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

May 23, 2022

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

RE: **Notice of Exempt Modification for T-Mobile: CT11160B**
Crown Site# 828402
720 Thompson Road, Thompson, CT 06277
Latitude: 41° 58′ 39.74″ / Longitude: -71° 50′ 47.55″

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 143-foot mount on the existing 156-foot monopole tower located at 720 Thompson Road, Thompson, CT. The property and tower are owned by Crown Castle. T-Mobile now intends to replace three (3) antennas and ancillary equipment at the 143ft level. This modification/proposal includes hardware that is both 4G (LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Panned Modification:

Tower:

Installed New:
(3) Ericsson – AIR6419 B41 Antennas
(3) Ericsson- Radio 4460 B25+B66
(3) 6x24 4AWG 50M HCS

Remove:
(3) Ericsson – APX16DWV-16DWV-S-E-A20 Antennas
(6) CommScope Twin Style 3 CX-TMA T1921B68-21-43
(12) 1-1/4" Coaxial Cables

Ground:

Install New:
(1) RP 6651 inside a 6160 Cabinet
(1) 6160 & B160 Cabinets.
(1.) DUW30 Inside a 6102 Cabinet

Remove:

(3^) Ericsson Double AWS/ PCS Diplexers
(6) RUS01 B2: L1900, G1900
(6) RUS01 B4: U2100, L2100

The facility was issued a zoning permit on March 26, 1998, and building permit#7321 was issued on April 2, 1998 by the Town of Thompson.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Amy St. Onge – First Selectwoman, Town of Thompson, Cynthia Dunne – Zoning Enforcement Officer, Town of Thompson. Crown Castle is the property and tower owner.

1. The proposed modifications will not result in an increase in the height of the existing tower.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modification will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communication Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

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

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

Sincerely,

Jeffrey Barbadora
Site Acquisition Specialist
1800 W. Park Drive
Westborough, MA 01581
(781) 970-0053
Jeff.Barbadora@crowncastle.com

Attachments
cc:

Amy St. Onge – First Selectwoman
Town Selectman's Office
815 Riverside Drive
North Grosvenordale, CT 06255
(860) 923-9561

Cynthia Dunne – Zoning Enforcement Officer
Planning & Development
815 Riverside Drive
North Grosvenordale, CT 06255
(860) 923-1852

Crown Castle, Property and Tower Owner

Hi. Your package was delivered Tue, 05/24/2022 at 12:48pm.

Delivered to 815 RIVERSIDE DR, NORTH GROSVENORDALE, CT 06255
Received by M.MONGEU

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	776934749202
FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Thompson -Selectman office Amy St. Onge- First Selectwoman 815 Riverside Drive NORTH GROSVENORDALE, CT, US, 06255
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Mon 5/23/2022 05:23 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	NORTH GROSVENORDALE, CT, US, 06255
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1 2

Hi. Your package was delivered Tue, 05/24/2022 at 12:48pm.

Delivered to 815 RIVERSIDE DR, NORTH GROSVENORDALE, CT 06255
Received by M.MONGEU

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER	776934790302
FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Thompson -Plan & Dev office Cynthia Dunn - ZEO 815 Riverside Drive NORTH GROSVENORDALE, CT, US, 06255
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Mon 5/23/2022 05:23 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	NORTH GROSVENORDALE, CT, US, 06255
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1

Badawi, Nesmet (Contractor)

From: ZEO@thompsonct.org
Sent: Wednesday, February 6, 2019 10:22 AM
To: Badawi, Nesmet (Contractor)
Subject: 720 Thompson Rd

In response to your inquiry at 720 Thompson Rd, I found the following information:

Certificate of Zoning Permit:
03/26/98 - Re: Omnipoint Telecommunications
08/17/99 - Co-Location on existing Tower- revised 11/04/99
11/03/99 - Co-locating an existing Moro-Pole Antenna by Nexter Communications
11/14/05 - no notation on zoning permit, but building permit states Reinforcing Existing Telecommunication Ground Plate.

If I can be of further assistance please call me at 860-923-9475, my office hours are Mon, Wed and Fri 9 am to 2 pm.

Cindy Dunne

ZEO Town of Thompson
860-923-9475
zeo@thompsonct.org
Office Hours Mon, Wed, and Fri 9 am to 2 pm

720 THOMPSON RD

Location	720 THOMPSON RD	**Mblu**	120/ 30/ 14/ 1/
Acct#	005601	**Owner**	NUTMEG REALTY II LLC
Assessment	$239,900	**Appraisal**	$342,700
PID	3748	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$126,700	$216,000	$342,700
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$88,700	$151,200	$239,900

Owner of Record

Owner	NUTMEG REALTY II LLC
Co-Owner	C/O CROWN CASTLE
Address	PMB 331 4017 WASHINGTON RD MCMURRAY, PA 15317

Sale Price	$1,350,000
Certificate	
Book & Page	0929/0247
Sale Date	01/24/2019
Instrument	25

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
NUTMEG REALTY II LLC	$1,350,000		0929/0247	25	01/24/2019
MELROSE ASSOCIATION LIMITED PART	$0		0163/0152		11/03/1983

Building Information

Building 1 : Section 1

Year Built:	
Living Area:	0
Replacement Cost:	$0
Building Percent Good:	

Replacement Cost
Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Outbuildings
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Xtra Fixtrs:	
Total Rooms:	
Bath Style:	
Kitchen Style:	

Building Photo


(https://images.vgsi.com/photos/ThompsonCTPhotos/\00\00\37/28.jpg)

Building Layout

Building Layout
(https://images.vgsi.com/photos/ThompsonCTPhotos//Sketches/3748_374

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	390A
Description	DEVEL LAND MDL-00
Zone	IND
Neighborhood	
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0
Frontage	0
Depth	0
Assessed Value	$151,200
Appraised Value	$216,000

Outbuildings

Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
TWR2	MONOPOLE			140 HEIGHT	$113,400	1
FN5	FENCE-10'CHAIN			400 L.F.	$13,300	1

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2018	$135,800	$200,000	$335,800
2017	$135,800	$200,000	$335,800
2016	$135,800	$200,000	$335,800

Assessment			
Valuation Year	Improvements	Land	Total
2018	$95,100	$140,000	$235,100
2017	$95,100	$140,000	$235,100
2016	$95,100	$140,000	$235,100

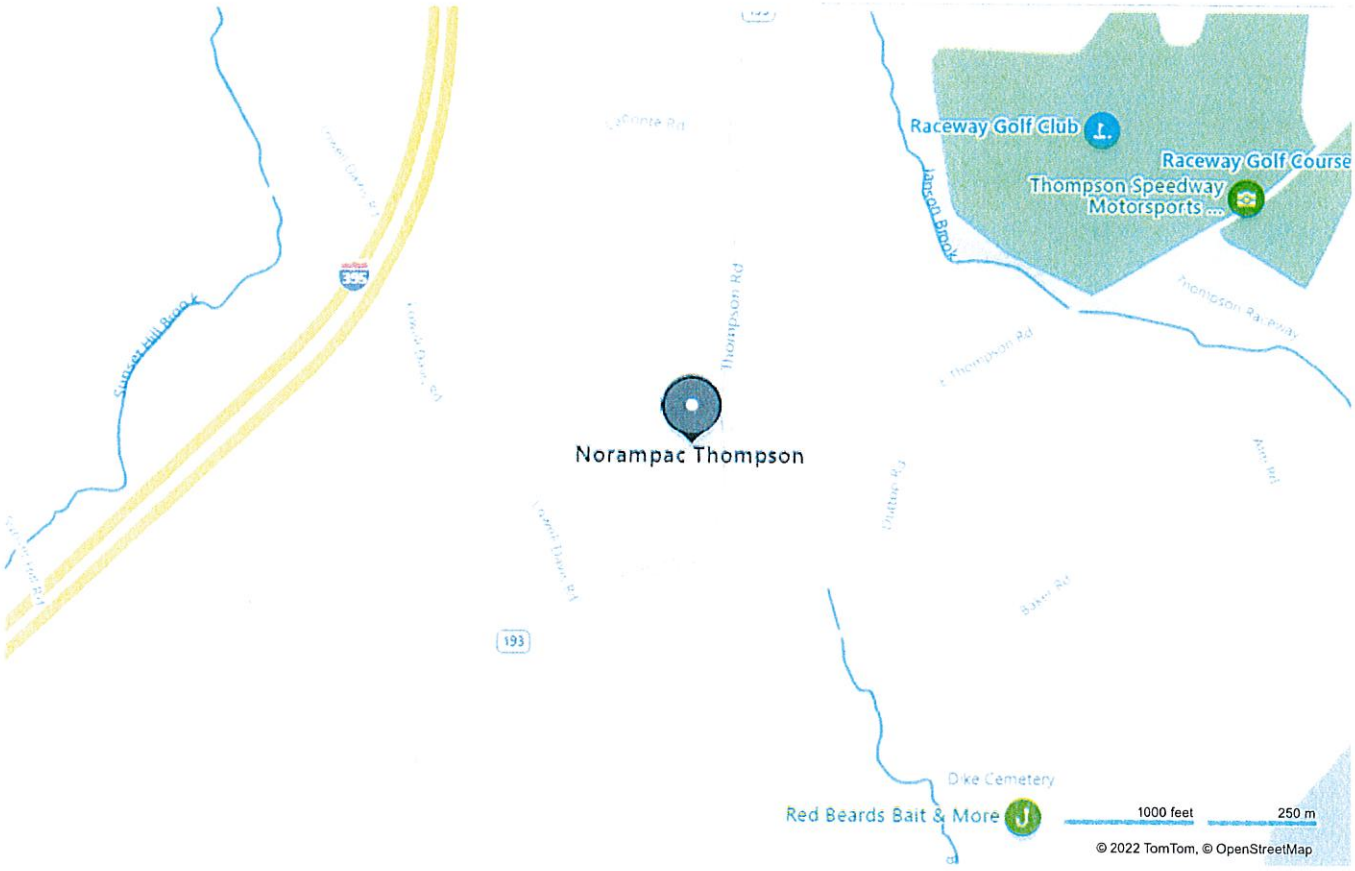
bing maps

Norampac Thompson

Address: 720 Thompson Rd, Thompson, CT 06277

Phone: (860) 923-9563

Website: http://cascades.com/



BUILDING PERMIT
Town of Thompson
NO. 7321

Issued To Omnipoint Communications

For 140 Ft. Monopole Tower

Street-Road 720 Thompson Rd

Date 4-2-98 Dept. of Building Inspection

THIS CARD MUST BE CONSPICUOUSLY DISPLAYED AT ALL TIMES
DURING THE PROGRESS OF OPERATIONS.

Date: **April 27, 2022**

Black & Veatch Corp.
11401 Lamar Avenue
Overland Park, KS 66211
(913) 458-6909

Subject:	**Structural Analysis Report**	
Carrier Designation:	***T-Mobile* Co-Locate**	
	Site Number:	CT11160B
	Site Name:	Thompson/ I-395 X99_1
Crown Castle Designation:	**BU Number:**	828402
	Site Name:	Thompson/ I-395 X99_1
	JDE Job Number:	700678
	Work Order Number:	2088109
	Order Number:	599889 Rev. 5
Engineering Firm Designation:	**Black & Veatch Corp. Project Number:**	406642
Site Data:	**720 Thompson Rd, Thompson, Windham County, CT**	
	Latitude *41° 58' 39.74"*, Longitude *-71° 50' 47.55"*	
	156 Foot - Monopole Tower	

Black & Veatch Corp. is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

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

LC7: Proposed Equipment Configuration **Sufficient Capacity - 85.7%**

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Nattakorn Rattanamusik/ Sirada Jaritreab

Respectfully submitted by:

Ping Jiang, P.E.
Professional Engineer

STATE OF CONNECTICUT · PING JIANG · 30767 · LICENSED PROFESSIONAL ENGINEER

Apr 27, 2022

Digitally signed by Ping Jiang
Date: 2022.04.27 13:53:26-05'00'

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1) INTRODUCTION

This tower is a 156 ft Monopole tower designed by Fred A. Nudd Corporation and mapped by FDH Engineering, Inc.

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

The tower has been modified per reinforcement drawings prepared by All-Points Technology Corp., P.C., in May of 2005. Reinforcement consists of addition of base plate stiffeners at elevation 0'. Refer to Modification Inspection Report by Dyco Industries, Inc., in October of 2005. This modification has been considered effective in this analysis.

The tower was later modified per reinforcement drawings prepared by Paul J. Ford and Company, in May of 2019. Reinforcement consisted of removing (15) existing base plate stiffeners and installing transition stiffener plate at elevation 0', installing anchor rods and anchor rod brackets, installing reinforcement plates at elevation 0.5' - 130.75' and removing existing spine and installing tower extension. Refer to Modification Inspection Report by Tower Engineering Professionals in July of 2019. This modification has been considered effective in this analysis.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor:	1
Ice Thickness:	1.000 in
Wind Speed with Ice:	50 mph
Seismic Ss:	0.186
Seismic S1:	0.056
Service Wind Speed:	60 mph
Seismic Loading:	Does not control per engineering judgment

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)
141.0	143.0	3	ericsson	AIR 6419 B41_TMO	4	1-5/8
		3	ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	rfs celwave	APXVAARR24_43-U-NA20		
	141.0	3	ericsson	RADIO 4449 B71/B85A		
		1	site pro1	F4P-12W 12' Fortress Quad Platform		
		1	site pro1	F4P-HRK12		

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)
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		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
		1	cci tower mounts (v2.1)	T-Arm Mount [TA 702-3]		
		3	commscope	NNVV-65B-R4 w/ Mount Pipe		
		3	rfs celwave	APXVTM14-ALU-I20 w/ Mount Pipe		
131.0	131.0	3	fujitsu	TA08025-B604	1	1-1/2
		3	fujitsu	TA08025-B605		
		3	jma wireless	MX08FRO665-21 w/ Mount Pipe		
		1	raycap	RDIDC-9181-PF-48		
		1	tower mounts	Commscope MC-PK8-DSH		
120.0	120.0	1	cci tower mounts (v2.1)	Platform Mount [LP 1201-1]	2	1-5/8
		2	decibel	980H120T4E-M w/ Mount Pipe		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
4-GEOTECHNICAL REPORTS	4726392	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	3918434	CCISITES
4-TOWER MANUFACTURER DRAWINGS	3508519	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	3675126	CCISITES
4-POST-MODIFICATION INSPECTION	3675131	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	7744596	CCISITES
4-POST-MODIFICATION INSPECTION	8524608	CCISITES

3.1) Analysis Method

tnxTower (version 8.1.1.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 standard.

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

3.2) Assumptions

1) Tower and structures were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary) (Monopole Tower)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L1	156 - 151	Pole	TP10.75x10.75x0.375	Pole	0.4%	Pass
L2	151 - 146	Pole	TP10.75x10.75x0.375	Pole	10.8%	Pass
L3	146 - 144	Pole	TP10.75x10.75x0.375	Pole	15.9%	Pass
L4	144 - 139	Pole	TP18.944x18x0.25	Pole	25.8%	Pass
L5	139 - 134	Pole	TP19.887x18.944x0.25	Pole	43.2%	Pass
L6	134 - 129	Pole	TP20.831x19.887x0.25	Pole	61.2%	Pass
L7	129 - 128.25	Pole	TP20.972x20.831x0.25	Pole	64.0%	Pass
L8	128.25 - 128	Pole + Reinf.	TP21.019x20.972x0.575	Pole	28.9%	Pass
L9	128 - 123	Pole + Reinf.	TP21.963x21.019x0.5625	Pole	37.8%	Pass
L10	123 - 118	Pole + Reinf.	TP22.906x21.963x0.55	Pole	46.5%	Pass
L11	118 - 113	Pole + Reinf.	TP23.85x22.906x0.525	Pole	55.1%	Pass
L12	113 - 108	Pole + Reinf.	TP24.793x23.85x0.5125	Pole	62.8%	Pass
L13	108 - 103	Pole + Reinf.	TP25.737x24.793x0.5	Pole	70.0%	Pass
L14	103 - 98	Pole + Reinf.	TP26.68x25.737x0.4938	Pole	76.5%	Pass
L15	98 - 96.5	Pole + Reinf.	TP27.624x26.68x0.4875	Pole	78.4%	Pass
L16	96.5 - 92	Pole + Reinf.	TP27.313x26.464x0.7	Pole	61.7%	Pass
L17	92 - 87	Pole + Reinf.	TP28.257x27.313x0.675	Pole	66.7%	Pass
L18	87 - 82	Pole + Reinf.	TP29.201x28.257x0.65	Pole	71.6%	Pass
L19	82 - 77.5	Pole + Reinf.	TP30.05x29.201x0.6375	Pole	75.9%	Pass
L20	77.5 - 72.5	Pole + Reinf.	TP30.994x30.05x0.6875	Pole	70.5%	Pass
L21	72.5 - 67.5	Pole + Reinf.	TP31.937x30.994x0.6875	Pole	73.6%	Pass
L22	67.5 - 67.08	Pole + Reinf.	TP32.016x31.937x0.675	Pole	73.8%	Pass
L23	67.08 - 66.83	Pole + Reinf.	TP32.063x32.016x0.975	Pole	52.9%	Pass
L24	66.83 - 66.33	Pole + Reinf.	TP32.158x32.063x0.9625	Pole	53.2%	Pass
L25	66.33 - 66.08	Pole + Reinf.	TP32.205x32.158x0.9625	Pole	53.3%	Pass
L26	66.08 - 61.75	Pole + Reinf.	TP33.824x32.205x0.95	Pole	55.3%	Pass
L27	61.75 - 56.75	Pole + Reinf.	TP33.341x32.397x0.9375	Pole	58.9%	Pass
L28	56.75 - 51.75	Pole + Reinf.	TP34.284x33.341x0.9125	Pole	61.0%	Pass
L29	51.75 - 46.75	Pole + Reinf.	TP35.228x34.284x0.9	Pole	63.5%	Pass
L30	46.75 - 41.75	Pole + Reinf.	TP36.171x35.228x0.8875	Pole	66.0%	Pass
L31	41.75 - 39.7	Pole + Reinf.	TP36.558x36.171x0.9	Pole	66.0%	Pass
L32	39.7 - 39.5	Pole + Reinf.	TP36.596x36.558x0.8875	Pole	66.1%	Pass
L33	39.5 - 34.5	Pole + Reinf.	TP37.539x36.596x0.875	Pole	67.8%	Pass
L34	34.5 - 31.75	Pole + Reinf.	TP38.058x37.539x0.8625	Pole	68.7%	Pass
L35	31.75 - 31.5	Pole + Reinf.	TP38.105x38.058x0.95	Pole	63.4%	Pass
L36	31.5 - 26.5	Pole + Reinf.	TP39.049x38.105x0.925	Pole	64.9%	Pass
L37	26.5 - 21.5	Pole + Reinf.	TP39.993x39.049x0.9	Pole	66.4%	Pass
L38	21.5 - 16.5	Pole + Reinf.	TP40.936x39.993x0.9	Pole	67.7%	Pass
L39	16.5 - 15.05	Pole + Reinf.	TP42.201x40.936x0.8875	Pole	68.1%	Pass
L40	15.05 - 8.8	Pole + Reinf.	TP41.639x40.46x0.875	Pole	71.7%	Pass
L41	8.8 - 8.25	Pole + Reinf.	TP41.743x41.639x0.875	Pole	71.9%	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
L42	8.25 - 8	Pole + Reinf.	TP41.79x41.743x0.95	Pole	66.6%	Pass
L43	8 - 4.75	Pole + Reinf.	TP42.404x41.79x0.95	Pole	67.6%	Pass
L44	4.75 - 4.5	Pole + Reinf.	TP42.451x42.404x1.3	Pole	53.2%	Pass
L45	4.5 - 4.25	Pole + Reinf.	TP42.498x42.451x1.3	Pole	53.3%	Pass
L46	4.25 - 4	Pole + Reinf.	TP42.545x42.498x1.2	Pole	54.1%	Pass
L47	4 - 3.5	Pole + Reinf.	TP42.64x42.545x1.2	Pole	54.3%	Pass
L48	3.5 - 3.25	Pole + Reinf.	TP42.687x42.64x1.475	Reinf. 10 Weldment	49.6%	Pass
L49	3.25 - 2.5	Pole + Reinf.	TP42.828x42.687x1.475	Pole	45.8%	Pass
L50	2.5 - 2.25	Pole + Reinf.	TP42.875x42.828x1.325	Reinf. 11 Weldment	55.6%	Pass
L51	2.25 - 0	Pole + Reinf.	TP43.3x42.875x1.325	Pole	52.6%	Pass
					Summary	
				Pole	78.4%	Pass
				Reinforcement	67.7%	Pass
				Overall	78.4%	Pass

Table 5 - Tower Component Stresses vs. Capacity (Monopole Tower) - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Flange Bolts	144	20.5	Pass
	Flange Plate		37.8	Pass
1	Anchor Rods (Original)	0	75.8	Pass
	Anchor Rods (Existing Modification)		41.6	Pass
	Base Plate		85.7	Pass
1	Base Foundation (Structure)	0	82.8	Pass
	Base Foundation (Soil Interaction)		26.0	Pass

Structure Rating (max from all components) =	**85.7%**

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

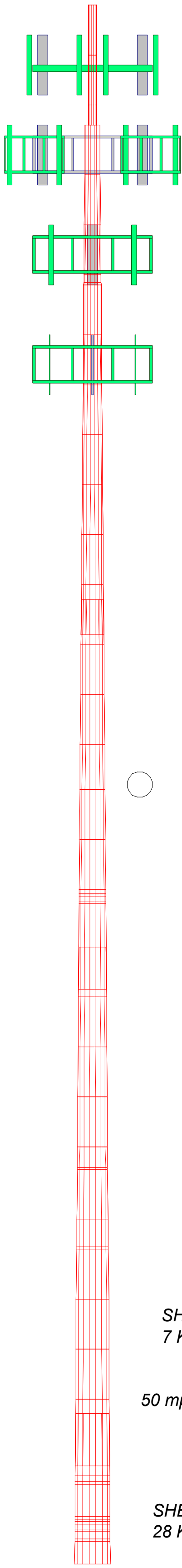
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.00	0	0.3750		10.7500	10.7500	A53-B-35	0.2
2	5.00	0	0.3750		10.7500	10.7500		0.2
3	2.00	0	0.3750		10.7500	10.7500		0.1
4	5.00	12	0.2500		18.0000	18.9435		0.2
5	5.00	12	0.2500		18.9435	19.8871		0.3
6	5.00	12	0.2500		19.8871	[illegible]		0.3
7, 8	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
9	5.00	12	0.5625		[illegible]	21.9628		0.6
10	5.00	12	0.5500		21.9628	22.9064		0.6
11	5.00	12	0.5250		22.9064	23.8499		0.6
12	5.00	12	0.5125		23.8499	24.7934		0.6
13	5.00	12	0.5000		24.7934	25.7369		0.6
14	5.00	12	0.4938		25.7369	26.6805		0.7
15	[illegible]	12	0.4875	3.50	26.6805	[illegible]		0.7
16	[illegible]	12	[illegible]		[illegible]	[illegible]		0.8
17	5.00	12	0.6750		[illegible]	[illegible]		0.9
18	5.00	12	0.6500		28.2568	29.2006		0.9
19	4.50	12	0.6375		29.2006	30.0500		0.8
20	5.00	12	0.6875		30.0500	30.9935		1.1
21	5.00	12	[illegible]		30.9935	[illegible]	A36	1.1
22–25	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
26	8.58	12	0.9500	4.25	[illegible]	[illegible]		2.6
27	[illegible]	12	[illegible]		[illegible]	[illegible]		1.5
28	5.00	12	[illegible]		[illegible]	34.2840		1.5
29	5.00	12	0.9000		34.2840	35.2275		1.5
30	5.00	12	0.8875		35.2275	36.1710		1.6
31, 32	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
33	5.00	12	[illegible]		[illegible]	[illegible]		1.7
34, 35	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
36	5.00	12	[illegible]		[illegible]	39.0492		1.8
37	5.00	12	0.9000		39.0492	39.9928		1.8
38	5.00	12	0.9000		39.9928	40.9365		1.9
39	[illegible]	12	0.8875	5.25	40.9365	42.2010		2.5
40–51	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
								38.3



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 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 78.4%

ALL REACTIONS ARE FACTORED

AXIAL 85 K
SHEAR 7 K
MOMENT 798 kip-ft
TORQUE 1 kip-ft
50 mph WIND - 1.0000 in ICE

AXIAL 66 K
SHEAR 28 K
MOMENT 3052 kip-ft
TORQUE 5 kip-ft
REACTIONS - 120 mph WIND

BLACK & VEATCH Building a world of difference.	Black & Veatch Corp. 11401 Lamar Avenue Overland Park, KS 66211 Phone: (913) 458-6909 FAX:	Job: **Thompson/ I-395 X99_1 (BU# 828402)**		
		Project: **406642 (828402.2088109)**		
		Client: Crown Castle	Drawn by: jar98096	App'd:
		Code: TIA-222-H	Date: 04/27/22	Scale: NTS
		Path:		Dwg No. E-1

Tower Input Data

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

- Tower is located in Windham County, Connecticut.
- Tower base elevation above sea level: 624.00 ft.
- Basic wind speed of 120 mph.
- Risk Category II.
- Exposure Category C.
- Simplified Topographic Factor Procedure for wind speed-up calculations is used.
- Topographic Category: 1.
- Crest Height: 0.00 ft.
- Nominal ice thickness of 1.0000 in.
- Ice thickness is considered to increase with height.
- Ice density of 56 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.
- TOWER RATING: 78.4%.
- A non-linear (P-delta) analysis was used.
- Pressures are calculated at each section.
- Stress ratio used in pole design is 1.
- Tower analysis based on target reliabilities in accordance with Annex S.
- Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
- Maximum demand-capacity ratio is: 1.05.
- Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	156.00-151.00	5.00	0.00	Round	10.7500	10.7500	0.3750		A53-B-35 (35 ksi)
L2	151.00-146.00	5.00	0.00	Round	10.7500	10.7500	0.3750		A53-B-35 (35 ksi)
L3	146.00-144.00	2.00	0.00	Round	10.7500	10.7500	0.3750		A53-B-35 (35 ksi)
L4	144.00-139.00	5.00	0.00	12	18.0000	18.9435	0.2500	1.0000	A36 (36 ksi)
L5	139.00-134.00	5.00	0.00	12	18.9435	19.8871	0.2500	1.0000	A36 (36 ksi)
L6	134.00-129.00	5.00	0.00	12	19.8871	20.8306	0.2500	1.0000	A36 (36 ksi)
L7	129.00-128.25	0.75	0.00	12	20.8306	20.9721	0.2500	1.0000	A36 (36 ksi)
L8	128.25-128.00	0.25	0.00	12	20.9721	21.0193	0.5750	2.3000	A36 (36 ksi)
L9	128.00-123.00	5.00	0.00	12	21.0193	21.9628	0.5625	2.2500	A36 (36 ksi)
L10	123.00-118.00	5.00	0.00	12	21.9628	22.9064	0.5500	2.2000	A36 (36 ksi)
L11	118.00-113.00	5.00	0.00	12	22.9064	23.8499	0.5250	2.1000	A36 (36 ksi)
L12	113.00-108.00	5.00	0.00	12	23.8499	24.7934	0.5125	2.0500	A36 (36 ksi)
L13	108.00-103.00	5.00	0.00	12	24.7934	25.7369	0.5000	2.0000	A36 (36 ksi)
L14	103.00-98.00	5.00	0.00	12	25.7369	26.6805	0.4938	1.9750	A36 (36 ksi)
L15	98.00-93.00	5.00	3.50	12	26.6805	27.6240	0.4875	1.9500	A36 (36 ksi)
L16	93.00-92.00	4.50	0.00	12	26.4635	27.3130	0.7000	2.8000	A36 (36 ksi)
L17	92.00-87.00	5.00	0.00	12	27.3130	28.2568	0.6750	2.7000	A36 (36 ksi)
L18	87.00-82.00	5.00	0.00	12	28.2568	29.2006	0.6500	2.6000	A36 (36 ksi)
L19	82.00-77.50	4.50	0.00	12	29.2006	30.0500	0.6375	2.5500	A36 (36 ksi)
L20	77.50-72.50	5.00	0.00	12	30.0500	30.9935	0.6875	2.7500	A36 (36 ksi)
L21	72.50-67.50	5.00	0.00	12	30.9935	31.9370	0.6875	2.7500	A36 (36 ksi)
L22	67.50-67.08	0.42	0.00	12	31.9370	32.0163	0.6750	2.7000	A36 (36 ksi)
L23	67.08-66.83	0.25	0.00	12	32.0163	32.0634	0.9750	3.9000	A36 (36 ksi)
L24	66.83-66.33	0.50	0.00	12	32.0634	32.1578	0.9625	3.8500	A36 (36 ksi)
L25	66.33-66.08	0.25	0.00	12	32.1578	32.2050	0.9625	3.8500	A36 (36 ksi)
L26	66.08-57.50	8.58	4.25	12	32.2050	33.8240	0.9500	3.8000	A36 (36 ksi)
L27	57.50-56.75	5.00	0.00	12	32.3970	33.3405	0.9375	3.7500	A36 (36 ksi)
L28	56.75-51.75	5.00	0.00	12	33.3405	34.2840	0.9125	3.6500	A36 (36 ksi)
L29	51.75-46.75	5.00	0.00	12	34.2840	35.2275	0.9000	3.6000	A36 (36 ksi)
L30	46.75-41.75	5.00	0.00	12	35.2275	36.1710	0.8875	3.5500	A36 (36 ksi)
L31	41.75-39.70	2.05	0.00	12	36.1710	36.5579	0.9000	3.6000	A36 (36 ksi)
L32	39.70-39.50	0.20	0.00	12	36.5579	36.5956	0.8875	3.5500	A36 (36 ksi)
L33	39.50-34.50	5.00	0.00	12	36.5956	37.5393	0.8750	3.5000	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	34.50-31.75	2.75	0.00	12	37.5393	38.0583	0.8625	3.4500	A36 (36 ksi)
L35	31.75-31.50	0.25	0.00	12	38.0583	38.1055	0.9500	3.8000	A36 (36 ksi)
L36	31.50-26.50	5.00	0.00	12	38.1055	39.0492	0.9250	3.7000	A36 (36 ksi)
L37	26.50-21.50	5.00	0.00	12	39.0492	39.9928	0.9000	3.6000	A36 (36 ksi)
L38	21.50-16.50	5.00	0.00	12	39.9928	40.9365	0.9000	3.6000	A36 (36 ksi)
L39	16.50-9.80	6.70	5.25	12	40.9365	42.2010	0.8875	3.5500	A36 (36 ksi)
L40	9.80-8.80	6.25	0.00	12	40.4601	41.6395	0.8750	3.5000	A36 (36 ksi)
L41	8.80-8.25	0.55	0.00	12	41.6395	41.7433	0.8750	3.5000	A36 (36 ksi)
L42	8.25-8.00	0.25	0.00	12	41.7433	41.7904	0.9500	3.8000	A36 (36 ksi)
L43	8.00-4.75	3.25	0.00	12	41.7904	42.4037	0.9500	3.8000	A36 (36 ksi)
L44	4.75-4.50	0.25	0.00	12	42.4037	42.4509	1.3000	5.2000	A36 (36 ksi)
L45	4.50-4.25	0.25	0.00	12	42.4509	42.4980	1.3000	5.2000	A36 (36 ksi)
L46	4.25-4.00	0.25	0.00	12	42.4980	42.5452	1.2000	4.8000	A36 (36 ksi)
L47	4.00-3.50	0.50	0.00	12	42.5452	42.6396	1.2000	4.8000	A36 (36 ksi)
L48	3.50-3.25	0.25	0.00	12	42.6396	42.6867	1.4750	5.9000	A36 (36 ksi)
L49	3.25-2.50	0.75	0.00	12	42.6867	42.8283	1.4750	5.9000	A36 (36 ksi)
L50	2.50-2.25	0.25	0.00	12	42.8283	42.8754	1.3250	5.3000	A36 (36 ksi)
L51	2.25-0.00	2.25		12	42.8754	43.3000	1.3250	5.3000	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	12.2228	164.6730	3.6705	5.3750	30.6368	329.3461	6.1077	0.0000	0
	10.7500	12.2228	164.6730	3.6705	5.3750	30.6368	329.3461	6.1077	0.0000	0
L2	10.7500	12.2228	164.6730	3.6705	5.3750	30.6368	329.3461	6.1077	0.0000	0
	10.7500	12.2228	164.6730	3.6705	5.3750	30.6368	329.3461	6.1077	0.0000	0
L3	10.7500	12.2228	164.6730	3.6705	5.3750	30.6368	329.3461	6.1077	0.0000	0
	10.7500	12.2228	164.6730	3.6705	5.3750	30.6368	329.3461	6.1077	0.0000	0
L4	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
L5	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
L6	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
L7	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
L8	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
L9	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
L10	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
L11	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
L12	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

