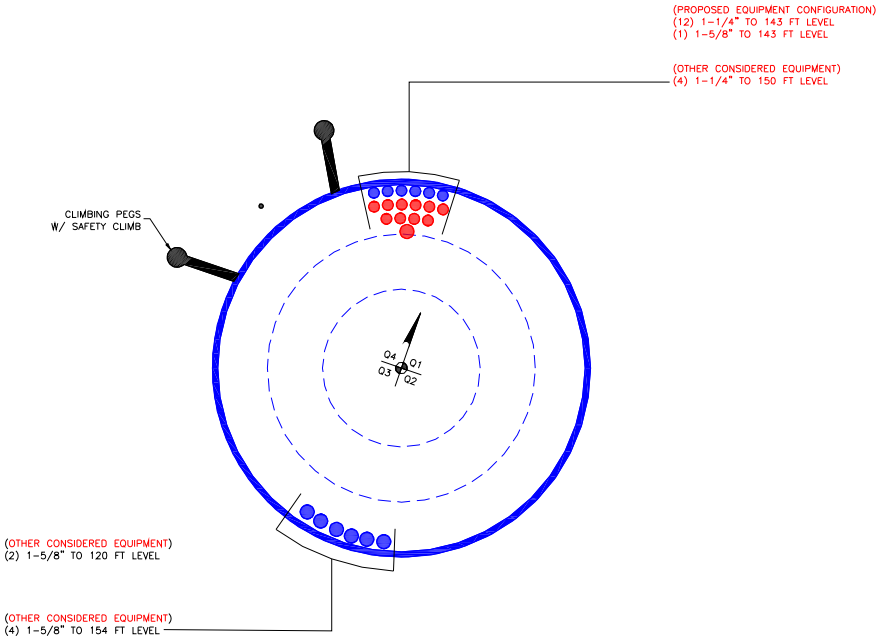
Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K
L1	156 - 151 (1)	TP10.75x10.75x0.365	1.05
L2	151 - 146 (2)	TP10.75x10.75x0.365	5.03
L3	146 - 144.5 (3)	TP10.75x10.75x0.365	5.09
L4	144.5 - 144 (4)	TP18x10.75x0.365	5.11
L5	144 - 139 (5)	TP18.9435x18x0.25	12.67
L6	139 - 134 (6)	TP19.8871x18.9435x0.25	13.13
L7	134 - 129 (7)	TP20.8306x19.8871x0.25	13.62
L8	129 - 128.25 (8)	TP20.9721x20.8306x0.25	13.70
L9	128.25 - 128 (9)	TP21.0193x20.9721x0.575	13.73
L10	128 - 123 (10)	TP21.9628x21.0193x0.5625	14.31
L11	123 - 118 (11)	TP22.9064x21.9628x0.55	17.29
L12	118 - 113 (12)	TP23.8499x22.9064x0.525	17.88
L13	113 - 108 (13)	TP24.7934x23.8499x0.5125	18.47
L14	108 - 103 (14)	TP25.7369x24.7934x0.5	19.06
L15	103 - 98 (15)	TP26.6805x25.7369x0.4938	19.67
L16	98 - 93 (16)	TP27.624x26.6805x0.4875	19.85
L17	93 - 92 (17)	TP27.313x26.4635x0.7	20.48
L18	92 - 87 (18)	TP28.2568x27.313x0.675	21.12
L19	87 - 82 (19)	TP29.2006x28.2568x0.65	21.75
L20	82 - 77.5 (20)	TP30.05x29.2006x0.6375	22.32
L21	77.5 - 72.5 (21)	TP30.9935x30.05x0.6875	22.97
L22	72.5 - 70.58 (22)	TP31.3558x30.9935x0.6875	23.22
L23	70.58 - 70.33 (23)	TP31.403x31.3558x0.6875	23.24
L24	70.33 - 67.08 (24)	TP32.0163x31.403x0.675	23.67

Section No.	Elevation ft	Size	Actual V_u K
L25	67.08 - 66.83 (25)	TP32.0634x32.0163x0.975	23.69
L26	66.83 - 61.83 (26)	TP33.0069x32.0634x0.95	24.42
L27	61.83 - 57.5 (27)	TP33.824x33.0069x0.95	24.44
L28	57.5 - 56.75 (28)	TP33.3405x32.397x0.9375	25.24
L29	56.75 - 51.75 (29)	TP34.284x33.3405x0.9125	25.95
L30	51.75 - 46.75 (30)	TP35.2275x34.284x0.9	26.64
L31	46.75 - 41.75 (31)	TP36.171x35.2275x0.8875	27.31
L32	41.75 - 39.8 (32)	TP36.539x36.171x0.875	27.59
L33	39.8 - 39.33 (33)	TP36.6277x36.539x0.95	27.63
L34	39.33 - 39.08 (34)	TP36.6749x36.6277x0.9375	27.67
L35	39.08 - 38.33 (35)	TP36.8164x36.6749x0.9375	27.77
L36	38.33 - 38.08 (36)	TP36.8636x36.8164x0.8875	27.80
L37	38.08 - 33.08 (37)	TP37.8073x36.8636x0.875	28.46
L38	33.08 - 30.75 (38)	TP38.247x37.8073x0.8625	28.76
L39	30.75 - 30.5 (39)	TP38.2942x38.247x0.9375	28.78
L40	30.5 - 25.5 (40)	TP39.2379x38.2942x0.925	29.43
L41	25.5 - 20.5 (41)	TP40.1816x39.2379x0.9	30.03
L42	20.5 - 15.5 (42)	TP41.1252x40.1816x0.8875	30.60
L43	15.5 - 9.8 (43)	TP42.201x41.1252x0.8875	30.64
L44	9.8 - 8.8 (44)	TP41.6395x40.4602x0.875	31.42
L45	8.8 - 8.25 (45)	TP41.7433x41.6395x0.875	31.47
L46	8.25 - 8 (46)	TP41.7904x41.7433x0.875	31.49
L47	8 - 4.25 (47)	TP42.498x41.7904x0.875	31.90
L48	4.25 - 4 (48)	TP42.5452x42.498x1.05	31.91
L49	4 - 3 (49)	TP42.7339x42.5452x1.05	32.03
L50	3 - 2.75 (50)	TP42.7811x42.7339x1.15	32.04
L51	2.75 - 0 (51)	TP43.3x42.7811x1.125	32.37

APPENDIX B

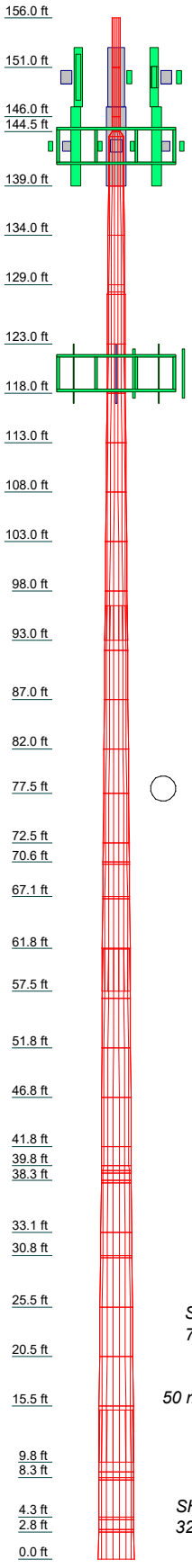
BASE LEVEL DRAWING



APPENDIX C

ADDITIONAL CALCULATIONS

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
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	4.5000	5.0000	5.0000	4.5000	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	0	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Thickness (in)	0.3650	0.3650	0.3650	0.3650	0.2500	0.2500	0.2500	0.2500	0.2500	0.5625	0.5500	0.5250	0.5125	0.5000	0.4938	0.4875	0.7000	0.6750	0.6500	0.6375	0.6875	0.6875	0.6875	0.6875	0.6875	0.9500	0.9500	0.9125	0.9125	0.9000	0.8875	0.8875	0.8750	0.8750	0.8750	0.8750	0.8750	0.9250	0.9000	0.9000	0.8875	0.8875	0.8750	0.8750	0.8750	0.8750	0.8750	1.1250
Socket Length (ft)																3.5000											4.2500																		5.2500					
Top Dia (in)	10.7500	10.7500	10.7500	10.7500	18.0000	18.9435	18.8871	18.8306	18.7742	21.0178	21.9628	22.9064	23.8499	24.7934	25.7369	25.6805	27.3125	27.2561	28.2568	29.2006	30.0500	30.0500	30.0500	30.0500	30.0500	32.0625	32.0625	33.3425	33.3425	34.2840	35.2275	35.2275	36.1710	36.1710	36.1710	36.1710	36.1710	38.2950	39.2379	39.2379	40.1816	40.1816	41.1252	41.1252	41.1252	41.1252	41.1252	42.0689
Bot Dia (in)	10.7500	10.7500	10.7500	10.7500	18.0000	18.9435	18.8871	18.8306	18.7742	21.0178	21.9628	22.9064	23.8499	24.7934	25.7369	25.6805	27.3125	27.2561	28.2568	29.2006	30.0500	30.0500	30.0500	30.0500	30.0500	32.0625	32.0625	33.3425	33.3425	34.2840	35.2275	35.2275	36.1710	36.1710	36.1710	36.1710	36.1710	38.2950	39.2379	39.2379	40.1816	40.1816	41.1252	41.1252	41.1252	41.1252	41.1252	42.0689
Grade	A53-B-35																					A36																													
Weight (K)	0.2	0.2	0.1	0.1	0.2	0.3	0.3	0.3	0.3	0.6	0.6	0.6	0.6	0.6	0.7	0.7	0.8	0.9	0.9	0.8	1.1	0.4	10.7	0	1.5	1.3	1.5	1.5	1.5	1.6	1.6	0.8	1.7	0.8	1.8	1.8	1.9	2.2	2.3	11.5	0.3	1.3	38.0					



ALL REACTIONS ARE FACTORED

AXIAL 77 K

SHEAR 7 K *MOMENT 748 kip-ft*

TORQUE 1 kip-ft
50 mph WIND - 1.2750 in ICE

AXIAL 60 K

SHEAR 32 K *MOMENT 3319 kip-ft*

TORQUE 3 kip-ft
REACTIONS - 130 mph WIND

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 130 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.27 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.0000 ft
8. TIA-222-H Annex S

Paul J. Ford and Company
250 East Broad st., Suite 600
Columbus, OH 43215
Phone: (614) 221-6679
FAX:

Job: *156' MP; Thompson/ I-395 X99_1; Thompson, C*			
Project: *PJF# 37519-0534.001.7805 / BU# 828402*			
Client: CCI	Drawn by: uyerra	App'd:	
Code: TIA-222-H	Date: 02/11/19	Scale: NTS	
Path:		Dwg No. E-1	

PAUL J. FORD & COMPANY
250 E Broad St, Ste 600 • Columbus, OH 43215
Phone 614.221.6679 www.pauljford.com

v4.5.6 - Effective 1-21-19

Date: 2/11/2019
PJF Project: 37519-0534.001.7805
Client Ref. # BU 828402
Site Name: Site Name
Description: Description
Owner: Owner
Engineer: UY

Asymmetric Anchor Rod Analysis

Moment =	3319	k-ft	TIA Ref.	H	η =	0.50	for Base Plates, Rev. G Sect. 4.9.9	Use An?	No	for Anchors or Bolts
Axial =	60.0	kips (+Comp, -Tension)	ASIF =	N/A	Threads =	N-Included	for Flange Plates, Rev. G & H			
Shear =	32.0	kips	Max Ratio =	100.0%	Grout =	0.00	psi, for Base Plates, Rev. H Sect 4.9.9 (Note)			
Anchor Qty =	27		Location =	Base Plate						

** For Post Installed Anchors: Check anchors for embedment, epoxy/grout bond, and capacity based on proof load. **

Item	Nominal Anchor Dia, in	Spec	Fy, ksi	Fu, ksi	Location, degrees	Anchor Circle, in	Type	Area Override, in^2	lar, in	Area, in^2	Max Net Comp, kips	Max Net Tension, kips	Tension Override, kips	Comp Override, kips	Tension Cap, kips	Comp Cap, kips	Capacity Ratio
1	2.000	Other	42	60	0.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
2	2.000	Other	42	60	20.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
3	2.000	Other	42	60	40.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
4	2.000	Other	42	60	60.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
5	2.000	Other	42	60	80.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
6	2.000	Other	42	60	100.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
7	2.000	Other	42	60	120.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
8	2.000	Other	42	60	140.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
9	2.000	Other	42	60	160.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
10	2.000	Other	42	60	180.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
11	2.000	Other	42	60	200.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
12	2.000	Other	42	60	220.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
13	2.000	Other	42	60	240.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
14	2.000	Other	42	60	260.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
15	2.000	Other	42	60	280.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
16	2.000	Other	42	60	300.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
17	2.000	Other	42	60	320.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
18	2.000	Other	42	60	340.0	51.00	Original	0.00	1.13	3.14	98.70	92.03	0.00	0.00	112.42	104.87	89.9%
19	2.250	A193 Gr B7	105	125	30.0	58.00	Post-Installed	0.00		3.98	137.26	137.26	0.00	0.00	304.47	341.01	38.3%
20	2.250	A193 Gr B7	105	125	51.0	58.00	Post-Installed	0.00		3.98	137.26	137.26	0.00	0.00	304.47	341.01	38.3%
21	2.250	A193 Gr B7	105	125	90.0	58.00	Post-Installed	0.00		3.98	137.26	137.26	0.00	0.00	304.47	341.01	38.3%
22	2.250	A193 Gr B7	105	125	150.0	58.00	Post-Installed	0.00		3.98	137.26	137.26	0.00	0.00	304.47	341.01	38.3%
23	2.250	A193 Gr B7	105	125	171.0	58.00	Post-Installed	0.00		3.98	137.26	137.26	0.00	0.00	304.47	341.01	38.3%
24	2.250	A193 Gr B7	105	125	210.0	58.00	Post-Installed	0.00		3.98	137.26	137.26	0.00	0.00	304.47	341.01	38.3%
25	2.250	A193 Gr B7	105	125	270.0	58.00	Post-Installed	0.00		3.98	137.26	137.26	0.00	0.00	304.47	341.01	38.3%
26	2.250	A193 Gr B7	105	125	291.0	58.00	Post-Installed	0.00		3.98	137.26	137.26	0.00	0.00	304.47	341.01	38.3%
27	2.250	A193 Gr B7	105	125	330.0	58.00	Post-Installed	0.00		3.98	137.26	137.26	0.00	0.00	304.47	341.01	38.3%
										92.33							