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
L13	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
L14	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
L15	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
L16	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
L17	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
L18	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
L19	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
L20	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
L21	31.8443	67.0899	7865.0300	10.8495	16.0546	489.8916	15936.6830	33.0196	6.4638	9.402
	32.8211	69.1786	8622.7093	11.1873	16.5434	521.2186	17471.9467	34.0476	6.7166	9.77
L22	32.8255	67.9480	8476.0961	11.1918	16.5434	512.3562	17174.8686	33.4419	6.7501	10
	32.9076	68.1202	8540.7243	11.2202	16.5844	514.9848	17305.8229	33.5267	6.7714	10.032
L23	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
L24	32.8550	96.3896	11900.4298	11.1341	16.6089	716.5111	24113.4971	47.4400	6.0135	6.248
	32.9526	96.6820	12009.0646	11.1679	16.6577	720.9305	24333.6208	47.5839	6.0388	6.274
L25	32.9526	96.6820	12009.0646	11.1679	16.6577	720.9305	24333.6208	47.5839	6.0388	6.274
	33.0015	96.8282	12063.6291	11.1848	16.6822	723.1452	24444.1832	47.6559	6.0514	6.287
L26	33.0059	95.6089	11921.2561	11.1893	16.6822	714.6108	24155.6970	47.0558	6.0849	6.405
	34.6821	100.5616	13871.4889	11.7689	17.5208	791.7141	28107.3973	49.4933	6.5188	6.862
L27	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
L28	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
L29	35.1760	96.7469	13762.6041	11.9515	17.7591	774.9595	27886.7672	47.6159	6.7761	7.529
	36.1527	99.4812	14962.7725	12.2893	18.2479	819.9740	30318.6337	48.9616	7.0290	7.81
L30	36.1571	98.1352	14771.0807	12.2937	18.2479	809.4691	29930.2141	48.2992	7.0625	7.958
	37.1339	100.8315	16022.3574	12.6315	18.7366	855.1371	32465.6401	49.6262	7.3153	8.243
L31	37.1295	102.2153	16230.6735	12.6270	18.7366	866.2567	32887.7449	50.3072	7.2818	8.091
	37.5300	103.3365	16770.6785	12.7655	18.9370	885.6048	33981.9414	50.8591	7.3855	8.206
L32	37.5344	101.9370	16555.150	12.7700	18.9370	874.2235	33545.223	50.1703	7.4190	8.359

Section	Tip Dia. in	Area in²	I in⁴	r in	C in	I/C in³	J in⁴	It/Q in²	w in	w/t
	37.5735	102.0449	16607.7636	12.7835	18.9565	876.0972	33651.8304	50.2234	7.4291	8.371
L33	37.5779	100.6428	16391.0521	12.7880	18.9565	864.6652	33212.7161	49.5333	7.4626	8.529
	38.5549	103.3016	17724.7291	13.1258	19.4454	911.5150	35915.1066	50.8419	7.7155	8.818
L34	38.5593	101.8606	17489.3945	13.1303	19.4454	899.4127	35438.2549	50.1327	7.7490	8.984
	39.0966	103.3020	18242.4323	13.3161	19.7142	925.3447	36964.1135	50.8421	7.8881	9.146
L35	39.0657	113.5143	19951.6450	13.2848	19.7142	1012.0443	40427.4420	55.8683	7.6536	8.056
	39.1146	113.6586	20027.8487	13.3017	19.7386	1014.6518	40581.8512	55.9393	7.6663	8.07
L36	39.1234	110.7421	19540.1897	13.3106	19.7386	989.9460	39593.7220	54.5039	7.7333	8.36
	40.1004	113.5528	21066.1012	13.6484	20.2275	1041.4605	42685.6323	55.8872	7.9862	8.634
L37	40.1092	110.5562	20537.0959	13.6574	20.2275	1015.3076	41613.7242	54.4124	8.0532	8.948
	41.0861	113.2910	22099.1378	13.9952	20.7163	1066.7522	44778.8446	55.7584	8.3061	9.229
L38	41.0861	113.2910	22099.1378	13.9952	20.7163	1066.7522	44778.8446	55.7584	8.3061	9.229
	42.0631	116.0257	23738.4425	14.3331	21.2051	1119.4685	48100.5203	57.1043	8.5590	9.51
L39	42.0675	114.4500	23430.6745	14.3375	21.2051	1104.9547	47476.8988	56.3288	8.5925	9.682
	43.3766	118.0637	25720.8994	14.7902	21.8601	1176.6130	52117.5155	58.1073	8.9314	10.064
L40	42.6044	111.5312	22307.2873	14.1715	20.9584	1064.3624	45200.6118	54.8922	8.4983	9.712
	42.7997	114.8540	24361.0450	14.5937	21.5693	1129.4337	49362.0819	56.5276	8.8144	10.074
L41	42.7997	114.8540	24361.0450	14.5937	21.5693	1129.4337	49362.0819	56.5276	8.8144	10.074
	42.9071	115.1464	24547.5809	14.6308	21.6230	1135.2525	49740.0541	56.6715	8.8422	10.105
L42	42.8807	124.7866	26505.1979	14.6040	21.6230	1225.7864	53706.7168	61.4162	8.6412	9.096
	42.9295	124.9309	26597.2554	14.6209	21.6475	1228.6553	53893.2503	61.4872	8.6538	9.109
L43	42.9295	124.9309	26597.2554	14.6209	21.6475	1228.6553	53893.2503	61.4872	8.6538	9.109
	43.5644	126.8069	27813.4838	14.8404	21.9651	1266.2570	56357.6588	62.4105	8.8182	9.282
L44	43.4410	172.0601	37104.6201	14.7151	21.9651	1689.2521	75184.0198	84.6827	7.8802	6.062
	43.4898	172.2576	37232.5170	14.7320	21.9896	1693.1912	75443.1737	84.7799	7.8928	6.071
L45	43.4898	172.2576	37232.5170	14.7320	21.9896	1693.1912	75443.1737	84.7799	7.8928	6.071
	43.5386	172.4550	37360.7102	14.7489	22.0140	1697.1349	75702.9279	84.8771	7.9055	6.081
L46	43.5739	159.5757	34738.5489	14.7847	22.0140	1578.0215	70389.7182	78.5383	8.1735	6.811
	43.6227	159.7579	34857.7286	14.8016	22.0384	1581.6796	70631.2085	78.6280	8.1861	6.822
L47	43.6227	159.7579	34857.7286	14.8016	22.0384	1581.6796	70631.2085	78.6280	8.1861	6.822
	43.7204	160.1225	35096.9025	14.8354	22.0873	1589.0085	71115.8396	78.8074	8.2114	6.843
L48	43.6234	195.5111	42286.7776	14.7369	22.0873	1914.5293	85684.4760	96.2246	7.4744	5.067
	43.6722	195.7352	42432.3213	14.7538	22.1117	1918.9957	85979.3869	96.3349	7.4870	5.076
L49	43.6722	195.7352	42432.3213	14.7538	22.1117	1918.9957	85979.3869	96.3349	7.4870	5.076
	43.8188	196.4073	42870.961	14.8045	22.1850	1932.4265	86868.190	96.6657	7.5250	5.102

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
L50	43.8717	177.0737	38931.7975	14.8582	22.1850	1754.8671	78886.3779	87.1503	7.9270	5.983
	43.9205	177.2749	39064.7023	14.8751	22.2095	1758.9204	79155.6778	87.2493	7.9396	5.992
L51	43.9205	177.2749	39064.7023	14.8751	22.2095	1758.9204	79155.6778	87.2493	7.9396	5.992
	44.3600	179.0863	40274.4682	15.0270	22.4294	1795.6106	81606.9915	88.1408	8.0534	6.078

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 156.00-151.00				1	1	1			
L2 151.00-146.00				1	1	1			
L3 146.00-144.00				1	1	1			
L4 144.00-139.00				1	1	1			
L5 139.00-134.00				1	1	1			
L6 134.00-129.00				1	1	1			
L7 129.00-128.25				1	1	1			
L8 128.25-128.00				1	1	0.917905			
L9 128.00-123.00				1	1	0.915981			
L10 123.00-118.00				1	1	0.915921			
L11 118.00-113.00				1	1	0.938956			
L12 113.00-108.00				1	1	0.942941			
L13 108.00-103.00				1	1	0.948594			
L14 103.00-98.00				1	1	0.944005			
L15 98.00-93.00				1	1	0.951143			
L16 93.00-92.00				1	1	0.895321			
L17 92.00-87.00				1	1	0.908542			
L18 87.00-82.00				1	1	0.924185			
L19 82.00-77.50				1	1	0.926017			
L20 77.50-72.50				1	1	0.93596			
L21 72.50-67.50				1	1	0.921425			
L22 67.50-67.08				1	1	0.936911			
L23 67.08-66.83				1	1	0.904489			
L24 66.83-66.33				1	1	0.914079			
L25 66.33-66.08				1	1	0.913189			
L26 66.08-57.50				1	1	0.909654			
L27 57.50-56.75				1	1	0.915643			

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
L28 56.75-51.75				1	1	0.92311			
L29 51.75-46.75				1	1	0.919409			
L30 46.75-41.75				1	1	0.916512			
L31 41.75-39.70				1	1	0.943692			
L32 39.70-39.50				1	1	0.956084			
L33 39.50-34.50				1	1	0.955483			
L34 34.50-31.75				1	1	0.961546			
L35 31.75-31.50				1	1	0.940513			
L36 31.50-26.50				1	1	0.951424			
L37 26.50-21.50				1	1	0.963681			
L38 21.50-16.50				1	1	0.950787			
L39 16.50-9.80				1	1	0.960204			
L40 9.80-8.80				1	1	0.967879			
L41 8.80-8.25				1	1	0.966509			
L42 8.25-8.00				1	1	0.956397			
L43 8.00-4.75				1	1	0.948088			
L44 4.75-4.50				1	1	0.887204			
L45 4.50-4.25				1	1	0.886519			
L46 4.25-4.00				1	1	0.824129			
L47 4.00-3.50				1	1	0.822964			
L48 3.50-3.25				1	1	0.82701			
L49 3.25-2.50				1	1	0.82505			
L50 2.50-2.25				1	1	0.819087			
L51 2.25-0.00				1	1	0.813665			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
********** **********										
CCI-SFP-085125	C	No	Surface Af (CaAa)	35.50 - 0.50	1	1	0.000 0.000	8.5000	19.5000	0.00
CCI-SFP-085125	B	No	Surface Af (CaAa)	35.50 - 0.50	1	1	0.000 0.000	8.5000	19.5000	0.00
CWFP-085125	B	No	Surface Af (CaAa)	35.50 - 0.50	1	1	0.000 0.000	8.5000	19.5000	0.00
CWFP-085125	A	No	Surface Af (CaAa)	35.50 - 0.50	1	1	0.000 0.000	8.5000	19.5000	0.00
CWFP-085125	C	No	Surface Af (CaAa)	35.50 - 0.50	1	1	0.000 0.000	8.5000	19.5000	0.00
CCI-SFP-065125	A	No	Surface Af (CaAa)	35.50 - 5.50	1	1	0.000 0.000	6.5000	15.5000	0.00
CCI-AFP-065125	B	No	Surface Af (CaAa)	70.58 - 35.50	1	1	0.000 0.000	6.5000	15.5000	0.00
CCI-AFP-065125	A	No	Surface Af (CaAa)	70.58 - 35.50	1	1	0.000 0.000	6.5000	15.5000	0.00
CCI-AFP-065125	C	No	Surface Af (CaAa)	70.58 - 35.50	1	1	0.000 0.000	6.5000	15.5000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
CCI-AFP-085125	C	No	Surface Af (CaAa)	70.58 - 35.50	1	1	0.000 0.000	8.5000	19.5000	0.00
CCI-AFP-085125	B	No	Surface Af (CaAa)	70.58 - 35.50	1	1	0.000 0.000	8.5000	19.5000	0.00
CCI-AFP-085125	A	No	Surface Af (CaAa)	70.58 - 35.50	1	1	0.000 0.000	8.5000	19.5000	0.00
CFP-085125	C	No	Surface Af (CaAa)	100.66 - 70.58	1	1	0.000 0.000	8.5000	19.5000	0.00
CFP-085125	B	No	Surface Af (CaAa)	100.66 - 70.58	1	1	0.000 0.000	8.5000	19.5000	0.00
CFP-085125	A	No	Surface Af (CaAa)	100.66 - 70.58	1	1	0.000 0.000	8.5000	19.5000	0.00
CCI-AFP-060100	C	No	Surface Af (CaAa)	130.75 - 100.66	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-AFP-060100	B	No	Surface Af (CaAa)	130.75 - 100.66	1	1	0.000 0.000	6.0000	14.0000	0.00
CCI-AFP-060100	A	No	Surface Af (CaAa)	130.75 - 100.66	1	1	0.000 0.000	6.0000	14.0000	0.00
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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
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HB114-1-0813U4-M5J(1-1/4)	C	No	No	Inside Pole	150.00 - 0.00	3	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	1.20 1.20 1.20
HB114-13U3M12-XXXF(1-1/4)	C	No	No	Inside Pole	150.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.99 0.99 0.99
**********									
HCS 6X12 4AWG(1-5/8)	C	No	No	Inside Pole	141.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	2.40 2.40 2.40
HB158-21U6S24-xxM_TMO(1-5/8)	C	No	No	Inside Pole	141.00 - 0.00	3	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	2.50 2.50 2.50
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CU12PSM9P6XXX (1-1/2)	C	No	No	Inside Pole	131.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	2.35 2.35 2.35
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LDF7-50A(1-5/8)	C	No	No	Inside Pole	120.00 - 0.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82
**********									
**********									
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Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	156.00-151.00	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
L2	151.00-146.00	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	0.02
L3	146.00-144.00	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	0.01
L4	144.00-139.00	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	0.04
L5	139.00-134.00	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	0.07
L6	134.00-129.00	A	0.000	0.000	1.750	0.000	0.00
		B	0.000	0.000	1.750	0.000	0.00
		C	0.000	0.000	1.750	0.000	0.08
L7	129.00-128.25	A	0.000	0.000	0.750	0.000	0.00
		B	0.000	0.000	0.750	0.000	0.00
		C	0.000	0.000	0.750	0.000	0.01
L8	128.25-128.00	A	0.000	0.000	0.250	0.000	0.00
		B	0.000	0.000	0.250	0.000	0.00
		C	0.000	0.000	0.250	0.000	0.00
L9	128.00-123.00	A	0.000	0.000	5.000	0.000	0.00
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	5.000	0.000	0.08
L10	123.00-118.00	A	0.000	0.000	5.000	0.000	0.00
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	5.000	0.000	0.09
L11	118.00-113.00	A	0.000	0.000	5.000	0.000	0.00
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	5.000	0.000	0.09
L12	113.00-108.00	A	0.000	0.000	5.000	0.000	0.00
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	5.000	0.000	0.09
L13	108.00-103.00	A	0.000	0.000	5.000	0.000	0.00
		B	0.000	0.000	5.000	0.000	0.00
		C	0.000	0.000	5.000	0.000	0.09
L14	103.00-98.00	A	0.000	0.000	6.108	0.000	0.00
		B	0.000	0.000	6.108	0.000	0.00
		C	0.000	0.000	6.108	0.000	0.09
L15	98.00-93.00	A	0.000	0.000	7.083	0.000	0.00
		B	0.000	0.000	7.083	0.000	0.00
		C	0.000	0.000	7.083	0.000	0.09
L16	93.00-92.00	A	0.000	0.000	1.417	0.000	0.00
		B	0.000	0.000	1.417	0.000	0.00
		C	0.000	0.000	1.417	0.000	0.02
L17	92.00-87.00	A	0.000	0.000	7.083	0.000	0.00
		B	0.000	0.000	7.083	0.000	0.00
		C	0.000	0.000	7.083	0.000	0.09
L18	87.00-82.00	A	0.000	0.000	7.083	0.000	0.00
		B	0.000	0.000	7.083	0.000	0.00
		C	0.000	0.000	7.083	0.000	0.09
L19	82.00-77.50	A	0.000	0.000	6.375	0.000	0.00
		B	0.000	0.000	6.375	0.000	0.00
		C	0.000	0.000	6.375	0.000	0.08
L20	77.50-72.50	A	0.000	0.000	7.083	0.000	0.00
		B	0.000	0.000	7.083	0.000	0.00
		C	0.000	0.000	7.083	0.000	0.09
L21	72.50-67.50	A	0.000	0.000	10.420	0.000	0.00
		B	0.000	0.000	10.420	0.000	0.00
		C	0.000	0.000	10.420	0.000	0.09
L22	67.50-67.08	A	0.000	0.000	1.050	0.000	0.00
		B	0.000	0.000	1.050	0.000	0.00
		C	0.000	0.000	1.050	0.000	0.01
L23	67.08-66.83	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.625	0.000	0.00
		C	0.000	0.000	0.625	0.000	0.00

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
L24	66.83-66.33	A	0.000	0.000	1.250	0.000	0.00
		B	0.000	0.000	1.250	0.000	0.00
		C	0.000	0.000	1.250	0.000	0.01
L25	66.33-66.08	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.625	0.000	0.00
		C	0.000	0.000	0.625	0.000	0.00
L26	66.08-57.50	A	0.000	0.000	21.450	0.000	0.00
		B	0.000	0.000	21.450	0.000	0.00
		C	0.000	0.000	21.450	0.000	0.16
L27	57.50-56.75	A	0.000	0.000	1.875	0.000	0.00
		B	0.000	0.000	1.875	0.000	0.00
		C	0.000	0.000	1.875	0.000	0.01
L28	56.75-51.75	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	12.500	0.000	0.09
L29	51.75-46.75	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	12.500	0.000	0.09
L30	46.75-41.75	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.500	0.000	0.00
		C	0.000	0.000	12.500	0.000	0.09
L31	41.75-39.70	A	0.000	0.000	5.125	0.000	0.00
		B	0.000	0.000	5.125	0.000	0.00
		C	0.000	0.000	5.125	0.000	0.04
L32	39.70-39.50	A	0.000	0.000	0.500	0.000	0.00
		B	0.000	0.000	0.500	0.000	0.00
		C	0.000	0.000	0.500	0.000	0.00
L33	39.50-34.50	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	12.833	0.000	0.00
		C	0.000	0.000	12.833	0.000	0.09
L34	34.50-31.75	A	0.000	0.000	6.875	0.000	0.00
		B	0.000	0.000	7.792	0.000	0.00
		C	0.000	0.000	7.792	0.000	0.05
L35	31.75-31.50	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.708	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L36	31.50-26.50	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	14.167	0.000	0.00
		C	0.000	0.000	14.167	0.000	0.09
L37	26.50-21.50	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	14.167	0.000	0.00
		C	0.000	0.000	14.167	0.000	0.09
L38	21.50-16.50	A	0.000	0.000	12.500	0.000	0.00
		B	0.000	0.000	14.167	0.000	0.00
		C	0.000	0.000	14.167	0.000	0.09
L39	16.50-9.80	A	0.000	0.000	16.750	0.000	0.00
		B	0.000	0.000	18.983	0.000	0.00
		C	0.000	0.000	18.983	0.000	0.12
L40	9.80-8.80	A	0.000	0.000	2.500	0.000	0.00
		B	0.000	0.000	2.833	0.000	0.00
		C	0.000	0.000	2.833	0.000	0.02
L41	8.80-8.25	A	0.000	0.000	1.375	0.000	0.00
		B	0.000	0.000	1.558	0.000	0.00
		C	0.000	0.000	1.558	0.000	0.01
L42	8.25-8.00	A	0.000	0.000	0.625	0.000	0.00
		B	0.000	0.000	0.708	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L43	8.00-4.75	A	0.000	0.000	7.313	0.000	0.00
		B	0.000	0.000	9.208	0.000	0.00
		C	0.000	0.000	9.208	0.000	0.06
L44	4.75-4.50	A	0.000	0.000	0.354	0.000	0.00
		B	0.000	0.000	0.708	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L45	4.50-4.25	A	0.000	0.000	0.354	0.000	0.00
		B	0.000	0.000	0.708	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L46	4.25-4.00	A	0.000	0.000	0.354	0.000	0.00
		B	0.000	0.000	0.708	0.000	0.00
		C	0.000	0.000	0.708	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
L47	4.00-3.50	A	0.000	0.000	0.708	0.000	0.00
		B	0.000	0.000	1.417	0.000	0.00
		C	0.000	0.000	1.417	0.000	0.01
L48	3.50-3.25	A	0.000	0.000	0.354	0.000	0.00
		B	0.000	0.000	0.708	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L49	3.25-2.50	A	0.000	0.000	1.063	0.000	0.00
		B	0.000	0.000	2.125	0.000	0.00
		C	0.000	0.000	2.125	0.000	0.01
L50	2.50-2.25	A	0.000	0.000	0.354	0.000	0.00
		B	0.000	0.000	0.708	0.000	0.00
		C	0.000	0.000	0.708	0.000	0.00
L51	2.25-0.00	A	0.000	0.000	2.479	0.000	0.00
		B	0.000	0.000	4.958	0.000	0.00
		C	0.000	0.000	4.958	0.000	0.04

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	156.00-151.00	A	0.991	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
L2	151.00-146.00	A	0.988	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	0.02
L3	146.00-144.00	A	0.986	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	0.01
L4	144.00-139.00	A	0.983	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	0.04
L5	139.00-134.00	A	0.980	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	0.07
L6	134.00-129.00	A	0.976	0.000	0.000	2.092	0.000	0.01
		B		0.000	0.000	2.092	0.000	0.01
		C		0.000	0.000	2.092	0.000	0.09
L7	129.00-128.25	A	0.974	0.000	0.000	0.896	0.000	0.01
		B		0.000	0.000	0.896	0.000	0.01
		C		0.000	0.000	0.896	0.000	0.02
L8	128.25-128.00	A	0.973	0.000	0.000	0.299	0.000	0.00
		B		0.000	0.000	0.299	0.000	0.00
		C		0.000	0.000	0.299	0.000	0.01
L9	128.00-123.00	A	0.971	0.000	0.000	5.971	0.000	0.03
		B		0.000	0.000	5.971	0.000	0.03
		C		0.000	0.000	5.971	0.000	0.12
L10	123.00-118.00	A	0.968	0.000	0.000	5.968	0.000	0.03
		B		0.000	0.000	5.968	0.000	0.03
		C		0.000	0.000	5.968	0.000	0.12
L11	118.00-113.00	A	0.963	0.000	0.000	5.963	0.000	0.03
		B		0.000	0.000	5.963	0.000	0.03
		C		0.000	0.000	5.963	0.000	0.13
L12	113.00-108.00	A	0.959	0.000	0.000	5.959	0.000	0.03
		B		0.000	0.000	5.959	0.000	0.03
		C		0.000	0.000	5.959	0.000	0.13
L13	108.00-103.00	A	0.955	0.000	0.000	5.955	0.000	0.03
		B		0.000	0.000	5.955	0.000	0.03
		C		0.000	0.000	5.955	0.000	0.13
L14	103.00-98.00	A	0.950	0.000	0.000	7.058	0.000	0.04
		B		0.000	0.000	7.058	0.000	0.04
		C		0.000	0.000	7.058	0.000	0.13
L15	98.00-93.00	A	0.945	0.000	0.000	8.029	0.000	0.04
		B		0.000	0.000	8.029	0.000	0.04
		C		0.000	0.000	8.029	0.000	0.13

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
L16	93.00-92.00	A	0.942	0.000	0.000	1.606	0.000	0.01
		B		0.000	0.000	1.606	0.000	0.01
		C		0.000	0.000	1.606	0.000	0.03
L17	92.00-87.00	A	0.939	0.000	0.000	8.023	0.000	0.04
		B		0.000	0.000	8.023	0.000	0.04
		C		0.000	0.000	8.023	0.000	0.13
L18	87.00-82.00	A	0.934	0.000	0.000	8.017	0.000	0.04
		B		0.000	0.000	8.017	0.000	0.04
		C		0.000	0.000	8.017	0.000	0.13
L19	82.00-77.50	A	0.928	0.000	0.000	7.211	0.000	0.04
		B		0.000	0.000	7.211	0.000	0.04
		C		0.000	0.000	7.211	0.000	0.12
L20	77.50-72.50	A	0.923	0.000	0.000	8.006	0.000	0.04
		B		0.000	0.000	8.006	0.000	0.04
		C		0.000	0.000	8.006	0.000	0.13
L21	72.50-67.50	A	0.916	0.000	0.000	11.901	0.000	0.06
		B		0.000	0.000	11.901	0.000	0.06
		C		0.000	0.000	11.901	0.000	0.15
L22	67.50-67.08	A	0.913	0.000	0.000	1.203	0.000	0.01
		B		0.000	0.000	1.203	0.000	0.01
		C		0.000	0.000	1.203	0.000	0.01
L23	67.08-66.83	A	0.912	0.000	0.000	0.716	0.000	0.00
		B		0.000	0.000	0.716	0.000	0.00
		C		0.000	0.000	0.716	0.000	0.01
L24	66.83-66.33	A	0.912	0.000	0.000	1.432	0.000	0.01
		B		0.000	0.000	1.432	0.000	0.01
		C		0.000	0.000	1.432	0.000	0.02
L25	66.33-66.08	A	0.911	0.000	0.000	0.716	0.000	0.00
		B		0.000	0.000	0.716	0.000	0.00
		C		0.000	0.000	0.716	0.000	0.01
L26	66.08-57.50	A	0.905	0.000	0.000	24.556	0.000	0.13
		B		0.000	0.000	24.556	0.000	0.13
		C		0.000	0.000	24.556	0.000	0.28
L27	57.50-56.75	A	0.898	0.000	0.000	2.146	0.000	0.01
		B		0.000	0.000	2.146	0.000	0.01
		C		0.000	0.000	2.146	0.000	0.02
L28	56.75-51.75	A	0.893	0.000	0.000	14.287	0.000	0.07
		B		0.000	0.000	14.287	0.000	0.07
		C		0.000	0.000	14.287	0.000	0.16
L29	51.75-46.75	A	0.885	0.000	0.000	14.269	0.000	0.07
		B		0.000	0.000	14.269	0.000	0.07
		C		0.000	0.000	14.269	0.000	0.16
L30	46.75-41.75	A	0.875	0.000	0.000	14.251	0.000	0.07
		B		0.000	0.000	14.251	0.000	0.07
		C		0.000	0.000	14.251	0.000	0.16
L31	41.75-39.70	A	0.868	0.000	0.000	5.837	0.000	0.03
		B		0.000	0.000	5.837	0.000	0.03
		C		0.000	0.000	5.837	0.000	0.07
L32	39.70-39.50	A	0.866	0.000	0.000	0.569	0.000	0.00
		B		0.000	0.000	0.569	0.000	0.00
		C		0.000	0.000	0.569	0.000	0.01
L33	39.50-34.50	A	0.860	0.000	0.000	14.220	0.000	0.07
		B		0.000	0.000	14.553	0.000	0.07
		C		0.000	0.000	14.553	0.000	0.16
L34	34.50-31.75	A	0.850	0.000	0.000	7.810	0.000	0.04
		B		0.000	0.000	8.727	0.000	0.04
		C		0.000	0.000	8.727	0.000	0.09
L35	31.75-31.50	A	0.846	0.000	0.000	0.710	0.000	0.00
		B		0.000	0.000	0.793	0.000	0.00
		C		0.000	0.000	0.793	0.000	0.01
L36	31.50-26.50	A	0.839	0.000	0.000	14.178	0.000	0.07
		B		0.000	0.000	15.845	0.000	0.07
		C		0.000	0.000	15.845	0.000	0.17
L37	26.50-21.50	A	0.823	0.000	0.000	14.147	0.000	0.07
		B		0.000	0.000	15.813	0.000	0.07
		C		0.000	0.000	15.813	0.000	0.16
L38	21.50-16.50	A	0.804	0.000	0.000	14.109	0.000	0.06
		B		0.000	0.000	15.775	0.000	0.07
		C		0.000	0.000	15.775	0.000	0.16

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
L39	16.50-9.80	A	0.775	0.000	0.000	18.827	0.000	0.08
		B		0.000	0.000	21.061	0.000	0.09
		C		0.000	0.000	21.061	0.000	0.21
L40	9.80-8.80	A	0.749	0.000	0.000	2.810	0.000	0.01
		B		0.000	0.000	3.143	0.000	0.01
		C		0.000	0.000	3.143	0.000	0.03
L41	8.80-8.25	A	0.742	0.000	0.000	1.538	0.000	0.01
		B		0.000	0.000	1.722	0.000	0.01
		C		0.000	0.000	1.722	0.000	0.02
L42	8.25-8.00	A	0.739	0.000	0.000	0.699	0.000	0.00
		B		0.000	0.000	0.782	0.000	0.00
		C		0.000	0.000	0.782	0.000	0.01
L43	8.00-4.75	A	0.721	0.000	0.000	8.142	0.000	0.03
		B		0.000	0.000	10.146	0.000	0.04
		C		0.000	0.000	10.146	0.000	0.10
L44	4.75-4.50	A	0.698	0.000	0.000	0.389	0.000	0.00
		B		0.000	0.000	0.778	0.000	0.00
		C		0.000	0.000	0.778	0.000	0.01
L45	4.50-4.25	A	0.694	0.000	0.000	0.389	0.000	0.00
		B		0.000	0.000	0.778	0.000	0.00
		C		0.000	0.000	0.778	0.000	0.01
L46	4.25-4.00	A	0.690	0.000	0.000	0.389	0.000	0.00
		B		0.000	0.000	0.777	0.000	0.00
		C		0.000	0.000	0.777	0.000	0.01
L47	4.00-3.50	A	0.684	0.000	0.000	0.777	0.000	0.00
		B		0.000	0.000	1.553	0.000	0.01
		C		0.000	0.000	1.553	0.000	0.02
L48	3.50-3.25	A	0.677	0.000	0.000	0.388	0.000	0.00
		B		0.000	0.000	0.776	0.000	0.00
		C		0.000	0.000	0.776	0.000	0.01
L49	3.25-2.50	A	0.666	0.000	0.000	1.162	0.000	0.00
		B		0.000	0.000	2.325	0.000	0.01
		C		0.000	0.000	2.325	0.000	0.02
L50	2.50-2.25	A	0.653	0.000	0.000	0.387	0.000	0.00
		B		0.000	0.000	0.774	0.000	0.00
		C		0.000	0.000	0.774	0.000	0.01
L51	2.25-0.00	A	0.606	0.000	0.000	2.691	0.000	0.01
		B		0.000	0.000	5.383	0.000	0.02
		C		0.000	0.000	5.383	0.000	0.06

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	156.00-151.00	0.0000	0.0000	0.0000	0.0000
L2	151.00-146.00	0.0000	0.0000	0.0000	0.0000
L3	146.00-144.00	0.0000	0.0000	0.0000	0.0000
L4	144.00-139.00	0.0000	0.0000	0.0000	0.0000
L5	139.00-134.00	0.0000	0.0000	0.0000	0.0000
L6	134.00-129.00	0.0000	0.0000	0.0000	0.0000
L7	129.00-128.25	0.0000	0.0000	0.0000	0.0000
L8	128.25-128.00	0.0000	0.0000	0.0000	0.0000
L9	128.00-123.00	0.0000	0.0000	0.0000	0.0000
L10	123.00-118.00	0.0000	0.0000	0.0000	0.0000
L11	118.00-113.00	0.0000	0.0000	0.0000	0.0000
L12	113.00-108.00	0.0000	0.0000	0.0000	0.0000
L13	108.00-103.00	0.0000	0.0000	0.0000	0.0000
L14	103.00-98.00	0.0000	0.0000	0.0000	0.0000
L15	98.00-93.00	0.0000	0.0000	0.0000	0.0000
L16	93.00-92.00	0.0000	0.0000	0.0000	0.0000
L17	92.00-87.00	0.0000	0.0000	0.0000	0.0000
L18	87.00-82.00	0.0000	0.0000	0.0000	0.0000
L19	82.00-77.50	0.0000	0.0000	0.0000	0.0000
L20	77.50-72.50	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
L21	72.50-67.50	0.0000	0.0000	0.0000	0.0000
L22	67.50-67.08	0.0000	0.0000	0.0000	0.0000
L23	67.08-66.83	0.0000	0.0000	0.0000	0.0000
L24	66.83-66.33	0.0000	0.0000	0.0000	0.0000
L25	66.33-66.08	0.0000	0.0000	0.0000	0.0000
L26	66.08-57.50	0.0000	0.0000	0.0000	0.0000
L27	57.50-56.75	0.0000	0.0000	0.0000	0.0000
L28	56.75-51.75	0.0000	0.0000	0.0000	0.0000
L29	51.75-46.75	0.0000	0.0000	0.0000	0.0000
L30	46.75-41.75	0.0000	0.0000	0.0000	0.0000
L31	41.75-39.70	0.0000	0.0000	0.0000	0.0000
L32	39.70-39.50	0.0000	0.0000	0.0000	0.0000
L33	39.50-34.50	0.1049	0.0606	0.0883	0.0510
L34	34.50-31.75	0.5014	0.2895	0.4257	0.2458
L35	31.75-31.50	0.5041	0.2911	0.4281	0.2472
L36	31.50-26.50	0.5086	0.2936	0.4321	0.2495
L37	26.50-21.50	0.5171	0.2985	0.4398	0.2539
L38	21.50-16.50	0.5255	0.3034	0.4477	0.2585
L39	16.50-9.80	0.5351	0.3090	0.4570	0.2638
L40	9.80-8.80	0.5349	0.3088	0.4570	0.2638
L41	8.80-8.25	0.5362	0.3096	0.4594	0.2652
L42	8.25-8.00	0.5370	0.3100	0.4602	0.2657
L43	8.00-4.75	0.9677	0.5587	0.8778	0.5068
L44	4.75-4.50	2.5458	1.4698	2.3993	1.3853
L45	4.50-4.25	2.5476	1.4709	2.4007	1.3860
L46	4.25-4.00	2.5488	1.4715	2.4013	1.3864
L47	4.00-3.50	2.5515	1.4731	2.4033	1.3875
L48	3.50-3.25	2.5561	1.4757	2.4071	1.3897
L49	3.25-2.50	2.5597	1.4778	2.4095	1.3911
L50	2.50-2.25	2.5623	1.4793	2.4108	1.3919
L51	2.25-0.00	2.3470	1.3550	2.1815	1.2595