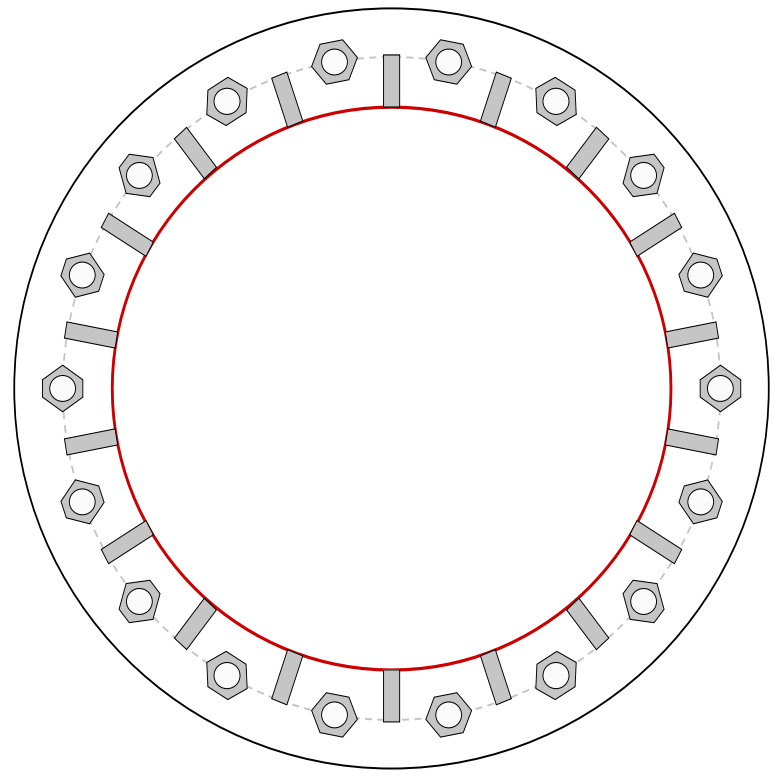
Monopole Base Plate Connection

Site Info	
BU #	828402
Site Name	
Order #	

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1.125

Applied Loads	
Moment (kip-ft)	1823.80
Axial Force (kips)	60.00
Shear Force (kips)	32.00

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(18) 2" ø bolts (A572-42 N; Fy=42 ksi, Fu=60 ksi) on 51" BC

Base Plate Data

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

Stiffener Data

(18) 18"H x 4"W x 1.25"T, Notch: 1"
plate: Fy= 36 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.625" fillet
vert. weld: 0.375" fillet

Pole Data

43.3" x 0.375" 12-sided pole (A36; Fy=36 ksi, Fu=58 ksi)

Analysis Results

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

Pu_c = 98.64	ϕPn_c = 105	**Stress Rating**
Vu = 1.78	ϕVn = 31.5	**89.8%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	30.48	(Roark's Flexural)
Allowable Stress (ksi):	32.4	
Stress Rating:	**89.6%**	**Pass**

Stiffener Summary

Horizontal Weld:	**74.5%**	**Pass**
Vertical Weld:	**23.1%**	**Pass**
Plate Flexure+Shear:	**5.3%**	**Pass**
Plate Tension+Shear:	**52.7%**	**Pass**
Plate Compression:	**39.1%**	**Pass**

Pole Summary

Punching Shear:	**8.7%**	**Pass**

PAUL J. FORD & COMPANY
250 E Broad St, Ste 600 • Columbus, OH 43215
Phone 614.221.6679 www.pauljford.com

v4.5.6 - Effective 1-21-19

Date: 2/11/2019
PJF Project: 37519-0534.001.7805
Client Ref. # BU 828402
Site Name: Site Name
Description: 144 ft
Owner: Owner
Engineer: UY

Asymmetric Bolt Analysis

Moment =	37	k-ft	TIA Ref.	H	η =	N/A	for Base Plates, Rev. G Sect. 4.9.9	Use An?	No	for Anchors or Bolts
Axial =	2.3	kips (+Comp, -Tension)	ASIF =	N/A	Threads =	N-Included	for Flange Plates, Rev. G & H			
Shear =	5.2	kips	Max Ratio =	100.0%	Grout =	0.00	psi, for Base Plates, Rev. H Sect 4.9.9 (Note)			
Anchor Qty =	10		Location =	Flange Plate						

** For Flange Plates: Prying action is not considered in the bolt loads. **

Item	Nominal Bolt Dia, in	Spec	Fy, ksi	Fu, ksi	Location, degrees	Bolt Circle, in	Type	Area Override, in^2	lar, in	Area, in^2	Max Net Comp, kips	Max Net Tension, kips	Tension Override, kips	Comp Override, kips	Tension Cap, kips	Comp Cap, kips	Capacity Ratio
1	0.750	A325	92	120	0.0	19.88	Original	0.00		0.44	1.11	0.95	20.34	20.34	20.34		4.4%
2	0.750	A325	92	120	60.0	19.88	Original	0.00		0.44	1.11	0.95	20.34	20.34	20.34		4.4%
3	0.750	A325	92	120	120.0	19.88	Original	0.00		0.44	1.11	0.95	20.34	20.34	20.34		4.4%
4	0.750	A325	92	120	180.0	19.88	Original	0.00		0.44	1.11	0.95	20.34	20.34	20.34		4.4%
5	0.750	A325	92	120	240.0	19.88	Original	0.00		0.44	1.11	0.95	20.34	20.34	20.34		4.4%
6	0.750	A325	92	120	300.0	19.88	Original	0.00		0.44	1.11	0.95	20.34	20.34	20.34		4.4%
7	1.750	A193 Gr B7	105	125	15.0	38.00	Original	0.00		2.41	11.17	10.29	100.00	100.00	100.00		9.8%
8	1.750	A193 Gr B7	105	125	105.0	38.00	Original	0.00		2.41	11.17	10.29	100.00	100.00	100.00		9.8%
9	1.750	A193 Gr B7	105	125	195.0	38.00	Original	0.00		2.41	11.17	10.29	100.00	100.00	100.00		9.8%
10	1.750	A193 Gr B7	105	125	285.0	38.00	Original	0.00		2.41	11.17	10.29	100.00	100.00	100.00		9.8%
										12.27							

Monopole Flange Plate Connection

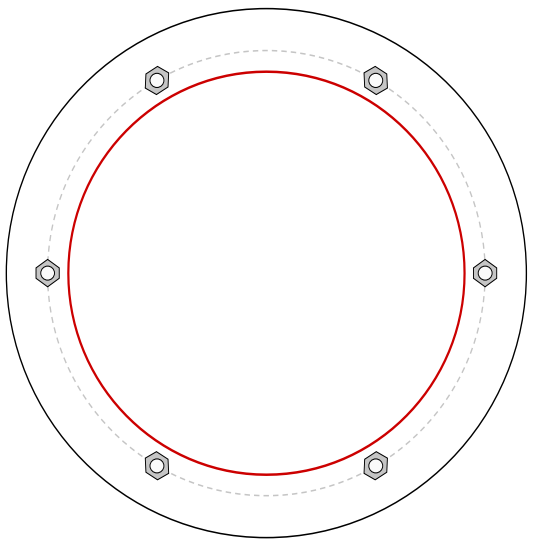
Elevation = 144 ft.

BU #	828402
Site Name	
Order #	
TIA-222 Revision	H

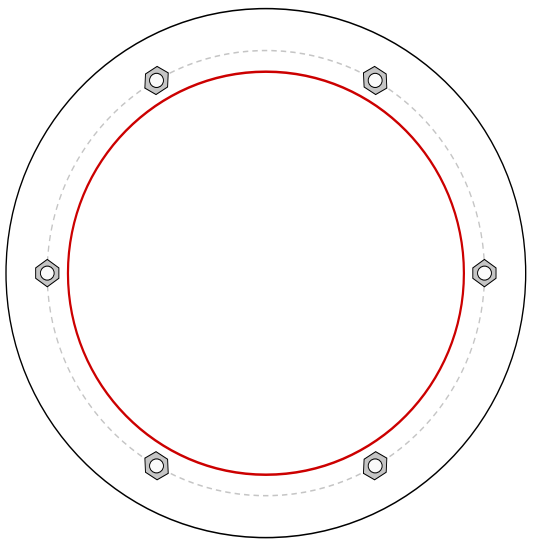
Applied Loads	
Moment (kip-ft)	2.60
Axial Force (kips)	0.50
Shear Force (kips)	1.10

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(6) 5/8" ø bolts (A325 X; Fy=92 ksi, Fu=120 ksi) on 19.875" BC

Top Plate Data

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

Bottom Plate Data

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

Top Stiffener Data

N/A

Bottom Stiffener Data

N/A

Top Pole Data

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

Bottom Pole Data

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

Analysis Results

Bolt Capacity

Max Load (kips)	0.96	
Allowable (kips)	20.34	
Stress Rating:	**4.5%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	0.22	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**0.7%**	**Pass**
Tension Side Stress Rating:	**0.2%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	2.01	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**5.9%**	**Pass**
Tension Side Stress Rating:	**2.2%**	**Pass**

Drilled Pier Foundation

BU # :	828402
Site Name:	
Order Number:	

TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	3319	
Axial Force (kips)	60	
Shear Force (kips)	32	

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

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

Analysis Results		
Soil Lateral Capacity	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	6.81	-
Soil Safety Factor	4.40	-
Max Moment (kip-ft)	3558.72	-
Rating*	*28.8%*	-
Soil Vertical Capacity	*Compression*	*Uplift*
Skin Friction (kips)	557.71	-
End Bearing (kips)	566.19	-
Weight of Concrete (kips)	129.78	-
Total Capacity (kips)	1123.90	-
Axial (kips)	189.78	-
Rating*	*16.1%*	-
Reinforced Concrete Capacity	*Compression*	*Uplift*
Critical Depth (ft from TOC)	6.60	-
Critical Moment (kip-ft)	3558.41	-
Critical Moment Capacity	3686.96	-
Rating*	*91.9%*	-

Soil Interaction Rating*	**28.8%**
Structural Foundation Rating*	**91.9%**

*Rating per TIA-222-H Section 15.5

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

Soil Profile

Groundwater Depth	n/a	ft	# of Layers	5

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

CCIpole

per TIA-222- H

Site BU: 828402

Work Order:

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	156	11.5	0	0	10.75	10.75	0.365		A53-B-35
2	144.5	0.5	0	0	10.75	18	0.365		A53-B-35
3	144	51	3.5	12	18.00	27.624	0.25	Auto	A36
4	96.5	19	0	12	26.46	30.05	0.25	Auto	A36
5	77.5	20	4.25	12	30.05	33.824	0.3125	Auto	A36
6	61.75	21.95	0	12	32.40	36.539	0.3125	Auto	A36
7	39.8	30	5.25	12	36.54	42.201	0.375	Auto	A36
8	15.05	15.05	0	12	40.46	43.3	0.375	Auto	A36

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	4.25	39.33	plate	I-085125; (1) (1.1875)	2	o				o							
2	8.25	38.33	plate	CCI-SFP-065125	1									o			
3	39.33	70.58	plate	CCI-AFP-085125	2	o				o							
4	38.33	70.58	plate	CCI-AFP-085125	1									o			
5	70.58	94.67	plate	I-085125; (1) (1.1875)	3	o				o				o			
6	94.67	128.25	plate	CCI-AFP-060100	3	o				o				o			
7	3	30.75	plate	I-085125; (1) (1.1875)	3				o				o				o
8	30.75	67.08	plate	CCI-AFP-065125	3				o				o				o
9	0	4.25	plate	FP 1.25 x 6.5_1	4	o			c	o							c
10	0	8.25	plate	FP 1.25 x 6.5_1	2							c	c				
11	0	3	plate	FP 1.25 x 3.5_1	9		o	o	o		o	o	o		o	o	o
12																	