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
L6	29	CCI-AFP-060100	129.00 - 130.75	1.0000	1.0000
L6	30	CCI-AFP-060100	129.00 - 130.75	1.0000	1.0000
L6	31	CCI-AFP-060100	129.00 - 130.75	1.0000	1.0000
L7	29	CCI-AFP-060100	128.25 - 129.00	1.0000	1.0000
L7	30	CCI-AFP-060100	128.25 - 129.00	1.0000	1.0000
L7	31	CCI-AFP-060100	128.25 - 129.00	1.0000	1.0000
L8	29	CCI-AFP-060100	128.00 - 128.25	1.0000	1.0000
L8	30	CCI-AFP-060100	128.00 - 128.25	1.0000	1.0000
L8	31	CCI-AFP-060100	128.00 - 128.25	1.0000	1.0000
L9	29	CCI-AFP-060100	123.00 - 128.00	1.0000	1.0000
L9	30	CCI-AFP-060100	123.00 - 128.00	1.0000	1.0000
L9	31	CCI-AFP-060100	123.00 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L10	29	CCI-AFP-060100	128.00 118.00 - 123.00	1.0000	1.0000
L10	30	CCI-AFP-060100	118.00 - 123.00	1.0000	1.0000
L10	31	CCI-AFP-060100	118.00 - 123.00	1.0000	1.0000
L11	29	CCI-AFP-060100	113.00 - 118.00	1.0000	1.0000
L11	30	CCI-AFP-060100	113.00 - 118.00	1.0000	1.0000
L11	31	CCI-AFP-060100	113.00 - 118.00	1.0000	1.0000
L12	29	CCI-AFP-060100	108.00 - 113.00	1.0000	1.0000
L12	30	CCI-AFP-060100	108.00 - 113.00	1.0000	1.0000
L12	31	CCI-AFP-060100	108.00 - 113.00	1.0000	1.0000
L13	29	CCI-AFP-060100	103.00 - 108.00	1.0000	1.0000
L13	30	CCI-AFP-060100	103.00 - 108.00	1.0000	1.0000
L13	31	CCI-AFP-060100	103.00 - 108.00	1.0000	1.0000
L14	26	CFP-085125	98.00 - 100.66	1.0000	1.0000
L14	27	CFP-085125	98.00 - 100.66	1.0000	1.0000
L14	28	CFP-085125	98.00 - 100.66	1.0000	1.0000
L14	29	CCI-AFP-060100	100.66 - 103.00	1.0000	1.0000
L14	30	CCI-AFP-060100	100.66 - 103.00	1.0000	1.0000
L14	31	CCI-AFP-060100	100.66 - 103.00	1.0000	1.0000
L15	26	CFP-085125	93.00 - 98.00	1.0000	1.0000
L15	27	CFP-085125	93.00 - 98.00	1.0000	1.0000
L15	28	CFP-085125	93.00 - 98.00	1.0000	1.0000
L16	26	CFP-085125	92.00 - 93.00	1.0000	1.0000
L16	27	CFP-085125	92.00 - 93.00	1.0000	1.0000
L16	28	CFP-085125	92.00 - 93.00	1.0000	1.0000
L17	26	CFP-085125	87.00 - 92.00	1.0000	1.0000
L17	27	CFP-085125	87.00 - 92.00	1.0000	1.0000
L17	28	CFP-085125	87.00 - 92.00	1.0000	1.0000
L18	26	CFP-085125	82.00 - 87.00	1.0000	1.0000
L18	27	CFP-085125	82.00 - 87.00	1.0000	1.0000
L18	28	CFP-085125	82.00 - 87.00	1.0000	1.0000
L19	26	CFP-085125	77.50 - 82.00	1.0000	1.0000
L19	27	CFP-085125	77.50 - 82.00	1.0000	1.0000
L19	28	CFP-085125	77.50 - 82.00	1.0000	1.0000
L20	26	CFP-085125	72.50 - 77.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L20	27	CFP-085125	72.50 - 77.50	1.0000	1.0000
L20	28	CFP-085125	72.50 - 77.50	1.0000	1.0000
L21	20	CCI-AFP-065125	67.50 - 70.58	1.0000	1.0000
L21	21	CCI-AFP-065125	67.50 - 70.58	1.0000	1.0000
L21	22	CCI-AFP-065125	67.50 - 70.58	1.0000	1.0000
L21	23	CCI-AFP-085125	67.50 - 70.58	1.0000	1.0000
L21	24	CCI-AFP-085125	67.50 - 70.58	1.0000	1.0000
L21	25	CCI-AFP-085125	67.50 - 70.58	1.0000	1.0000
L21	26	CFP-085125	70.58 - 72.50	1.0000	1.0000
L21	27	CFP-085125	70.58 - 72.50	1.0000	1.0000
L21	28	CFP-085125	70.58 - 72.50	1.0000	1.0000
L22	20	CCI-AFP-065125	67.08 - 67.50	1.0000	1.0000
L22	21	CCI-AFP-065125	67.08 - 67.50	1.0000	1.0000
L22	22	CCI-AFP-065125	67.08 - 67.50	1.0000	1.0000
L22	23	CCI-AFP-085125	67.08 - 67.50	1.0000	1.0000
L22	24	CCI-AFP-085125	67.08 - 67.50	1.0000	1.0000
L22	25	CCI-AFP-085125	67.08 - 67.50	1.0000	1.0000
L23	20	CCI-AFP-065125	66.83 - 67.08	1.0000	1.0000
L23	21	CCI-AFP-065125	66.83 - 67.08	1.0000	1.0000
L23	22	CCI-AFP-065125	66.83 - 67.08	1.0000	1.0000
L23	23	CCI-AFP-085125	66.83 - 67.08	1.0000	1.0000
L23	24	CCI-AFP-085125	66.83 - 67.08	1.0000	1.0000
L23	25	CCI-AFP-085125	66.83 - 67.08	1.0000	1.0000
L24	20	CCI-AFP-065125	66.33 - 66.83	1.0000	1.0000
L24	21	CCI-AFP-065125	66.33 - 66.83	1.0000	1.0000
L24	22	CCI-AFP-065125	66.33 - 66.83	1.0000	1.0000
L24	23	CCI-AFP-085125	66.33 - 66.83	1.0000	1.0000
L24	24	CCI-AFP-085125	66.33 - 66.83	1.0000	1.0000
L24	25	CCI-AFP-085125	66.33 - 66.83	1.0000	1.0000
L25	20	CCI-AFP-065125	66.08 - 66.33	1.0000	1.0000
L25	21	CCI-AFP-065125	66.08 - 66.33	1.0000	1.0000
L25	22	CCI-AFP-065125	66.08 - 66.33	1.0000	1.0000
L25	23	CCI-AFP-085125	66.08 - 66.33	1.0000	1.0000
L25	24	CCI-AFP-085125	66.08 - 66.33	1.0000	1.0000
L25	25	CCI-AFP-085125	66.08 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L26	20	CCI-AFP-065125	66.33 57.50 - 66.08	1.0000	1.0000
L26	21	CCI-AFP-065125	57.50 - 66.08	1.0000	1.0000
L26	22	CCI-AFP-065125	57.50 - 66.08	1.0000	1.0000
L26	23	CCI-AFP-085125	57.50 - 66.08	1.0000	1.0000
L26	24	CCI-AFP-085125	57.50 - 66.08	1.0000	1.0000
L26	25	CCI-AFP-085125	57.50 - 66.08	1.0000	1.0000
L27	20	CCI-AFP-065125	56.75 - 57.50	1.0000	1.0000
L27	21	CCI-AFP-065125	56.75 - 57.50	1.0000	1.0000
L27	22	CCI-AFP-065125	56.75 - 57.50	1.0000	1.0000
L27	23	CCI-AFP-085125	56.75 - 57.50	1.0000	1.0000
L27	24	CCI-AFP-085125	56.75 - 57.50	1.0000	1.0000
L27	25	CCI-AFP-085125	56.75 - 57.50	1.0000	1.0000
L28	20	CCI-AFP-065125	51.75 - 56.75	1.0000	1.0000
L28	21	CCI-AFP-065125	51.75 - 56.75	1.0000	1.0000
L28	22	CCI-AFP-065125	51.75 - 56.75	1.0000	1.0000
L28	23	CCI-AFP-085125	51.75 - 56.75	1.0000	1.0000
L28	24	CCI-AFP-085125	51.75 - 56.75	1.0000	1.0000
L28	25	CCI-AFP-085125	51.75 - 56.75	1.0000	1.0000
L29	20	CCI-AFP-065125	46.75 - 51.75	1.0000	1.0000
L29	21	CCI-AFP-065125	46.75 - 51.75	1.0000	1.0000
L29	22	CCI-AFP-065125	46.75 - 51.75	1.0000	1.0000
L29	23	CCI-AFP-085125	46.75 - 51.75	1.0000	1.0000
L29	24	CCI-AFP-085125	46.75 - 51.75	1.0000	1.0000
L29	25	CCI-AFP-085125	46.75 - 51.75	1.0000	1.0000
L30	20	CCI-AFP-065125	41.75 - 46.75	1.0000	1.0000
L30	21	CCI-AFP-065125	41.75 - 46.75	1.0000	1.0000
L30	22	CCI-AFP-065125	41.75 - 46.75	1.0000	1.0000
L30	23	CCI-AFP-085125	41.75 - 46.75	1.0000	1.0000
L30	24	CCI-AFP-085125	41.75 - 46.75	1.0000	1.0000
L30	25	CCI-AFP-085125	41.75 - 46.75	1.0000	1.0000
L31	20	CCI-AFP-065125	39.70 - 41.75	1.0000	1.0000
L31	21	CCI-AFP-065125	39.70 - 41.75	1.0000	1.0000
L31	22	CCI-AFP-065125	39.70 - 41.75	1.0000	1.0000
L31	23	CCI-AFP-085125	39.70 - 41.75	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L31	24	CCI-AFP-085125	39.70 - 41.75	1.0000	1.0000
L31	25	CCI-AFP-085125	39.70 - 41.75	1.0000	1.0000
L32	20	CCI-AFP-065125	39.50 - 39.70	1.0000	1.0000
L32	21	CCI-AFP-065125	39.50 - 39.70	1.0000	1.0000
L32	22	CCI-AFP-065125	39.50 - 39.70	1.0000	1.0000
L32	23	CCI-AFP-085125	39.50 - 39.70	1.0000	1.0000
L32	24	CCI-AFP-085125	39.50 - 39.70	1.0000	1.0000
L32	25	CCI-AFP-085125	39.50 - 39.70	1.0000	1.0000
L33	14	CCI-SFP-085125	34.50 - 35.50	1.0000	1.0000
L33	15	CCI-SFP-085125	34.50 - 35.50	1.0000	1.0000
L33	16	CWFP-085125	34.50 - 35.50	1.0000	1.0000
L33	17	CWFP-085125	34.50 - 35.50	1.0000	1.0000
L33	18	CWFP-085125	34.50 - 35.50	1.0000	1.0000
L33	19	CCI-SFP-065125	34.50 - 35.50	1.0000	1.0000
L33	20	CCI-AFP-065125	35.50 - 39.50	1.0000	1.0000
L33	21	CCI-AFP-065125	35.50 - 39.50	1.0000	1.0000
L33	22	CCI-AFP-065125	35.50 - 39.50	1.0000	1.0000
L33	23	CCI-AFP-085125	35.50 - 39.50	1.0000	1.0000
L33	24	CCI-AFP-085125	35.50 - 39.50	1.0000	1.0000
L33	25	CCI-AFP-085125	35.50 - 39.50	1.0000	1.0000
L34	14	CCI-SFP-085125	31.75 - 34.50	1.0000	1.0000
L34	15	CCI-SFP-085125	31.75 - 34.50	1.0000	1.0000
L34	16	CWFP-085125	31.75 - 34.50	1.0000	1.0000
L34	17	CWFP-085125	31.75 - 34.50	1.0000	1.0000
L34	18	CWFP-085125	31.75 - 34.50	1.0000	1.0000
L34	19	CCI-SFP-065125	31.75 - 34.50	1.0000	1.0000
L35	14	CCI-SFP-085125	31.50 - 31.75	1.0000	1.0000
L35	15	CCI-SFP-085125	31.50 - 31.75	1.0000	1.0000
L35	16	CWFP-085125	31.50 - 31.75	1.0000	1.0000
L35	17	CWFP-085125	31.50 - 31.75	1.0000	1.0000
L35	18	CWFP-085125	31.50 - 31.75	1.0000	1.0000
L35	19	CCI-SFP-065125	31.50 - 31.75	1.0000	1.0000
L36	14	CCI-SFP-085125	26.50 - 31.50	1.0000	1.0000
L36	15	CCI-SFP-085125	26.50 - 31.50	1.0000	1.0000
L36	16	CWFP-085125	26.50 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L36	17	CWFP-085125	31.50 26.50 - 31.50	1.0000	1.0000
L36	18	CWFP-085125	31.50 26.50 - 31.50	1.0000	1.0000
L36	19	CCI-SFP-065125	31.50 26.50 - 31.50	1.0000	1.0000
L37	14	CCI-SFP-085125	26.50 21.50 - 26.50	1.0000	1.0000
L37	15	CCI-SFP-085125	26.50 21.50 - 26.50	1.0000	1.0000
L37	16	CWFP-085125	26.50 21.50 - 26.50	1.0000	1.0000
L37	17	CWFP-085125	26.50 21.50 - 26.50	1.0000	1.0000
L37	18	CWFP-085125	26.50 21.50 - 26.50	1.0000	1.0000
L37	19	CCI-SFP-065125	26.50 21.50 - 26.50	1.0000	1.0000
L38	14	CCI-SFP-085125	21.50 16.50 - 21.50	1.0000	1.0000
L38	15	CCI-SFP-085125	21.50 16.50 - 21.50	1.0000	1.0000
L38	16	CWFP-085125	21.50 16.50 - 21.50	1.0000	1.0000
L38	17	CWFP-085125	21.50 16.50 - 21.50	1.0000	1.0000
L38	18	CWFP-085125	21.50 16.50 - 21.50	1.0000	1.0000
L38	19	CCI-SFP-065125	21.50 16.50 - 21.50	1.0000	1.0000
L39	14	CCI-SFP-085125	9.80 - 16.50	1.0000	1.0000
L39	15	CCI-SFP-085125	9.80 - 16.50	1.0000	1.0000
L39	16	CWFP-085125	9.80 - 16.50	1.0000	1.0000
L39	17	CWFP-085125	9.80 - 16.50	1.0000	1.0000
L39	18	CWFP-085125	9.80 - 16.50	1.0000	1.0000
L39	19	CCI-SFP-065125	9.80 - 16.50	1.0000	1.0000
L40	14	CCI-SFP-085125	8.80 - 9.80	1.0000	1.0000
L40	15	CCI-SFP-085125	8.80 - 9.80	1.0000	1.0000
L40	16	CWFP-085125	8.80 - 9.80	1.0000	1.0000
L40	17	CWFP-085125	8.80 - 9.80	1.0000	1.0000
L40	18	CWFP-085125	8.80 - 9.80	1.0000	1.0000
L40	19	CCI-SFP-065125	8.80 - 9.80	1.0000	1.0000
L41	14	CCI-SFP-085125	8.25 - 8.80	1.0000	1.0000
L41	15	CCI-SFP-085125	8.25 - 8.80	1.0000	1.0000
L41	16	CWFP-085125	8.25 - 8.80	1.0000	1.0000
L41	17	CWFP-085125	8.25 - 8.80	1.0000	1.0000
L41	18	CWFP-085125	8.25 - 8.80	1.0000	1.0000
L41	19	CCI-SFP-065125	8.25 - 8.80	1.0000	1.0000
L42	14	CCI-SFP-085125	8.00 - 8.25	1.0000	1.0000
L42	15	CCI-SFP-085125	8.00 - 8.25	1.0000	1.0000
L42	16	CWFP-085125	8.00 - 8.25	1.0000	1.0000
L42	17	CWFP-085125	8.00 - 8.25	1.0000	1.0000
L42	18	CWFP-085125	8.00 - 8.25	1.0000	1.0000
L42	19	CCI-SFP-065125	8.00 - 8.25	1.0000	1.0000
L43	14	CCI-SFP-085125	4.75 - 8.00	1.0000	1.0000
L43	15	CCI-SFP-085125	4.75 - 8.00	1.0000	1.0000
L43	16	CWFP-085125	4.75 - 8.00	1.0000	1.0000
L43	17	CWFP-085125	4.75 - 8.00	1.0000	1.0000
L43	18	CWFP-085125	4.75 - 8.00	1.0000	1.0000
L43	19	CCI-SFP-065125	5.50 - 8.00	1.0000	1.0000
L44	14	CCI-SFP-085125	4.50 - 4.75	1.0000	1.0000
L44	15	CCI-SFP-085125	4.50 - 4.75	1.0000	1.0000
L44	16	CWFP-085125	4.50 - 4.75	1.0000	1.0000
L44	17	CWFP-085125	4.50 - 4.75	1.0000	1.0000
L44	18	CWFP-085125	4.50 - 4.75	1.0000	1.0000
L45	14	CCI-SFP-085125	4.25 - 4.50	1.0000	1.0000
L45	15	CCI-SFP-085125	4.25 - 4.50	1.0000	1.0000
L45	16	CWFP-085125	4.25 - 4.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L45	17	CWFP-085125	4.25 - 4.50	1.0000	1.0000
L45	18	CWFP-085125	4.25 - 4.50	1.0000	1.0000
L46	14	CCI-SFP-085125	4.00 - 4.25	1.0000	1.0000
L46	15	CCI-SFP-085125	4.00 - 4.25	1.0000	1.0000
L46	16	CWFP-085125	4.00 - 4.25	1.0000	1.0000
L46	17	CWFP-085125	4.00 - 4.25	1.0000	1.0000
L46	18	CWFP-085125	4.00 - 4.25	1.0000	1.0000
L47	14	CCI-SFP-085125	3.50 - 4.00	1.0000	1.0000
L47	15	CCI-SFP-085125	3.50 - 4.00	1.0000	1.0000
L47	16	CWFP-085125	3.50 - 4.00	1.0000	1.0000
L47	17	CWFP-085125	3.50 - 4.00	1.0000	1.0000
L47	18	CWFP-085125	3.50 - 4.00	1.0000	1.0000
L48	14	CCI-SFP-085125	3.25 - 3.50	1.0000	1.0000
L48	15	CCI-SFP-085125	3.25 - 3.50	1.0000	1.0000
L48	16	CWFP-085125	3.25 - 3.50	1.0000	1.0000
L48	17	CWFP-085125	3.25 - 3.50	1.0000	1.0000
L48	18	CWFP-085125	3.25 - 3.50	1.0000	1.0000
L49	14	CCI-SFP-085125	2.50 - 3.25	1.0000	1.0000
L49	15	CCI-SFP-085125	2.50 - 3.25	1.0000	1.0000
L49	16	CWFP-085125	2.50 - 3.25	1.0000	1.0000
L49	17	CWFP-085125	2.50 - 3.25	1.0000	1.0000
L49	18	CWFP-085125	2.50 - 3.25	1.0000	1.0000
L50	14	CCI-SFP-085125	2.25 - 2.50	1.0000	1.0000
L50	15	CCI-SFP-085125	2.25 - 2.50	1.0000	1.0000
L50	16	CWFP-085125	2.25 - 2.50	1.0000	1.0000
L50	17	CWFP-085125	2.25 - 2.50	1.0000	1.0000
L50	18	CWFP-085125	2.25 - 2.50	1.0000	1.0000
L51	14	CCI-SFP-085125	0.50 - 2.25	1.0000	1.0000
L51	15	CCI-SFP-085125	0.50 - 2.25	1.0000	1.0000
L51	16	CWFP-085125	0.50 - 2.25	1.0000	1.0000
L51	17	CWFP-085125	0.50 - 2.25	1.0000	1.0000
L51	18	CWFP-085125	0.50 - 2.25	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L6	29	CCI-AFP-060100	129.00 - 130.75	Auto	0.1886
L6	30	CCI-AFP-060100	129.00 - 130.75	Auto	0.1886
L6	31	CCI-AFP-060100	129.00 - 130.75	Auto	0.1886
L7	29	CCI-AFP-060100	128.25 - 129.00	Auto	0.1781
L7	30	CCI-AFP-060100	128.25 - 129.00	Auto	0.1781
L7	31	CCI-AFP-060100	128.25 - 129.00	Auto	0.1781
L8	29	CCI-AFP-060100	128.00 - 128.25	Auto	0.3190
L8	30	CCI-AFP-060100	128.00 - 128.25	Auto	0.3190
L8	31	CCI-AFP-060100	128.00 - 128.25	Auto	0.3190
L9	29	CCI-AFP-060100	123.00 - 128.00	Auto	0.2913
L9	30	CCI-AFP-060100	123.00 - 128.00	Auto	0.2913

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L9	31	CCI-AFP-060100	123.00 - 128.00	Auto	0.2913
L10	29	CCI-AFP-060100	118.00 - 123.00	Auto	0.2436
L10	30	CCI-AFP-060100	118.00 - 123.00	Auto	0.2436
L10	31	CCI-AFP-060100	118.00 - 123.00	Auto	0.2436
L11	29	CCI-AFP-060100	113.00 - 118.00	Auto	0.1903
L11	30	CCI-AFP-060100	113.00 - 118.00	Auto	0.1903
L11	31	CCI-AFP-060100	113.00 - 118.00	Auto	0.1903
L12	29	CCI-AFP-060100	108.00 - 113.00	Auto	0.1425
L12	30	CCI-AFP-060100	108.00 - 113.00	Auto	0.1425
L12	31	CCI-AFP-060100	108.00 - 113.00	Auto	0.1425
L13	29	CCI-AFP-060100	103.00 - 108.00	Auto	0.0948
L13	30	CCI-AFP-060100	103.00 - 108.00	Auto	0.0948
L13	31	CCI-AFP-060100	103.00 - 108.00	Auto	0.0948
L14	26	CFP-085125	98.00 - 100.66	Auto	0.3224
L14	27	CFP-085125	98.00 - 100.66	Auto	0.3224
L14	28	CFP-085125	98.00 - 100.66	Auto	0.3224
L14	29	CCI-AFP-060100	100.66 - 103.00	Auto	0.0611
L14	30	CCI-AFP-060100	100.66 - 103.00	Auto	0.0611
L14	31	CCI-AFP-060100	100.66 - 103.00	Auto	0.0611
L15	26	CFP-085125	93.00 - 98.00	Auto	0.2976
L15	27	CFP-085125	93.00 - 98.00	Auto	0.2976
L15	28	CFP-085125	93.00 - 98.00	Auto	0.2976
L16	26	CFP-085125	92.00 - 93.00	Auto	0.3625
L16	27	CFP-085125	92.00 - 93.00	Auto	0.3625
L16	28	CFP-085125	92.00 - 93.00	Auto	0.3625
L17	26	CFP-085125	87.00 - 92.00	Auto	0.3368
L17	27	CFP-085125	87.00 - 92.00	Auto	0.3368
L17	28	CFP-085125	87.00 - 92.00	Auto	0.3368
L18	26	CFP-085125	82.00 - 87.00	Auto	0.2991
L18	27	CFP-085125	82.00 - 87.00	Auto	0.2991
L18	28	CFP-085125	82.00 - 87.00	Auto	0.2991
L19	26	CFP-085125	77.50 - 82.00	Auto	0.2669
L19	27	CFP-085125	77.50 - 82.00	Auto	0.2669
L19	28	CFP-085125	77.50 - 82.00	Auto	0.2669

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L20	26	CFP-085125	72.50 - 77.50	Auto	0.2544
L20	27	CFP-085125	72.50 - 77.50	Auto	0.2544
L20	28	CFP-085125	72.50 - 77.50	Auto	0.2544
L21	20	CCI-AFP-065125	67.50 - 70.58	Auto	0.0000
L21	21	CCI-AFP-065125	67.50 - 70.58	Auto	0.0000
L21	22	CCI-AFP-065125	67.50 - 70.58	Auto	0.0000
L21	23	CCI-AFP-085125	67.50 - 70.58	Auto	0.2190
L21	24	CCI-AFP-085125	67.50 - 70.58	Auto	0.2190
L21	25	CCI-AFP-085125	67.50 - 70.58	Auto	0.2190
L21	26	CFP-085125	70.58 - 72.50	Auto	0.2338
L21	27	CFP-085125	70.58 - 72.50	Auto	0.2338
L21	28	CFP-085125	70.58 - 72.50	Auto	0.2338
L22	20	CCI-AFP-065125	67.08 - 67.50	Auto	0.0000
L22	21	CCI-AFP-065125	67.08 - 67.50	Auto	0.0000
L22	22	CCI-AFP-065125	67.08 - 67.50	Auto	0.0000
L22	23	CCI-AFP-085125	67.08 - 67.50	Auto	0.2046
L22	24	CCI-AFP-085125	67.08 - 67.50	Auto	0.2046
L22	25	CCI-AFP-085125	67.08 - 67.50	Auto	0.2046
L23	20	CCI-AFP-065125	66.83 - 67.08	Auto	0.0810
L23	21	CCI-AFP-065125	66.83 - 67.08	Auto	0.0810
L23	22	CCI-AFP-065125	66.83 - 67.08	Auto	0.0810
L23	23	CCI-AFP-085125	66.83 - 67.08	Auto	0.2972
L23	24	CCI-AFP-085125	66.83 - 67.08	Auto	0.2972
L23	25	CCI-AFP-085125	66.83 - 67.08	Auto	0.2972
L24	20	CCI-AFP-065125	66.33 - 66.83	Auto	0.0729
L24	21	CCI-AFP-065125	66.33 - 66.83	Auto	0.0729
L24	22	CCI-AFP-065125	66.33 - 66.83	Auto	0.0729
L24	23	CCI-AFP-085125	66.33 - 66.83	Auto	0.2910
L24	24	CCI-AFP-085125	66.33 - 66.83	Auto	0.2910
L24	25	CCI-AFP-085125	66.33 - 66.83	Auto	0.2910
L25	20	CCI-AFP-065125	66.08 - 66.33	Auto	0.0700
L25	21	CCI-AFP-065125	66.08 - 66.33	Auto	0.0700
L25	22	CCI-AFP-065125	66.08 - 66.33	Auto	0.0700
L25	23	CCI-AFP-085125	66.08 - 66.33	Auto	0.2888

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L25	24	CCI-AFP-085125	66.08 - 66.33	Auto	0.2888
L25	25	CCI-AFP-085125	66.08 - 66.33	Auto	0.2888
L26	20	CCI-AFP-065125	57.50 - 66.08	Auto	0.0305
L26	21	CCI-AFP-065125	57.50 - 66.08	Auto	0.0305
L26	22	CCI-AFP-065125	57.50 - 66.08	Auto	0.0305
L26	23	CCI-AFP-085125	57.50 - 66.08	Auto	0.2586
L26	24	CCI-AFP-085125	57.50 - 66.08	Auto	0.2586
L26	25	CCI-AFP-085125	57.50 - 66.08	Auto	0.2586
L27	20	CCI-AFP-065125	56.75 - 57.50	Auto	0.0148
L27	21	CCI-AFP-065125	56.75 - 57.50	Auto	0.0148
L27	22	CCI-AFP-065125	56.75 - 57.50	Auto	0.0148
L27	23	CCI-AFP-085125	56.75 - 57.50	Auto	0.2466
L27	24	CCI-AFP-085125	56.75 - 57.50	Auto	0.2466
L27	25	CCI-AFP-085125	56.75 - 57.50	Auto	0.2466
L28	20	CCI-AFP-065125	51.75 - 56.75	Auto	0.0000
L28	21	CCI-AFP-065125	51.75 - 56.75	Auto	0.0000
L28	22	CCI-AFP-065125	51.75 - 56.75	Auto	0.0000
L28	23	CCI-AFP-085125	51.75 - 56.75	Auto	0.2216
L28	24	CCI-AFP-085125	51.75 - 56.75	Auto	0.2216
L28	25	CCI-AFP-085125	51.75 - 56.75	Auto	0.2216
L29	20	CCI-AFP-065125	46.75 - 51.75	Auto	0.0000
L29	21	CCI-AFP-065125	46.75 - 51.75	Auto	0.0000
L29	22	CCI-AFP-065125	46.75 - 51.75	Auto	0.0000
L29	23	CCI-AFP-085125	46.75 - 51.75	Auto	0.1879
L29	24	CCI-AFP-085125	46.75 - 51.75	Auto	0.1879
L29	25	CCI-AFP-085125	46.75 - 51.75	Auto	0.1879
L30	20	CCI-AFP-065125	41.75 - 46.75	Auto	0.0000
L30	21	CCI-AFP-065125	41.75 - 46.75	Auto	0.0000
L30	22	CCI-AFP-065125	41.75 - 46.75	Auto	0.0000
L30	23	CCI-AFP-085125	41.75 - 46.75	Auto	0.1542
L30	24	CCI-AFP-085125	41.75 - 46.75	Auto	0.1542
L30	25	CCI-AFP-085125	41.75 - 46.75	Auto	0.1542
L31	20	CCI-AFP-065125	39.70 - 41.75	Auto	0.0000
L31	21	CCI-AFP-065125	39.70 - 41.75	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L31	22	CCI-AFP-065125	39.70 - 41.75	Auto	0.0000
L31	23	CCI-AFP-085125	39.70 - 41.75	Auto	0.1372
L31	24	CCI-AFP-085125	39.70 - 41.75	Auto	0.1372
L31	25	CCI-AFP-085125	39.70 - 41.75	Auto	0.1372
L32	20	CCI-AFP-065125	39.50 - 39.70	Auto	0.0000
L32	21	CCI-AFP-065125	39.50 - 39.70	Auto	0.0000
L32	22	CCI-AFP-065125	39.50 - 39.70	Auto	0.0000
L32	23	CCI-AFP-085125	39.50 - 39.70	Auto	0.1266
L32	24	CCI-AFP-085125	39.50 - 39.70	Auto	0.1266
L32	25	CCI-AFP-085125	39.50 - 39.70	Auto	0.1266
L33	14	CCI-SFP-085125	34.50 - 35.50	Auto	0.0953
L33	15	CCI-SFP-085125	34.50 - 35.50	Auto	0.0953
L33	16	CWFP-085125	34.50 - 35.50	Auto	0.0953
L33	17	CWFP-085125	34.50 - 35.50	Auto	0.0953
L33	18	CWFP-085125	34.50 - 35.50	Auto	0.0953
L33	19	CCI-SFP-065125	34.50 - 35.50	Auto	0.0000
L33	20	CCI-AFP-065125	35.50 - 39.50	Auto	0.0000
L33	21	CCI-AFP-065125	35.50 - 39.50	Auto	0.0000
L33	22	CCI-AFP-065125	35.50 - 39.50	Auto	0.0000
L33	23	CCI-AFP-085125	35.50 - 39.50	Auto	0.1101
L33	24	CCI-AFP-085125	35.50 - 39.50	Auto	0.1101
L33	25	CCI-AFP-085125	35.50 - 39.50	Auto	0.1101
L34	14	CCI-SFP-085125	31.75 - 34.50	Auto	0.0802
L34	15	CCI-SFP-085125	31.75 - 34.50	Auto	0.0802
L34	16	CWFP-085125	31.75 - 34.50	Auto	0.0802
L34	17	CWFP-085125	31.75 - 34.50	Auto	0.0802
L34	18	CWFP-085125	31.75 - 34.50	Auto	0.0802
L34	19	CCI-SFP-065125	31.75 - 34.50	Auto	0.0000
L35	14	CCI-SFP-085125	31.50 - 31.75	Auto	0.0988
L35	15	CCI-SFP-085125	31.50 - 31.75	Auto	0.0988
L35	16	CWFP-085125	31.50 - 31.75	Auto	0.0988
L35	17	CWFP-085125	31.50 - 31.75	Auto	0.0988
L35	18	CWFP-085125	31.50 - 31.75	Auto	0.0988
L35	19	CCI-SFP-065125	31.50 - 31.75	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L36	14	CCI-SFP-085125	26.50 - 31.50	Auto	0.0753
L36	15	CCI-SFP-085125	26.50 - 31.50	Auto	0.0753
L36	16	CWFP-085125	26.50 - 31.50	Auto	0.0753
L36	17	CWFP-085125	26.50 - 31.50	Auto	0.0753
L36	18	CWFP-085125	26.50 - 31.50	Auto	0.0753
L36	19	CCI-SFP-065125	26.50 - 31.50	Auto	0.0000
L37	14	CCI-SFP-085125	21.50 - 26.50	Auto	0.0377
L37	15	CCI-SFP-085125	21.50 - 26.50	Auto	0.0377
L37	16	CWFP-085125	21.50 - 26.50	Auto	0.0377
L37	17	CWFP-085125	21.50 - 26.50	Auto	0.0377
L37	18	CWFP-085125	21.50 - 26.50	Auto	0.0377
L37	19	CCI-SFP-065125	21.50 - 26.50	Auto	0.0000
L38	14	CCI-SFP-085125	16.50 - 21.50	Auto	0.0087
L38	15	CCI-SFP-085125	16.50 - 21.50	Auto	0.0087
L38	16	CWFP-085125	16.50 - 21.50	Auto	0.0087
L38	17	CWFP-085125	16.50 - 21.50	Auto	0.0087
L38	18	CWFP-085125	16.50 - 21.50	Auto	0.0087
L38	19	CCI-SFP-065125	16.50 - 21.50	Auto	0.0000
L39	14	CCI-SFP-085125	9.80 - 16.50	Auto	0.0000
L39	15	CCI-SFP-085125	9.80 - 16.50	Auto	0.0000
L39	16	CWFP-085125	9.80 - 16.50	Auto	0.0000
L39	17	CWFP-085125	9.80 - 16.50	Auto	0.0000
L39	18	CWFP-085125	9.80 - 16.50	Auto	0.0000
L39	19	CCI-SFP-065125	9.80 - 16.50	Auto	0.0000
L40	14	CCI-SFP-085125	8.80 - 9.80	Auto	0.0000
L40	15	CCI-SFP-085125	8.80 - 9.80	Auto	0.0000
L40	16	CWFP-085125	8.80 - 9.80	Auto	0.0000
L40	17	CWFP-085125	8.80 - 9.80	Auto	0.0000
L40	18	CWFP-085125	8.80 - 9.80	Auto	0.0000
L40	19	CCI-SFP-065125	8.80 - 9.80	Auto	0.0000
L41	14	CCI-SFP-085125	8.25 - 8.80	Auto	0.0000
L41	15	CCI-SFP-085125	8.25 - 8.80	Auto	0.0000
L41	16	CWFP-085125	8.25 - 8.80	Auto	0.0000
L41	17	CWFP-085125	8.25 - 8.80	Auto	0.0000
L41	18	CWFP-085125	8.25 - 8.80	Auto	0.0000
L41	19	CCI-SFP-065125	8.25 - 8.80	Auto	0.0000
L42	14	CCI-SFP-085125	8.00 - 8.25	Auto	0.0000
L42	15	CCI-SFP-085125	8.00 - 8.25	Auto	0.0000
L42	16	CWFP-085125	8.00 - 8.25	Auto	0.0000
L42	17	CWFP-085125	8.00 - 8.25	Auto	0.0000
L42	18	CWFP-085125	8.00 - 8.25	Auto	0.0000
L42	19	CCI-SFP-065125	8.00 - 8.25	Auto	0.0000
L43	14	CCI-SFP-085125	4.75 - 8.00	Auto	0.0000
L43	15	CCI-SFP-085125	4.75 - 8.00	Auto	0.0000
L43	16	CWFP-085125	4.75 - 8.00	Auto	0.0000
L43	17	CWFP-085125	4.75 - 8.00	Auto	0.0000
L43	18	CWFP-085125	4.75 - 8.00	Auto	0.0000
L43	19	CCI-SFP-065125	5.50 - 8.00	Auto	0.0000
L44	14	CCI-SFP-085125	4.50 - 4.75	Auto	0.0722
L44	15	CCI-SFP-085125	4.50 - 4.75	Auto	0.0722