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	8.5	1.25	10.625	0.625	n/a	n/a	17.000	9.063	1.1875	A572-65
2	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
3	8.5	1.25	10.625	0.625	51.000	51.000	17.000	9.063	1.1875	A572-65
4	8.5	1.25	10.625	0.625	51.000	51.000	17.000	9.063	1.1875	A572-65
5	8.5	1.25	10.625	0.625	60.000	60.000	17.000	9.063	1.1875	A572-65
6	6	1	6	0.5	30.000	30.000	16.000	4.750	1.1875	A572-65
7	8.5	1.25	10.625	0.625	n/a	n/a	17.000	9.063	1.1875	A572-65
8	6.5	1.25	8.125	0.625	42.000	42.000	19.000	6.563	1.1875	A572-65
9	1.25	6.5	8.125	3.25	n/a	n/a	0.000	8.125	0.0000	A572-65
10	1.25	6.5	8.125	3.25	n/a	n/a	0.000	8.125	0.0000	A572-65
11	1.25	3.5	4.375	1.75	n/a	n/a	0.000	4.375	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	156 - 151	5		0	10.750	10.750	0.365	A53-B-35	1.000
2	151 - 146	5		0	10.750	10.750	0.365	A53-B-35	1.000
3	146 - 144.5	1.5	0	0	10.750	10.750	0.365	A53-B-35	1.000
4	144.5 - 144	0.5	0	0	10.750	18.000	0.365	A53-B-35	1.000
5	144 - 139	5		12	18.000	18.944	0.25	A36	1.000
6	139 - 134	5		12	18.944	19.887	0.25	A36	1.000
7	134 - 129	5		12	19.887	20.831	0.25	A36	1.000
8	129 - 128.25	0.75		12	20.831	20.972	0.25	A36	1.000
9	128.25 - 128	0.25		12	20.972	21.019	0.575	A36	0.918
10	128 - 123	5		12	21.019	21.963	0.5625	A36	0.916
11	123 - 118	5		12	21.963	22.906	0.55	A36	0.916
12	118 - 113	5		12	22.906	23.850	0.525	A36	0.939
13	113 - 108	5		12	23.850	24.793	0.5125	A36	0.943
14	108 - 103	5		12	24.793	25.737	0.5	A36	0.949
15	103 - 98	5		12	25.737	26.680	0.49375	A36	0.944
16	98 - 96.5	5	3.5	12	26.680	27.624	0.4875	A36	0.951
17	96.5 - 92	4.5		12	26.464	27.313	0.7	A36	0.895
18	92 - 87	5		12	27.313	28.257	0.675	A36	0.909
19	87 - 82	5		12	28.257	29.201	0.65	A36	0.924
20	82 - 77.5	4.5	0	12	29.201	30.050	0.6375	A36	0.926
21	77.5 - 72.5	5		12	30.050	30.994	0.6875	A36	0.936
22	72.5 - 70.58	1.92		12	30.994	31.356	0.6875	A36	0.930
23	70.58 - 70.33	0.25		12	31.356	31.403	0.6875	A36	0.930
24	70.33 - 67.08	3.25		12	31.403	32.016	0.675	A36	0.937
25	67.08 - 66.83	0.25		12	32.016	32.063	0.975	A36	0.904
26	66.83 - 61.83	5		12	32.063	33.007	0.95	A36	0.910
27	61.83 - 61.75	4.33	4.25	12	33.007	33.824	0.95	A36	0.910
28	61.75 - 56.75	5		12	32.397	33.341	0.9375	A36	0.916
29	56.75 - 51.75	5		12	33.341	34.284	0.9125	A36	0.923
30	51.75 - 46.75	5		12	34.284	35.228	0.9	A36	0.919
31	46.75 - 41.75	5		12	35.228	36.171	0.8875	A36	0.917
32	41.75 - 39.8	1.95	0	12	36.171	36.539	0.875	A36	0.923
33	39.8 - 39.33	0.47		12	36.539	36.628	0.95	A36	0.917
34	39.33 - 39.08	0.25		12	36.628	36.675	0.9375	A36	0.928
35	39.08 - 38.33	0.75		12	36.675	36.816	0.9375	A36	0.926
36	38.33 - 38.08	0.25		12	36.816	36.864	0.8875	A36	0.952
37	38.08 - 33.08	5		12	36.864	37.807	0.875	A36	0.952
38	33.08 - 30.75	2.33		12	37.807	38.247	0.8625	A36	0.959
39	30.75 - 30.5	0.25		12	38.247	38.294	0.9375	A36	0.950
40	30.5 - 25.5	5		12	38.294	39.238	0.925	A36	0.949
41	25.5 - 20.5	5		12	39.238	40.182	0.9	A36	0.961
42	20.5 - 15.5	5		12	40.182	41.125	0.8875	A36	0.961
43	15.5 - 15.05	5.7	5.25	12	41.125	42.201	0.8875	A36	0.960
44	15.05 - 8.8	6.25		12	40.460	41.639	0.875	A36	0.968
45	8.8 - 8.25	0.55		12	41.639	41.743	0.875	A36	0.967
46	8.25 - 8	0.25		12	41.743	41.790	0.875	A36	1.036
47	8 - 4.25	3.75		12	41.790	42.498	0.875	A36	1.026
48	4.25 - 4	0.25		12	42.498	42.545	1.05	A36	0.938
49	4 - 3	1		12	42.545	42.734	1.05	A36	0.936
50	3 - 2.75	0.25		12	42.734	42.781	1.15	A36	0.905
51	2.75 - 0	2.75		12	42.781	43.300	1.125	A36	0.917

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	156 - 151	0.44	3.37	1.05
2	151 - 146	2.13	26.36	5.03
3	146 - 144.5	2.21	34.00	5.14
4	144.5 - 144	2.25	36.57	5.16
5	144 - 139	6.29	91.68	12.67
6	139 - 134	6.78	156.16	13.13
7	134 - 129	7.32	223.03	13.62
8	129 - 128.25	7.40	233.28	13.70
9	128.25 - 128	7.45	236.70	13.73
10	128 - 123	8.32	306.79	14.31
11	123 - 118	11.80	384.52	17.29
12	118 - 113	12.74	472.39	17.88
13	113 - 108	13.70	563.22	18.47
14	108 - 103	14.70	657.00	19.06
15	103 - 98	15.71	753.77	19.67
16	98 - 96.5	16.02	783.40	19.85
17	96.5 - 92	17.74	874.13	20.48
18	92 - 87	19.05	978.09	21.12
19	87 - 82	20.39	1085.22	21.75
20	82 - 77.5	21.62	1184.35	22.32
21	77.5 - 72.5	23.12	1297.52	22.97
22	72.5 - 70.58	23.69	1341.84	23.22
23	70.58 - 70.33	23.78	1347.64	23.24
24	70.33 - 67.08	24.77	1423.84	23.67
25	67.08 - 66.83	24.88	1429.76	23.69
26	66.83 - 61.83	26.89	1550.01	24.42
27	61.83 - 61.75	26.93	1551.96	24.44
28	61.75 - 56.75	30.49	1676.14	25.24
29	56.75 - 51.75	32.54	1804.06	25.95
30	51.75 - 46.75	34.62	1935.46	26.64
31	46.75 - 41.75	36.72	2070.27	27.31
32	41.75 - 39.8	37.54	2123.76	27.59
33	39.8 - 39.33	37.77	2136.73	27.63
34	39.33 - 39.08	37.89	2143.65	27.67
35	39.08 - 38.33	38.23	2164.43	27.77
36	38.33 - 38.08	38.34	2171.37	27.80
37	38.08 - 33.08	40.58	2311.98	28.46
38	33.08 - 30.75	41.64	2378.62	28.76
39	30.75 - 30.5	41.77	2385.81	28.78
40	30.5 - 25.5	44.20	2531.29	29.43
41	25.5 - 20.5	46.66	2679.85	30.03
42	20.5 - 15.5	49.15	2831.35	30.60
43	15.5 - 15.05	49.38	2845.12	30.64
44	15.05 - 8.8	54.85	3039.03	31.42
45	8.8 - 8.25	55.13	3056.32	31.47
46	8.25 - 8	55.27	3064.19	31.49
47	8 - 4.25	57.29	3182.98	31.90
48	4.25 - 4	57.45	3190.95	31.91
49	4 - 3	58.03	3222.91	32.03
50	3 - 2.75	58.19	3230.92	32.04
51	2.75 - 0	59.89	3319.45	32.37

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
156 - 151	Pole	TP10.75x10.75x0.365	Pole	3.2%	Pass
151 - 146	Pole	TP10.75x10.75x0.365	Pole	24.9%	Pass
146 - 144.5	Pole	TP10.75x10.75x0.365	Pole	32.0%	Pass
144.5 - 144	Pole	TP18x10.75x0.365	Pole	12.0%	Pass
144 - 139	Pole	TP18.944x18x0.25	Pole	38.5%	Pass
139 - 134	Pole	TP19.887x18.944x0.25	Pole	58.9%	Pass
134 - 129	Pole	TP20.831x19.887x0.25	Pole	76.2%	Pass
129 - 128.25	Pole	TP20.972x20.831x0.25	Pole	78.6%	Pass
128.25 - 128	Pole + Reinf.	TP21.019x20.972x0.575	Pole	35.8%	Pass
128 - 123	Pole + Reinf.	TP21.963x21.019x0.5625	Pole	43.6%	Pass
123 - 118	Pole + Reinf.	TP22.906x21.963x0.55	Pole	51.5%	Pass
118 - 113	Pole + Reinf.	TP23.85x22.906x0.525	Pole	59.7%	Pass
113 - 108	Pole + Reinf.	TP24.793x23.85x0.5125	Pole	67.2%	Pass
108 - 103	Pole + Reinf.	TP25.737x24.793x0.5	Pole	74.2%	Pass
103 - 98	Pole + Reinf.	TP26.68x25.737x0.4938	Pole	80.7%	Pass
98 - 96.5	Pole + Reinf.	TP27.624x26.68x0.4875	Pole	82.5%	Pass
96.5 - 92	Pole + Reinf.	TP27.313x26.464x0.7	Pole	64.9%	Pass
92 - 87	Pole + Reinf.	TP28.257x27.313x0.675	Pole	70.0%	Pass
87 - 82	Pole + Reinf.	TP29.201x28.257x0.65	Pole	75.1%	Pass
82 - 77.5	Pole + Reinf.	TP30.05x29.201x0.6375	Pole	79.6%	Pass
77.5 - 72.5	Pole + Reinf.	TP30.994x30.05x0.6875	Pole	74.0%	Pass
72.5 - 70.58	Pole + Reinf.	TP31.356x30.994x0.6875	Pole	75.3%	Pass
70.58 - 70.33	Pole + Reinf.	TP31.403x31.356x0.6875	Pole	75.4%	Pass
70.33 - 67.08	Pole + Reinf.	TP32.016x31.403x0.675	Pole	77.5%	Pass
67.08 - 66.83	Pole + Reinf.	TP32.063x32.016x0.975	Pole	55.6%	Pass
66.83 - 61.83	Pole + Reinf.	TP33.007x32.063x0.95	Pole	58.1%	Pass
61.83 - 61.75	Pole + Reinf.	TP33.824x33.007x0.95	Pole	58.1%	Pass
61.75 - 56.75	Pole + Reinf.	TP33.341x32.397x0.9375	Pole	62.1%	Pass
56.75 - 51.75	Pole + Reinf.	TP34.284x33.341x0.9125	Pole	64.4%	Pass
51.75 - 46.75	Pole + Reinf.	TP35.228x34.284x0.9	Pole	67.2%	Pass
46.75 - 41.75	Pole + Reinf.	TP36.171x35.228x0.8875	Pole	70.0%	Pass
41.75 - 39.8	Pole + Reinf.	TP36.539x36.171x0.875	Pole	71.1%	Pass
39.8 - 39.33	Pole + Reinf.	TP36.628x36.539x0.95	Pole	65.2%	Pass
39.33 - 39.08	Pole + Reinf.	TP36.675x36.628x0.9375	Pole	65.3%	Pass
39.08 - 38.33	Pole + Reinf.	TP36.816x36.675x0.9375	Pole	65.6%	Pass
38.33 - 38.08	Pole + Reinf.	TP36.864x36.816x0.8875	Pole	70.8%	Pass
38.08 - 33.08	Pole + Reinf.	TP37.807x36.864x0.875	Pole	72.7%	Pass
33.08 - 30.75	Pole + Reinf.	TP38.247x37.807x0.8625	Pole	73.6%	Pass
30.75 - 30.5	Pole + Reinf.	TP38.294x38.247x0.9375	Pole	68.0%	Pass
30.5 - 25.5	Pole + Reinf.	TP39.238x38.294x0.925	Pole	69.8%	Pass
25.5 - 20.5	Pole + Reinf.	TP40.182x39.238x0.9	Pole	71.5%	Pass
20.5 - 15.5	Pole + Reinf.	TP41.125x40.182x0.8875	Pole	73.1%	Pass
15.5 - 15.05	Pole + Reinf.	TP42.201x41.125x0.8875	Pole	73.3%	Pass
15.05 - 8.8	Pole + Reinf.	TP41.639x40.46x0.875	Pole	77.4%	Pass
8.8 - 8.25	Pole + Reinf.	TP41.743x41.639x0.875	Pole	77.6%	Pass
8.25 - 8	Pole + Reinf.	TP41.79x41.743x0.875	Pole	78.3%	Pass
8 - 4.25	Pole + Reinf.	TP42.498x41.79x0.875	Pole	79.8%	Pass
4.25 - 4	Pole + Reinf.	TP42.545x42.498x1.05	Pole	66.8%	Pass
4 - 3	Pole + Reinf.	TP42.734x42.545x1.05	Pole	67.2%	Pass
3 - 2.75	Pole + Reinf.	TP42.781x42.734x1.15	Pole	62.2%	Pass
2.75 - 0	Pole + Reinf.	TP43.3x42.781x1.125	Pole	63.2%	Pass
				Summary	
			Pole	82.5%	Pass
			Reinforcement	71.2%	Pass
			Overall	82.5%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*											
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11
156 - 151	161	n/a	161	11.91	n/a	11.91	3.2%											
151 - 146	161	n/a	161	11.91	n/a	11.91	24.9%											
146 - 144.5	161	n/a	161	11.91	n/a	11.91	32.0%											
144.5 - 144	786	n/a	786	20.22	n/a	20.22	12.0%											
144 - 139	672	n/a	672	15.03	n/a	15.03	38.5%											
139 - 134	779	n/a	779	15.79	n/a	15.79	58.9%											
134 - 129	897	n/a	897	16.54	n/a	16.54	76.2%											
129 - 128.25	916	n/a	916	16.66	n/a	16.66	78.6%											
128.25 - 128	922	1119	2040	16.70	18.00	34.70	35.8%						31.2%					
128 - 123	1053	1214	2267	17.45	18.00	35.45	43.6%						37.9%					
123 - 118	1197	1314	2510	18.21	18.00	36.21	51.5%						44.8%					
118 - 113	1352	1417	2770	18.97	18.00	36.97	59.7%						51.8%					
113 - 108	1521	1525	3046	19.73	18.00	37.73	67.2%						58.2%					
108 - 103	1703	1636	3340	20.49	18.00	38.49	74.2%						64.1%					
103 - 98	1900	1752	3651	21.25	18.00	39.25	80.7%						69.6%					
98 - 96.5	1961	1787	3749	21.47	18.00	39.47	82.5%						71.2%					
96.5 - 92	2039	3349	5388	21.75	31.88	53.63	64.9%					52.5%						
92 - 87	2260	3567	5827	22.51	31.88	54.39	70.0%					56.1%						
87 - 82	2497	3792	6289	23.27	31.88	55.15	75.1%					59.5%						
82 - 77.5	2723	4001	6724	23.95	31.88	55.83	79.6%					62.5%						
77.5 - 72.5	3714	4240	7955	30.83	31.88	62.70	74.0%					59.6%						
72.5 - 70.58	3848	4334	8182	31.19	31.88	63.07	75.3%					60.6%						
70.58 - 70.33	3865	4346	8211	31.24	31.88	63.12	75.4%			60.7%	60.7%							
70.33 - 67.08	4098	4507	8606	31.86	31.88	63.73	77.5%			62.4%	62.4%							
67.08 - 66.83	4117	7946	12062	31.90	56.25	88.15	55.6%			44.7%	44.7%				47.1%			
66.83 - 61.83	4495	8394	12889	32.85	56.25	89.10	58.1%			46.7%	46.7%				49.2%			
61.83 - 61.75	4501	8401	12902	32.87	56.25	89.12	58.1%			46.7%	46.7%				49.2%			
61.75 - 56.75	4634	8555	13189	33.19	56.25	89.44	62.1%			49.9%	49.9%				52.5%			
56.75 - 51.75	5042	9021	14063	34.13	56.25	90.38	64.4%			51.7%	51.7%				54.5%			
51.75 - 46.75	5474	9498	14972	35.08	56.25	91.33	67.2%			53.5%	53.5%				56.4%			
46.75 - 41.75	5930	9989	15919	36.03	56.25	92.28	70.0%			55.2%	55.2%				58.2%			
41.75 - 39.8	6114	10183	16298	36.40	56.25	92.65	71.1%			55.9%	55.9%				58.9%			
39.8 - 39.33	7353	10230	17584	43.71	56.25	99.96	65.2%			52.3%	52.3%				55.1%			
39.33 - 39.08	7382	10256	17638	43.77	56.25	100.02	65.3%	54.4%			52.3%				55.1%			
39.08 - 38.33	7469	10331	17800	43.94	56.25	100.19	65.6%	54.6%			52.6%				55.4%			
38.33 - 38.08	7508	9475	16983	44.00	53.75	97.75	70.8%	54.8%	60.0%						59.1%			
38.08 - 33.08	8105	9944	18048	45.13	53.75	98.88	72.7%	56.4%	61.6%						60.6%			
33.08 - 30.75	8394	10166	18559	45.67	53.75	99.42	73.6%	57.0%	62.3%						61.4%			
30.75 - 30.5	8424	11712	20136	45.72	61.25	106.97	68.0%	53.0%	57.5%					56.0%				
30.5 - 25.5	9068	12269	21337	46.86	61.25	108.11	69.8%	54.4%	59.0%					57.4%				
25.5 - 20.5	9745	12838	22583	48.00	61.25	109.25	71.5%	55.7%	60.4%					58.8%				
20.5 - 15.5	10454	13421	23875	49.14	61.25	110.39	73.1%	56.9%	61.7%					60.1%				
15.5 - 15.05	10520	13474	23994	49.24	61.25	110.49	73.3%	57.1%	61.8%					60.2%				
15.05 - 8.8	10855	13744	24599	49.76	61.25	111.01	77.4%	60.1%	65.1%					63.4%				
8.8 - 8.25	10937	13810	24747	49.88	61.25	111.13	77.6%	60.2%	65.3%					63.5%				
8.25 - 8	10985	13756	24742	49.94	69.38	119.31	78.3%	60.1%						62.1%			56.6%	
8 - 4.25	11558	14204	25761	50.79	69.38	120.17	79.8%	61.0%						63.0%			57.4%	
4.25 - 4	11603	19429	31033	50.85	80.63	131.47	66.8%							51.1%		54.9%	55.2%	
4 - 3	11760	19585	31345	51.08	80.63	131.70	67.2%							51.4%		55.1%	55.5%	
3 - 2.75	11796	22374	34170	51.13	88.13	139.26	62.2%									51.3%	51.6%	45.5%
2.75 - 0	12234	22861	35095	51.76	88.13	139.88	63.2%									51.9%	52.2%	46.0%

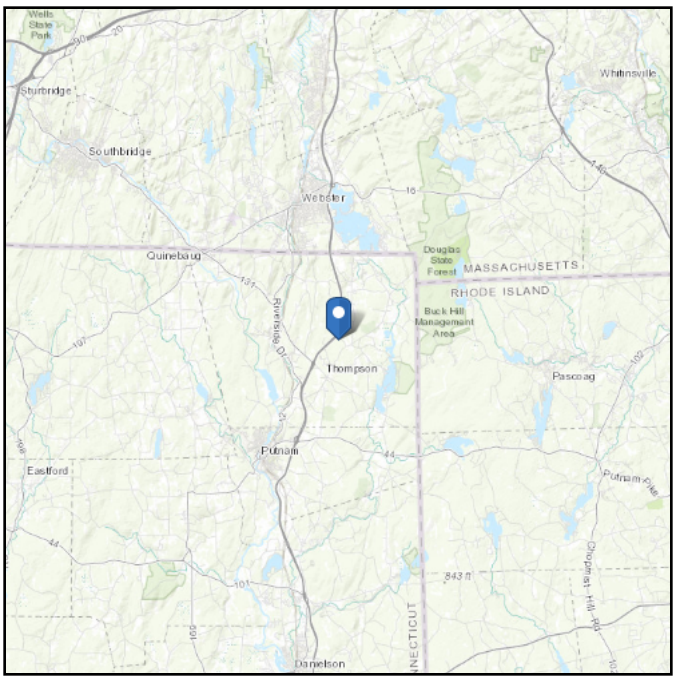
Note: Section capacity checked in 5 degree increments.
Rating per TIA-222-H Section 15.5.

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 538.27 ft (NAVD 88)
Latitude: 41.977706
Longitude: -71.855



Wind

Results:

Wind Speed:	127 Vmph
10-year MRI	78 Vmph
25-year MRI	88 Vmph
50-year MRI	96 Vmph
100-year MRI	103 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:	Thu Nov 01 2018

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

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

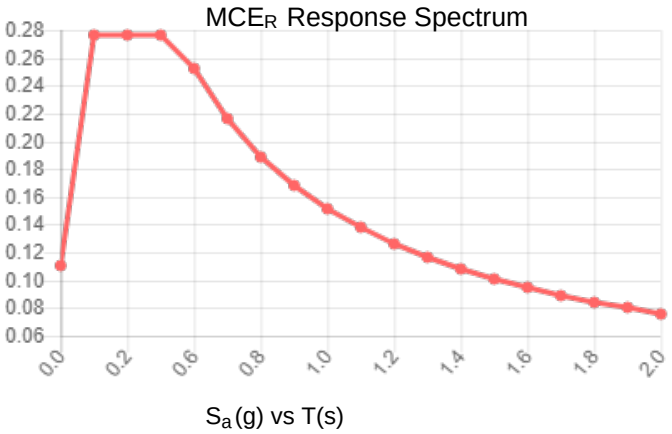
Seismic

Site Soil Class: D - Stiff Soil

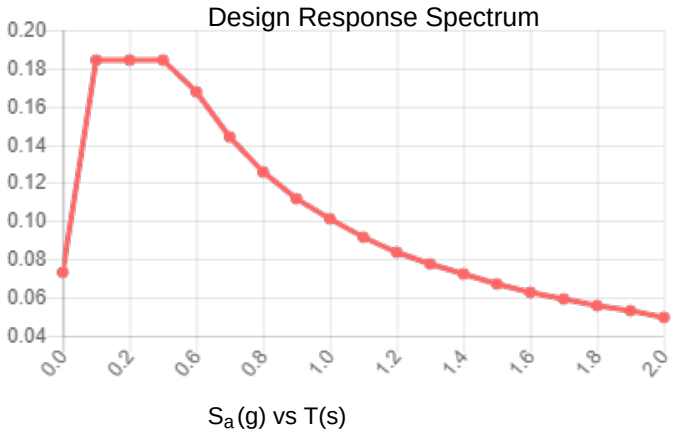
Results:

S_S :	0.172	S_{DS} :	0.184
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.600	T_L :	6.000
F_v :	2.400	PGA :	0.085
S_{MS} :	0.276	PGA_M :	0.136
S_{M1} :	0.151	F_{PGA} :	1.600
		I_e :	1

Seismic Design Category B



Sa(g) vs T(s)



Sa(g) vs T(s)

Data Accessed: Thu Nov 01 2018

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

Ice

Results:

Ice Thickness:	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:	Thu Nov 01 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.

SHEET INDEX

NO.	DESCRIPTION
T1	TITLE PAGE
N1	NOTES
C1	PLAN & ELEVATION
C2	RF CHART AND ORIENTATION
D1	EQUIPMENT DETAILS
E1	GROUNDING & ELECTRICAL DETAILS

TOWER OWNER NOTIFICATION

ONCE THE CONTRACTOR HAS RECEIVED AND ACCEPTED THE NOTICE TO PROCEED, CONTRACTOR WILL CONTACT THE CROWN CASTLE CONSTRUCTION MANAGER OF RECORD (NOTED ON THE FIRST PAGE ON THIS CONSTRUCTION DRAWING) A MINIMUM OF 48 HOURS PRIOR TO WORK START. UPON ARRIVAL TO THE JOB SITE, CONTRACTOR CREW IS REQUIRED CALL 1-800-788-7011 TO NOTIFY THE CROWN CASTLE NOC WORK HAS BEGUN.

T-Mobile

CROWN CASTLE

CBU

828402

SITE ID

CT11160B

SITE NAME

THOMPSON/I-395 X99_1

SITE ADDRESS

720 THOMPSON ROAD
THOMPSON, CT 06277

CONFIGURATION

67D94B OUTDOOR

PROJECT SITE INFORMATION

SITE ID:	CT11160B
SITE NAME:	THOMPSON/I-395 X99_1
SITE ADDRESS:	720 THOMPSON ROAD THOMPSON, CT 06277
PERMITTING JURISDICTION:	TOWN OF THOMPSON
COUNTY:	WINDHAM
ZONING:	IND
SITE COORDINATES: LATITUDE:	41° 58' 39.74" N (41.977706°) (NAD 83)
LONGITUDE:	71° 50' 47.55" W (-71.846542°) (NAD 83)
APPLICANT:	T-MOBILE NORTHEAST LLC 103 MONARCH DRIVE LIVERPOOL, NY 13088

STRUCTURAL ANALYSIS INFORMATION

TOWER ANALYSIS

BASED ON THE STRUCTURAL ANALYSIS COMPLETED BY **PAUL J. FORD** DATED **02/10/2019.** THE EXISTING TOWER IS CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT CONFIGURATION.