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L44	16	CWFP-085125	4.50 - 4.75	Auto	0.0722
L44	17	CWFP-085125	4.50 - 4.75	Auto	0.0722
L44	18	CWFP-085125	4.50 - 4.75	Auto	0.0722
L45	14	CCI-SFP-085125	4.25 - 4.50	Auto	0.0707
L45	15	CCI-SFP-085125	4.25 - 4.50	Auto	0.0707
L45	16	CWFP-085125	4.25 - 4.50	Auto	0.0707
L45	17	CWFP-085125	4.25 - 4.50	Auto	0.0707
L45	18	CWFP-085125	4.25 - 4.50	Auto	0.0707
L46	14	CCI-SFP-085125	4.00 - 4.25	Auto	0.0377
L46	15	CCI-SFP-085125	4.00 - 4.25	Auto	0.0377
L46	16	CWFP-085125	4.00 - 4.25	Auto	0.0377
L46	17	CWFP-085125	4.00 - 4.25	Auto	0.0377
L46	18	CWFP-085125	4.00 - 4.25	Auto	0.0377
L47	14	CCI-SFP-085125	3.50 - 4.00	Auto	0.0354
L47	15	CCI-SFP-085125	3.50 - 4.00	Auto	0.0354
L47	16	CWFP-085125	3.50 - 4.00	Auto	0.0354
L47	17	CWFP-085125	3.50 - 4.00	Auto	0.0354
L47	18	CWFP-085125	3.50 - 4.00	Auto	0.0354
L48	14	CCI-SFP-085125	3.25 - 3.50	Auto	0.1199
L48	15	CCI-SFP-085125	3.25 - 3.50	Auto	0.1199
L48	16	CWFP-085125	3.25 - 3.50	Auto	0.1199
L48	17	CWFP-085125	3.25 - 3.50	Auto	0.1199
L48	18	CWFP-085125	3.25 - 3.50	Auto	0.1199
L49	14	CCI-SFP-085125	2.50 - 3.25	Auto	0.1169
L49	15	CCI-SFP-085125	2.50 - 3.25	Auto	0.1169
L49	16	CWFP-085125	2.50 - 3.25	Auto	0.1169
L49	17	CWFP-085125	2.50 - 3.25	Auto	0.1169
L49	18	CWFP-085125	2.50 - 3.25	Auto	0.1169
L50	14	CCI-SFP-085125	2.25 - 2.50	Auto	0.0667
L50	15	CCI-SFP-085125	2.25 - 2.50	Auto	0.0667
L50	16	CWFP-085125	2.25 - 2.50	Auto	0.0667
L50	17	CWFP-085125	2.25 - 2.50	Auto	0.0667
L50	18	CWFP-085125	2.25 - 2.50	Auto	0.0667
L51	14	CCI-SFP-085125	0.50 - 2.25	Auto	0.0607
L51	15	CCI-SFP-085125	0.50 - 2.25	Auto	0.0607
L51	16	CWFP-085125	0.50 - 2.25	Auto	0.0607
L51	17	CWFP-085125	0.50 - 2.25	Auto	0.0607
L51	18	CWFP-085125	0.50 - 2.25	Auto	0.0607

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 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	7.55 8.04 8.53	4.23 4.67 5.12	0.11 0.20 0.30
NNVV-65B-R4 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	7.55 8.04 8.53	4.23 4.67 5.12	0.11 0.20 0.30
NNVV-65B-R4 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	7.55 8.04 8.53	4.23 4.67 5.12	0.11 0.20 0.30
APXVTM14-ALU-I20 w/	A	From Leg	4.00	0.0000	150.00	No Ice	4.09	2.86	0.08

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
Mount Pipe			0.00			1/2"	4.48	3.23	0.13
			0.00			Ice	4.88	3.61	0.19
						1" Ice			
APXVTM14-ALU-I20 w/ Mount Pipe	B	From Leg	4.00	0.0000	150.00	No Ice	4.09	2.86	0.08
			0.00			1/2"	4.48	3.23	0.13
			0.00			Ice	4.88	3.61	0.19
						1" Ice			
APXVTM14-ALU-I20 w/ Mount Pipe	C	From Leg	4.00	0.0000	150.00	No Ice	4.09	2.86	0.08
			0.00			1/2"	4.48	3.23	0.13
			0.00			Ice	4.88	3.61	0.19
						1" Ice			
TD-RRH8X20-25	A	From Leg	4.00	0.0000	150.00	No Ice	4.05	1.53	0.07
			0.00			1/2"	4.30	1.71	0.10
			0.00			Ice	4.56	1.90	0.13
						1" Ice			
TD-RRH8X20-25	B	From Leg	4.00	0.0000	150.00	No Ice	4.05	1.53	0.07
			0.00			1/2"	4.30	1.71	0.10
			0.00			Ice	4.56	1.90	0.13
						1" Ice			
TD-RRH8X20-25	C	From Leg	4.00	0.0000	150.00	No Ice	4.05	1.53	0.07
			0.00			1/2"	4.30	1.71	0.10
			0.00			Ice	4.56	1.90	0.13
						1" Ice			
PCS 1900MHZ 4X45W-65MHZ	A	From Leg	4.00	0.0000	150.00	No Ice	2.32	2.24	0.06
			0.00			1/2"	2.53	2.44	0.08
			0.00			Ice	2.74	2.65	0.11
						1" Ice			
PCS 1900MHZ 4X45W-65MHZ	B	From Leg	4.00	0.0000	150.00	No Ice	2.32	2.24	0.06
			0.00			1/2"	2.53	2.44	0.08
			0.00			Ice	2.74	2.65	0.11
						1" Ice			
PCS 1900MHZ 4X45W-65MHZ	C	From Leg	4.00	0.0000	150.00	No Ice	2.32	2.24	0.06
			0.00			1/2"	2.53	2.44	0.08
			0.00			Ice	2.74	2.65	0.11
						1" Ice			
(2) RRH2X50-800	A	From Leg	4.00	0.0000	150.00	No Ice	1.70	1.28	0.05
			0.00			1/2"	1.86	1.43	0.07
			0.00			Ice	2.03	1.58	0.09
						1" Ice			
(2) RRH2X50-800	B	From Leg	4.00	0.0000	150.00	No Ice	1.70	1.28	0.05
			0.00			1/2"	1.86	1.43	0.07
			0.00			Ice	2.03	1.58	0.09
						1" Ice			
(2) RRH2X50-800	C	From Leg	4.00	0.0000	150.00	No Ice	1.70	1.28	0.05
			0.00			1/2"	1.86	1.43	0.07
			0.00			Ice	2.03	1.58	0.09
						1" Ice			
T-Arm Mount [TA 702-3]	A	None		0.0000	150.00	No Ice	4.75	4.75	0.34
						1/2"	5.82	5.82	0.43
						Ice	6.98	6.98	0.55
						1" Ice			
***									
Site Pro 1 F4P-12W 12' Fortress Quad Platform	C	None		0.0000	141.00	No Ice	34.66	34.66	2.64
						1/2"	44.06	44.06	3.48
						Ice	56.66	53.47	4.64
						1" Ice			
Site Pro1 F4P-HRK12	C	None		0.0000	141.00	No Ice	5.68	5.44	0.51
						1/2"	7.91	7.39	0.62
						Ice	10.22	8.82	0.77
						1" Ice			
(2) 10'x2.5" Mount Pipe	A	From Leg	4.00	0.0000	141.00	No Ice	2.88	2.88	0.06
			0.00			1/2"	3.91	3.91	0.08
			0.00			Ice	4.96	4.96	0.11
						1" Ice			
(2) 10'x2.5" Mount Pipe	B	From Leg	4.00	-30.0000	141.00	No Ice	2.88	2.88	0.06

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
			0.00			1/2" Ice	3.91	3.91	0.08
			0.00			1" Ice	4.96	4.96	0.11
(2) 10'x2.5" Mount Pipe	C	From Leg	4.00	30.0000	141.00	No Ice	2.88	2.88	0.06
			0.00			1/2" Ice	3.91	3.91	0.08
			0.00			1" Ice	4.96	4.96	0.11
(2) 10'x2.5" Mount Pipe	C	From Face	4.00	0.0000	141.00	No Ice	2.88	2.88	0.06
			0.00			1/2" Ice	3.91	3.91	0.08
			0.00			1" Ice	4.96	4.96	0.11
APXVAARR24_43-U-NA20	A	From Leg	4.00	0.0000	141.00	No Ice	14.67	5.32	0.15
			0.00			1/2" Ice	15.43	5.99	0.27
			2.00			1" Ice	16.21	6.68	0.39
APXVAARR24_43-U-NA20	B	From Leg	4.00	-30.0000	141.00	No Ice	14.67	5.32	0.15
			0.00			1/2" Ice	15.43	5.99	0.27
			2.00			1" Ice	16.21	6.68	0.39
APXVAARR24_43-U-NA20	C	From Face	4.00	0.0000	141.00	No Ice	14.67	5.32	0.15
			0.00			1/2" Ice	15.43	5.99	0.27
			2.00			1" Ice	16.21	6.68	0.39
AIR 6419 B41_TMO	A	From Leg	4.00	0.0000	141.00	No Ice	7.00	2.83	0.10
			0.00			1/2" Ice	7.53	3.24	0.14
			2.00			1" Ice	8.07	3.67	0.19
AIR 6419 B41_TMO	B	From Leg	4.00	-30.0000	141.00	No Ice	7.00	2.83	0.10
			0.00			1/2" Ice	7.53	3.24	0.14
			2.00			1" Ice	8.07	3.67	0.19
AIR 6419 B41_TMO	C	From Face	4.00	0.0000	141.00	No Ice	7.00	2.83	0.10
			0.00			1/2" Ice	7.53	3.24	0.14
			2.00			1" Ice	8.07	3.67	0.19
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.00	0.0000	141.00	No Ice	2.14	1.69	0.11
			0.00			1/2" Ice	2.32	1.85	0.13
			2.00			1" Ice	2.51	2.02	0.16
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.00	-30.0000	141.00	No Ice	2.14	1.69	0.11
			0.00			1/2" Ice	2.32	1.85	0.13
			2.00			1" Ice	2.51	2.02	0.16
RADIO 4460 B2/B25 B66_TMO	C	From Face	4.00	0.0000	141.00	No Ice	2.14	1.69	0.11
			0.00			1/2" Ice	2.32	1.85	0.13
			2.00			1" Ice	2.51	2.02	0.16
RADIO 4449 B71/B85A	A	From Leg	4.00	0.0000	141.00	No Ice	1.64	1.31	0.07
			0.00			1/2" Ice	1.80	1.46	0.09
			0.00			1" Ice	1.97	1.61	0.11
RADIO 4449 B71/B85A	B	From Leg	4.00	-30.0000	141.00	No Ice	1.64	1.31	0.07
			0.00			1/2" Ice	1.80	1.46	0.09
			0.00			1" Ice	1.97	1.61	0.11
RADIO 4449 B71/B85A	C	From Face	4.00	0.0000	141.00	No Ice	1.64	1.31	0.07
			0.00			1/2" Ice	1.80	1.46	0.09
			0.00			1" Ice	1.97	1.61	0.11
********									
Commscope MC-PK8-DSH	C	None		0.0000	131.00	No Ice	34.24	34.24	1.75
						1/2" Ice	62.95	62.95	2.10
						1" Ice	91.66	91.66	2.45
(2) 8'x2" Mount Pipe	A	From Leg	4.00	0.0000	131.00	No Ice	1.90	1.90	0.03

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
			0.00			1/2" Ice	2.73	2.73	0.04
			0.00			1" Ice	3.40	3.40	0.06
(2) 8'x2" Mount Pipe	B	From Leg	4.00	0.0000	131.00	No Ice	1.90	1.90	0.03
			0.00			1/2" Ice	2.73	2.73	0.04
			0.00			1" Ice	3.40	3.40	0.06
(2) 8'x2" Mount Pipe	C	From Leg	4.00	0.0000	131.00	No Ice	1.90	1.90	0.03
			0.00			1/2" Ice	2.73	2.73	0.04
			0.00			1" Ice	3.40	3.40	0.06
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.00	0.0000	131.00	No Ice	8.01	4.23	0.11
			0.00			1/2" Ice	8.52	4.69	0.19
			0.00			1" Ice	9.04	5.16	0.29
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.00	0.0000	131.00	No Ice	8.01	4.23	0.11
			0.00			1/2" Ice	8.52	4.69	0.19
			0.00			1" Ice	9.04	5.16	0.29
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.00	0.0000	131.00	No Ice	8.01	4.23	0.11
			0.00			1/2" Ice	8.52	4.69	0.19
			0.00			1" Ice	9.04	5.16	0.29
TA08025-B604	A	From Leg	4.00	0.0000	131.00	No Ice	1.96	0.98	0.06
			0.00			1/2" Ice	2.14	1.11	0.08
			0.00			1" Ice	2.32	1.25	0.10
TA08025-B604	B	From Leg	4.00	0.0000	131.00	No Ice	1.96	0.98	0.06
			0.00			1/2" Ice	2.14	1.11	0.08
			0.00			1" Ice	2.32	1.25	0.10
TA08025-B604	C	From Leg	4.00	0.0000	131.00	No Ice	1.96	0.98	0.06
			0.00			1/2" Ice	2.14	1.11	0.08
			0.00			1" Ice	2.32	1.25	0.10
TA08025-B605	A	From Leg	4.00	0.0000	131.00	No Ice	1.96	1.13	0.08
			0.00			1/2" Ice	2.14	1.27	0.09
			0.00			1" Ice	2.32	1.41	0.11
TA08025-B605	B	From Leg	4.00	0.0000	131.00	No Ice	1.96	1.13	0.08
			0.00			1/2" Ice	2.14	1.27	0.09
			0.00			1" Ice	2.32	1.41	0.11
TA08025-B605	C	From Leg	4.00	0.0000	131.00	No Ice	1.96	1.13	0.08
			0.00			1/2" Ice	2.14	1.27	0.09
			0.00			1" Ice	2.32	1.41	0.11
RDIDC-9181-PF-48	A	From Leg	4.00	0.0000	131.00	No Ice	2.01	1.17	0.02
			0.00			1/2" Ice	2.19	1.31	0.04
			0.00			1" Ice	2.37	1.46	0.06
**********									
Platform Mount [LP 1201-1]	B	None		0.0000	120.00	No Ice	18.38	18.38	2.10
						1/2" Ice	22.11	22.11	2.65
						1" Ice	25.87	25.87	3.26
6'x2" Mount Pipe	B	From Leg	4.00	0.0000	120.00	No Ice	1.43	1.43	0.02
			0.00			1/2" Ice	1.92	1.92	0.03
			0.00			1" Ice	2.29	2.29	0.05
(3) 6'x2" Mount Pipe	A	From Leg	4.00	0.0000	120.00	No Ice	1.43	1.43	0.02
			0.00			1/2" Ice	1.92	1.92	0.03
			0.00			1" Ice	2.29	2.29	0.05
(3) 6'x2" Mount Pipe	C	From Leg	4.00	0.0000	120.00	No Ice	1.43	1.43	0.02

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
			0.00			1/2" Ice	1.92	1.92	0.03
			0.00			1" Ice	2.29	2.29	0.05
(2) 980H120T4E-M w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.0000	120.00	No Ice 1/2" Ice 1" Ice	3.41 3.97 4.55	2.94 3.50 4.07	0.03 0.06 0.10
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Top Bridge	A	From Face	0.00 0.00 3.00	0.0000	144.00	No Ice 1/2" Ice 1" Ice	0.90 1.06 1.22	2.49 2.69 2.91	0.34 0.36 0.37
Top Bridge	B	From Face	0.00 0.00 3.00	0.0000	144.00	No Ice 1/2" Ice 1" Ice	0.90 1.06 1.22	2.49 2.69 2.91	0.34 0.36 0.37
Top Bridge	C	From Face	0.00 0.00 3.00	0.0000	144.00	No Ice 1/2" Ice 1" Ice	0.90 1.06 1.22	2.49 2.69 2.91	0.34 0.36 0.37
Top Bridge	A	From Leg	0.00 0.00 3.00	0.0000	144.00	No Ice 1/2" Ice 1" Ice	0.90 1.06 1.22	2.49 2.69 2.91	0.34 0.36 0.37
Rod of Bridge	A	From Face	0.00 0.00 0.00	0.0000	144.00	No Ice 1/2" Ice 1" Ice	0.94 1.18 1.43	0.94 1.18 1.43	0.04 0.04 0.05
Rod of Bridge	B	From Face	0.00 0.00 0.00	0.0000	144.00	No Ice 1/2" Ice 1" Ice	0.94 1.18 1.43	0.94 1.18 1.43	0.04 0.04 0.05
Rod of Bridge	C	From Face	0.00 0.00 0.00	0.0000	144.00	No Ice 1/2" Ice 1" Ice	0.94 1.18 1.43	0.94 1.18 1.43	0.04 0.04 0.05
Rod of Bridge	A	From Leg	0.00 0.00 0.00	0.0000	144.00	No Ice 1/2" Ice 1" Ice	0.94 1.18 1.43	0.94 1.18 1.43	0.04 0.04 0.05
Bottom Bridge	A	From Face	0.00 0.00 -3.00	0.0000	144.00	No Ice 1/2" Ice 1" Ice	0.90 1.06 1.22	1.81 1.99 2.18	0.25 0.26 0.27
Bottom Bridge	B	From Face	0.00 0.00 -3.00	0.0000	144.00	No Ice 1/2" Ice 1" Ice	0.90 1.06 1.22	1.81 1.99 2.18	0.25 0.26 0.27
Bottom Bridge	C	From Face	0.00 0.00 -3.00	0.0000	144.00	No Ice 1/2" Ice 1" Ice	0.90 1.06 1.22	1.81 1.99 2.18	0.25 0.26 0.27
Bottom Bridge	A	From Leg	0.00 0.00 -3.00	0.0000	144.00	No Ice 1/2" Ice 1" Ice	0.90 1.06 1.22	1.81 1.99 2.18	0.25 0.26 0.27
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Load Combinations

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	156 - 151	Pole	Max Tension	26	0.00	0.00	0.00
			Max. Compression	26	-0.32	-0.00	-0.00
			Max. Mx	8	-0.24	-0.39	-0.00
			Max. My	14	-0.24	-0.00	-0.39
			Max. Vy	8	0.15	-0.39	-0.00
			Max. Vx	14	0.16	-0.00	-0.39
L2	151 - 146	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-4.21	-0.01	-0.01
			Max. Mx	8	-2.19	-11.37	-0.01
			Max. My	14	-2.19	-0.01	-11.40

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	2.77	-11.37	-0.01
			Max. Vx	14	2.77	-0.01	-11.40
			Max. Torque	18			-0.00
L3	146 - 144	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-4.34	-0.02	-0.01
			Max. Mx	8	-2.30	-16.96	-0.02
			Max. My	14	-2.29	-0.02	-17.01
			Max. Vy	8	2.83	-16.96	-0.02
			Max. Vx	14	2.83	-0.02	-17.01
			Max. Torque	18			-0.00
L4	144 - 139	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-17.80	-3.88	-3.00
			Max. Mx	8	-11.01	-54.67	-1.29
			Max. My	14	-10.92	-1.98	-56.48
			Max. Vy	8	9.83	-54.67	-1.29
			Max. Vx	14	10.46	-1.98	-56.48
			Max. Torque	18			4.77
L5	139 - 134	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-18.33	-3.94	-3.04
			Max. Mx	8	-11.40	-104.76	-1.34
			Max. My	14	-11.31	-2.02	-109.75
			Max. Vy	8	10.21	-104.76	-1.34
			Max. Vx	14	10.85	-2.02	-109.75
			Max. Torque	18			4.77
L6	134 - 129	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-23.82	-3.99	-2.78
			Max. Mx	8	-14.80	-163.62	-1.29
			Max. My	14	-14.70	-2.06	-171.76
			Max. Vy	8	14.02	-163.62	-1.29
			Max. Vx	14	14.70	-2.06	-171.76
			Max. Torque	18			4.77
L7	129 - 128.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-23.92	-4.00	-2.78
			Max. Mx	8	-14.87	-174.15	-1.29
			Max. My	14	-14.77	-2.07	-182.80
			Max. Vy	8	14.08	-174.15	-1.29
			Max. Vx	14	14.76	-2.07	-182.80
			Max. Torque	18			4.58
L8	128.25 - 128	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-23.97	-4.00	-2.78
			Max. Mx	8	-14.91	-177.68	-1.29
			Max. My	14	-14.82	-2.07	-186.49
			Max. Vy	8	14.10	-177.68	-1.29
			Max. Vx	14	14.77	-2.07	-186.49
			Max. Torque	18			4.58
L9	128 - 123	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.02	-4.05	-2.82
			Max. Mx	8	-15.72	-249.24	-1.34
			Max. My	14	-15.63	-2.11	-261.44
			Max. Vy	8	14.54	-249.24	-1.34
			Max. Vx	14	15.21	-2.11	-261.44
			Max. Torque	18			4.58
L10	123 - 118	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.30	-4.58	-3.13
			Max. Mx	8	-19.19	-326.80	-1.45
			Max. My	14	-19.10	-2.25	-342.31
			Max. Vy	8	16.82	-326.80	-1.45
			Max. Vx	14	17.48	-2.25	-342.31
			Max. Torque	18			5.19
L11	118 - 113	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.40	-4.63	-3.16
			Max. Mx	8	-20.07	-411.96	-1.59
			Max. My	14	-19.98	-2.39	-430.78
			Max. Vy	8	17.26	-411.96	-1.59
			Max. Vx	14	17.92	-2.39	-430.78
			Max. Torque	18			5.19
L12	113 - 108	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-32.52	-4.68	-3.19
			Max. Mx	8	-20.97	-499.28	-1.72

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	14	-20.89	-2.52	-521.42
			Max. Vy	8	17.69	-499.28	-1.72
			Max. Vx	14	18.35	-2.52	-521.42
			Max. Torque	18			5.19
L13	108 - 103	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.65	-4.72	-3.22
			Max. Mx	8	-21.90	-588.77	-1.85
			Max. My	14	-21.82	-2.65	-614.21
			Max. Vy	8	18.13	-588.77	-1.85
			Max. Vx	14	18.78	-2.65	-614.21
			Max. Torque	18			5.19
L14	103 - 98	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.83	-4.76	-3.25
			Max. Mx	8	-22.85	-680.43	-1.97
			Max. My	14	-22.78	-2.77	-709.16
			Max. Vy	8	18.56	-680.43	-1.97
			Max. Vx	14	19.22	-2.77	-709.16
			Max. Torque	18			5.18
L15	98 - 93	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.19	-4.77	-3.25
			Max. Mx	8	-23.14	-708.35	-2.01
			Max. My	14	-23.07	-2.81	-738.07
			Max. Vy	8	18.70	-708.35	-2.01
			Max. Vx	14	19.35	-2.81	-738.07
			Max. Torque	18			5.18
L16	93 - 92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.21	-4.80	-3.27
			Max. Mx	8	-24.80	-793.53	-2.12
			Max. My	14	-24.73	-2.92	-826.20
			Max. Vy	8	19.17	-793.53	-2.12
			Max. Vx	14	19.83	-2.92	-826.20
			Max. Torque	18			5.18
L17	92 - 87	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.71	-4.83	-3.30
			Max. Mx	8	-26.05	-890.50	-2.24
			Max. My	14	-25.99	-3.04	-926.45
			Max. Vy	8	19.64	-890.50	-2.24
			Max. Vx	14	20.29	-3.04	-926.45
			Max. Torque	18			5.18
L18	87 - 82	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.23	-4.86	-3.32
			Max. Mx	8	-27.33	-989.78	-2.36
			Max. My	14	-27.26	-3.16	-1029.02
			Max. Vy	8	20.10	-989.78	-2.36
			Max. Vx	14	20.75	-3.16	-1029.02
			Max. Torque	18			5.18
L19	82 - 77.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.62	-4.88	-3.33
			Max. Mx	8	-28.49	-1081.12	-2.46
			Max. My	14	-28.43	-3.26	-1123.29
			Max. Vy	8	20.52	-1081.12	-2.46
			Max. Vx	14	21.17	-3.26	-1123.29
			Max. Torque	18			5.18
L20	77.5 - 72.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.29	-4.90	-3.35
			Max. Mx	8	-29.92	-1184.82	-2.57
			Max. My	14	-29.87	-3.38	-1230.25
			Max. Vy	8	20.99	-1184.82	-2.57
			Max. Vx	14	21.64	-3.38	-1230.25
			Max. Torque	18			5.18
L21	72.5 - 67.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.06	-4.92	-3.36
			Max. Mx	8	-31.37	-1290.89	-2.69
			Max. My	14	-31.32	-3.49	-1339.56
			Max. Vy	8	21.46	-1290.89	-2.69
			Max. Vx	14	22.11	-3.49	-1339.56
			Max. Torque	18			5.17
L22	67.5 - 67.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.21	-4.93	-3.36

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-31.50	-1299.91	-2.69
			Max. My	14	-31.45	-3.50	-1348.85
			Max. Vy	8	21.50	-1299.91	-2.69
			Max. Vx	14	22.14	-3.50	-1348.85
			Max. Torque	18			5.17
L23	67.08 - 66.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.33	-4.93	-3.36
			Max. Mx	8	-31.60	-1305.28	-2.70
			Max. My	14	-31.55	-3.50	-1354.39
			Max. Vy	8	21.52	-1305.28	-2.70
			Max. Vx	14	22.17	-3.50	-1354.39
			Max. Torque	18			5.17
L24	66.83 - 66.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.56	-4.93	-3.36
			Max. Mx	8	-31.79	-1316.05	-2.71
			Max. My	14	-31.75	-3.51	-1365.48
			Max. Vy	8	21.57	-1316.05	-2.71
			Max. Vx	14	22.22	-3.51	-1365.48
			Max. Torque	18			5.17
L25	66.33 - 66.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.68	-4.93	-3.37
			Max. Mx	8	-31.89	-1321.45	-2.72
			Max. My	14	-31.85	-3.52	-1371.04
			Max. Vy	8	21.60	-1321.45	-2.72
			Max. Vx	14	22.24	-3.52	-1371.04
			Max. Torque	18			5.17
L26	66.08 - 57.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.69	-4.93	-3.36
			Max. Mx	8	-33.58	-1415.92	-2.81
			Max. My	14	-33.53	-3.62	-1468.30
			Max. Vy	8	22.05	-1415.92	-2.81
			Max. Vx	14	22.70	-3.62	-1468.30
			Max. Torque	18			5.17
L27	57.5 - 56.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.75	-4.93	-3.37
			Max. Mx	8	-37.08	-1527.65	-2.92
			Max. My	14	-37.04	-3.73	-1583.28
			Max. Vy	8	22.65	-1527.65	-2.92
			Max. Vx	14	23.30	-3.73	-1583.28
			Max. Torque	18			5.17
L28	56.75 - 51.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.09	-4.93	-3.36
			Max. Mx	8	-39.06	-1642.06	-3.03
			Max. My	14	-39.02	-3.84	-1700.92
			Max. Vy	8	23.14	-1642.06	-3.03
			Max. Vx	14	23.78	-3.84	-1700.92
			Max. Torque	18			5.17
L29	51.75 - 46.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.45	-4.93	-3.36
			Max. Mx	8	-41.07	-1758.90	-3.14
			Max. My	14	-41.03	-3.94	-1820.98
			Max. Vy	8	23.62	-1758.90	-3.14
			Max. Vx	14	24.26	-3.94	-1820.98
			Max. Torque	18			5.17
L30	46.75 - 41.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.84	-4.93	-3.36
			Max. Mx	8	-43.10	-1878.13	-3.24
			Max. My	14	-43.07	-4.05	-1943.41
			Max. Vy	8	24.09	-1878.13	-3.24
			Max. Vx	14	24.73	-4.05	-1943.41
			Max. Torque	18			5.17
L31	41.75 - 39.7	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.87	-4.93	-3.36

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Mx	8	-43.98	-1927.69	-3.29
			Max. My	14	-43.95	-4.09	-1994.29
			Max. Vy	8	24.29	-1927.69	-3.29
			Max. Vx	14	24.93	-4.09	-1994.29
			Max. Torque	18			5.17
L32	39.7 - 39.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.97	-4.93	-3.37
			Max. Mx	8	-44.07	-1932.55	-3.29
			Max. My	14	-44.04	-4.10	-1999.27
			Max. Vy	8	24.30	-1932.55	-3.29
			Max. Vx	14	24.94	-4.10	-1999.27
			Max. Torque	18			5.17
L33	39.5 - 34.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.48	-4.93	-3.37
			Max. Mx	8	-46.22	-2055.16	-3.39
			Max. My	14	-46.20	-4.20	-2125.08
			Max. Vy	8	24.77	-2055.16	-3.39
			Max. Vx	14	25.40	-4.20	-2125.08
			Max. Torque	18			5.17
L34	34.5 - 31.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-63.88	-4.94	-3.37
			Max. Mx	8	-47.42	-2123.57	-3.45
			Max. My	14	-47.40	-4.26	-2195.23
			Max. Vy	8	25.02	-2123.57	-3.45
			Max. Vx	14	25.65	-4.26	-2195.23
			Max. Torque	18			5.17
L35	31.75 - 31.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-64.02	-4.94	-3.37
			Max. Mx	8	-47.55	-2129.83	-3.46
			Max. My	14	-47.53	-4.26	-2201.64
			Max. Vy	8	25.03	-2129.83	-3.46
			Max. Vx	14	25.66	-4.26	-2201.64
			Max. Torque	18			5.17
L36	31.5 - 26.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-66.73	-4.94	-3.37
			Max. Mx	8	-49.89	-2256.06	-3.56
			Max. My	14	-49.88	-4.37	-2331.03
			Max. Vy	8	25.48	-2256.06	-3.56
			Max. Vx	14	26.11	-4.37	-2331.03
			Max. Torque	18			5.17
L37	26.5 - 21.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-69.46	-4.95	-3.38
			Max. Mx	8	-52.27	-2384.46	-3.66
			Max. My	14	-52.26	-4.47	-2462.58
			Max. Vy	8	25.91	-2384.46	-3.66
			Max. Vx	14	26.54	-4.47	-2462.58
			Max. Torque	18			5.17
L38	21.5 - 16.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.21	-4.96	-3.39
			Max. Mx	8	-54.67	-2514.94	-3.75
			Max. My	14	-54.66	-4.56	-2596.18
			Max. Vy	8	26.31	-2514.94	-3.75
			Max. Vx	14	26.93	-4.56	-2596.18
			Max. Torque	18			5.17
L39	16.5 - 9.8	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.02	-4.97	-3.39
			Max. Mx	8	-55.37	-2553.15	-3.78
			Max. My	14	-55.37	-4.59	-2635.29
			Max. Vy	8	26.43	-2553.15	-3.78
			Max. Vx	14	27.05	-4.59	-2635.29
			Max. Torque	18			5.17
L40	9.8 - 8.8	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.06	-4.98	-3.39
			Max. Mx	8	-60.76	-2719.98	-3.90
			Max. My	14	-60.76	-4.72	-2806.00
			Max. Vy	8	26.98	-2719.98	-3.90
			Max. Vx	14	27.60	-4.72	-2806.00
			Max. Torque	18			5.17
L41	8.8 - 8.25	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	-79.37	-4.98	-3.39
			Max. Mx	8	-61.04	-2734.82	-3.91
			Max. My	14	-61.03	-4.73	-2821.18
			Max. Vy	8	27.01	-2734.82	-3.91
			Max. Vx	14	27.63	-4.73	-2821.18
			Max. Torque	18			5.17
L42	8.25 - 8	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-79.51	-4.98	-3.39
			Max. Mx	8	-61.17	-2741.57	-3.92
			Max. My	14	-61.16	-4.73	-2828.08
			Max. Vy	8	27.02	-2741.57	-3.92
			Max. Vx	14	27.64	-4.73	-2828.08
			Max. Torque	18			5.17
L43	8 - 4.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.41	-4.99	-3.40
			Max. Mx	8	-62.86	-2829.77	-3.98
			Max. My	14	-62.86	-4.79	-2918.29
			Max. Vy	8	27.28	-2829.77	-3.98
			Max. Vx	14	27.89	-4.79	-2918.29
			Max. Torque	18			5.17
L44	4.75 - 4.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.59	-4.99	-3.40
			Max. Mx	8	-63.03	-2836.59	-3.98
			Max. My	14	-63.03	-4.80	-2925.26
			Max. Vy	8	27.28	-2836.59	-3.98
			Max. Vx	14	27.90	-4.80	-2925.26
			Max. Torque	18			5.17
L45	4.5 - 4.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.76	-5.00	-3.40
			Max. Mx	8	-63.20	-2843.41	-3.99
			Max. My	14	-63.19	-4.80	-2932.23
			Max. Vy	8	27.30	-2843.41	-3.99
			Max. Vx	14	27.92	-4.80	-2932.23
			Max. Torque	18			5.17
L46	4.25 - 4	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.92	-5.00	-3.41
			Max. Mx	8	-63.34	-2850.24	-3.99
			Max. My	14	-63.34	-4.81	-2939.21
			Max. Vy	8	27.32	-2850.24	-3.99
			Max. Vx	14	27.94	-4.81	-2939.21
			Max. Torque	18			5.17
L47	4 - 3.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.23	-5.00	-3.41
			Max. Mx	8	-63.62	-2863.91	-4.00
			Max. My	14	-63.62	-4.82	-2953.19
			Max. Vy	8	27.37	-2863.91	-4.00
			Max. Vx	14	27.98	-4.82	-2953.19
			Max. Torque	18			5.17
L48	3.5 - 3.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.42	-5.01	-3.41
			Max. Mx	8	-63.80	-2870.75	-4.01
			Max. My	14	-63.80	-4.82	-2960.19
			Max. Vy	8	27.38	-2870.75	-4.01
			Max. Vx	14	28.00	-4.82	-2960.19
			Max. Torque	18			5.17
L49	3.25 - 2.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.98	-5.01	-3.41
			Max. Mx	8	-64.31	-2891.31	-4.02
			Max. My	14	-64.31	-4.84	-2981.21
			Max. Vy	8	27.45	-2891.31	-4.02
			Max. Vx	14	28.07	-4.84	-2981.21
			Max. Torque	18			5.17
L50	2.5 - 2.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-83.15	-5.01	-3.41
			Max. Mx	8	-64.47	-2898.17	-4.03
			Max. My	14	-64.47	-4.84	-2988.22
			Max. Vy	8	27.47	-2898.17	-4.03
			Max. Vx	14	28.08	-4.84	-2988.22
			Max. Torque	18			5.17