ANTENNA MOUNTS

BASED ON THE MOUNT ANALYSIS COMPLETED BY **FRENCH & PARRELLO** DATED **04/16/2019.** THE PROPOSED ANTENNA MOUNTS ARE CAPABLE OF SUPPORTING THE PROPOSED EQUIPMENT CONFIGURATION

PROJECT TEAM INFORMATION

CLIENT REPRESENTATIVE:	CROWN CASTLE 3 CORPORATE PARK DRIVE SUITE 101 CLIFTON PARK, NY 12065
CLIENT REP. CONTACT:	WILL STONE (518) 373-3543
ENGINEER:	INFINIGY 6865 DEERPATH ROAD SUITE 152 ELKRIDGE, MD 21075
ENGINEER CONTACT:	MATTHEW LIVERETTE (518) 690-0790

SCOPE OF WORK

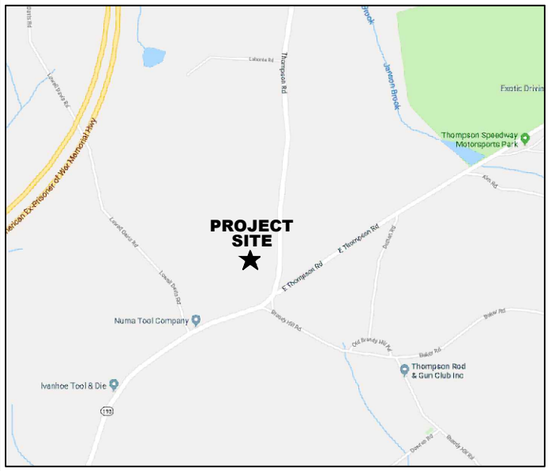
SCOPE OF WORK:
TMO L600 67D974B OUTDOOR (CONNECTICUT MARKET) REPLACING (6) EXISTING ANTENNAS WITH NEW MODELS. ADDING (6) COAX AND (1) HYBRID FIBER CABLE. REPLACING (6) TMA WITH NEW MODELS AND ADDING (3) RRUS. REPLACING (3) T-ARM MOUNTS WITH (1) NEW MOUNT; UPGRADE CABINET BREAKER TO 100A/2P

FINAL CONFIGURATION: (6) ANTENNAS, (12) COAX, (1) HYBRID FIBER CABLE, (6) TMA'S, AND (3) RRUS.

811 Know what's below. Call before you dig.

TO OBTAIN LOCATION OF PARTICIPANTS UNDERGROUND FACILITIES BEFORE YOU DIG IN CONNECTICUT, CONTACT CALL BEFORE YOU DIG
TOLL FREE: 1-800-922-4455 OR
www.cbyd.com
CONNECTICUT STATUTE REQUIRES MIN OF 2 WORKING DAYS NOTICE BEFORE YOU EXCAVATE

LOCATION MAP



GENERAL NOTES

- HANDICAP ACCESS REQUIREMENTS ARE NOT REQUIRED.
- FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.
- FACILITY HAS NO PLUMBING OR REFRIGERANTS.
- THIS FACILITY SHALL MEET OR EXCEED ALL FAA AND FCC REGULATORY REQUIREMENTS.
- ALL NEW MATERIAL SHALL BE FURNISHED AND INSTALLED BY CONTRACTOR UNLESS NOTED OTHERWISE. EQUIPMENT, ANTENNAS/RRH AND CABLES FURNISHED BY OWNER AND INSTALLED BY CONTRACTOR.
- THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT DISTURBANCE OR EFFECT ON STORMWATER DRAINAGE.
- NO SANITARY SEWER, POTABLE WATER, OR TRASH DISPOSAL SERVICE IS REQUIRED
- NO COMMERCIAL SIGNAGE IS PROPOSED

CODE COMPLIANCE

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED WITH ANY LOCAL AMENDMENTS BY THE LOCAL GOVERNING AUTHORITIES:

- 2018 CONNECTICUT STATE BUILDING CODE
- 2018 CONNECTICUT STATE FIRE SAFETY CODE
- 2015 INTERNATIONAL BUILDING CODE
- 2017 NATIONAL ELECTRICAL CODE (NFPA 70)
- NATIONAL FIRE PROTECTION ASSOCIATION 101
- NATIONAL FIRE PROTECTION ASSOCIATION 1
- LOCAL BUILDING CODES
- CITY/COUNTY ORDINANCES
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION SPECIFICATIONS (AISC)
- UNDERWRITERS LABORATORIES APPROVED ELECTRICAL PRODUCTS.
- ANSI EIA/TIA 222 REV. H
- TIA 607
- INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS 81
- IEEE C2 (LATEST EDITION)
- TELCORDIA GR-1275
- ANSI T1.311

T-Mobile
T-MOBILE NORTHEAST LLC
103 MONARCH DRIVE
LIVERPOOL, NY 13088

INFINIGY ENGINEERING, PLLC
1033 WATERVLIET SHAKER RD
ALBANY, NY 12205

STATE OF CONNECTICUT
JOHN S. STEVENS
24705
LICENSED PROFESSIONAL ENGINEER

05-10-19

No.	Submittal / Revision	App'd	Date
1	MOUNT ANALYSIS	BWB	05/07/19
0	ISSUED FOR CONSTRUCTION	RMS	01/30/19
A	ISSUED FOR REVIEW	RMS	11/12/18

Drawn: RMS
Designed: MRL
Checked: AJD

Project Number: 600-007

Project Title:
CT11160B
THOMPSON/I-395 X99_1
720 THOMPSON ROAD
THOMPSON, CT 06277

Prepared For: CROWN CASTLE

Drawing Title
TITLE PAGE

Drawing Number
T1

GENERAL NOTES

PART 1 – GENERAL REQUIREMENTS

1.1 THE WORK SHALL COMPLY WITH APPLICABLE NATIONAL CODES AND STANDARDS, LATEST EDITION, AND PORTIONS THEREOF, INCLUDED BUT NOT LIMITED TO THE FOLLOWING:
- A. GR-63-CORE NEBS REQUIREMENTS: PHYSICAL PROTECTION
- B. GR-78-CORE GENERIC REQUIREMENTS FOR THE PHYSICAL DESIGN AND MANUFACTURE OF TELECOMMUNICATIONS EQUIPMENT.
- C. NATIONAL FIRE PROTECTION ASSOCIATION CODES AND STANDARDS (NFPA) INCLUDING NFPA 70 (NATIONAL ELECTRICAL CODE – "NEC").
- D. AND NFPA 101 (LIFE SAFETY CODE).
- E. AMERICAN SOCIETY FOR TESTING OF MATERIALS (ASTM).
- F. INSTITUTE OF ELECTRONIC AND ELECTRICAL ENGINEERS (IEEE).

1.2 DEFINITIONS:
A: WORK: THE SUM OF TASKS AND RESPONSIBILITIES IDENTIFIED IN THE CONTRACT DOCUMENTS.
B: COMPANY: T-MOBILE CORPORATION
C. ENGINEER: SYNONYMOUS WITH ARCHITECT & ENGINEER AND "A&E". THE DESIGN PROFESSIONAL HAVING PROFESSIONAL RESPONSIBILITY FOR DESIGN OF THE PROJECT.
D: CONTRACTOR: CONSTRUCTION CONTRACTOR; CONSTRUCTION VENDOR; INDIVIDUAL OR ENTITY WHO AFTER EXECUTION OF A CONTRACT IS BOUND TO ACCOMPLISH THE WORK.
E: THIRD PARTY VENDOR OR AGENCY: A VENDOR OR AGENCY ENGAGED SEPARATELY BY THE COMPANY, A&E, OR CONTRACTOR TO PROVIDE MATERIALS OR TO ACCOMPLISH SPECIFIC TASKS RELATED TO BUT NOT INCLUDED IN THE WORK.

1.3 POINT OF CONTACT: COMMUNICATION BETWEEN THE COMPANY AND THE CONTRACTOR SHALL FLOW THROUGH THE SINGLE COMPANY SITE DEVELOPMENT SPECIALIST OR OTHER PROJECT COORDINATOR APPOINTED TO MANAGE THE PROJECT FOR THE COMPANY.

1.4 ON-SITE SUPERVISION: THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE WORK AND SHALL BE RESPONSIBLE FOR CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES IN ACCORDANCE WITH THE CONTRACT DOCUMENTS. THE CONTRACTOR SHALL EMPLOY A COMPETENT SUPERINTENDENT WHO SHALL BE IN ATTENDANCE AT THE SITE AT ALL TIMES DURING PERFORMANCE OF THE WORK.

1.5 DRAWINGS, SPECIFICATIONS AND DETAILS REQUIRED AT JOBSITE: THE CONSTRUCTION CONTRACTOR SHALL MAINTAIN A FULL SET OF THE CONSTRUCTION DRAWINGS, STANDARD CONSTRUCTION DETAILS FOR WIRELESS SITES, AND THE STANDARD CONSTRUCTION SPECIFICATIONS FOR WIRELESS SITES AT THE JOBSITE FROM MOBILIZATION THROUGH CONSTRUCTION COMPLETION.
A. THE JOBSITE DRAWINGS, SPECIFICATIONS AND DETAILS SHALL BE CLEARLY MARKED DAILY IN PENCIL WITH ANY CHANGES IN CONSTRUCTION OVER WHAT IS DEPICTED IN THE DOCUMENTS. AT CONSTRUCTION COMPLETION, THIS JOBSITE MARKUP SET SHALL BE DELIVERED TO THE COMPANY OR COMPANY'S DESIGNATED REPRESENTATIVE TO BE FORWARDED TO THE COMPANY'S A&E VENDOR FOR PRODUCTION OF "AS-BUILT" DRAWINGS.

1.6 USE OF JOB SITE: THE CONTRACTOR SHALL CONFINE ALL CONSTRUCTION AND RELATED OPERATIONS INCLUDING STAGING AND STORAGE OF MATERIALS AND EQUIPMENT, PARKING, TEMPORARY FACILITIES, AND WASTE STORAGE TO THE LEASE PARCEL UNLESS OTHERWISE PERMITTED BY THE CONTRACT DOCUMENTS.

1.7 NOTICE TO PROCEED:
A. NO WORK SHALL COMMENCE PRIOR TO COMPANY'S WRITTEN NOTICE TO PROCEED.
B. UPON RECEIVING NOTICE TO PROCEED, CONTRACTOR SHALL FULLY PERFORM ALL WORK NECESSARY TO PROVIDE T-MOBILE WITH AN OPERATIONAL WIRELESS FACILITY.

PART 2 – EXECUTION

2.1 TEMPORARY UTILITIES AND FACILITIES: THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL TEMPORARY UTILITIES AND FACILITIES NECESSARY EXCEPT AS OTHERWISE INDICATED IN THE CONSTRUCTION DOCUMENTS. TEMPORARY UTILITIES AND FACILITIES INCLUDE, POTABLE WATER, HEAT, HVAC, ELECTRICITY, SANITARY FACILITIES, WASTE DISPOSAL FACILITIES, AND TELEPHONE/COMMUNICATION SERVICES. PROVIDE TEMPORARY UTILITIES AND FACILITIES IN ACCORDANCE WITH OSHA AND THE AUTHORITY HAVING JURISDICTION. CONTRACTOR MAY UTILIZE THE COMPANY ELECTRICAL SERVICE IN THE COMPLETION OF THE WORK WHEN IT BECOMES AVAILABLE. USE OF THE LESSORS OR SITE OWNER'S UTILITIES OR FACILITIES IS EXPRESSLY FORBIDDEN EXCEPT AS OTHERWISE ALLOWED IN THE CONTRACT DOCUMENTS.

2.2 ACCESS TO WORK: THE CONTRACTOR SHALL PROVIDE ACCESS TO THE JOB SITE FOR AUTHORIZED COMPANY PERSONNEL AND AUTHORIZED REPRESENTATIVES OF THE ARCHITECT/ENGINEER DURING ALL PHASES OF THE WORK.

2.3 TESTING: REQUIREMENTS FOR TESTING BY THIS CONTRACTOR SHALL BE AS INDICATED HEREWITH, ON THE CONSTRUCTION DRAWINGS, AND IN THE INDIVIDUAL SECTIONS OF THESE SPECIFICATIONS. SHOULD COMPANY CHOOSE TO ENGAGE ANY THIRD-PARTY TO CONDUCT ADDITIONAL TESTING, THE CONTRACTOR SHALL COOPERATE WITH AND PROVIDE A WORK AREA FOR COMPANY'S TEST AGENCY.

2.4 COMPANY FURNISHED MATERIAL AND EQUIPMENT: ALL HANDLING, STORAGE AND INSTALLATION OF COMPANY FURNISHED MATERIAL AND EQUIPMENT SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONTRACT DOCUMENTS AND WITH THE MANUFACTURER'S INSTRUCTIONS AND RECOMMENDATIONS.
A. CONTRACTOR SHALL PROCURE ALL OTHER REQUIRED WORK RELATED MATERIALS NOT PROVIDED BY T-MOBILE TO SUCCESSFULLY CONSTRUCT A WIRELESS FACILITY.

2.5 DIMENSIONS: VERIFY DIMENSIONS INDICATED ON DRAWINGS WITH FIELD DIMENSIONS BEFORE FABRICATION OR ORDERING OF MATERIALS. DO NOT SCALE DRAWINGS.

2.6 EXISTING CONDITIONS: NOTIFY THE COMPANY REPRESENTATIVE OF EXISTING CONDITIONS DIFFERING FROM THOSE INDICATED ON THE DRAWINGS. DO NOT REMOVE OR ALTER STRUCTURAL COMPONENTS WITHOUT PRIOR WRITTEN APPROVAL FROM THE ARCHITECT AND ENGINEER.

PART 3 – RECEIPT OF MATERIAL & EQUIPMENT

3.1 RECEIPT OF MATERIAL AND EQUIPMENT: CONTRACTOR IS RESPONSIBLE FOR T-MOBILE PROVIDED MATERIAL AND EQUIPMENT AND UPON RECEIPT SHALL:
- A. ACCEPT DELIVERIES AS SHIPPED AND TAKE RECEIPT.
- B. VERIFY COMPLETENESS AND CONDITION OF ALL DELIVERIES.
- C. TAKE RESPONSIBILITY FOR EQUIPMENT AND PROVIDE INSURANCE PROTECTION AS REQUIRED IN AGREEMENT.
- D. RECORD ANY DEFECTS OR DAMAGES AND WITHIN TWENTY-FOUR HOURS AFTER RECEIPT, REPORT TO T-MOBILE OR ITS DESIGNATED PROJECT REPRESENTATIVE OF SUCH.
- E. PROVIDE SECURE AND NECESSARY WEATHER PROTECTED WAREHOUSING.
- F. COORDINATE SAFE AND SECURE TRANSPORTATION OF MATERIAL AND EQUIPMENT, DELIVERING AND OFF-LOADING FROM CONTRACTOR'S WAREHOUSE TO SITE.

PART 4 – GENERAL REQUIREMENTS FOR CONSTRUCTION

4.1 CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH. AT THE COMPLETION OF THE WORK, CONTRACTOR SHALL REMOVE FROM THE SITE ALL REMAINING RUBBISH, IMPLEMENTS, TEMPORARY FACILITIES, AND SURPLUS MATERIALS.

4.2 EQUIPMENT ROOMS SHALL AT ALL TIMES BE MAINTAINED "BROOM CLEAN" AND CLEAR OF DEBRIS.

4.3 CONTRACTOR SHALL TAKE ALL REASONABLE PRECAUTIONS TO DISCOVER AND LOCATE ANY HAZARDOUS CONDITION.
A. IN THE EVENT CONTRACTOR ENCOUNTERS ANY HAZARDOUS CONDITION WHICH HAS NOT BEEN ABATED OR OTHERWISE MITIGATED, CONTRACTOR AND ALL OTHER PERSONS SHALL IMMEDIATELY STOP WORK IN THE AFFECTED AREA AND NOTIFY COMPANY IN WRITING. THE WORK IN THE AFFECTED AREA SHALL NOT BE RESUMED EXCEPT BY WRITTEN NOTIFICATION BY COMPANY.
B. CONTRACTOR AGREES TO USE CARE WHILE ON THE SITE AND SHALL NOT TAKE ANY ACTION THAT WILL OR MAY RESULT IN OR CAUSE THE HAZARDOUS CONDITION TO BE FURTHER RELEASED IN THE ENVIRONMENT, OR TO FURTHER EXPOSE INDIVIDUALS TO THE HAZARD.

4.4 CONTRACTOR'S ACTIVITIES SHALL BE RESTRICTED TO THE PROJECT LIMITS. SHOULD AREAS OUTSIDE THE PROJECT LIMITS BE AFFECTED BY CONTRACTOR'S ACTIVITIES, CONTRACTOR SHALL IMMEDIATELY RETURN THEM TO ORIGINAL CONDITION.

4.5 CONDUCT TESTING AS REQUIRED HEREIN.

PART 5 – TESTS AND INSPECTIONS

5.1 TESTS AND INSPECTIONS:
- A. THE CONTRACTOR SHALL BE RESPONSIBLE FOR ALL CONSTRUCTION TESTS, INSPECTIONS AND PROJECT DOCUMENTATION.
- B. CONTRACTOR SHALL COORDINATE TEST AND INSPECTION SCHEDULES WITH COMPANY'S REPRESENTATIVE WHO MUST BE ON SITE TO WITNESS SUCH TESTS AND INSPECTIONS.
- C. WHEN THE USE OF A THIRD PARTY INDEPENDENT TESTING AGENCY IS REQUIRED, THE AGENCY THAT IS SELECTED MUST PERFORM SUCH WORK ON A REGULAR BASIS IN THE STATE WHERE THE PROJECT IS LOCATED AND HAVE A THOROUGH UNDERSTANDING OF LOCAL AVAILABLE MATERIALS, INCLUDING THE SOIL, ROCK, AND GROUNDWATER CONDITIONS.
- D. THE THIRD PARTY TESTING AGENCY IS TO BE FAMILIAR WITH THE APPLICABLE REQUIREMENTS FOR THE TESTS TO BE DONE, EQUIPMENT TO BE USED, AND ASSOCIATED HEALTH AND SAFETY ISSUES.
- E. SITE RESISTANCE TO EARTH TESTING PER EXHIBIT: CELL SITE GROUNDING SYSTEM DESIGN.
- F. ANTENNA AND COAX SWEEP TESTS PER EXHIBIT: ANTENNA TRANSMISSION LINE ACCEPTANCE STANDARDS.
- G. ALL OTHER TESTS REQUIRED BY COMPANY OR JURISDICTION.

PART 6 – TRENCHING AND BACKFILLING

6.1 TRENCHING AND BACKFILLING: THE CONTRACTOR SHALL PERFORM ALL EXCAVATION OF EVERY DESCRIPTION AND OF WHATEVER SUBSTANCES ENCOUNTERED, TO THE DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR AS OTHERWISE SPECIFIED.

A. PROTECTION OF EXISTING UTILITIES: THE CONTRACTOR SHALL CHECK WITH THE LOCAL UTILITIES AND THE RESPECTIVE UTILITY LOCATOR COMPANIES PRIOR TO STARTING EXCAVATION OPERATIONS IN EACH RESPECTIVE AREA TO ASCERTAIN THE LOCATIONS OF KNOWN UTILITY LINES. THE LOCATIONS, NUMBER AND TYPES OF EXISTING UTILITY LINES DETAILED ON THE CONSTRUCTION DRAWINGS ARE APPROXIMATE AND DO NOT REPRESENT EXACT INFORMATION. THE CONTRACTOR SHALL BE RESPONSIBLE FOR REPAIRING ALL LINES DAMAGED DURING EXCAVATION AND ALL ASSOCIATED OPERATIONS. ALL UTILITY LINES UNCOVERED DURING THE EXCAVATION OPERATIONS, SHALL BE PROTECTED FROM DAMAGE DURING EXCAVATION AND ASSOCIATED OPERATIONS. ALL REPAIRS SHALL BE APPROVED BY THE UTILITY COMPANY.

B. HAND DIGGING: UNLESS APPROVED IN WRITING OTHERWISE, ALL DIGGING WITHIN AN EXISTING CELL SITE COMPOUND IS TO BE DONE BY HAND.

C. DURING EXCAVATION, MATERIAL SUITABLE FOR BACKFILLING SHALL BE STOCKPILED IN AN ORDERLY MANNER A SUFFICIENT DISTANCE FROM THE BANKS OF THE TRENCH TO AVOID OVERLOADING AND TO PREVENT SLIDES OR CAVE-INS. ALL EXCAVATED MATERIALS NOT REQUIRED OR SUITABLE FOR BACKFILL SHALL BE REMOVED AND DISPOSED OF AT THE CONTRACTOR'S EXPENSE.

D. GRADING SHALL BE DONE AS MAY BE NECESSARY TO PREVENT SURFACE WATER FROM FLOWING INTO TRENCHES OR OTHER EXCAVATIONS, AND ANY WATER ACCUMULATING THEREIN SHALL BE REMOVED BY PUMPING OR BY OTHER APPROVED METHOD.

E. SHEETING AND SHORING SHALL BE DONE AS NECESSARY FOR THE PROTECTION OF THE WORK AND FOR THE SAFETY OF PERSONNEL. UNLESS OTHERWISE INDICATED, EXCAVATION SHALL BE BY OPEN CUT, EXCEPT THAT SHORT SECTIONS OF A TRENCH MAY BE TUNNELED IF, THE CONDUIT CAN BE SAFELY AND PROPERLY INSTALLED AND BACKFILL CAN BE PROPERLY TAMPED IN SUCH TUNNEL SECTIONS. EARTH EXCAVATION SHALL COMPRISE ALL MATERIALS AND SHALL INCLUDE CLAY, SILT, SAND, MUCK, GRAVEL, HARDPAN, LOOSE SHALE, AND LOOSE STONE.

F. TRENCHES SHALL BE OF NECESSARY WIDTH FOR THE PROPER LAYING OF THE CONDUIT OR CABLE, AND THE BANKS SHALL BE AS NEARLY VERTICAL AS PRACTICABLE. THE BOTTOM OF THE TRENCHES SHALL BE ACCURATELY GRADED TO PROVIDE UNIFORM BEARING AND SUPPORT FOR EACH SECTION OF THE CONDUIT OR CABLE ON UNDISTURBED SOIL AT EVERY POINT ALONG ITS ENTIRE LENGTH. EXCEPT WHERE ROCK IS ENCOUNTERED, CARE SHALL BE TAKEN NOT TO EXCAVATE BELOW THE DEPTHS INDICATED. WHERE ROCK EXCAVATIONS ARE NECESSARY, THE ROCK SHALL BE EXCAVATED TO A MINIMUM OVER DEPTH OF 6 INCHES BELOW THE TRENCH DEPTHS INDICATED ON THE CONSTRUCTION DRAWINGS OR SPECIFIED. OVER DEPTHS IN THE ROCK EXCAVATION AND UNAUTHORIZED OVER DEPTHS SHALL BE THOROUGHLY BACK FILLED AND TAMPED TO THE APPROPRIATE GRADE. WHENEVER WET OR OTHERWISE UNSTABLE SOIL THAT IS INCAPABLE OF PROPERLY SUPPORTING THE CONDUIT OR CABLE IS ENCOUNTERED IN THE BOTTOM OF THE TRENCH, SUCH SOLID SHALL BE REMOVED TO A MINIMUM OVER DEPTH OF 6 INCHES AND THE TRENCH BACKFILLED TO THE PROPER GRADE WITH EARTH OF OTHER SUITABLE MATERIAL, AS HEREINAFTER SPECIFIED.

G. BACKFILLING OF TRENCHES. TRENCHES SHALL NOT BE BACKFILLED UNTIL ALL SPECIFIED TESTS HAVE BEEN PERFORMED AND ACCEPTED. WHERE COMPACTED BACKFILL IS NOT INDICATED THE TRENCHES SHALL BE CAREFULLY BACKFILLED WITH SELECT MATERIAL SUCH AS EXCAVATED SOILS THAT ARE FREE OF ROOTS, SOD, RUBBISH OR STONES, DEPOSITED IN 6 INCH LAYERS AND THOROUGHLY AND CAREFULLY RAMMED UNTIL THE CONDUIT OR CABLE HAS A COVER OF NOT LESS THAN 1 FOOT. THE REMAINDER OF THE BACKFILL MATERIAL SHALL BE GRANULAR IN NATURE AND SHALL NOT CONTAIN ROOTS, SOD, RUBBING, OR STONES OF 2-1/2 INCH MAXIMUM DIMENSION. BACKFILL SHALL BE CAREFULLY PLACED IN THE TRENCH AND IN 1 FOOT LAYERS AND EACH LAYER TAMPED. SETTLING THE BACKFILL WITH WATER WILL BE PERMITTED. THE SURFACE SHALL BE GRADED TO A REASONABLE UNIFORMITY AND THE MOUNDING OVER THE TRENCHES LEFT IN A UNIFORM AND NEAT CONDITION.

SYMBOL	DESCRIPTION
	CIRCUIT BREAKER
	NON-FUSIBLE DISCONNECT SWITCH
F	FUSIBLE DISCONNECT SWITCH
	SURFACE MOUNTED PANEL BOARD
T	TRANSFORMER
M	KILOWATT HOUR METER
JB	JUNCTION BOX
PB	PULL BOX TO NEC/TELCO STANDARDS
	UNDERGROUND UTILITIES
	EXOTHERMIC WELD CONNECTION
	MECHANICAL CONNECTION
OR	GROUND ROD
OR	GROUND ROD WITH INSPECTION SLEEVE
	GROUND BAR
	120AC DUPLEX RECEPTACLE
G	GROUND CONDUCTOR
	DC POWER AND FIBER OPTIC TRUNK CABLES
E	DC POWER CABLES
# / #	REPRESENTS DETAIL NUMBER / REF. DRAWING NUMBER

ABBREVIATIONS

CIGBE	COAX ISOLATED GROUND BAR EXTERNAL
MIGB	MASTER ISOLATED GROUND BAR
SST	SELF SUPPORTING TOWER
GPS	GLOBAL POSITIONING SYSTEM
TYP	TYPICAL
DWG	DRAWING
BCW	BARE COPPER WIRE
BFG	BELOW FINISH GRADE
PVC	POLYVINYL CHLORIDE
CAB	CABINET
C	CONDUIT
SS	STAINLESS STEEL
G	GROUND
AWG	AMERICAN WIRE GAUGE
RGS	RIGID GALVANIZED STEEL
AHJ	AUTHORITY HAVING JURISDICTION
TTLNA	TOWER TOP LOW NOISE AMPLIFIER
UNO	UNLESS NOTED OTHERWISE
EMT	ELECTRICAL METALLIC TUBING
AGL	ABOVE GROUND LEVEL

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LICENSED PROFESSIONAL ENGINEER
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A	ISSUED FOR REVIEW	RMS	11/12/18