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L51	2.25 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.65	-5.03	-3.42
			Max. Mx	8	-65.87	-2960.18	-4.07
			Max. My	14	-65.87	-4.88	-3051.61
			Max. Vy	8	27.66	-2960.18	-4.07
			Max. Vx	14	28.28	-4.88	-3051.61
			Max. Torque	18			5.17

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	84.65	-0.00	-0.00
	Max. H_x	20	65.88	27.65	0.02
	Max. H_z	3	49.41	0.02	28.26
	Max. M_x	2	3048.21	0.02	28.26
	Max. M_z	8	2960.18	-27.65	-0.02
	Max. Torsion	18	5.17	23.94	-14.11
	Min. Vert	19	49.41	23.94	-14.11
	Min. H_x	8	65.88	-27.65	-0.02
	Min. H_z	15	49.41	-0.02	-28.26
	Min. M_x	14	-3051.61	-0.02	-28.26
	Min. M_z	20	-2955.19	27.65	0.02
	Min. Torsion	6	-5.08	-23.94	14.11

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	54.90	0.00	0.00	1.34	-1.97	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	65.88	-0.02	-28.26	-3048.21	-0.06	3.03
0.9 Dead+1.0 Wind 0 deg - No Ice	49.41	-0.02	-28.26	-3009.66	0.58	2.98
1.2 Dead+1.0 Wind 30 deg - No Ice	65.88	13.81	-24.47	-2638.46	-1479.13	4.66
0.9 Dead+1.0 Wind 30 deg - No Ice	49.41	13.81	-24.47	-2605.15	-1459.68	4.61
1.2 Dead+1.0 Wind 60 deg - No Ice	65.88	23.94	-14.11	-1521.29	-2562.65	5.08
0.9 Dead+1.0 Wind 60 deg - No Ice	49.41	23.94	-14.11	-1502.26	-2529.40	5.03
1.2 Dead+1.0 Wind 90 deg - No Ice	65.88	27.65	0.02	4.07	-2960.18	4.17
0.9 Dead+1.0 Wind 90 deg - No Ice	49.41	27.65	0.02	3.59	-2921.86	4.14
1.2 Dead+1.0 Wind 120 deg - No Ice	65.88	23.96	14.15	1528.80	-2565.09	2.14
0.9 Dead+1.0 Wind 120 deg - No Ice	49.41	23.96	14.15	1508.81	-2531.80	2.13
1.2 Dead+1.0 Wind 150 deg - No Ice	65.88	13.84	24.49	2644.25	-1483.34	-0.50
0.9 Dead+1.0 Wind 150 deg - No Ice	49.41	13.84	24.49	2609.99	-1463.82	-0.47
1.2 Dead+1.0 Wind 180 deg - No Ice	65.88	0.02	28.26	3051.61	-4.88	-3.03
0.9 Dead+1.0 Wind 180 deg - No Ice	49.41	0.02	28.26	3012.14	-4.18	-2.98
1.2 Dead+1.0 Wind 210 deg	65.88	-13.81	24.47	2641.82	1474.22	-4.75

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
- No Ice 0.9 Dead+1.0 Wind 210 deg	49.41	-13.81	24.47	2607.60	1456.09	-4.69
- No Ice 1.2 Dead+1.0 Wind 240 deg	65.88	-23.94	14.11	1524.61	2557.71	-5.17
- No Ice 0.9 Dead+1.0 Wind 240 deg	49.41	-23.94	14.11	1504.68	2525.80	-5.11
- No Ice 1.2 Dead+1.0 Wind 270 deg	65.88	-27.65	-0.02	-0.75	2955.19	-4.17
- No Ice 0.9 Dead+1.0 Wind 270 deg	49.41	-27.65	-0.02	-1.17	2918.22	-4.14
- No Ice 1.2 Dead+1.0 Wind 300 deg	65.88	-23.96	-14.15	-1525.44	2560.07	-2.05
- No Ice 0.9 Dead+1.0 Wind 300 deg	49.41	-23.96	-14.15	-1506.37	2528.14	-2.05
- No Ice 1.2 Dead+1.0 Wind 330 deg	65.88	-13.84	-24.49	-2640.85	1478.35	0.58
- No Ice 0.9 Dead+1.0 Wind 330 deg	49.41	-13.84	-24.49	-2607.51	1460.18	0.55
- No Ice 1.2 Dead+1.0 Ice+1.0 Temp	84.65	0.00	0.00	3.42	-5.03	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	84.65	-0.00	-7.03	-791.19	-4.73	0.71
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	84.65	3.46	-6.09	-684.50	-393.63	1.10
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	84.65	5.99	-3.51	-393.46	-678.45	1.19
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	84.65	6.92	0.00	3.95	-782.86	0.97
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	84.65	6.00	3.52	401.24	-678.89	0.49
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	84.65	3.46	6.09	691.97	-394.39	-0.13
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	84.65	0.00	7.03	798.22	-5.60	-0.71
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	84.65	-3.46	6.09	691.53	383.31	-1.10
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	84.65	-5.99	3.51	400.49	668.12	-1.20
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	84.65	-6.92	-0.00	3.08	772.53	-0.97
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	84.65	-6.00	-3.52	-394.22	668.55	-0.48
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	84.65	-3.46	-6.09	-684.94	384.06	0.13
Dead+Wind 0 deg - Service	54.90	-0.00	-6.67	-714.18	-1.49	0.71
Dead+Wind 30 deg - Service	54.90	3.26	-5.78	-618.03	-348.57	1.11
Dead+Wind 60 deg - Service	54.90	5.65	-3.33	-355.91	-602.80	1.21
Dead+Wind 90 deg - Service	54.90	6.53	0.00	1.96	-696.06	0.98
Dead+Wind 120 deg - Service	54.90	5.66	3.34	359.68	-603.36	0.50
Dead+Wind 150 deg - Service	54.90	3.27	5.78	621.39	-349.54	-0.12
Dead+Wind 180 deg - Service	54.90	0.00	6.67	716.98	-2.61	-0.71
Dead+Wind 210 deg - Service	54.90	-3.26	5.78	620.83	344.47	-1.11
Dead+Wind 240 deg - Service	54.90	-5.65	3.33	358.70	598.70	-1.21
Dead+Wind 270 deg - Service	54.90	-6.53	-0.00	0.83	691.96	-0.98
Dead+Wind 300 deg - Service	54.90	-5.66	-3.34	-356.88	599.26	-0.50
Dead+Wind 330 deg - Service	54.90	-3.27	-5.78	-618.60	345.44	0.13

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	-54.90	0.00	-0.00	54.90	0.00	0.000%
2	-0.02	-65.88	-28.26	0.02	65.88	28.26	0.000%
3	-0.02	-49.41	-28.26	0.02	49.41	28.26	0.000%
4	13.81	-65.88	-24.47	-13.81	65.88	24.47	0.000%
5	13.81	-49.41	-24.47	-13.81	49.41	24.47	0.000%
6	23.94	-65.88	-14.11	-23.94	65.88	14.11	0.000%
7	23.94	-49.41	-14.11	-23.94	49.41	14.11	0.000%
8	27.65	-65.88	0.02	-27.65	65.88	-0.02	0.000%
9	27.65	-49.41	0.02	-27.65	49.41	-0.02	0.000%
10	23.96	-65.88	14.15	-23.96	65.88	-14.15	0.000%
11	23.96	-49.41	14.15	-23.96	49.41	-14.15	0.000%
12	13.84	-65.88	24.49	-13.84	65.88	-24.49	0.000%
13	13.84	-49.41	24.49	-13.84	49.41	-24.49	0.000%
14	0.02	-65.88	28.26	-0.02	65.88	-28.26	0.000%
15	0.02	-49.41	28.26	-0.02	49.41	-28.26	0.000%
16	-13.81	-65.88	24.47	13.81	65.88	-24.47	0.000%
17	-13.81	-49.41	24.47	13.81	49.41	-24.47	0.000%
18	-23.94	-65.88	14.11	23.94	65.88	-14.11	0.000%
19	-23.94	-49.41	14.11	23.94	49.41	-14.11	0.000%
20	-27.65	-65.88	-0.02	27.65	65.88	0.02	0.000%
21	-27.65	-49.41	-0.02	27.65	49.41	0.02	0.000%
22	-23.96	-65.88	-14.15	23.96	65.88	14.15	0.000%
23	-23.96	-49.41	-14.15	23.96	49.41	14.15	0.000%
24	-13.84	-65.88	-24.49	13.84	65.88	24.49	0.000%
25	-13.84	-49.41	-24.49	13.84	49.41	24.49	0.000%
26	0.00	-84.65	0.00	-0.00	84.65	-0.00	0.000%
27	-0.00	-84.65	-7.03	0.00	84.65	7.03	0.000%
28	3.46	-84.65	-6.09	-3.46	84.65	6.09	0.000%
29	5.99	-84.65	-3.51	-5.99	84.65	3.51	0.000%
30	6.92	-84.65	0.00	-6.92	84.65	-0.00	0.000%
31	6.00	-84.65	3.52	-6.00	84.65	-3.52	0.000%
32	3.46	-84.65	6.09	-3.46	84.65	-6.09	0.000%
33	0.00	-84.65	7.03	-0.00	84.65	-7.03	0.000%
34	-3.46	-84.65	6.09	3.46	84.65	-6.09	0.000%
35	-5.99	-84.65	3.51	5.99	84.65	-3.51	0.000%
36	-6.92	-84.65	-0.00	6.92	84.65	0.00	0.000%
37	-6.00	-84.65	-3.52	6.00	84.65	3.52	0.000%
38	-3.46	-84.65	-6.09	3.46	84.65	6.09	0.000%
39	-0.00	-54.90	-6.67	0.00	54.90	6.67	0.000%
40	3.26	-54.90	-5.78	-3.26	54.90	5.78	0.000%
41	5.65	-54.90	-3.33	-5.65	54.90	3.33	0.000%
42	6.53	-54.90	0.00	-6.53	54.90	-0.00	0.000%
43	5.66	-54.90	3.34	-5.66	54.90	-3.34	0.000%
44	3.27	-54.90	5.78	-3.27	54.90	-5.78	0.000%
45	0.00	-54.90	6.67	-0.00	54.90	-6.67	0.000%
46	-3.26	-54.90	5.78	3.26	54.90	-5.78	0.000%
47	-5.65	-54.90	3.33	5.65	54.90	-3.33	0.000%
48	-6.53	-54.90	-0.00	6.53	54.90	0.00	0.000%
49	-5.66	-54.90	-3.34	5.66	54.90	3.34	0.000%
50	-3.27	-54.90	-5.78	3.27	54.90	5.78	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000358
2	Yes	6	0.00000001	0.00011271
3	Yes	5	0.00000001	0.00082770
4	Yes	6	0.00000001	0.00089568
5	Yes	6	0.00000001	0.00031927
6	Yes	6	0.00000001	0.00070396
7	Yes	6	0.00000001	0.00024707
8	Yes	6	0.00000001	0.00015639
9	Yes	6	0.00000001	0.00005831

10	Yes	6	0.00000001	0.00082602
11	Yes	6	0.00000001	0.00029281
12	Yes	6	0.00000001	0.00080323
13	Yes	6	0.00000001	0.00028263
14	Yes	6	0.00000001	0.00011611
15	Yes	5	0.00000001	0.00085204
16	Yes	6	0.00000001	0.00070327
17	Yes	6	0.00000001	0.00024618
18	Yes	6	0.00000001	0.00088482
19	Yes	6	0.00000001	0.00031678
20	Yes	6	0.00000001	0.00015284
21	Yes	6	0.00000001	0.00005708
22	Yes	6	0.00000001	0.00073592
23	Yes	6	0.00000001	0.00025942
24	Yes	6	0.00000001	0.00077086
25	Yes	6	0.00000001	0.00027216
26	Yes	4	0.00000001	0.00072546
27	Yes	6	0.00000001	0.00039153
28	Yes	6	0.00000001	0.00043696
29	Yes	6	0.00000001	0.00042816
30	Yes	6	0.00000001	0.00039386
31	Yes	6	0.00000001	0.00043916
32	Yes	6	0.00000001	0.00044178
33	Yes	6	0.00000001	0.00040081
34	Yes	6	0.00000001	0.00042875
35	Yes	6	0.00000001	0.00042891
36	Yes	6	0.00000001	0.00038037
37	Yes	6	0.00000001	0.00041528
38	Yes	6	0.00000001	0.00042092
39	Yes	5	0.00000001	0.00008894
40	Yes	5	0.00000001	0.00024553
41	Yes	5	0.00000001	0.00016046
42	Yes	5	0.00000001	0.00011686
43	Yes	5	0.00000001	0.00019545
44	Yes	5	0.00000001	0.00017390
45	Yes	5	0.00000001	0.00009044
46	Yes	5	0.00000001	0.00015023
47	Yes	5	0.00000001	0.00024489
48	Yes	5	0.00000001	0.00011444
49	Yes	5	0.00000001	0.00014316
50	Yes	5	0.00000001	0.00015310

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	156 - 151	20.409	45	1.2480	0.0149
L2	151 - 146	19.103	45	1.2476	0.0149
L3	146 - 144	17.799	45	1.2375	0.0149
L4	144 - 139	17.283	45	1.2257	0.0149
L5	139 - 134	16.007	45	1.2081	0.0137
L6	134 - 129	14.761	45	1.1680	0.0110
L7	129 - 128.25	13.567	45	1.1112	0.0087
L8	128.25 - 128	13.393	45	1.1012	0.0083
L9	128 - 123	13.335	45	1.0997	0.0083
L10	123 - 118	12.202	45	1.0639	0.0074
L11	118 - 113	11.110	45	1.0212	0.0065
L12	113 - 108	10.067	45	0.9707	0.0057
L13	108 - 103	9.079	45	0.9146	0.0049
L14	103 - 98	8.153	45	0.8536	0.0042
L15	98 - 93	7.293	45	0.7895	0.0036
L16	96.5 - 92	7.048	45	0.7696	0.0034
L17	92 - 87	6.335	45	0.7393	0.0032
L18	87 - 82	5.588	45	0.6863	0.0028
L19	82 - 77.5	4.899	45	0.6311	0.0024
L20	77.5 - 72.5	4.328	45	0.5804	0.0021
L21	72.5 - 67.5	3.747	45	0.5280	0.0018

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L22	67.5 - 67.08	3.222	45	0.4760	0.0015
L23	67.08 - 66.83	3.180	45	0.4716	0.0015
L24	66.83 - 66.33	3.155	45	0.4697	0.0015
L25	66.33 - 66.08	3.106	45	0.4659	0.0015
L26	66.08 - 57.5	3.082	45	0.4640	0.0015
L27	61.75 - 56.75	2.676	45	0.4309	0.0013
L28	56.75 - 51.75	2.236	45	0.4082	0.0012
L29	51.75 - 46.75	1.830	45	0.3671	0.0011
L30	46.75 - 41.75	1.467	45	0.3262	0.0009
L31	41.75 - 39.7	1.146	45	0.2854	0.0008
L32	39.7 - 39.5	1.027	45	0.2690	0.0007
L33	39.5 - 34.5	1.016	45	0.2674	0.0007
L34	34.5 - 31.75	0.757	45	0.2271	0.0006
L35	31.75 - 31.5	0.633	45	0.2049	0.0005
L36	31.5 - 26.5	0.622	45	0.2030	0.0005
L37	26.5 - 21.5	0.429	45	0.1657	0.0004
L38	21.5 - 16.5	0.275	45	0.1282	0.0003
L39	16.5 - 9.8	0.161	45	0.0913	0.0002
L40	15.05 - 8.8	0.134	45	0.0806	0.0002
L41	8.8 - 8.25	0.045	45	0.0531	0.0001
L42	8.25 - 8	0.039	45	0.0489	0.0001
L43	8 - 4.75	0.036	45	0.0471	0.0001
L44	4.75 - 4.5	0.012	45	0.0242	0.0001
L45	4.5 - 4.25	0.011	45	0.0229	0.0001
L46	4.25 - 4	0.010	45	0.0216	0.0000
L47	4 - 3.5	0.008	45	0.0202	0.0000
L48	3.5 - 3.25	0.006	45	0.0174	0.0000
L49	3.25 - 2.5	0.006	45	0.0162	0.0000
L50	2.5 - 2.25	0.003	45	0.0127	0.0000
L51	2.25 - 0	0.003	45	0.0114	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	NNVV-65B-R4 w/ Mount Pipe	45	18.841	1.2473	0.0149	45858
144.00	Top Bridge	45	17.283	1.2257	0.0149	14526
141.00	Site Pro 1 F4P-12W 12' Fortress Quad Platform	45	16.515	1.2154	0.0144	11980
131.00	Commscope MC-PK8-DSH	45	14.037	1.1377	0.0096	5167
120.00	Platform Mount [LP 1201-1]	45	11.541	1.0390	0.0069	6545

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	156 - 151	86.686	14	5.2828	0.0631
L2	151 - 146	81.162	14	5.2817	0.0631
L3	146 - 144	75.652	14	5.2398	0.0631
L4	144 - 139	73.470	14	5.1907	0.0632
L5	139 - 134	68.072	14	5.1189	0.0583
L6	134 - 129	62.796	14	4.9567	0.0468
L7	129 - 128.25	57.728	14	4.7218	0.0369
L8	128.25 - 128	56.990	14	4.6804	0.0355
L9	128 - 123	56.746	14	4.6739	0.0353
L10	123 - 118	51.932	14	4.5241	0.0315
L11	118 - 113	47.291	14	4.3440	0.0279
L12	113 - 108	42.856	14	4.1309	0.0243
L13	108 - 103	38.657	14	3.8930	0.0210

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L14	103 - 98	34.717	14	3.6345	0.0180
L15	98 - 93	31.055	14	3.3620	0.0153
L16	96.5 - 92	30.013	14	3.2776	0.0146
L17	92 - 87	26.978	14	3.1487	0.0135
L18	87 - 82	23.800	14	2.9233	0.0118
L19	82 - 77.5	20.863	14	2.6883	0.0102
L20	77.5 - 72.5	18.432	14	2.4725	0.0089
L21	72.5 - 67.5	15.960	14	2.2495	0.0077
L22	67.5 - 67.08	13.722	14	2.0277	0.0066
L23	67.08 - 66.83	13.544	14	2.0089	0.0065
L24	66.83 - 66.33	13.439	14	2.0009	0.0064
L25	66.33 - 66.08	13.230	14	1.9848	0.0063
L26	66.08 - 57.5	13.127	14	1.9767	0.0063
L27	61.75 - 56.75	11.399	14	1.8356	0.0057
L28	56.75 - 51.75	9.521	14	1.7389	0.0052
L29	51.75 - 46.75	7.792	14	1.5640	0.0045
L30	46.75 - 41.75	6.246	14	1.3895	0.0039
L31	41.75 - 39.7	4.882	14	1.2156	0.0033
L32	39.7 - 39.5	4.375	14	1.1460	0.0031
L33	39.5 - 34.5	4.327	14	1.1391	0.0030
L34	34.5 - 31.75	3.225	14	0.9671	0.0025
L35	31.75 - 31.5	2.695	14	0.8725	0.0022
L36	31.5 - 26.5	2.650	14	0.8647	0.0022
L37	26.5 - 21.5	1.828	14	0.7059	0.0017
L38	21.5 - 16.5	1.172	14	0.5459	0.0013
L39	16.5 - 9.8	0.683	14	0.3888	0.0009
L40	15.05 - 8.8	0.572	14	0.3432	0.0008
L41	8.8 - 8.25	0.190	14	0.2262	0.0005
L42	8.25 - 8	0.165	14	0.2082	0.0005
L43	8 - 4.75	0.154	14	0.2007	0.0004
L44	4.75 - 4.5	0.051	14	0.1030	0.0002
L45	4.5 - 4.25	0.046	14	0.0974	0.0002
L46	4.25 - 4	0.041	14	0.0918	0.0002
L47	4 - 3.5	0.036	14	0.0859	0.0002
L48	3.5 - 3.25	0.028	14	0.0739	0.0002
L49	3.25 - 2.5	0.024	14	0.0690	0.0001
L50	2.5 - 2.25	0.014	14	0.0542	0.0001
L51	2.25 - 0	0.011	14	0.0487	0.0001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.00	NNVV-65B-R4 w/ Mount Pipe	14	80.057	5.2802	0.0630	11387
144.00	Top Bridge	14	73.470	5.1907	0.0632	3571
141.00	Site Pro 1 F4P-12W 12' Fortress Quad Platform	14	70.220	5.1481	0.0613	3082
131.00	Commscope MC-PK8-DSH	14	59.725	4.8321	0.0408	1275
120.00	Platform Mount [LP 1201-1]	14	49.125	4.4192	0.0293	1571

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$

Section No.	Elevation	Size	L	L_u	Kl/r	A	P_u	ϕP_n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in^2	K	K	
L1	156 - 151 (1)	TP10.75x10.75x0.375	5.00	0.00	0.0	12.2228	-0.24	385.02	0.001
L2	151 - 146 (2)	TP10.75x10.75x0.375	5.00	0.00	0.0	12.2228	-2.19	385.02	0.006
L3	146 - 144 (3)	TP10.75x10.75x0.375	2.00	0.00	0.0	12.2228	-2.29	385.02	0.006
L4	144 - 139 (4)	TP18.9435x18x0.25	5.00	0.00	0.0	15.0483	-10.92	487.57	0.022
L5	139 - 134 (5)	TP19.8871x18.9435x0.25	5.00	0.00	0.0	15.8078	-11.31	512.17	0.022
L6	134 - 129 (6)	TP20.8306x19.8871x0.25	5.00	0.00	0.0	16.5674	-14.70	536.78	0.027
L7	129 - 128.25 (7)	TP20.9721x20.8306x0.25	0.75	0.00	0.0	16.6813	-14.77	540.47	0.027
L8	128.25 - 128 (8)	TP21.0193x20.9721x0.575	0.25	0.00	0.0	37.8526	-14.82	1226.42	0.012
L9	128 - 123 (9)	TP21.9628x21.0193x0.5625	5.00	0.00	0.0	38.7613	-15.63	1255.87	0.012
L10	123 - 118 (10)	TP22.9064x21.9628x0.55	5.00	0.00	0.0	39.5931	-19.10	1282.82	0.015
L11	118 - 113 (11)	TP23.8499x22.9064x0.525	5.00	0.00	0.0	39.4307	-19.98	1277.56	0.016
L12	113 - 108 (12)	TP24.7934x23.8499x0.5125	5.00	0.00	0.0	40.0696	-20.89	1298.25	0.016
L13	108 - 103 (13)	TP25.7369x24.7934x0.5	5.00	0.00	0.0	40.6315	-21.82	1316.46	0.017
L14	103 - 98 (14)	TP26.6805x25.7369x0.4938	5.00	0.00	0.0	41.6336	-22.78	1348.93	0.017
L15	98 - 93 (15)	TP27.624x26.6805x0.4875	5.00	0.00	0.0	41.5607	-23.07	1346.57	0.017
L16	93 - 92 (16)	TP27.313x26.4635x0.7	4.50	0.00	0.0	59.9856	-24.73	1943.53	0.013
L17	92 - 87 (17)	TP28.2568x27.313x0.675	5.00	0.00	0.0	59.9490	-25.99	1942.35	0.013
L18	87 - 82 (18)	TP29.2006x28.2568x0.65	5.00	0.00	0.0	59.7563	-27.26	1936.11	0.014
L19	82 - 77.5 (19)	TP30.05x29.2006x0.6375	4.50	0.00	0.0	60.3765	-28.43	1956.20	0.015
L20	77.5 - 72.5 (20)	TP30.9935x30.05x0.6875	5.00	0.00	0.0	67.0899	-29.87	2173.71	0.014
L21	72.5 - 67.5 (21)	TP31.937x30.9935x0.6875	5.00	0.00	0.0	69.1786	-31.32	2241.39	0.014
L22	67.5 - 67.08 (22)	TP32.0163x31.937x0.675	0.42	0.00	0.0	68.1202	-31.45	2207.10	0.014
L23	67.08 - 66.83 (23)	TP32.0634x32.0163x0.975	0.25	0.00	0.0	97.6021	-31.55	3162.31	0.010
L24	66.83 - 66.33 (24)	TP32.1578x32.0634x0.9625	0.50	0.00	0.0	96.6820	-31.75	3132.50	0.010
L25	66.33 - 66.08 (25)	TP32.205x32.1578x0.9625	0.25	0.00	0.0	96.8282	-31.85	3137.23	0.010
L26	66.08 - 57.5 (26)	TP33.824x32.205x0.95	8.58	0.00	0.0	98.1083	-33.53	3178.71	0.011
L27	57.5 - 56.75 (27)	TP33.3405x32.397x0.9375	5.00	0.00	0.0	97.8166	-37.04	3169.26	0.012
L28	56.75 - 51.75 (28)	TP34.284x33.3405x0.9125	5.00	0.00	0.0	98.0539	-39.02	3176.95	0.012
L29	51.75 - 46.75 (29)	TP35.2275x34.284x0.9	5.00	0.00	0.0	99.4812	-41.03	3223.19	0.013
L30	46.75 - 41.75 (30)	TP36.171x35.2275x0.8875	5.00	0.00	0.0	100.8320	-43.07	3266.94	0.013
L31	41.75 - 39.7 (31)	TP36.5579x36.171x0.9	2.05	0.00	0.0	103.3370	-43.95	3348.10	0.013
L32	39.7 - 39.5 (32)	TP36.5956x36.5579x0.8875	0.20	0.00	0.0	102.0450	-44.04	3306.25	0.013
L33	39.5 - 34.5 (33)	TP37.5393x36.5956x0.875	5.00	0.00	0.0	103.3020	-46.20	3346.97	0.014
L34	34.5 - 31.75 (34)	TP38.0583x37.5393x0.8625	2.75	0.00	0.0	103.3020	-47.40	3346.99	0.014
L35	31.75 - 31.5	TP38.1055x38.0583x0.95	0.25	0.00	0.0	113.65	-47.53	3682.54	0.013

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	(35)					90			
L36	31.5 - 26.5 (36)	TP39.0492x38.1055x0.925	5.00	0.00	0.0	113.5530	-49.88	3679.11	0.014
L37	26.5 - 21.5 (37)	TP39.9928x39.0492x0.9	5.00	0.00	0.0	113.2910	-52.26	3670.63	0.014
L38	21.5 - 16.5 (38)	TP40.9365x39.9928x0.9	5.00	0.00	0.0	116.0260	-54.66	3759.23	0.015
L39	16.5 - 9.8 (39)	TP42.201x40.9365x0.8875	6.70	0.00	0.0	115.2320	-55.37	3733.52	0.015
L40	9.8 - 8.8 (40)	TP41.6395x40.4602x0.875	6.25	0.00	0.0	114.8540	-60.76	3721.27	0.016
L41	8.8 - 8.25 (41)	TP41.7433x41.6395x0.875	0.55	0.00	0.0	115.1460	-61.03	3730.74	0.016
L42	8.25 - 8 (42)	TP41.7904x41.7433x0.95	0.25	0.00	0.0	124.9310	-61.16	4047.76	0.015
L43	8 - 4.75 (43)	TP42.4037x41.7904x0.95	3.25	0.00	0.0	126.8070	-62.86	4108.54	0.015
L44	4.75 - 4.5 (44)	TP42.4509x42.4037x1.3	0.25	0.00	0.0	172.2580	-63.03	5581.15	0.011
L45	4.5 - 4.25 (45)	TP42.498x42.4509x1.3	0.25	0.00	0.0	172.4550	-63.19	5587.54	0.011
L46	4.25 - 4 (46)	TP42.5452x42.498x1.2	0.25	0.00	0.0	159.7580	-63.34	5176.16	0.012
L47	4 - 3.5 (47)	TP42.6396x42.5452x1.2	0.50	0.00	0.0	160.1220	-63.62	5187.97	0.012
L48	3.5 - 3.25 (48)	TP42.6867x42.6396x1.475	0.25	0.00	0.0	195.7350	-63.80	6341.82	0.010
L49	3.25 - 2.5 (49)	TP42.8283x42.6867x1.475	0.75	0.00	0.0	196.4070	-64.31	6363.60	0.010
L50	2.5 - 2.25 (50)	TP42.8754x42.8283x1.325	0.25	0.00	0.0	177.2750	-64.47	5743.71	0.011
L51	2.25 - 0 (51)	TP43.3x42.8754x1.325	2.25	0.00	0.0	179.0860	-65.87	5802.40	0.011