Drawn: RMS
Designed: MRL
Checked: AJD

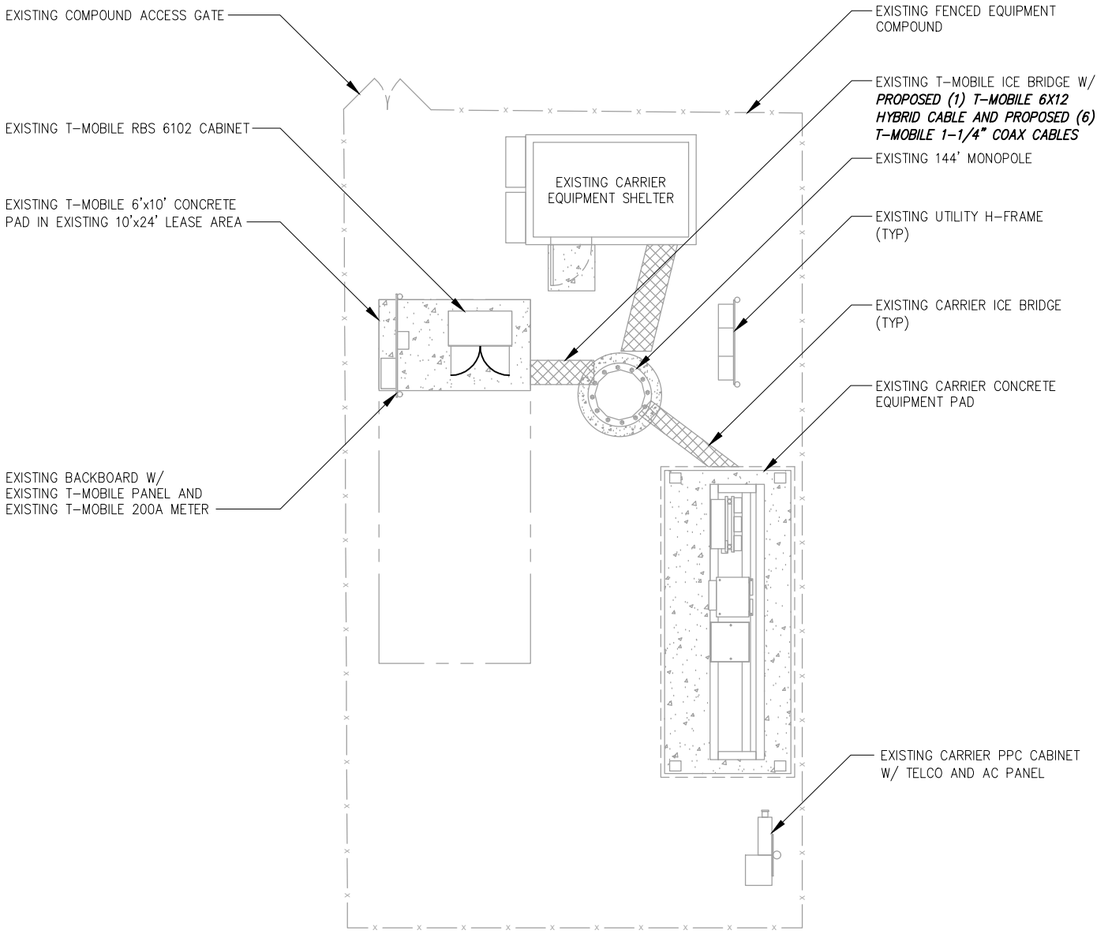
Project Number: 600-007

Project Title:
CT11160B
THOMPSON/I-395
X99_1
720 THOMPSON ROAD
THOMPSON, CT 06277

Prepared For:
CROWN CASTLE

Drawing Title
NOTES

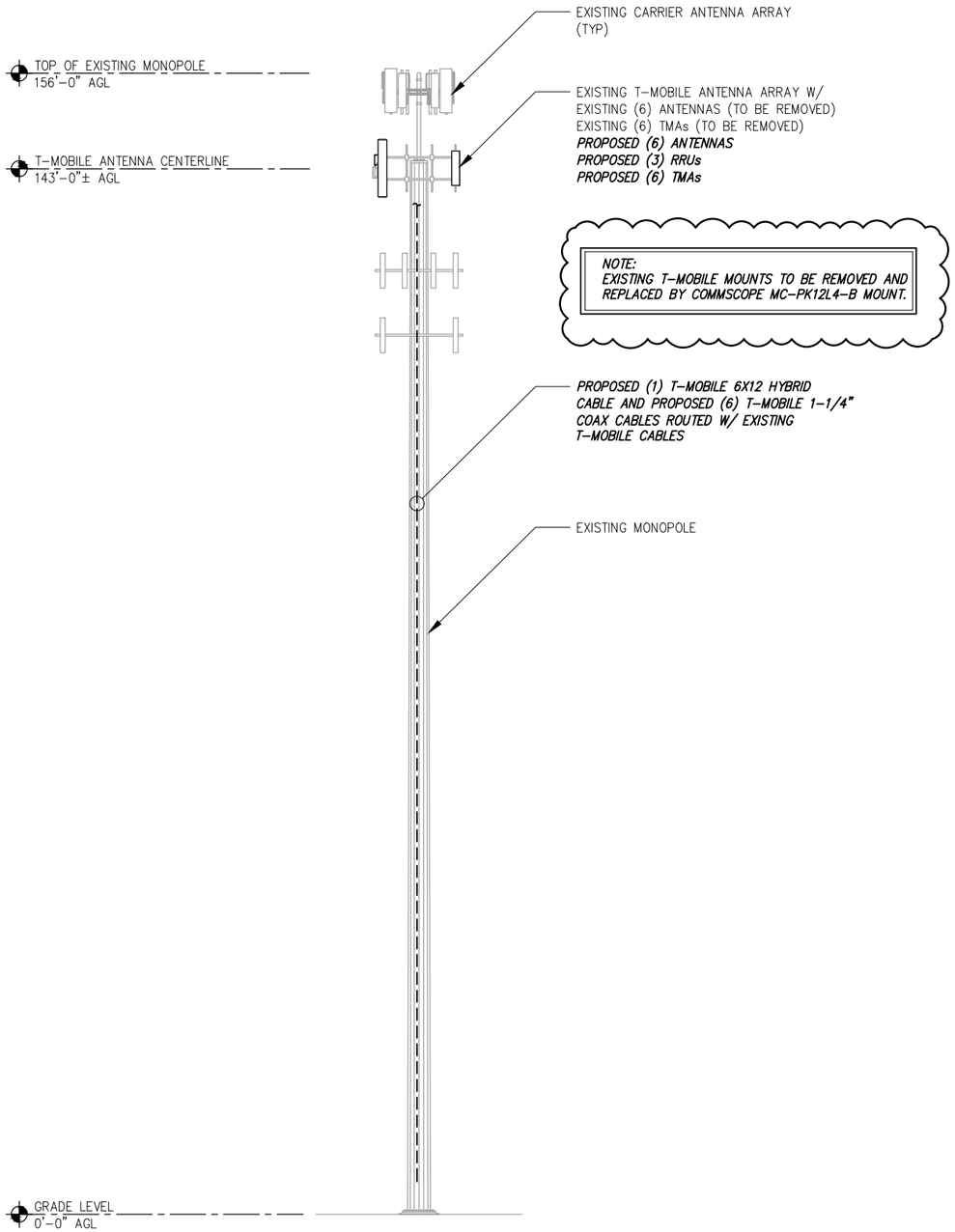
Drawing Number
N1



NORTH

1 / C1 PLAN VIEW
SCALE: AS NOTED

GRAPHIC SCALE:
10' 5' 0 5' 10'
SCALE (11x17): 1" = 10'-0"
SCALE (22x34): 1" = 5'-0"



2 / C1 ELEVATION
SCALE: NOT TO SCALE

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PLAN AND ELEVATION

Drawing Number
C1

SECTOR	ANTENNA POSITION	ANTENNA MODEL #	VENDOR	AZIMUTH	M-TILT	E-TILT	ANTENNA CENTERLINE	TMA/RRU MODEL #	CABLE LENGTH	CABLE TYPE AND QUANTITY
ALPHA	A-1	**APXVAARR24_43-UNA20**	**RFS**	90°	0	2°/2°/2°	140'-0"	**ATMAA1412D-1A20**	EX.	(2) 1-1/4" COAX
								RADIO 4449 B12/B71	**175'±**	**(1) 6X12 HYBRID TRUNK CABLE (SHARED BY ALL SECTORS)**
	A-4	**APX16DWV-16DWVS-E-A20**	**RFS**	90°	0	2°	140'-0"	**ATMAA1412D-1A20**	**175'±**	**(2) 1-1/4" COAX**
BETA	B-1	**APXVAARR24_43-UNA20**	**RFS**	210°	0	2°/2°/2°	140'-0"	**ATMAA1412D-1A20**	EX.	(2) 1-1/4" COAX
								RADIO 4449 B12/B71	**175'±**	**(1) 6X12 HYBRID TRUNK CABLE (SHARED BY ALL SECTORS)**
	B-4	**APX16DWV-16DWVS-E-A20**	**RFS**	210°	0	2°	140'-0"	**ATMAA1412D-1A20**	**175'±**	**(2) 1-1/4" COAX**
GAMMA	C-1	**APXVAARR24_43-UNA20**	**RFS**	330°	0	2°/2°/2°	140'-0"	**ATMAA1412D-1A20**	EX.	(2) 1-1/4" COAX
								RADIO 4449 B12/B71	**175'±**	**(1) 6X12 HYBRID TRUNK CABLE (SHARED BY ALL SECTORS)**
	C-4	**APX16DWV-16DWVS-E-A20**	**RFS**	330°	0	2°	140'-0"	**ATMAA1412D-1A20**	**175'±**	**(2) 1-1/4" COAX**

1 / C2 RF SYSTEM CHART
SCALE: NOT TO SCALE

KEY

EXISTING
PROPOSED

ANTENNA LOCATION KEY

VIEWED FROM BEHIND

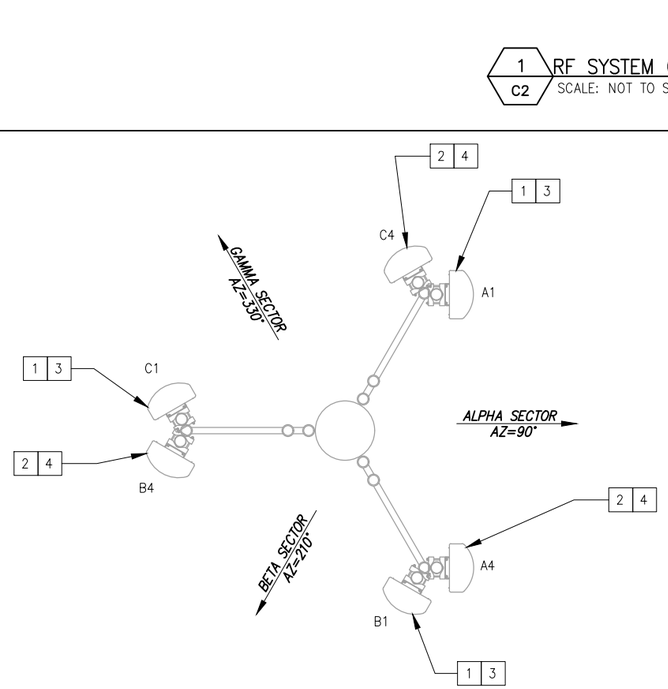
#1 #2 #3 #4

GENERAL NOTES:

1. CONTRACTOR TO VERIFY PROPOSED ANTENNA INFORMATION IS THE MOST CURRENT AT TIME OF CONSTRUCTION.
2. CONTRACTOR TO CONFIRM CABLE LENGTHS FOR ANY PROPOSED CABLES/JUMPERS PRIOR TO CONSTRUCTION.

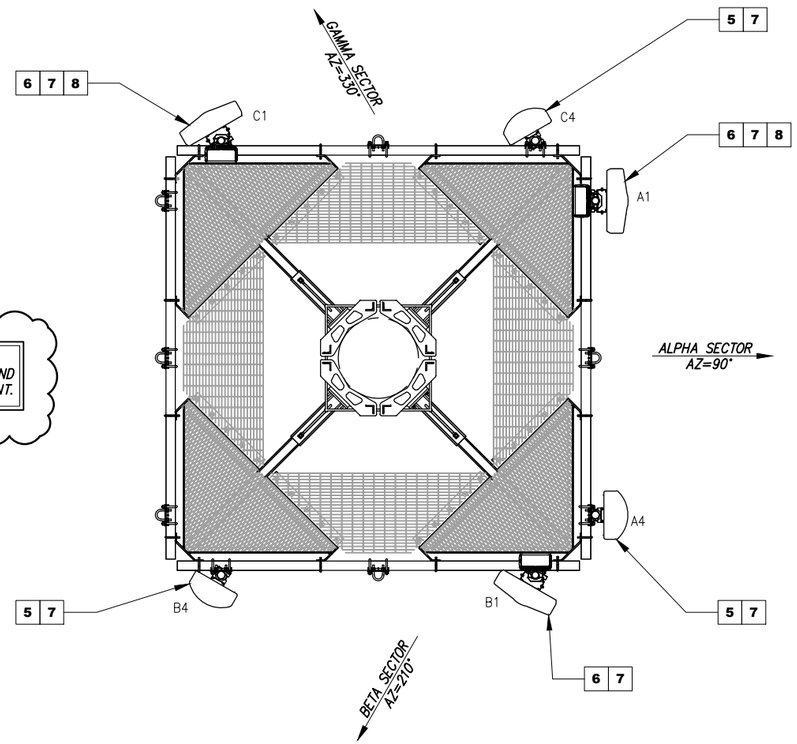
ORIENTATION PLAN KEY

KEY	DESCRIPTION	TYPE	QTY	STATUS
1	RV90-17-XXDP	ANTENNA	3	REMOVED
2	APXV18-206516S-C-A20	TMA	3	REMOVED
3	d B2 TMA	TMA	3	REMOVED
4	d B4 TMA	TMA	3	REMOVED
5	**APX16DWV-16DWVS-E-A20**	**ANTENNA**	**3**	**PROPOSED**
6	**APXVAARR24_43-UNA20**	**ANTENNA**	**3**	**PROPOSED**
7	**ATMAA1412D-1A20**	**TMA**	**6**	**PROPOSED**
8	**RADIO 4449 B12/B71**	**RRU**	**3**	**PROPOSED**



NORTH 2 / C2 EXISTING ANTENNA ORIENTATION
SCALE: NOT TO SCALE

NOTE:
EXISTING T-MOBILE MOUNTS TO BE REMOVED AND REPLACED BY COMMSCOPE MC-PK12L4-B MOUNT.