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	156 - 151 (1)	TP10.75x10.75x0.375	0.39	106.01	0.004	0.00	106.01	0.000
L2	151 - 146 (2)	TP10.75x10.75x0.375	11.40	106.01	0.108	0.00	106.01	0.000
L3	146 - 144 (3)	TP10.75x10.75x0.375	17.01	106.01	0.160	0.00	106.01	0.000
L4	144 - 139 (4)	TP18.9435x18x0.25	56.52	232.70	0.243	0.00	232.70	0.000
L5	139 - 134 (5)	TP19.8871x18.9435x0.25	109.77	256.95	0.427	0.00	256.95	0.000
L6	134 - 129 (6)	TP20.8306x19.8871x0.25	171.77	282.40	0.608	0.00	282.40	0.000
L7	129 - 128.25 (7)	TP20.9721x20.8306x0.25	182.81	286.32	0.639	0.00	286.32	0.000
L8	128.25 - 128 (8)	TP21.0193x20.9721x0.575	186.50	630.98	0.296	0.00	630.98	0.000
L9	128 - 123 (9)	TP21.9628x21.0193x0.5625	261.45	677.55	0.386	0.00	677.55	0.000
L10	123 - 118 (10)	TP22.9064x21.9628x0.55	342.32	724.20	0.473	0.00	724.20	0.000
L11	118 - 113 (11)	TP23.8499x22.9064x0.525	430.79	754.01	0.571	0.00	754.01	0.000
L12	113 - 108 (12)	TP24.7934x23.8499x0.5125	521.42	798.73	0.653	0.00	798.73	0.000
L13	108 - 103 (13)	TP25.7369x24.7934x0.5	614.22	842.88	0.729	0.00	842.88	0.000
L14	103 - 98 (14)	TP26.6805x25.7369x0.4938	709.16	897.02	0.791	0.00	897.02	0.000
L15	98 - 93 (15)	TP27.624x26.6805x0.4875	738.07	905.74	0.815	0.00	905.74	0.000
L16	93 - 92 (16)	TP27.313x26.4635x0.7	826.20	1303.93	0.634	0.00	1303.93	0.000
L17	92 - 87 (17)	TP28.2568x27.313x0.675	926.46	1352.99	0.685	0.00	1352.99	0.000
L18	87 - 82 (18)	TP29.2006x28.2568x0.65	1029.03	1398.34	0.736	0.00	1398.34	0.000
L19	82 - 77.5 (19)	TP30.05x29.2006x0.6375	1123.29	1457.06	0.771	0.00	1457.06	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L20	77.5 - 72.5 (20)	TP30.9935x30.05x0.6875	1230.25	1666.61	0.738	0.00	1666.61	0.000
L21	72.5 - 67.5 (21)	TP31.937x30.9935x0.6875	1339.57	1773.18	0.755	0.00	1773.18	0.000
L22	67.5 - 67.08 (22)	TP32.0163x31.937x0.675	1348.86	1751.97	0.770	0.00	1751.97	0.000
L23	67.08 - 66.83 (23)	TP32.0634x32.0163x0.975	1354.39	2466.25	0.549	0.00	2466.25	0.000
L24	66.83 - 66.33 (24)	TP32.1578x32.0634x0.9625	1365.48	2452.61	0.557	0.00	2452.61	0.000
L25	66.33 - 66.08 (25)	TP32.205x32.1578x0.9625	1371.04	2460.14	0.557	0.00	2460.14	0.000
L26	66.08 - 57.5 (26)	TP33.824x32.205x0.95	1468.31	2561.80	0.573	0.00	2561.80	0.000
L27	57.5 - 56.75 (27)	TP33.3405x32.397x0.9375	1583.28	2582.28	0.613	0.00	2582.28	0.000
L28	56.75 - 51.75 (28)	TP34.284x33.3405x0.9125	1700.93	2670.03	0.637	0.00	2670.03	0.000
L29	51.75 - 46.75 (29)	TP35.2275x34.284x0.9	1820.98	2789.55	0.653	0.00	2789.55	0.000
L30	46.75 - 41.75 (30)	TP36.171x35.2275x0.8875	1943.42	2909.18	0.668	0.00	2909.18	0.000
L31	41.75 - 39.7 (31)	TP36.5579x36.171x0.9	1994.29	3012.82	0.662	0.00	3012.82	0.000
L32	39.7 - 39.5 (32)	TP36.5956x36.5579x0.8875	1999.28	2980.48	0.671	0.00	2980.48	0.000
L33	39.5 - 34.5 (33)	TP37.5393x36.5956x0.875	2125.08	3100.97	0.685	0.00	3100.97	0.000
L34	34.5 - 31.75 (34)	TP38.0583x37.5393x0.8625	2195.23	3148.03	0.697	0.00	3148.03	0.000
L35	31.75 - 31.5 (35)	TP38.1055x38.0583x0.95	2201.65	3451.84	0.638	0.00	3451.84	0.000
L36	31.5 - 26.5 (36)	TP39.0492x38.1055x0.925	2331.03	3543.05	0.658	0.00	3543.05	0.000
L37	26.5 - 21.5 (37)	TP39.9928x39.0492x0.9	2462.58	3629.09	0.679	0.00	3629.09	0.000
L38	21.5 - 16.5 (38)	TP40.9365x39.9928x0.9	2596.18	3808.43	0.682	0.00	3808.43	0.000
L39	16.5 - 9.8 (39)	TP42.201x40.9365x0.8875	2635.29	3811.17	0.691	0.00	3811.17	0.000
L40	9.8 - 8.8 (40)	TP41.6395x40.4602x0.875	2806.00	3842.33	0.730	0.00	3842.33	0.000
L41	8.8 - 8.25 (41)	TP41.7433x41.6395x0.875	2821.18	3862.13	0.730	0.00	3862.13	0.000
L42	8.25 - 8 (42)	TP41.7904x41.7433x0.95	2828.09	4179.88	0.677	0.00	4179.88	0.000
L43	8 - 4.75 (43)	TP42.4037x41.7904x0.95	2918.29	4307.81	0.677	0.00	4307.81	0.000
L44	4.75 - 4.5 (44)	TP42.4509x42.4037x1.3	2925.26	5760.23	0.508	0.00	5760.23	0.000
L45	4.5 - 4.25 (45)	TP42.498x42.4509x1.3	2932.24	5773.65	0.508	0.00	5773.65	0.000
L46	4.25 - 4 (46)	TP42.5452x42.498x1.2	2939.22	5380.88	0.546	0.00	5380.88	0.000
L47	4 - 3.5 (47)	TP42.6396x42.5452x1.2	2953.19	5405.81	0.546	0.00	5405.81	0.000
L48	3.5 - 3.25 (48)	TP42.6867x42.6396x1.475	2960.19	6528.42	0.453	0.00	6528.42	0.000
L49	3.25 - 2.5 (49)	TP42.8283x42.6867x1.475	2981.21	6574.12	0.453	0.00	6574.12	0.000
L50	2.5 - 2.25 (50)	TP42.8754x42.8283x1.325	2988.22	5983.85	0.499	0.00	5983.85	0.000
L51	2.25 - 0 (51)	TP43.3x42.8754x1.325	3051.61	6108.67	0.500	0.00	6108.67	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	156 - 151 (1)	TP10.75x10.75x0.375	0.16	115.51	0.001	0.00	105.36	0.000
L2	151 - 146 (2)	TP10.75x10.75x0.375	2.77	115.51	0.024	0.00	105.36	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L3	146 - 144 (3)	TP10.75x10.75x0.375	2.83	115.51	0.025	0.00	105.36	0.000
L4	144 - 139 (4)	TP18.9435x18x0.25	10.46	146.27	0.072	2.43	240.52	0.010
L5	139 - 134 (5)	TP19.8871x18.9435x0.25	10.85	153.65	0.071	2.43	265.41	0.009
L6	134 - 129 (6)	TP20.8306x19.8871x0.25	14.70	161.04	0.091	2.43	291.53	0.008
L7	129 - 128.25 (7)	TP20.9721x20.8306x0.25	14.76	162.14	0.091	2.43	295.55	0.008
L8	128.25 - 128 (8)	TP21.0193x20.9721x0.575	14.77	367.93	0.040	2.43	661.66	0.004
L9	128 - 123 (9)	TP21.9628x21.0193x0.5625	15.21	376.76	0.040	2.43	709.23	0.003
L10	123 - 118 (10)	TP22.9064x21.9628x0.55	17.48	384.85	0.045	3.04	756.81	0.004
L11	118 - 113 (11)	TP23.8499x22.9064x0.525	17.92	383.27	0.047	3.04	786.36	0.004
L12	113 - 108 (12)	TP24.7934x23.8499x0.5125	18.35	389.48	0.047	3.04	831.85	0.004
L13	108 - 103 (13)	TP25.7369x24.7934x0.5	18.78	394.94	0.048	3.04	876.73	0.003
L14	103 - 98 (14)	TP26.6805x25.7369x0.4938	19.22	404.68	0.047	3.04	932.16	0.003
L15	98 - 93 (15)	TP27.624x26.6805x0.4875	19.35	403.97	0.048	3.04	940.81	0.003
L16	93 - 92 (16)	TP27.313x26.4635x0.7	19.83	583.06	0.034	3.04	1364.92	0.002
L17	92 - 87 (17)	TP28.2568x27.313x0.675	20.29	582.70	0.035	3.03	1413.74	0.002
L18	87 - 82 (18)	TP29.2006x28.2568x0.65	20.75	580.83	0.036	3.03	1458.70	0.002
L19	82 - 77.5 (19)	TP30.05x29.2006x0.6375	21.17	586.86	0.036	3.03	1518.33	0.002
L20	77.5 - 72.5 (20)	TP30.9935x30.05x0.6875	21.64	652.11	0.033	3.03	1738.41	0.002
L21	72.5 - 67.5 (21)	TP31.937x30.9935x0.6875	22.11	672.42	0.033	3.03	1848.33	0.002
L22	67.5 - 67.08 (22)	TP32.0163x31.937x0.675	22.14	662.13	0.033	3.03	1825.40	0.002
L23	67.08 - 66.83 (23)	TP32.0634x32.0163x0.975	22.17	948.69	0.023	3.03	2594.32	0.001
L24	66.83 - 66.33 (24)	TP32.1578x32.0634x0.9625	22.22	939.75	0.024	3.03	2578.70	0.001
L25	66.33 - 66.08 (25)	TP32.205x32.1578x0.9625	22.24	941.17	0.024	3.03	2586.50	0.001
L26	66.08 - 57.5 (26)	TP33.824x32.205x0.95	22.70	953.61	0.024	3.03	2690.28	0.001
L27	57.5 - 56.75 (27)	TP33.3405x32.397x0.9375	23.30	950.78	0.025	3.03	2709.97	0.001
L28	56.75 - 51.75 (28)	TP34.284x33.3405x0.9125	23.78	953.08	0.025	3.03	2797.74	0.001
L29	51.75 - 46.75 (29)	TP35.2275x34.284x0.9	24.26	966.96	0.025	3.03	2919.78	0.001
L30	46.75 - 41.75 (30)	TP36.171x35.2275x0.8875	24.73	980.08	0.025	3.03	3041.82	0.001
L31	41.75 - 39.7 (31)	TP36.5579x36.171x0.9	24.93	1004.43	0.025	3.03	3150.47	0.001
L32	39.7 - 39.5 (32)	TP36.5956x36.5579x0.8875	24.94	991.88	0.025	3.03	3115.47	0.001
L33	39.5 - 34.5 (33)	TP37.5393x36.5956x0.875	25.40	1004.09	0.025	3.03	3238.30	0.001
L34	34.5 - 31.75 (34)	TP38.0583x37.5393x0.8625	25.65	1004.10	0.026	3.03	3285.25	0.001
L35	31.75 - 31.5 (35)	TP38.1055x38.0583x0.95	25.66	1104.76	0.023	3.03	3610.70	0.001
L36	31.5 - 26.5 (36)	TP39.0492x38.1055x0.925	26.11	1103.73	0.024	3.03	3701.38	0.001
L37	26.5 - 21.5 (37)	TP39.9928x39.0492x0.9	26.54	1101.19	0.024	3.03	3786.68	0.001
L38	21.5 - 16.5 (38)	TP40.9365x39.9928x0.9	26.93	1127.77	0.024	3.03	3971.70	0.001
L39	16.5 - 9.8 (39)	TP42.201x40.9365x0.8875	27.05	1120.06	0.024	3.03	3972.72	0.001
L40	9.8 - 8.8 (40)	TP41.6395x40.4602x0.875	27.60	1116.38	0.025	3.03	4003.07	0.001
L41	8.8 - 8.25 (41)	TP41.7433x41.6395x0.875	27.63	1119.22	0.025	3.03	4023.48	0.001
L42	8.25 - 8 (42)	TP41.7904x41.7433x0.95	27.64	1214.33	0.023	3.03	4362.41	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L43	8 - 4.75 (43)	TP42.4037x41.7904x0.95	27.89	1232.56	0.023	3.03	4494.41	0.001
L44	4.75 - 4.5 (44)	TP42.4509x42.4037x1.3	27.90	1674.34	0.017	3.03	6060.71	0.000
L45	4.5 - 4.25 (45)	TP42.498x42.4509x1.3	27.92	1676.26	0.017	3.03	6074.62	0.000
L46	4.25 - 4 (46)	TP42.5452x42.498x1.2	27.94	1552.85	0.018	3.03	5647.47	0.001
L47	4 - 3.5 (47)	TP42.6396x42.5452x1.2	27.98	1556.39	0.018	3.03	5673.27	0.001
L48	3.5 - 3.25 (48)	TP42.6867x42.6396x1.475	28.00	1902.55	0.015	3.03	6896.93	0.000
L49	3.25 - 2.5 (49)	TP42.8283x42.6867x1.475	28.07	1909.08	0.015	3.03	6944.38	0.000
L50	2.5 - 2.25 (50)	TP42.8754x42.8283x1.325	28.08	1723.11	0.016	3.03	6297.80	0.000
L51	2.25 - 0 (51)	TP43.3x42.8754x1.325	28.28	1740.72	0.016	3.03	6427.17	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	156 - 151 (1)	0.001	0.004	0.000	0.001	0.000	0.004	1.050	4.8.2
L2	151 - 146 (2)	0.006	0.108	0.000	0.024	0.000	0.114	1.050	4.8.2
L3	146 - 144 (3)	0.006	0.160	0.000	0.025	0.000	0.167	1.050	4.8.2
L4	144 - 139 (4)	0.022	0.243	0.000	0.072	0.010	0.272	1.050	4.8.2
L5	139 - 134 (5)	0.022	0.427	0.000	0.071	0.009	0.456	1.050	4.8.2
L6	134 - 129 (6)	0.027	0.608	0.000	0.091	0.008	0.646	1.050	4.8.2
L7	129 - 128.25 (7)	0.027	0.639	0.000	0.091	0.008	0.676	1.050	4.8.2
L8	128.25 - 128 (8)	0.012	0.296	0.000	0.040	0.004	0.310	1.050	4.8.2
L9	128 - 123 (9)	0.012	0.386	0.000	0.040	0.003	0.400	1.050	4.8.2
L10	123 - 118 (10)	0.015	0.473	0.000	0.045	0.004	0.490	1.050	4.8.2
L11	118 - 113 (11)	0.016	0.571	0.000	0.047	0.004	0.590	1.050	4.8.2
L12	113 - 108 (12)	0.016	0.653	0.000	0.047	0.004	0.671	1.050	4.8.2
L13	108 - 103 (13)	0.017	0.729	0.000	0.048	0.003	0.748	1.050	4.8.2
L14	103 - 98 (14)	0.017	0.791	0.000	0.047	0.003	0.810	1.050	4.8.2
L15	98 - 93 (15)	0.017	0.815	0.000	0.048	0.003	0.835	1.050	4.8.2
L16	93 - 92 (16)	0.013	0.634	0.000	0.034	0.002	0.648	1.050	4.8.2
L17	92 - 87 (17)	0.013	0.685	0.000	0.035	0.002	0.699	1.050	4.8.2
L18	87 - 82 (18)	0.014	0.736	0.000	0.036	0.002	0.751	1.050	4.8.2
L19	82 - 77.5 (19)	0.015	0.771	0.000	0.036	0.002	0.787	1.050	4.8.2
L20	77.5 - 72.5 (20)	0.014	0.738	0.000	0.033	0.002	0.753	1.050	4.8.2
L21	72.5 - 67.5 (21)	0.014	0.755	0.000	0.033	0.002	0.771	1.050	4.8.2
L22	67.5 - 67.08 (22)	0.014	0.770	0.000	0.033	0.002	0.785	1.050	4.8.2
L23	67.08 - 66.83 (23)	0.010	0.549	0.000	0.023	0.001	0.560	1.050	4.8.2
L24	66.83 - 66.33 (24)	0.010	0.557	0.000	0.024	0.001	0.567	1.050	4.8.2
L25	66.33 - 66.08 (25)	0.010	0.557	0.000	0.024	0.001	0.568	1.050	4.8.2
L26	66.08 - 57.5 (26)	0.011	0.573	0.000	0.024	0.001	0.584	1.050	4.8.2
L27	57.5 - 56.75 (27)	0.012	0.613	0.000	0.025	0.001	0.625	1.050	4.8.2
L28	56.75 - 51.75 (28)	0.012	0.637	0.000	0.025	0.001	0.650	1.050	4.8.2
L29	51.75 - 46.75 (29)	0.013	0.653	0.000	0.025	0.001	0.666	1.050	4.8.2
L30	46.75 - 41.75 (30)	0.013	0.668	0.000	0.025	0.001	0.682	1.050	4.8.2
L31	41.75 - 39.7 (31)	0.013	0.662	0.000	0.025	0.001	0.676	1.050	4.8.2

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L32	39.7 - 39.5 (32)	0.013	0.671	0.000	0.025	0.001	0.685	1.050	4.8.2
L33	39.5 - 34.5 (33)	0.014	0.685	0.000	0.025	0.001	0.700	1.050	4.8.2
L34	34.5 - 31.75 (34)	0.014	0.697	0.000	0.026	0.001	0.712	1.050	4.8.2
L35	31.75 - 31.5 (35)	0.013	0.638	0.000	0.023	0.001	0.651	1.050	4.8.2
L36	31.5 - 26.5 (36)	0.014	0.658	0.000	0.024	0.001	0.672	1.050	4.8.2
L37	26.5 - 21.5 (37)	0.014	0.679	0.000	0.024	0.001	0.693	1.050	4.8.2
L38	21.5 - 16.5 (38)	0.015	0.682	0.000	0.024	0.001	0.697	1.050	4.8.2
L39	16.5 - 9.8 (39)	0.015	0.691	0.000	0.024	0.001	0.707	1.050	4.8.2
L40	9.8 - 8.8 (40)	0.016	0.730	0.000	0.025	0.001	0.747	1.050	4.8.2
L41	8.8 - 8.25 (41)	0.016	0.730	0.000	0.025	0.001	0.747	1.050	4.8.2
L42	8.25 - 8 (42)	0.015	0.677	0.000	0.023	0.001	0.692	1.050	4.8.2
L43	8 - 4.75 (43)	0.015	0.677	0.000	0.023	0.001	0.693	1.050	4.8.2
L44	4.75 - 4.5 (44)	0.011	0.508	0.000	0.017	0.000	0.519	1.050	4.8.2
L45	4.5 - 4.25 (45)	0.011	0.508	0.000	0.017	0.000	0.519	1.050	4.8.2
L46	4.25 - 4 (46)	0.012	0.546	0.000	0.018	0.001	0.559	1.050	4.8.2
L47	4 - 3.5 (47)	0.012	0.546	0.000	0.018	0.001	0.559	1.050	4.8.2
L48	3.5 - 3.25 (48)	0.010	0.453	0.000	0.015	0.000	0.464	1.050	4.8.2
L49	3.25 - 2.5 (49)	0.010	0.453	0.000	0.015	0.000	0.464	1.050	4.8.2
L50	2.5 - 2.25 (50)	0.011	0.499	0.000	0.016	0.000	0.511	1.050	4.8.2
L51	2.25 - 0 (51)	0.011	0.500	0.000	0.016	0.000	0.511	1.050	4.8.2

Section Capacity Table

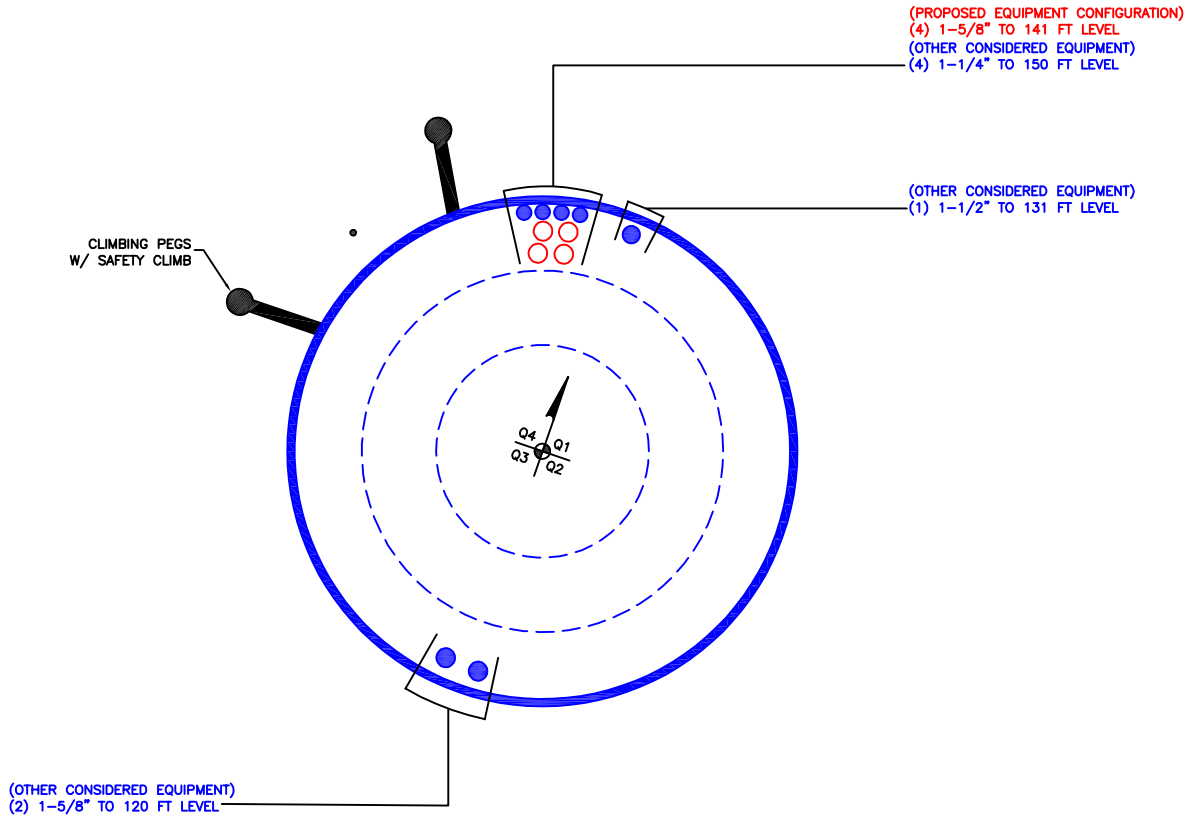
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	156 - 151	Pole	TP10.75x10.75x0.375	1	-0.24	404.27	0.4	Pass
L2	151 - 146	Pole	TP10.75x10.75x0.375	2	-2.19	404.27	10.8	Pass
L3	146 - 144	Pole	TP10.75x10.75x0.375	3	-2.29	404.27	15.9	Pass
L4	144 - 139	Pole	TP18.9435x18x0.25	4	-10.92	511.94	25.9	Pass
L5	139 - 134	Pole	TP19.8871x18.9435x0.25	5	-11.31	537.78	43.4	Pass
L6	134 - 129	Pole	TP20.8306x19.8871x0.25	6	-14.70	563.62	61.5	Pass
L7	129 - 128.25	Pole	TP20.9721x20.8306x0.25	7	-14.77	567.50	64.4	Pass
L8	128.25 - 128	Pole	TP21.0193x20.9721x0.575	8	-14.82	1287.74	29.5	Pass
L9	128 - 123	Pole	TP21.9628x21.0193x0.5625	9	-15.63	1318.66	38.1	Pass
L10	123 - 118	Pole	TP22.9064x21.9628x0.55	10	-19.10	1346.96	46.7	Pass
L11	118 - 113	Pole	TP23.8499x22.9064x0.525	11	-19.98	1341.44	56.1	Pass
L12	113 - 108	Pole	TP24.7934x23.8499x0.5125	12	-20.89	1363.16	64.0	Pass
L13	108 - 103	Pole	TP25.7369x24.7934x0.5	13	-21.82	1382.28	71.2	Pass
L14	103 - 98	Pole	TP26.6805x25.7369x0.4938	14	-22.78	1416.38	77.1	Pass
L15	98 - 93	Pole	TP27.624x26.6805x0.4875	15	-23.07	1413.90	79.5	Pass
L16	93 - 92	Pole	TP27.313x26.4635x0.7	16	-24.73	2040.71	61.7	Pass
L17	92 - 87	Pole	TP28.2568x27.313x0.675	17	-25.99	2039.47	66.6	Pass
L18	87 - 82	Pole	TP29.2006x28.2568x0.65	18	-27.26	2032.92	71.6	Pass
L19	82 - 77.5	Pole	TP30.05x29.2006x0.6375	19	-28.43	2054.01	74.9	Pass
L20	77.5 - 72.5	Pole	TP30.9935x30.05x0.6875	20	-29.87	2282.40	71.7	Pass
L21	72.5 - 67.5	Pole	TP31.937x30.9935x0.6875	21	-31.32	2353.46	73.4	Pass
L22	67.5 - 67.08	Pole	TP32.0163x31.937x0.675	22	-31.45	2317.45	74.8	Pass
L23	67.08 - 66.83	Pole	TP32.0634x32.0163x0.975	23	-31.55	3320.43	53.3	Pass
L24	66.83 - 66.33	Pole	TP32.1578x32.0634x0.9625	24	-31.75	3289.12	54.0	Pass
L25	66.33 - 66.08	Pole	TP32.205x32.1578x0.9625	25	-31.85	3294.09	54.1	Pass
L26	66.08 - 57.5	Pole	TP33.824x32.205x0.95	26	-33.53	3337.65	55.7	Pass
L27	57.5 - 56.75	Pole	TP33.3405x32.397x0.9375	27	-37.04	3327.72	59.6	Pass
L28	56.75 - 51.75	Pole	TP34.284x33.3405x0.9125	28	-39.02	3335.80	61.9	Pass
L29	51.75 - 46.75	Pole	TP35.2275x34.284x0.9	29	-41.03	3384.35	63.4	Pass
L30	46.75 - 41.75	Pole	TP36.171x35.2275x0.8875	30	-43.07	3430.29	64.9	Pass

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L31	41.75 - 39.7	Pole	TP36.5579x36.171x0.9	31	-43.95	3515.50	64.4	Pass
L32	39.7 - 39.5	Pole	TP36.5956x36.5579x0.8875	32	-44.04	3471.56	65.2	Pass
L33	39.5 - 34.5	Pole	TP37.5393x36.5956x0.875	33	-46.20	3514.32	66.6	Pass
L34	34.5 - 31.75	Pole	TP38.0583x37.5393x0.8625	34	-47.40	3514.34	67.8	Pass
L35	31.75 - 31.5	Pole	TP38.1055x38.0583x0.95	35	-47.53	3866.67	62.0	Pass
L36	31.5 - 26.5	Pole	TP39.0492x38.1055x0.925	36	-49.88	3863.07	64.0	Pass
L37	26.5 - 21.5	Pole	TP39.9928x39.0492x0.9	37	-52.26	3854.16	66.0	Pass
L38	21.5 - 16.5	Pole	TP40.9365x39.9928x0.9	38	-54.66	3947.19	66.4	Pass
L39	16.5 - 9.8	Pole	TP42.201x40.9365x0.8875	39	-55.37	3920.20	67.3	Pass
L40	9.8 - 8.8	Pole	TP41.6395x40.4602x0.875	40	-60.76	3907.33	71.2	Pass
L41	8.8 - 8.25	Pole	TP41.7433x41.6395x0.875	41	-61.03	3917.28	71.2	Pass
L42	8.25 - 8	Pole	TP41.7904x41.7433x0.95	42	-61.16	4250.15	65.9	Pass
L43	8 - 4.75	Pole	TP42.4037x41.7904x0.95	43	-62.86	4313.97	66.0	Pass
L44	4.75 - 4.5	Pole	TP42.4509x42.4037x1.3	44	-63.03	5860.21	49.5	Pass
L45	4.5 - 4.25	Pole	TP42.498x42.4509x1.3	45	-63.19	5866.92	49.5	Pass
L46	4.25 - 4	Pole	TP42.5452x42.498x1.2	46	-63.34	5434.97	53.2	Pass
L47	4 - 3.5	Pole	TP42.6396x42.5452x1.2	47	-63.62	5447.37	53.2	Pass
L48	3.5 - 3.25	Pole	TP42.6867x42.6396x1.475	48	-63.80	6658.91	44.2	Pass
L49	3.25 - 2.5	Pole	TP42.8283x42.6867x1.475	49	-64.31	6681.78	44.2	Pass
L50	2.5 - 2.25	Pole	TP42.8754x42.8283x1.325	50	-64.47	6030.90	48.7	Pass
L51	2.25 - 0	Pole	TP43.3x42.8754x1.325	51	-65.87	6092.52	48.7	Pass
							Summary	
						Pole (L15)	79.5	Pass
						RATING =	**79.5**	**Pass**

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

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 828402 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 828402

Work Order: 2088109

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	12	0	0	10.75	10.75	0.375		A53-B-35
2	144	51	3.5	12	18.00	27.624	0.25	Auto	A36
3	96.5	19	0	12	26.46	30.05	0.25	Auto	A36
4	77.5	20	4.25	12	30.05	33.824	0.3125	Auto	A36
5	61.75	21.95	0	12	32.40	36.539	0.3125	Auto	A36
6	39.8	30	5.25	12	36.54	42.201	0.375	Auto	A36
7	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	39.75	plate	CCI-SFP-085125	2	E				E							
2	8.25	39.75	plate	CCI-SFP-065125	1									E			
3	39.75	66.33	plate	CCI-AFP-085125	3	E				E				E			
4	66.33	95.67	plate	CFP-085125	3	E				E				E			
5	95.67	128.25	plate	CCI-AFP-060100	3	E				E				E			
6	2.5	31.75	plate	CWFP-085125	3				E				E				E
7	31.75	67.08	plate	CCI-AFP-065125	3				E				E				E
8	0	4.75	plate	TS 1.25"x6.5"	4	c			c	c							c
9	0	8.25	plate	TS 1.25"x6.5"	2								c	c			
10	0	3.5	plate	TS 1.25"x4"	6		o	4			o	-4			o	4	
11	0	2.5	plate	TS 1.25"x4"	3				o				o				o
12																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in2)	Bolt Hole Size (in)	Reinforcement Material
1	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	45	PC 8.8 - M20 (100)	45.000	17.000	9.063	1.1875	A572-65
2	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	33	PC 8.8 - M20 (100)	33.000	19.000	6.563	1.1875	A572-65
3	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	51	PC 8.8 - M20 (100)	51.000	17.000	9.063	1.1875	A572-65
4	8.5	1.25	10.625	0.625	PC 8.8 - M20 (100)	60	PC 8.8 - M20 (100)	60.000	17.000	9.063	1.1875	A572-65
5	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
6	8.5	1.25	10.625	0.625	Welded	n/a	PC 8.8 - M20 (100)	45.000	17.000	9.063	1.1875	A572-65
7	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	42	PC 8.8 - M20 (100)	42.000	19.000	6.563	1.1875	A572-65
8	1.25	6.5	8.125	3.25	Welded	n/a	Welded	n/a	0.000	8.125	0.0000	A572-65
9	1.25	6.5	8.125	3.25	Welded	n/a	Welded	n/a	0.000	8.125	0.0000	A572-65
10	1.25	4	5	2	Welded	n/a	Welded	n/a	0.000	5.000	0.0000	A572-65
11	1.25	4	5	2	Welded	n/a	Welded	n/a	0.000	5.000	0.0000	A572-65

Connection Details for Custom Reinforcements

Reinforcement	End	# Bolts	N or X	Bolt Spacing (in)	Edge Dist (in)	Weld Grade (ksi)	Transverse (Horiz.) Weld Type	Horiz. Weld Length (in)	Horiz. Groove Depth (in)	Horiz. Groove Angle (deg)	Horiz. Fillet Size (in)	Vertical Weld Length (in)	Vertical Fillet Size (in)	Rev H Connection Capacity (kip)
CFP-085125	Top	20	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	20	N	3	3	-	-	-	-	-	-	-	-	-
CWFP-085125	Top	15	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	80	Fillet	8.5	-	-	0.625	-	-	-
TS 1.25"x6.5"	Top	-	-	-	-	80	None	-	-	-	-	27	0.375	-
	Bottom	-	-	-	-	80	CJP Groove	11.5	0.625	45	0.625	-	-	-
TS 1.25"x4"	Top	-	-	-	-	80	None	-	-	-	-	12	0.375	-
	Bottom	-	-	-	-	80	CJP Groove	6.5	0.625	45	0.625	-	-	-

TNX Geometry Input

Increment (ft): 5 Export to TNX

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	156 - 151	5		0	10.750	10.750	0.375	A53-B-35	1.000
2	151 - 146	5		0	10.750	10.750	0.375	A53-B-35	1.000
3	146 - 144	2	0	0	10.750	10.750	0.375	A53-B-35	1.000
4	144 - 139	5		12	18.000	18.944	0.25	A36	1.000
5	139 - 134	5		12	18.944	19.887	0.25	A36	1.000
6	134 - 129	5		12	19.887	20.831	0.25	A36	1.000
7	129 - 128.25	0.75		12	20.831	20.972	0.25	A36	1.000
8	128.25 - 128	0.25		12	20.972	21.019	0.575	A36	0.918
9	128 - 123	5		12	21.019	21.963	0.5625	A36	0.916
10	123 - 118	5		12	21.963	22.906	0.55	A36	0.916
11	118 - 113	5		12	22.906	23.850	0.525	A36	0.939
12	113 - 108	5		12	23.850	24.793	0.5125	A36	0.943
13	108 - 103	5		12	24.793	25.737	0.5	A36	0.949
14	103 - 98	5		12	25.737	26.680	0.49375	A36	0.944
15	98 - 96.5	5	3.5	12	26.680	27.624	0.4875	A36	0.951
16	96.5 - 92	4.5		12	26.464	27.313	0.7	A36	0.895
17	92 - 87	5		12	27.313	28.257	0.675	A36	0.909
18	87 - 82	5		12	28.257	29.201	0.65	A36	0.924
19	82 - 77.5	4.5	0	12	29.201	30.050	0.6375	A36	0.926
20	77.5 - 72.5	5		12	30.050	30.994	0.6875	A36	0.936
21	72.5 - 67.5	5		12	30.994	31.937	0.6875	A36	0.921
22	67.5 - 67.08	0.42		12	31.937	32.016	0.675	A36	0.937
23	67.08 - 66.83	0.25		12	32.016	32.063	0.975	A36	0.904
24	66.83 - 66.33	0.5		12	32.063	32.158	0.9625	A36	0.914
25	66.33 - 66.08	0.25		12	32.158	32.205	0.9625	A36	0.913
26	66.08 - 61.75	8.58	4.25	12	32.205	33.824	0.95	A36	0.910
27	61.75 - 56.75	5		12	32.397	33.341	0.9375	A36	0.916
28	56.75 - 51.75	5		12	33.341	34.284	0.9125	A36	0.923
29	51.75 - 46.75	5		12	34.284	35.228	0.9	A36	0.919
30	46.75 - 41.75	5	0	12	35.228	36.171	0.8875	A36	0.917
31	41.75 - 39.7	2.05		12	36.171	36.558	0.9	A36	0.944
32	39.7 - 39.5	0.2		12	36.558	36.596	0.8875	A36	0.956
33	39.5 - 34.5	5		12	36.596	37.539	0.875	A36	0.955
34	34.5 - 31.75	2.75		12	37.539	38.058	0.8625	A36	0.962
35	31.75 - 31.5	0.25		12	38.058	38.105	0.95	A36	0.941
36	31.5 - 26.5	5		12	38.105	39.049	0.925	A36	0.951
37	26.5 - 21.5	5		12	39.049	39.993	0.9	A36	0.964
38	21.5 - 16.5	5		12	39.993	40.936	0.9	A36	0.951
39	16.5 - 15.05	6.7	5.25	12	40.936	42.201	0.8875	A36	0.960
40	15.05 - 8.8	6.25		12	40.460	41.639	0.875	A36	0.968
41	8.8 - 8.25	0.55		12	41.639	41.743	0.875	A36	0.967
42	8.25 - 8	0.25		12	41.743	41.790	0.95	A36	0.956
43	8 - 4.75	3.25		12	41.790	42.404	0.95	A36	0.948
44	4.75 - 4.5	0.25		12	42.404	42.451	1.3	A36	0.887
45	4.5 - 4.25	0.25		12	42.451	42.498	1.3	A36	0.887
46	4.25 - 4	0.25		12	42.498	42.545	1.2	A36	0.824
47	4 - 3.5	0.5		12	42.545	42.640	1.2	A36	0.823
48	3.5 - 3.25	0.25		12	42.640	42.687	1.475	A36	0.827
49	3.25 - 2.5	0.75		12	42.687	42.828	1.475	A36	0.825
50	2.5 - 2.25	0.25		12	42.828	42.875	1.325	A36	0.819
51	2.25 - 0	2.25		12	42.875	43.300	1.325	A36	0.814

TNX Section Forces

Increment (ft): 5

	Section Height (ft)	TNX Output		
		P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	156 - 151	0.24	0.39	0.16
2	151 - 146	2.19	11.40	2.77
3	146 - 144	2.29	17.01	2.83
4	144 - 139	10.94	56.76	10.31
5	139 - 134	11.31	109.77	10.85
6	134 - 129	14.70	171.77	14.70
7	129 - 128.25	14.77	182.81	14.76
8	128.25 - 128	14.82	186.50	14.77
9	128 - 123	15.63	261.45	15.21
10	123 - 118	19.10	342.32	17.48
11	118 - 113	19.98	430.79	17.92
12	113 - 108	20.89	521.42	18.35
13	108 - 103	21.82	614.21	18.78
14	103 - 98	22.78	709.17	19.22
15	98 - 96.5	23.07	738.07	19.35
16	96.5 - 92	24.73	826.20	19.83
17	92 - 87	25.99	926.46	20.29
18	87 - 82	27.26	1029.02	20.75
19	82 - 77.5	28.43	1123.29	21.17
20	77.5 - 72.5	29.87	1230.25	21.64
21	72.5 - 67.5	31.32	1339.56	22.11
22	67.5 - 67.08	31.45	1348.85	22.14
23	67.08 - 66.83	31.55	1354.39	22.17
24	66.83 - 66.33	31.75	1365.49	22.22
25	66.33 - 66.08	31.85	1371.04	22.24
26	66.08 - 61.75	33.53	1468.31	22.70
27	61.75 - 56.75	37.04	1583.28	23.30
28	56.75 - 51.75	39.02	1700.93	23.78
29	51.75 - 46.75	41.03	1820.99	24.26
30	46.75 - 41.75	43.07	1943.42	24.73
31	41.75 - 39.7	43.95	1994.29	24.93
32	39.7 - 39.5	44.04	1999.28	24.94
33	39.5 - 34.5	46.20	2125.08	25.40
34	34.5 - 31.75	47.40	2195.23	25.65
35	31.75 - 31.5	47.53	2201.65	25.66
36	31.5 - 26.5	49.88	2331.03	26.11
37	26.5 - 21.5	52.26	2462.59	26.54
38	21.5 - 16.5	54.66	2596.18	26.93
39	16.5 - 15.05	55.37	2635.30	27.05
40	15.05 - 8.8	60.76	2806.00	27.60
41	8.8 - 8.25	61.03	2821.18	27.63
42	8.25 - 8	61.16	2828.09	27.64
43	8 - 4.75	62.86	2918.29	27.89
44	4.75 - 4.5	63.03	2925.26	27.90
45	4.5 - 4.25	63.19	2932.24	27.92
46	4.25 - 4	63.34	2939.22	27.94
47	4 - 3.5	63.62	2953.20	27.98
48	3.5 - 3.25	63.80	2960.19	28.00
49	3.25 - 2.5	64.31	2981.21	28.07
50	2.5 - 2.25	64.47	2988.23	28.08
51	2.25 - 0	65.87	3051.61	28.28

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity* (100% Max. Allowable)										
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11
156 - 151	165	n/a	165	12.22	n/a	12.22	0.4%											
151 - 146	165	n/a	165	12.22	n/a	12.22	10.8%											
146 - 144	165	n/a	165	12.22	n/a	12.22	15.9%											
144 - 139	672	n/a	672	15.03	n/a	15.03	25.8%											
139 - 134	779	n/a	779	15.79	n/a	15.79	43.2%											
134 - 129	897	n/a	897	16.54	n/a	16.54	61.2%											
129 - 128.25	916	n/a	916	16.66	n/a	16.66	64.0%											
128.25 - 128	922	1119	2040	16.70	18.00	34.70	28.9%					25.3%						
128 - 123	1053	1214	2267	17.45	18.00	35.45	37.8%					32.9%						
123 - 118	1197	1314	2510	18.21	18.00	36.21	46.5%					40.5%						
118 - 113	1352	1417	2770	18.97	18.00	36.97	55.1%					47.8%						
113 - 108	1521	1525	3046	19.73	18.00	37.73	62.8%					54.5%						
108 - 103	1703	1636	3340	20.49	18.00	38.49	70.0%					60.6%						
103 - 98	1900	1752	3651	21.25	18.00	39.25	76.5%					66.1%						
98 - 96.5	1961	1787	3749	21.47	18.00	39.47	78.4%					67.7%						
96.5 - 92	2039	3349	5388	21.75	31.88	53.63	61.7%				50.0%							
92 - 87	2260	3567	5827	22.51	31.88	54.39	66.7%				53.5%							
87 - 82	2497	3792	6289	23.27	31.88	55.15	71.6%				56.8%							
82 - 77.5	2723	4001	6724	23.95	31.88	55.83	75.9%				59.6%							
77.5 - 72.5	3714	4240	7955	30.83	31.88	62.70	70.5%				56.9%							
72.5 - 67.5	4068	4486	8554	31.78	31.88	63.65	73.6%				59.3%							
67.5 - 67.08	4098	4507	8606	31.86	31.88	63.73	73.8%				59.5%							
67.08 - 66.83	4117	7946	12062	31.90	56.25	88.15	52.9%				42.6%			44.9%				
66.83 - 66.33	4153	7990	12143	32.00	56.25	88.25	53.2%				42.8%			45.1%				
66.33 - 66.08	4172	8012	12184	32.05	56.25	88.30	53.3%			42.9%				45.2%				
66.08 - 61.75	4501	8401	12902	32.87	56.25	89.12	55.3%			44.4%				46.8%				
61.75 - 56.75	4634	8555	13189	33.19	56.25	89.44	58.9%			47.3%				49.9%				
56.75 - 51.75	5042	9021	14063	34.13	56.25	90.38	61.0%			49.0%				51.6%				
51.75 - 46.75	5474	9498	14972	35.08	56.25	91.33	63.5%			50.6%				53.3%				
46.75 - 41.75	5930	9989	15919	36.03	56.25	92.28	66.0%			52.1%				54.9%				
41.75 - 39.7	7320	9326	16647	43.63	53.75	97.38	66.0%	51.2%	56.0%					55.2%				
39.7 - 39.5	7343	9344	16688	43.67	53.75	97.42	66.1%	49.3%	56.1%					55.2%				
39.5 - 34.5	7932	9809	17742	44.81	53.75	98.56	67.8%	50.6%	57.4%					56.6%				
34.5 - 31.75	8269	10070	18339	45.44	53.75	99.19	68.7%	51.3%	58.2%					57.3%				
31.75 - 31.5	8299	11602	19901	45.49	61.25	106.74	63.4%	47.6%	53.7%				52.2%					
31.5 - 26.5	8937	12156	21093	46.63	61.25	107.88	64.9%	48.7%	54.9%				51.4%					
26.5 - 21.5	9607	12723	22330	47.77	61.25	109.02	66.4%	49.8%	56.1%				52.5%					
21.5 - 16.5	10310	13304	23613	48.91	61.25	110.16	67.7%	50.8%	57.2%				53.6%					
16.5 - 15.05	10520	13474	23994	49.24	61.25	110.49	68.1%	51.1%	57.5%				53.9%					
15.05 - 8.8	10855	13744	24599	49.76	61.25	111.01	71.7%	53.7%	60.4%				56.6%					
8.8 - 8.25	10937	13810	24747	49.88	61.25	111.13	71.9%	53.8%	60.5%				56.7%					
8.25 - 8	10970	15814	26784	49.94	69.38	119.31	66.6%	52.5%					52.7%			48.7%		
8 - 4.75	11464	16260	27724	50.68	69.38	120.05	67.6%	53.1%					53.3%			45.5%		
4.75 - 4.5	11610	25633	37243	50.73	101.88	152.61	53.2%	35.0%					41.2%		39.3%	42.2%		
4.5 - 4.25	11649	25684	37333	50.79	101.88	152.67	53.3%	36.4%					41.2%		36.3%	42.3%		
4.25 - 4	11574	23398	34972	50.85	80.63	131.47	54.1%						43.0%		43.3%	43.3%		
4 - 3.5	11652	23491	35143	50.96	80.63	131.59	54.3%						43.1%		43.4%	43.4%		
3.5 - 3.25	11691	31042	42733	51.02	110.63	161.64	43.9%						35.7%		36.5%	34.9%	49.6%	
3.25 - 2.5	11810	31100	42910	51.19	110.63	161.81	45.8%						35.8%		36.6%	35.0%	33.7%	
2.5 - 2.25	11849	27566	39415	51.25	93.75	145.00	50.0%								41.8%	39.8%	38.6%	55.6%
2.25 - 0	12208	27927	40136	51.76	93.75	145.51	52.6%								42.9%	40.9%	42.9%	42.4%

Note: Section capacity checked using 5 degree increments.

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

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
156 - 151	Pole	TP10.75x10.75x0.375	Pole	0.4%	Pass
151 - 146	Pole	TP10.75x10.75x0.375	Pole	10.8%	Pass
146 - 144	Pole	TP10.75x10.75x0.375	Pole	15.9%	Pass
144 - 139	Pole	TP18.944x18x0.25	Pole	25.8%	Pass
139 - 134	Pole	TP19.887x18.944x0.25	Pole	43.2%	Pass
134 - 129	Pole	TP20.831x19.887x0.25	Pole	61.2%	Pass
129 - 128.25	Pole	TP20.972x20.831x0.25	Pole	64.0%	Pass
128.25 - 128	Pole + Reinf.	TP21.019x20.972x0.575	Pole	28.9%	Pass
128 - 123	Pole + Reinf.	TP21.963x21.019x0.5625	Pole	37.8%	Pass
123 - 118	Pole + Reinf.	TP22.906x21.963x0.55	Pole	46.5%	Pass
118 - 113	Pole + Reinf.	TP23.85x22.906x0.525	Pole	55.1%	Pass
113 - 108	Pole + Reinf.	TP24.793x23.85x0.5125	Pole	62.8%	Pass
108 - 103	Pole + Reinf.	TP25.737x24.793x0.5	Pole	70.0%	Pass
103 - 98	Pole + Reinf.	TP26.68x25.737x0.4938	Pole	76.5%	Pass
98 - 96.5	Pole + Reinf.	TP27.624x26.68x0.4875	Pole	78.4%	Pass
96.5 - 92	Pole + Reinf.	TP27.313x26.464x0.7	Pole	61.7%	Pass
92 - 87	Pole + Reinf.	TP28.257x27.313x0.675	Pole	66.7%	Pass
87 - 82	Pole + Reinf.	TP29.201x28.257x0.65	Pole	71.6%	Pass
82 - 77.5	Pole + Reinf.	TP30.05x29.201x0.6375	Pole	75.9%	Pass
77.5 - 72.5	Pole + Reinf.	TP30.994x30.05x0.6875	Pole	70.5%	Pass
72.5 - 67.5	Pole + Reinf.	TP31.937x30.994x0.6875	Pole	73.6%	Pass
67.5 - 67.08	Pole + Reinf.	TP32.016x31.937x0.675	Pole	73.8%	Pass
67.08 - 66.83	Pole + Reinf.	TP32.063x32.016x0.975	Pole	52.9%	Pass
66.83 - 66.33	Pole + Reinf.	TP32.158x32.063x0.9625	Pole	53.2%	Pass
66.33 - 66.08	Pole + Reinf.	TP32.205x32.158x0.9625	Pole	53.3%	Pass
66.08 - 61.75	Pole + Reinf.	TP33.824x32.205x0.95	Pole	55.3%	Pass
61.75 - 56.75	Pole + Reinf.	TP33.341x32.397x0.9375	Pole	58.9%	Pass
56.75 - 51.75	Pole + Reinf.	TP34.284x33.341x0.9125	Pole	61.0%	Pass
51.75 - 46.75	Pole + Reinf.	TP35.228x34.284x0.9	Pole	63.5%	Pass
46.75 - 41.75	Pole + Reinf.	TP36.171x35.228x0.8875	Pole	66.0%	Pass
41.75 - 39.7	Pole + Reinf.	TP36.558x36.171x0.9	Pole	66.0%	Pass
39.7 - 39.5	Pole + Reinf.	TP36.596x36.558x0.8875	Pole	66.1%	Pass
39.5 - 34.5	Pole + Reinf.	TP37.539x36.596x0.875	Pole	67.8%	Pass
34.5 - 31.75	Pole + Reinf.	TP38.058x37.539x0.8625	Pole	68.7%	Pass
31.75 - 31.5	Pole + Reinf.	TP38.105x38.058x0.95	Pole	63.4%	Pass
31.5 - 26.5	Pole + Reinf.	TP39.049x38.105x0.925	Pole	64.9%	Pass
26.5 - 21.5	Pole + Reinf.	TP39.993x39.049x0.9	Pole	66.4%	Pass
21.5 - 16.5	Pole + Reinf.	TP40.936x39.993x0.9	Pole	67.7%	Pass
16.5 - 15.05	Pole + Reinf.	TP42.201x40.936x0.8875	Pole	68.1%	Pass
15.05 - 8.8	Pole + Reinf.	TP41.639x40.46x0.875	Pole	71.7%	Pass
8.8 - 8.25	Pole + Reinf.	TP41.743x41.639x0.875	Pole	71.9%	Pass
8.25 - 8	Pole + Reinf.	TP41.79x41.743x0.95	Pole	66.6%	Pass
8 - 4.75	Pole + Reinf.	TP42.404x41.79x0.95	Pole	67.6%	Pass
4.75 - 4.5	Pole + Reinf.	TP42.451x42.404x1.3	Pole	53.2%	Pass
4.5 - 4.25	Pole + Reinf.	TP42.498x42.451x1.3	Pole	53.3%	Pass
4.25 - 4	Pole + Reinf.	TP42.545x42.498x1.2	Pole	54.1%	Pass
4 - 3.5	Pole + Reinf.	TP42.64x42.545x1.2	Pole	54.3%	Pass
3.5 - 3.25	Pole + Reinf.	TP42.687x42.64x1.475	Reinf. 10 Weldment	49.6%	Pass
3.25 - 2.5	Pole + Reinf.	TP42.828x42.687x1.475	Pole	45.8%	Pass
2.5 - 2.25	Pole + Reinf.	TP42.875x42.828x1.325	Reinf. 11 Weldment	55.6%	Pass
2.25 - 0	Pole + Reinf.	TP43.3x42.875x1.325	Pole	52.6%	Pass
				Summary	
			Pole	78.4%	Pass
			Reinforcement	67.7%	Pass
			Overall	78.4%	Pass

Monopole Flange Plate Connection

Elevation = 144 ft.

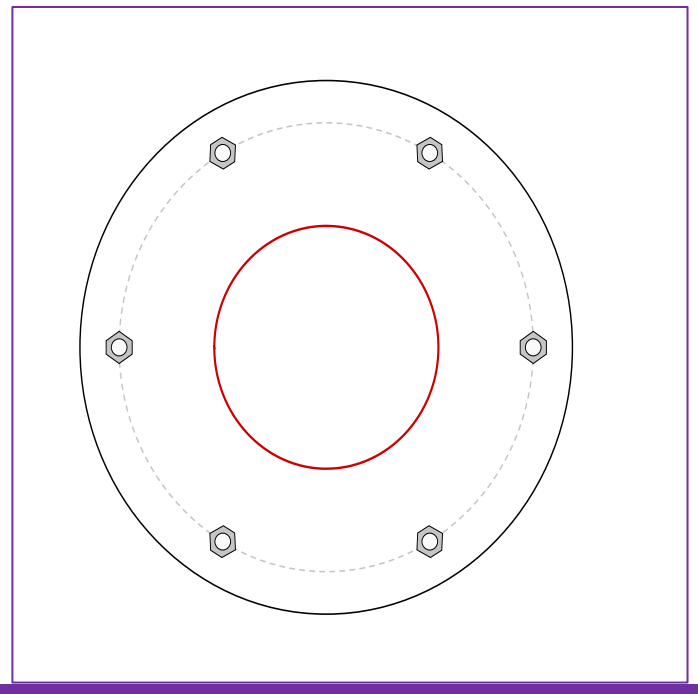
BU #	828402
Site Name	Thompson/ I-395 X99_
Order #	599889 Rev.5

TIA-222 Revision	H

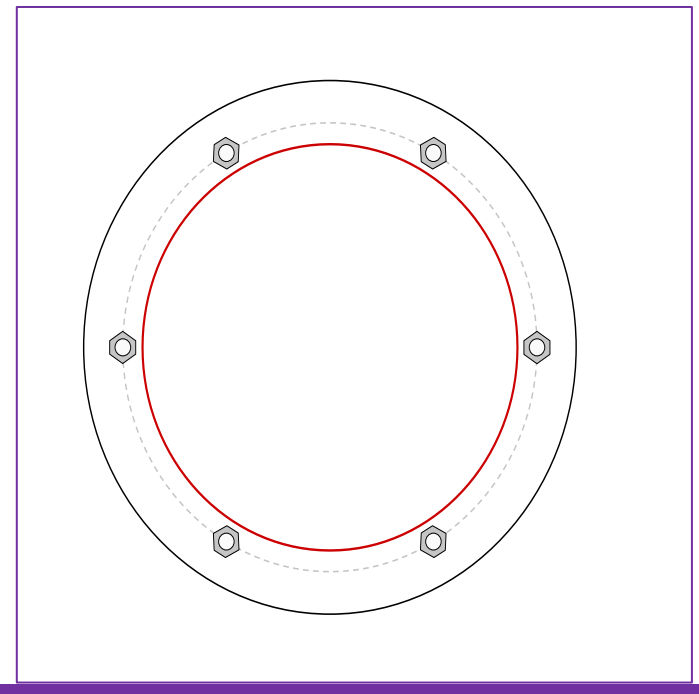
Applied Loads	
Moment (kip-ft)	17.01
Axial Force (kips)	2.29
Shear Force (kips)	2.83

**TIA-222-H Section 15.5 Applied*

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(6) 3/4" ø bolts (A325 N; 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

10.75" x 0.375" 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)	6.46	
Allowable (kips)	30.05	
Stress Rating:	**20.5%**	**Pass**

Top Plate Capacity

Max Stress (ksi):	4.34	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**12.7%**	**Pass**
Tension Side Stress Rating:	**8.4%**	**Pass**

Bottom Plate Capacity

Max Stress (ksi):	12.86	(Flexural)
Allowable Stress (ksi):	32.40	
Stress Rating:	**37.8%**	**Pass**
Tension Side Stress Rating:	**12.9%**	**Pass**

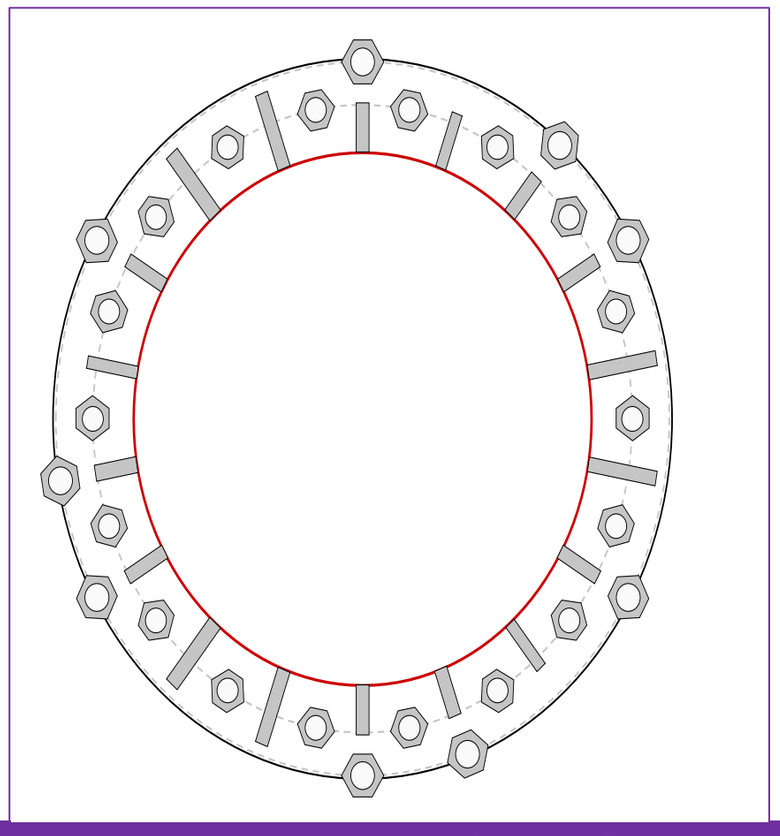
Monopole Base Plate Connection

Site Info	
BU #	828402
Site Name	hompson/ I-395 X99_
Order #	599889 Rev.5

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

Applied Loads	
Moment (kip-ft)	3051.61
Axial Force (kips)	65.87
Shear Force (kips)	28.28

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (18) 2" ø bolts (A36M-42 N; Fy=42 ksi, Fu=60 ksi) on 51" BC

GROUP 2: (9) 2-1/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 58" BC

pos. (deg): 30, 50, 90, 150, 190, 210, 270, 290, 330

Base Plate Data

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

Stiffener Data

Group 1: (3) 18"H x 4.75"W x 1"T, Notch: 1"
plate: Fy= 36 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.625" fillet
vert. weld: 0.375" fillet

Group 2: (6) 54"H x 4"W x 1.25"T, Notch: 0.75"
plate: Fy= 65 ksi ; weld: Fy= 80 ksi
horiz. weld: 0.625" fillet
vert. weld: 0.375" fillet

Group 3: (3) 42"H x 4"W x 1.25"T, Notch: 0.75"
plate: Fy= 36 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.625" fillet
vert. weld: 0.375" fillet

Group 4: (4) 84"H x 6.5"W x 1.25"T, Notch: 0.75"
plate: Fy= 65 ksi ; weld: Fy= 80 ksi
horiz. weld: 0.625" fillet
vert. weld: 0.375" fillet

Group 5: (2) 126"H x 6.5"W x 1.25"T, Notch: 0.75"
plate: Fy= 65 ksi ; weld: Fy= 80 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)*

GROUP 1:		
Pu_c = 94.37	ϕPn_c = 118.75	**Stress Rating**
Vu = 1.57	ϕVn = 53.44	**75.8%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_t = 133.07	ϕPn_t = 304.69	**Stress Rating**
Vu = 0	ϕVn = 186.38	**41.6%**
Mu = 0	ϕMn = 179.4	**Pass**

Base Plate Summary

Max Stress (ksi):	29.16	(Roark's Flexural)
Allowable Stress (ksi):	32.4	
Stress Rating:	**85.7%**	**Pass**

Stiffener Summary

Horizontal Weld:	**54.9%**	**Pass**
Vertical Weld:	**17.0%**	**Pass**
Plate Flexure+Shear:	**5.1%**	**Pass**
Plate Tension+Shear:	**37.9%**	**Pass**
Plate Compression:	**31.9%**	**Pass**

Pole Summary

Punching Shear:	**7.2%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

note: Bending interaction not considered when Grout Considered = "Yes"

Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending	Grout Considered	Apply at BARB Elevation	BARB CL Elevation (ft)
1	Yes	Yes	Yes	No	No	
2	No	No	No	No	No	

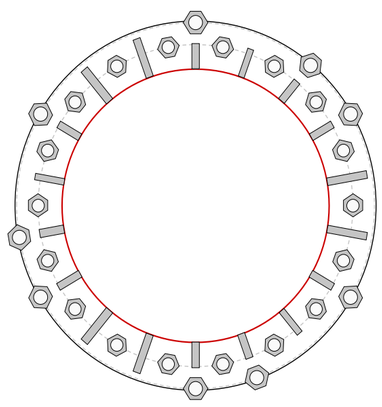
Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	l_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	0	2	A36M-42	51	0.5	1.625	N-Included		No
2	1	20	2	A36M-42	51	0.5	1.625	N-Included		No
3	1	40	2	A36M-42	51	0.5	1.625	N-Included		No
4	1	60	2	A36M-42	51	0.5	1.625	N-Included		No
5	1	80	2	A36M-42	51	0.5	1.625	N-Included		No
6	1	100	2	A36M-42	51	0.5	1.625	N-Included		No
7	1	120	2	A36M-42	51	0.5	1.625	N-Included		No
8	1	140	2	A36M-42	51	0.5	1.625	N-Included		No
9	1	160	2	A36M-42	51	0.5	1.625	N-Included		No
10	1	180	2	A36M-42	51	0.5	1.625	N-Included		No
11	1	200	2	A36M-42	51	0.5	1.625	N-Included		No
12	1	220	2	A36M-42	51	0.5	1.625	N-Included		No
13	1	240	2	A36M-42	51	0.5	1.625	N-Included		No
14	1	260	2	A36M-42	51	0.5	1.625	N-Included		No
15	1	280	2	A36M-42	51	0.5	1.625	N-Included		No
16	1	300	2	A36M-42	51	0.5	1.625	N-Included		No
17	1	320	2	A36M-42	51	0.5	1.625	N-Included		No
18	1	340	2	A36M-42	51	0.5	1.625	N-Included		No
19	2	30	2.25	A193 Gr. B7	58	0.5	9.625	N-Included		No
20	2	50	2.25	A193 Gr. B7	58	0.5	9.625	N-Included		No
21	2	90	2.25	A193 Gr. B7	58	0.5	9.625	N-Included		No
22	2	150	2.25	A193 Gr. B7	58	0.5	9.625	N-Included		No
23	2	190	2.25	A193 Gr. B7	58	0.5	9.625	N-Included		No
24	2	210	2.25	A193 Gr. B7	58	0.5	9.625	N-Included		No
25	2	270	2.25	A193 Gr. B7	58	0.5	9.625	N-Included		No
26	2	290	2.25	A193 Gr. B7	58	0.5	9.625	N-Included		No
27	2	330	2.25	A193 Gr. B7	58	0.5	9.625	N-Included		No

Custom Stiffener Connection

Stiffener	Stiffener Group ID	Location (deg.)	Width (in)	Height (in)	Thickness (in)	H. Notch (in)	V. Notch (in)	Grade (ksi)	Weld Type	Groove Depth (in)	Groove Angle (deg.)	H. Fillet Weld Size (in)	V. Fillet Weld Size (in)	Weld Strength (ksi)
1	4	10	6.5	84	1.25	0.75	0.75	65	Fillet			0.625	0.375	80
2	2	30	4	54	1.25	0.75	0.75	65	Fillet			0.625	0.375	80
3	2	50	4	54	1.25	0.75	0.75	65	Fillet			0.625	0.375	80
4	1	70	4.75	18	1	1	1	36	Fillet			0.625	0.375	70
5	3	90	4	42	1.25	0.75	0.75	36	Fillet			0.625	0.375	70
6	4	110	6.5	84	1.25	0.75	0.75	65	Fillet			0.625	0.375	80
7	4	130	6.5	84	1.25	0.75	0.75	65	Fillet			0.625	0.375	80
8	2	150	4	54	1.25	0.75	0.75	65	Fillet			0.625	0.375	80
9	1	170	4.75	18	1	1	1	36	Fillet			0.625	0.375	70
10	2	190	4	54	1.25	0.75	0.75	65	Fillet			0.625	0.375	80
11	3	210	4	42	1.25	0.75	0.75	36	Fillet			0.625	0.375	70
12	5	230	6.5	126	1.25	0.75	0.75	65	Fillet			0.625	0.375	80
13	5	250	6.5	126	1.25	0.75	0.75	65	Fillet			0.625	0.375	80
14	2	270	4	54	1.25	0.75	0.75	65	Fillet			0.625	0.375	80
15	2	290	4	54	1.25	0.75	0.75	65	Fillet			0.625	0.375	80
16	1	310	4.75	18	1	1	1	36	Fillet			0.625	0.375	70
17	3	330	4	42	1.25	0.75	0.75	36	Fillet			0.625	0.375	70
18	4	350	6.5	84	1.25	0.75	0.75	65	Fillet			0.625	0.375	80

Plot Graphic



Anchor Rod Bracket Calculations:

Additional Anchor Rod Group:

$N_{new} := 9$ $D_{new} := 2.25 \cdot in$ $Fu_{rod} := 125 ksi$

$BC_{new} := 58 \cdot in$ $A_{net\_new} := 3.25 \cdot in^2$ $Fy_{rod} := 105 ksi$

$A_{n\_new} := N_{new} \cdot A_{net\_new} = 29.25 \cdot in^2$

Anchor Rod Bracket Calculations

Analysis
Design

Comment = "Analyze the anchor rod brackets to resist the controlling anchor rod demand force"

Anchor Rod Demand Force:

$P_{.umax} := 133.07 kip$

Bracket Loading:

$$P_u := \begin{cases} \phi P_n & \text{if AorD = "Design"} \\ P_{umax} & \text{if AorD = "Analysis"} \end{cases} = 133.07 \cdot kip$$

Tube Design (Square HSS)

Member Size: HSS 5x5x1/2

Apply TIA-222-H Section 15.5? No / Yes

Member Properties (AISC 15th Ed., Table 1-12):

Outside Diameter: $OD_{HSS} := 5 \cdot in$

Area: $A_{HSS} := 7.88 \cdot in^2$ $A_{e\_HSS} := 0.75 \cdot A_{HSS} = 5.91 \cdot in^2$

Thickness: $t_{HSS} := 0.5 \cdot in$

Yield Strength: $F_{y\_HSS} := 50 \cdot ksi$ $F_{u\_HSS} := 62 \cdot ksi$

Length: $L_{HSS} := 30 \cdot in$

Moment of Inertia: $I_{HSS} := 26 \cdot in^4$

Radius of Gyration: $r_{HSS} := 1.82 \cdot in$

Inside Dimension: $ID_{HSS} := OD_{HSS} - 2 \cdot t_{HSS} = 4 \cdot in$

Bearing Check
(AISC 15th Ed., Equation J7-1):

$\phi_b := 0.75$

$Pu\_c = \phi_b \cdot R_n = \phi_b \cdot 1.8 \cdot F_{y\_HSS} \cdot A_{pb}$

$A_{pb} := \frac{P_u}{\phi_b \cdot 1.8 \cdot F_{y\_HSS}} = 1.97 \cdot in^2$

$Check_{bear} := \begin{cases} \text{"OK"} & \text{if } A_{HSS} \geq A_{pb} \\ \text{"N/G"} & \text{otherwise} \end{cases}$

$Check_{bear} = \text{"OK"}$

Compression Check
(AISC 15th Ed., Eqs. E3-1 to E3-4):

$\phi_c := 0.9$

$K := 1$

$\phi P_{u\_comp} = \phi_c \cdot F_{cr} \cdot A_g$

$L_c := K \cdot L_{HSS} = 30 \cdot in$

$F_e := \frac{\pi^2 \cdot 29000ksi}{\left(\frac{L_c}{r_{HSS}}\right)^2} = 1053.41 \cdot ksi$

$\frac{L_c}{r_{HSS}} = 16.48 \quad < \quad 4.71 \cdot \sqrt{\frac{29000 \cdot ksi}{F_{y\_HSS}}} = 113.43$

$$\therefore \quad F_{cr} := 0.658^{\frac{F_{y\_HSS}}{F_e}} \cdot F_{y\_HSS} = 49.02 \cdot ksi$$

(AISC 15th Ed., Equation J4-6):

$$\phi P_{u\_comp} := \begin{cases} \phi_c \cdot F_{y\_HSS} \cdot A_{HSS} & \text{if } \frac{L_c}{r_{HSS}} \le 25 \\ \phi_c \cdot F_{cr} \cdot A_{HSS} & \text{otherwise} \end{cases}$$

$$\phi P_{u\_comp} = 354.6 \cdot kip$$

$$Check_{comp} := \begin{cases} \text{"OK"} & \text{if } Rating_{comp} < 100\% \\ \text{"N/G"} & \text{otherwise} \end{cases}$$

$Check_{comp} = \text{"OK"}$

Gusset Plate Design

Gusset Plate width: $w_{plate} := 4 \cdot in$

Gusset Plate thickness: $t_{plate} := 1.25in$

$L_{plate1} := 42in$

$L_{plate2} := 30in$

Gusset Plate Strength: $Fy_{plate} := 65ksi$

$Fu_{plate} := 80ksi$

Pole thickness: $t_{pole} := 0.375in$

Shear Check
(AISC 15th Ed., Eqs. J4-3 and J4-4):

$A_g := t_{plate} \cdot L_{plate2} = 37.5 \cdot in^2$

$A_{nv} := A_g = 37.5 \cdot in^2$

Shear Yielding

$\phi_v := 1$

$\phi V_{plate} := \phi_v \cdot 0.6 \cdot A_g \cdot Fy_{plate} = 1462.5 \cdot kip$

$$Check_{shear} := \begin{cases} \text{"OK"} & \text{if } Rating_{sheary} < 100\% \\ \text{"N/G"} & \text{otherwise} \end{cases}$$

$Check_{shear} = \text{"OK"}$

Shear Rupture

$\phi_v := 0.75$

$\phi V_{plate} := \phi_v \cdot 0.6 \cdot A_{nv} \cdot Fu_{plate} = 1350 \cdot kip$

$$Check_{shear} := \begin{cases} \text{"OK"} & \text{if } Rating_{shearr} < 100\% \\ \text{"N/G"} & \text{otherwise} \end{cases}$$

$Check_{shear} = \text{"OK"}$

Gusset Plate to Tower and Base Plate Weld Design (Horizontal and

Vertical Weld):
(AISC 15th Ed., Part 8)

Gusset plate thickness: $t_{plate} = 1.25 \cdot in$

Tower Grade: $Fy_{pole} := 36ksi$ $Fu_{pole} := 58ksi$

Base Plate Grade: $Fy_{base} := 36ksi$ $Fu_{base} := 58ksi$

Gussett Plate Grade: $Fy_{plate} = 65 \cdot ksi$ $Fu_{plate} = 80 \cdot ksi$

Height of vertical weld from base plate: $H := L_{plate1} = 42 \cdot in$

$Notch_{horiz} := 0.75 \cdot in$

$Notch_{vert} := 0.75 \cdot in$

Gap between Base Plate and HSS: $Gap := 0in$

Vertical fillet weld size to pole:
(in sixteenths of an inch) $D_{vpole} := 6$

$$weldsize_{pole} := \frac{D_{vpole}}{16} = \frac{3}{8}$$

Electrode Strength:

$$Check := \begin{cases} \text{"OK"} & \text{if } Rating_{weld2} < 100\% \\ \text{"INSUFFICIENT"} & \text{otherwise} \end{cases}$$

Check = "OK"

Gusset Plate to HSS Weld Design
(AISC 15th Ed., Table 8-4)

Interpolation per AISC SCM Table 8-4:

Electrode Strength:

Fillet Weld Size (in sixteenths of an inch): $D := 6$

Groove Weld:

Groove Depth (inches): $GD := 0in$

Assume the worst-case installation scenario where the rod is positioned directly against the far side of the HSS.

$$ecc_2 := OD_{HSS} - t_{HSS} - \frac{D_{new}}{2} = 3.38 \cdot in$$

Load not in plane with weld group:

$k := 0$

$$a := \frac{ecc_2}{L_{plate2}} = 0.11$$

$C_1 = 1.03$

$Coeff_1 = 3.71$

$\phi_w := 0.75$

$$D_{min1} := ceil\left(\frac{P_u \cdot in}{\phi_w \cdot Coeff_1\, C_1 \cdot L_{plate2} \cdot kip}\right) = 2$$

$$minweldsize := \frac{D_{min1}}{16} = \frac{1}{8}$$

$$Check_{weld} := \begin{cases} \text{"OK"} & \text{if } D_1 \geq D_{min1} \wedge D_1 \geq Min_{weldsize} \wedge D_1 \leq Max_{weldsize} \\ \text{"N/G"} & \text{otherwise} \end{cases}$$

$Check_{weld} = \text{"OK"}$

$$\phi Rn_{weld1} := \phi_w \cdot Coeff_1\, ksi \cdot in \cdot C_1 \cdot D_1 \cdot L_{plate2} = 515.53 \cdot kip$$

$$Check_{weld1} := \begin{cases} \text{"OK"} & \text{if } Rating_{weld1} < 100\% \\ \text{"N/G"} & \text{otherwise} \end{cases}$$

$Check_{weld1} = \text{"OK"}$

Gusset Plate to Pole Punching Shear Check (max per unit length): (AISC 15th Ed., Section J4.2)

What is the bracket welded to?