NORTH 3 / C2 PROPOSED ANTENNA ORIENTATION
SCALE: NOT TO SCALE

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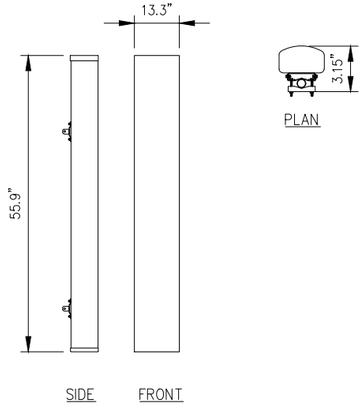
X99_1
720 THOMPSON ROAD
THOMPSON, CT 06277

Prepared For:
CROWN CASTLE

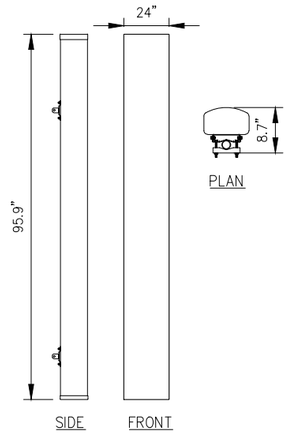
Drawing Title
RF CHART

Drawing Number
C2



RFS MODEL NO.: APX16DWV-16DWVS-E-A20	
RADOME MATERIAL:	FIBERGLASS
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD:	55.9"x13.3"x3.15"
WEIGHT, W/O	
MOUNTING KIT:	40.7 LBS

1 / D1 APX16DWV ANTENNA DETAIL
SCALE: NOT TO SCALE



RFS MODEL NO.: APXVAARR24_43-UNA20	
RADOME MATERIAL:	FIBERGLASS
RADOME COLOR:	LIGHT GREY
DIMENSIONS, HxWxD:	95.9"x24"x8.7"
WEIGHT, W/O	
MOUNTING KIT:	128 LBS

2 / D1 APXVARR ANTENNA DETAIL
SCALE: NOT TO SCALE

ERICSSON RADIO 4449 B12/B71 SPECIFICATIONS

- HxWxD, (INCHES) : 17.91"x13.19"x10.63"
- WEIGHT (LBS) : 74.96
- COLOR : GRAY

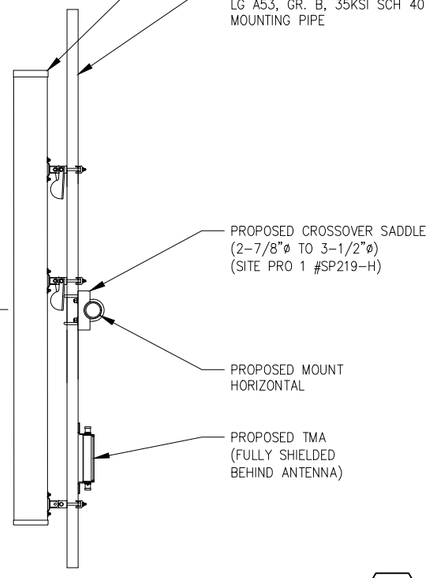
3 / D1 RRU DETAIL
SCALE: NOT TO SCALE

RFS ATMAA1412D-1A20 SPECIFICATIONS

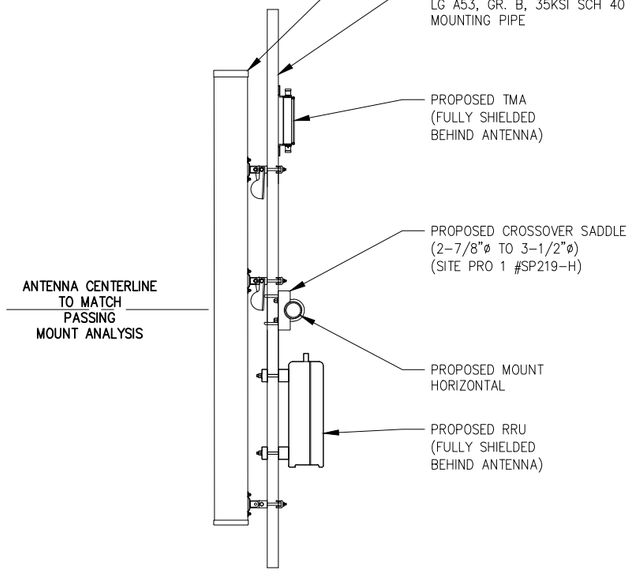
- HxWxD, (INCHES) : 12"x10"x4"
- WEIGHT (LBS) : 13
- COLOR : GRAY

4 / D1 TMA DETAIL
SCALE: NOT TO SCALE

NOTE:
ANTENNA CENTERLINE TO BE CENTERED ON MOUNT HORIZONTAL

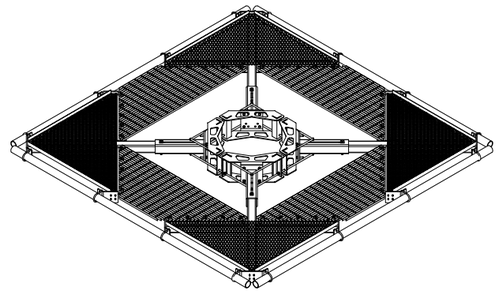


NOTE:
ANTENNA CENTERLINE TO BE CENTERED ON MOUNT HORIZONTAL



5 / D1 ANTENNA/RRU/TMA MOUNTING DETAILS
SCALE: NOT TO SCALE

NOTE:
PIPE MASTS ORDERED SEPARATELY



COMMSCOPE 4 SECTOR MONOPOLE
CO-LOCATION PLATFORM KIT, 30" TO 60" O.D.,
12'-6" FACE
COMMSCOPE P/N MC-PK12L4-B

6 / D1 ANTENNA MOUNT DETAIL
SCALE: NOT TO SCALE

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X99_1
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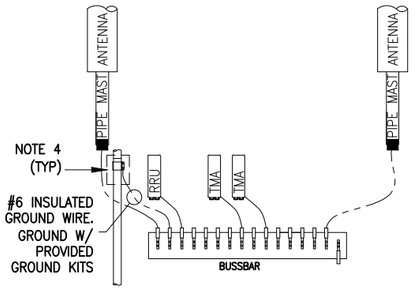
Prepared For:
CROWN CASTLE

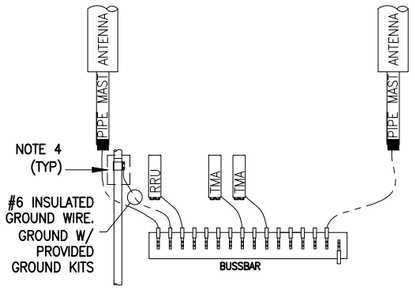
Drawing Title
EQUIPMENT DETAILS

Drawing Number
D1

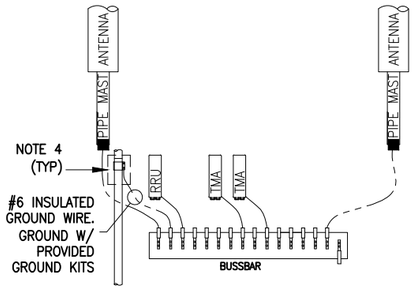
ALPHA SECTOR
(LAYOUT SHOWN GENERICALLY, SEE ANTENNA ORIENTATION)



BETA SECTOR
(LAYOUT SHOWN GENERICALLY, SEE ANTENNA ORIENTATION)

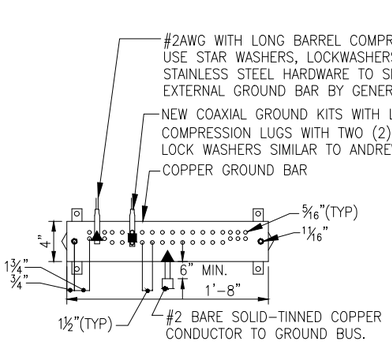


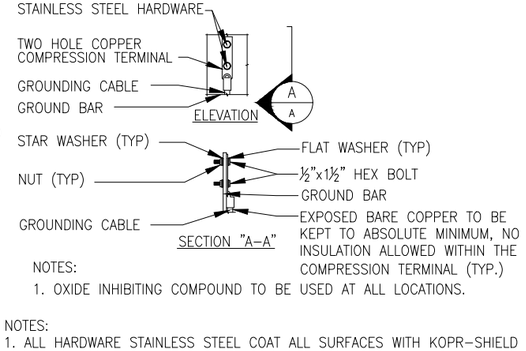
GAMMA SECTOR
(LAYOUT SHOWN GENERICALLY, SEE ANTENNA ORIENTATION)



NOTES:
1. PROVIDE #2AWG GROUNDING CONDUCTOR, U.O.N.
2. PROVIDE BONDING AND GROUNDING CONDUCTORS WITH GREEN TYPE THWN INSULATION, U.O.N.
3. PROVIDE SOLID TINNED BARE COPPER WIRE (BCW) GROUNDING CONDUCTOR.
4. PROVIDE STANDARD COAX OR HYBRID CABLE GROUNDING KIT OR FIELD FABRICATE TO SUIT CONDITIONS. TOTAL LENGTH OF GROUNDING CONDUCTOR SHALL NOT EXCEED 10'–0".
5. PROVIDE GROUNDING ELECTRODES QUANTITY, TYPE AND SIZE AS INDICATED ON SITE GROUNDING PLAN.
6. LEAVE GROUND WIRE COILED UP ABOVE GRADE. CAP END OF CONDUIT.
7. ADD COAX OR HYBRID CABLE GROUND KIT CONNECTION TO BUSSBAR WHEN LENGTH OF CABLE TRAY (FROM TOWER OR MONOPOLE TO EQUIPMENT) IS GREATER THAN 20'–0".
8. ADD #2/0 GREEN INSULATED CONDUCTOR BETWEEN CABLE TRAY AND GRIPSTRUT/COVER.
9. BUSSBARS ARE TO BE TINNED COPPER BARS (¼"X2"X12") MOUNTED ON INSULATORS, U.O.N.
10. GROUND ALL PROPOSED ANTENNAS, DIPLEXERS, TMAS, AND RRUS PER MANU. SPECS.

1 / E1 GROUNDING DIAGRAM
SCALE: NOT TO SCALE

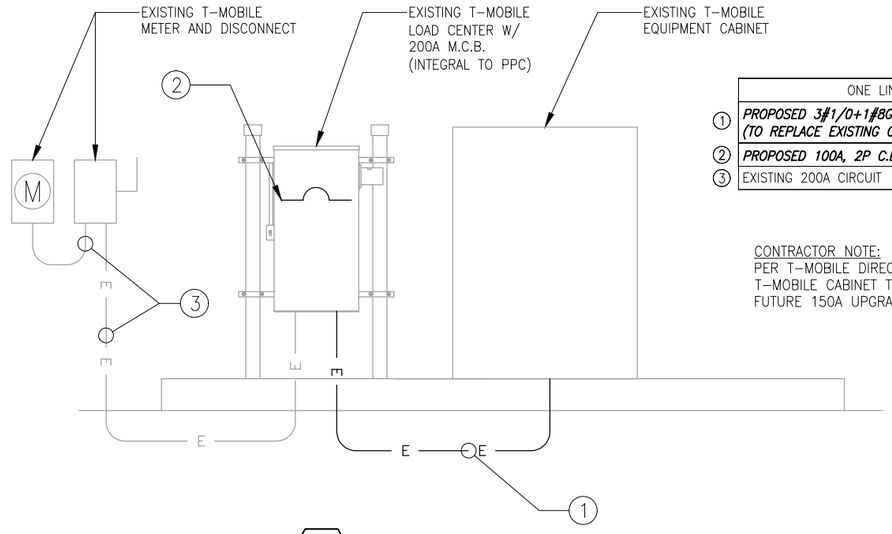




NOTES:
1. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

NOTES:
1. ALL HARDWARE STAINLESS STEEL COAT ALL SURFACES WITH KOPR–SHIELD BEFORE MATING.
2. FOR GROUND BOND TO STEEL ONLY: INSERT A TOOTH WASHER BETWEEN LUG AND STEEL, COAT ALL SURFACES WITH KOPR–SHIELD.
3. ALL HOLES ARE COUNTERSUNK 1/16".

2 / E1 GROUND BAR CONNECTION DETAIL
SCALE: NOT TO SCALE



ONE LINE SCHEDULE	
1	*PROPOSED 3#1/0+1#8G IN 2" CONDUIT (TO REPLACE EXISTING CONDUCTOR AND CONDUIT)*
2	*PROPOSED 100A, 2P C.B.*
3	EXISTING 200A CIRCUIT

CONTRACTOR NOTE:
PER T–MOBILE DIRECTIVE, CONDUCTORS TO T–MOBILE CABINET TO BE OVERSIZED FOR FUTURE 150A UPGRADE.

3 / E1 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

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GROUNDING & ELECTRICAL DETAILS

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