Reinforcement Thickness: $t_{ref} := 1.25in$

Reinforcement Grade: $F_{y\_ref} := 65ksi$

$F_{u\_ref} := 80ksi$

Assume the worst-case installation scenario where the rod is positioned directly against the far side of the HSS.

$\phi_{sy} := 1.0$

$\phi_{sr} := 0.75$

$ecc_1 := w_{plate} + OD_{HSS} - t_{HSS} - \frac{D_{new}}{2} = 7.38 \cdot in$

$M_1 := P_u \cdot ecc_1 = 981.39 \cdot kip \cdot in$

$S_1 := \frac{t_{plate} \cdot L_{plate1}^2}{6} = 367.5 \cdot in^3$

$f_v := \frac{M_1}{S_1} \cdot t_{plate} \cdot 1in = 3.34 \cdot kip$

AISC 15th Ed., Equation J4-3:

$\phi F_{sy} := \phi_{sy} \cdot 0.6 \cdot Fy_{pole} \cdot 2 \cdot t_{pole} \cdot 1in$

$\phi F_{sy\_ref} := \phi_{sy} \cdot 0.6 \cdot F_{y\_ref} \cdot 2 \cdot t_{ref} \cdot 1in$

AISC 15th Ed., Equation J4-4:

$\phi F_{sr} := \phi_{sr} \cdot 0.6 \cdot Fu_{pole} \cdot 2 \cdot t_{pole} \cdot 1in$ $\phi F_{sr\_ref} := \phi_{sr} \cdot 0.6 \cdot F_{u\_ref} \cdot 2 \cdot t_{ref} \cdot 1in$

$\phi F_v = 16.2 \cdot kip$

$$Check_{PS1} := \begin{cases} \text{"OK"} & \text{if } Rating_{PS1} < 100\% \\ \text{"N/G"} & \text{otherwise} \end{cases}$$

$Check_{PS1} = \text{"OK"}$

Gusset Plate to HSS Punching Shear Check (max per unit length): (AISC 15th Ed., Section J4.2)

Assume the worst-case installation scenario where the rod is positioned directly against the far side of the HSS.

$ecc_2 := OD_{HSS} - t_{HSS} - \frac{D_{new}}{2} = 3.38 \cdot in$

$M_2 := P_u \cdot ecc_2 = 449.11 \cdot kip \cdot in$

$S_2 := \frac{t_{plate} \cdot L_{plate2}^2}{6} = 187.5 \cdot in^3$

$f_w := \frac{M_2}{S_2} \cdot t_{plate} \cdot 1in = 2.99 \cdot kip$

AISC 15th Ed., Equation J4-3:

$\phi F_{sy} := \phi_{sy} \cdot 0.6 \cdot F_{y\_HSS} \cdot 2 \cdot t_{HSS} \cdot 1in = 30 \cdot kip$

AISC 15th Ed., Equation J4-4:

$\phi F_{sr} := \phi_{sr} \cdot 0.6 \cdot F_{u\_HSS} \cdot 2 \cdot t_{HSS} \cdot 1in = 27.9 \cdot kip$

$\phi F_w := \min(\phi F_{sy}, \phi F_{sr}) = 27.9 \cdot kip$

$$Check_{PS2} := \begin{cases} \text{"OK"} & \text{if } Rating_{PS2} < 100\% \\ \text{"N/G"} & \text{otherwise} \end{cases}$$

$Check_{PS2} = \text{"OK"}$

Embedment Depth Calculations

Projected Embedment Depth: $L_{em} := 78 \cdot ft$

Concrete Strength: $f'_c := 3000psi$

Are anchor rods installed in piers?:

Yield Strength of Rebar: $f_y := 60ksi$

Transverse Reinforcement Index: $k_{tr} := 0$ Can be taken as 0 for design per ACI 318-14

Epoxy Factor: $\psi_e := 1$

Rebar Size Factor: $\psi_s := 1$

Casting Position Factor: $\psi_t := 1$

Concrete Weight Factor: $\lambda := 1 \cdot \sqrt{psi}$

Pier Diameter: $D_{pier} := 6ft$

Cover: $c_c := 3in$

Rebar Size: $d_s := 8$

$d_b := \left| vlookup\left(d_s, d_{btable}, 2\right) \right| \cdot in = 1 \cdot in$

Tie Size: $Tie := 4$

Number of Vertical Rebar: $n := 34$

The embedment depth shall be analyzed based on the design tension capacity of the anchor rods.

Design Load:

$$\phi P_{nt} := 0.75 \cdot Fu_{rod} \cdot A_{net\_new} = 304.69 \cdot kip$$

Development Length (ACI 318-14 Chapter 25):

$$BC_{rebar} := D_{pier} - 2 \cdot c_c - \frac{Tie \cdot in}{4} - d_b = 64 \cdot in$$

$$S_{rebar} := \frac{\pi \cdot BC_{rebar}}{n} = 5.914 \cdot in$$

$$c_b := \min\left(c_c + \frac{Tie}{8} in + \frac{d_b}{2}, S_{rebar} \cdot 0.5 \right) = 2.96 \cdot in$$

ACI 318-14, Equation 25.4.2.3a:

$$l_d := \left[\frac{3}{40} \cdot \frac{f_y}{\lambda \cdot \sqrt{f'_c}} \cdot \frac{\psi_t \cdot \psi_e \cdot \psi_s}{\min\left[\left(\frac{c_b + k_{tr}}{d_b} \right), 2.5 \right]} \right] \cdot d_b = 32.86 \cdot in$$

Calculate Max Distance Between Rebar and New Anchor Rods:

$$A := \frac{1}{2} \cdot S_{rebar} = 2.957 \cdot in$$

$$B := \frac{BC_{rebar}}{2} - \frac{BC_{new}}{2} = 3 \cdot in$$

$$G := \sqrt{A^2 + B^2} = 4.212 \cdot in$$

$$l'_d := l_d + \frac{G}{1.5} + 3in = 3.22\ ft$$

Epoxy Development Length: Bond Strength:

Epoxy :=

$$S_b := \begin{cases} S_{bh} & \text{if Epoxy} = 0 \\ S_{bA} & \text{if Epoxy} = 1 \wedge \left(f'_c = 4000\text{psi} \vee f'_c > 4000\cdot\text{psi}\right) \\ 0.94 S_{bA} & \text{if Epoxy} = 1 \wedge \left(f'_c = 3000\text{psi} \vee f'_c < 3000\cdot\text{psi}\right) \\ E_{bond} & \text{if Epoxy} = 1 \wedge f'_c > 3000\text{psi} \wedge f'_c < 4000\text{psi} \end{cases} = 7.4 \times 10^6$$

$$\phi_{bond} := 0.65$$

$$L_{be} := \frac{\phi P_{nt}}{\pi \cdot D_{new} \cdot S_b \cdot \phi_{bond}} = 61.8\cdot\text{in}$$

Required Embedment Length:

Length of Breaker Tape: $L_{BT} := 12\cdot\text{in}$

$$L_{min} := \begin{cases} \max\left(L_{be} + L_{BT}, l'_d + 0.25\cdot L_{be}\right) & \text{if Piers} = \text{"Yes"} \\ \left(L_{be} + L_{BT}\right) & \text{if Piers} = \text{"No"} \end{cases} = 1.87$$

$$\text{Check} := \begin{cases} \text{"OK"} & \text{if } L_{min} \le L_{em} \\ \text{"N/G"} & \text{otherwise} \end{cases}$$

Check = "OK"

Anchor Rod Bracket Summary

Bracket HSS Compression:	$Rating_{comp} = 35.74 \cdot \%$
Bracket Plate Shear Yielding:	$Rating_{sheary} = 8.67 \cdot \%$
Bracket Plate Shear Rupture:	$Rating_{shearr} = 9.39 \cdot \%$
Bracket Plate to Pole Weld:	$Rating_{weld2} = 23.93 \cdot \%$
Bracket Plate to HSS Weld:	$Rating_{weld1} = 24.58 \cdot \%$
Bracket Plate to Pole Punching Shear:	$Rating_{PS1} = 19.62 \cdot \%$
Bracket Plate to HSS Punching Shear:	$Rating_{PS2} = 10.22 \cdot \%$

Drilled Pier Foundation

BU # :	828402
Site Name:	Thompson/ I-395 X99_1
Order Number:	599889 Rev. 5
TIA-222 Revison:	H
Tower Type:	Monopole

Applied Loads	Comp.	Uplift
Moment (kip-ft)	3051.61	
Axial Force (kips)	65.88	
Shear Force (kips)	28.26	

Material Properties		
Concrete Strength, f'c:	3	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	40	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	
Tie Spacing	16	in

Rebar & Pier Options
Embedded Pole Inputs
Belled Pier Inputs

Analysis Results		
Soil Lateral Check	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	6.81	-
Soil Safety Factor	4.87	-
Max Moment (kip-ft)	3214.15	-
Rating*	*26.0%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	557.71	-
End Bearing (kips)	640.31	-
Weight of Concrete (kips)	129.78	-
Total Capacity (kips)	1198.02	-
Axial (kips)	195.66	-
Rating*	*15.6%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	6.60	-
Critical Moment (kip-ft)	3213.87	-
Critical Moment Capacity	3698.09	-
Rating*	*82.8%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	22.52	-
Critical Shear (kip)	178.85	-
Critical Shear Capacity	554.86	-
Rating*	*30.7%*	-

Shear-Friction Methodology is Applied

Structural Foundation Rating*	**82.8%**
Soil Interaction Rating*	**26.0%**

*Rating per TIA-222-H Section 15.5

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

Go to Soil Calculations

Soil Profile

Groundwater Depth	N/A	# of Layers	5

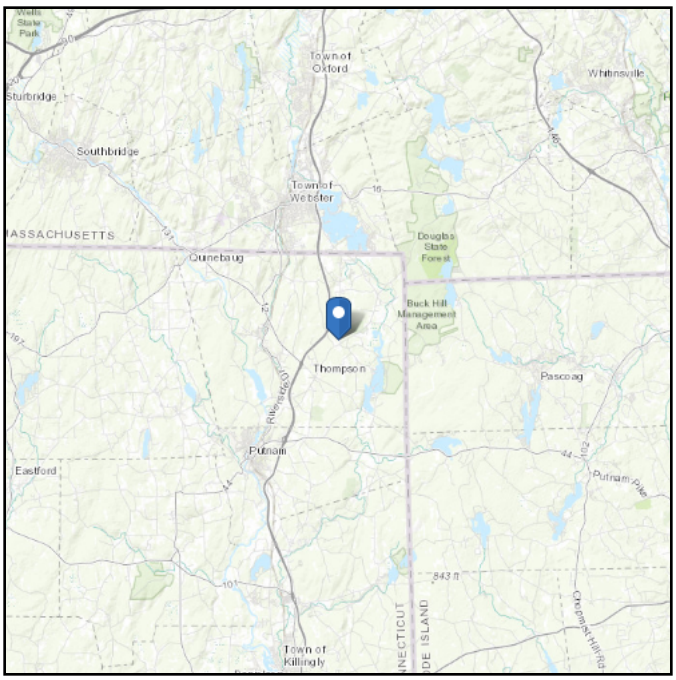
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Net 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	0	38	0.000	0.000	0.90	0.90			Cohesionless
3	8	15	7	140	150	0	42	0.000	0.000	1.60	1.60			Cohesionless
4	15	20	5	140	150	0	42	0.000	0.000	2.20	2.20			Cohesionless
5	20	25.25	5.25	140	150	0	42	0.000	0.000	2.60	2.60	26.7		Cohesionless

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Default (see Section 11.4.3)

Elevation: 623.8 ft (NAVD 88)
Latitude: 41.977706
Longitude: -71.846542



Wind

Results:

Wind Speed	120 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	93 Vmph
100-year MRI	99 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Tue Apr 26 2022

Value provided is 3-second gust wind speeds at 33 ft above ground for Exposure C Category, based on linear interpolation between contours. Wind speeds are interpolated in accordance with the 7-16 Standard. Wind speeds correspond to approximately a 7% probability of exceedance in 50 years (annual exceedance probability = 0.00143, MRI = 700 years).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

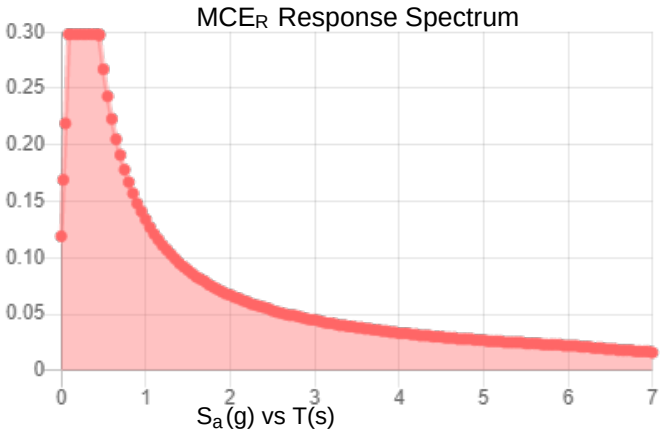
Seismic

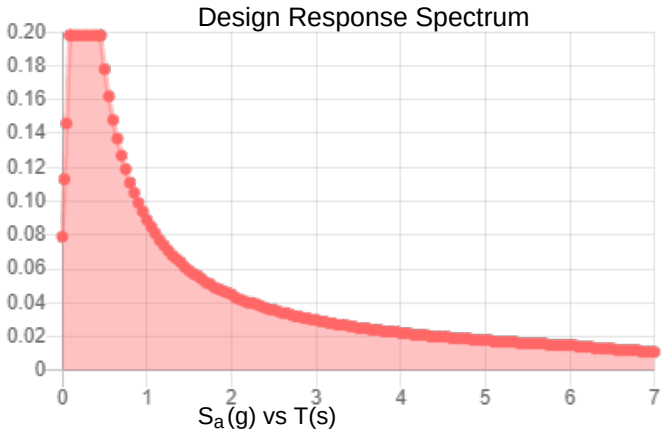
Site Soil Class: D - Default (see Section 11.4.3)

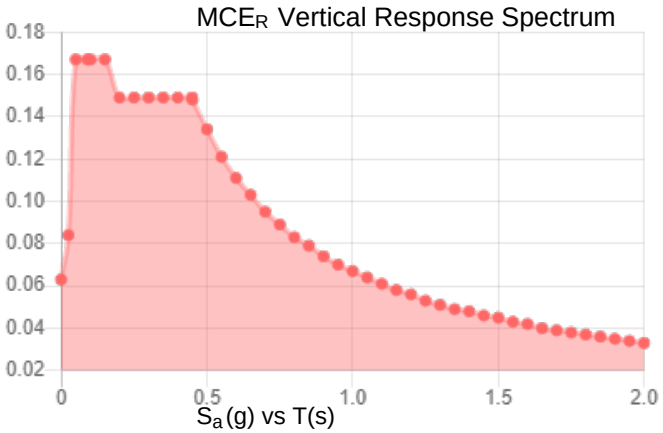
Results:

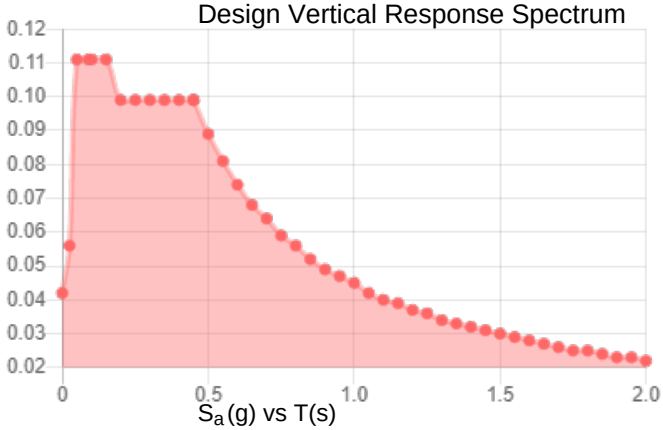
S_S :	0.186	S_{D1} :	0.089
S_1 :	0.056	T_L :	6
F_a :	1.6	PGA :	0.1
F_v :	2.4	PGA_M :	0.16
S_{MS} :	0.298	F_{PGA} :	1.599
S_{M1} :	0.134	I_e :	1
S_{DS} :	0.198	C_v :	0.7

Seismic Design Category B









Data Accessed: **Tue Apr 26 2022**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Tue Apr 26 2022

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

Date: **April 14, 2022**

POD Group
1033 E Turkeyfoot Lake Rd. Suite 206
Akron, OH 44312
(330) 961.7432
mhoudeshell@podgrp.com

Subject:	**Mount Analysis Report**	
Carrier Designation:	**T-Mobile**	
	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:	**700678**
	Crown Castle Order Number:	**599889 Rev.5**
Engineering Firm Designation:	**POD Report Designation:**	**22-126480**
Site Data:	**720 Thompson Rd, Thompson, Windham County, CT 06277** **Latitude 41° 58' 39.74" Longitude -71° 50' 47.55"**	
Structure Information:	**Tower Height & Type:**	**156.2 ft Monopole**
	Mount Elevation:	**141 ft**
	Mount Type:	**12.5 ft Platform w/ Support Rails**

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

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

12.5 ft Platform w/ Support Rails **Sufficient**

This analysis utilizes an ultimate 3-second gust wind speed of 127 mph as required by the 2018 Connecticut Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount structural analysis prepared by: Angelin Chittilappilly

Respectfully submitted by:

Jason Cheronis, PE
Connecticut PE#: 0032793

STATE OF CONNECTICUT
JASON CHERONIS
PEN.0032793
LICENSED
PROFESSIONAL ENGINEER

Jason Cheronis
Digitally signed by Jason Cheronis
Date: 2022.04.14 09:47:14 -04'00'

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1) INTRODUCTION

This is an existing 4 - sector 12' Platform with Support Rails design by SitePro1.

2) ANALYSIS CRITERIA

Building Code: 2015 IBC & 2018 Connecticut State Building Code
TIA-222 Revision: TIA-222-H
Risk Category: II
Ultimate Wind Speed: 127 mph
Exposure Category: C
Topographic Factor at Base: 1
Topographic Factor at Mount: 1
Ice Thickness: 1 in
Wind Speed with Ice: 50 mph
Seismic S_s: 0.172
Seismic S_1: 0.063
Live Loading Wind Speed: 30 mph
Man Live Load at Mid/End-Points: 250 lb
Man Live Load at Mount Pipes: 500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details	Note
141	143	3	ERICSSON	AIR 6419 B41_TMO	12.5 ft Platform w/ Support Rails	-
		3	RFS/CELWAVE	APXVAARR24_43-U-NA20		
		3	ERICSSON	RADIO 4460 B2/B25 B66_TMO		
	141	3	ERICSSON	RADIO 4449 B71/B85A		

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	-	Crown Castle App # 599889 Rev.5 Dated: 2/3/2022	Crown Castle
RFDS	-	T-Mobile Site ID: CT11160B Dated: 3/15/2022	Crown Castle
Structural Analysis	-	Paul J. Ford & Co. Project #: 37521-1143.001.7805 Dated: 9/20/2021	Crown Castle
Previous Mount Analysis	-	POD Project#: 22-121437 Dated: 02/10/2022	POD
Mount Specification Drawings	-	SitePro1 Drawing #: F4P-12W Dated: 8/30/2017	SitePro1
Modification Drawings	-	SitePro1 Drawing #: F4P-HRK12 Date: 8/29/2017	SitePro1

3.1) Analysis Method

RISA-3D (Version 17.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases. Selected output from the analysis are included in the Appendices.

A tool internally developed, using Microsoft Excel, by POD Group, was used to calculate wind loading on all appurtenances, dishes, and mount members for various load cases. Selected output from the calculations is included in Appendix B.

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

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed, and maintained in good condition in accordance with its original design, TIA Standards, and/or manufacturer's specifications. This is not a condition assessment of the mount, structure, or foundation.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) The weight of the mount was increased 10% in the analysis to account for connections, coax, and jumpers.
5) The purpose of this report is to assess the feasibility of adding appurtenances usually accompanied by transmission lines to the structure. POD Group does not analyze the fabrication of the mount or structure (including welding).
6) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
7) Based on the review, POD Group believes this mount is SitePro1, P/N: F4P-12W and P/N: F4P-HRK12.
8) Steel grades have been assumed as follows, unless noted otherwise:
    a. WT Shapes, Angle, Plate — ASTM 992 (GR 50)
    b. HSS (Rectangular) — ASTM Q235 (GR 35)
    c. Pipe — ASTM A53 (GR 35)
    d. Connection Bolts — ASTM A325

If any of these assumptions are not valid or have been made in error, this analysis may be affected, and POD Group should be allowed to review any new information to determine its effect on the structural integrity of the mount.

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (12.5 ft Platform w/ Support Rails)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1	Standoff	SO TOP25	141	76.9	Pass
	Mount Pipe	MP ALPHA1		67.2	Pass
	Rail	RAIL1		76.9	Pass
	Corner	CORNER2		42.6	Pass
	Face	FACE1		46.9	Pass
	Support	SUPPORT12		49.2	Pass
	Vertical	VERT1		61.7	Pass
	Diagonal	DAIG13		37.5	Pass
	Standoff	SOBOT		32.8	Pass
	Bracing	BRACE12		25.5	Pass
	Plates	PLATE2		20.6	Pass
	Standoff Flange Plate Bolts	-		15.3	Pass
	Standoff Flange Plate	-		26.2	Pass

Structure Rating (max from all components) =	**76.9%**

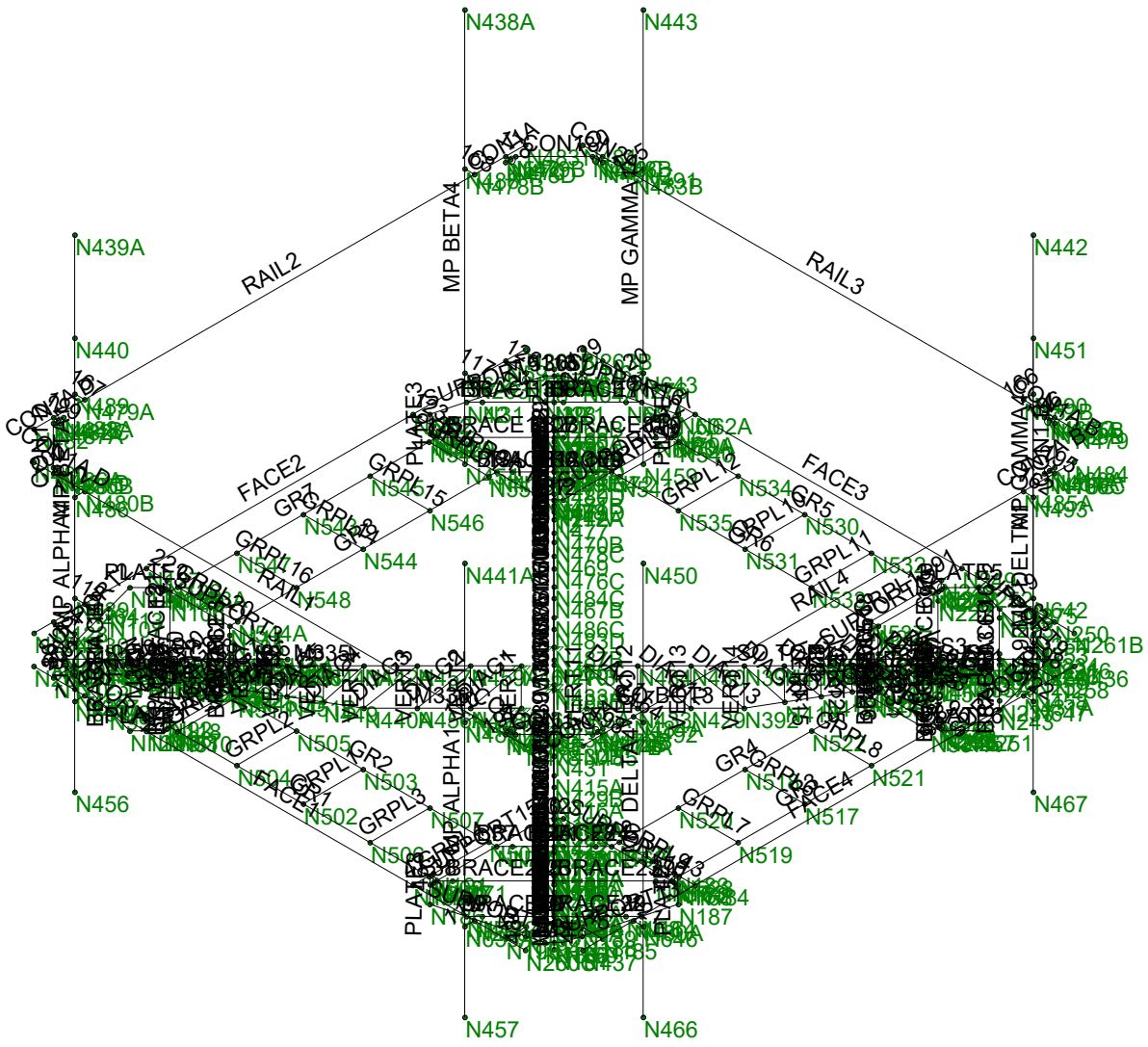
Notes:
1) See additional documentation in “Appendix C – Software Analysis Output” and “Appendix D – Additional Calculations” for calculations supporting the % capacity

4.1) Recommendations

The mount has sufficient capacity to carry the proposed loading configuration. No modifications are required at this time.

APPENDIX A

Wire Frame and Rendered Models



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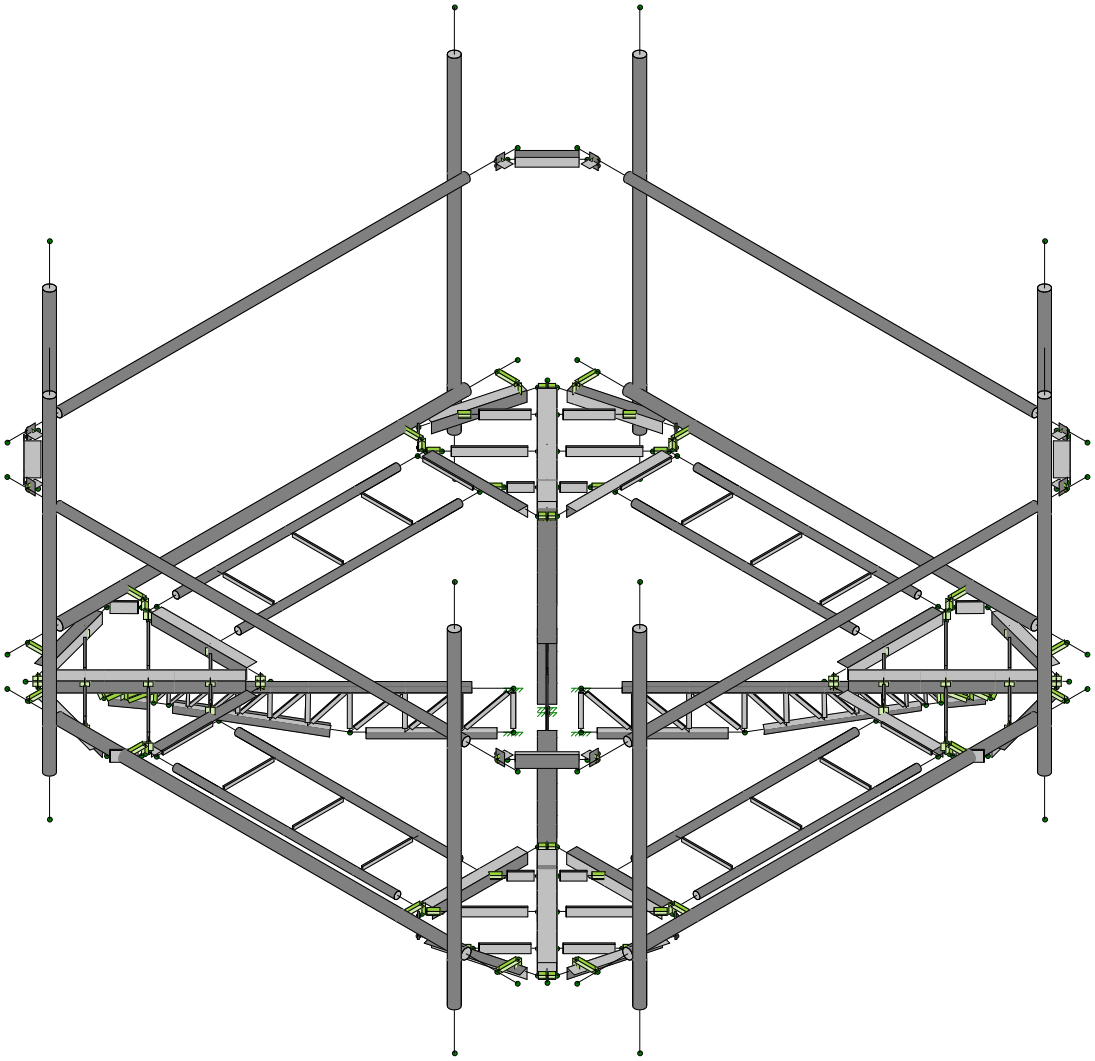
22-126480		(PL40)824439.r3d



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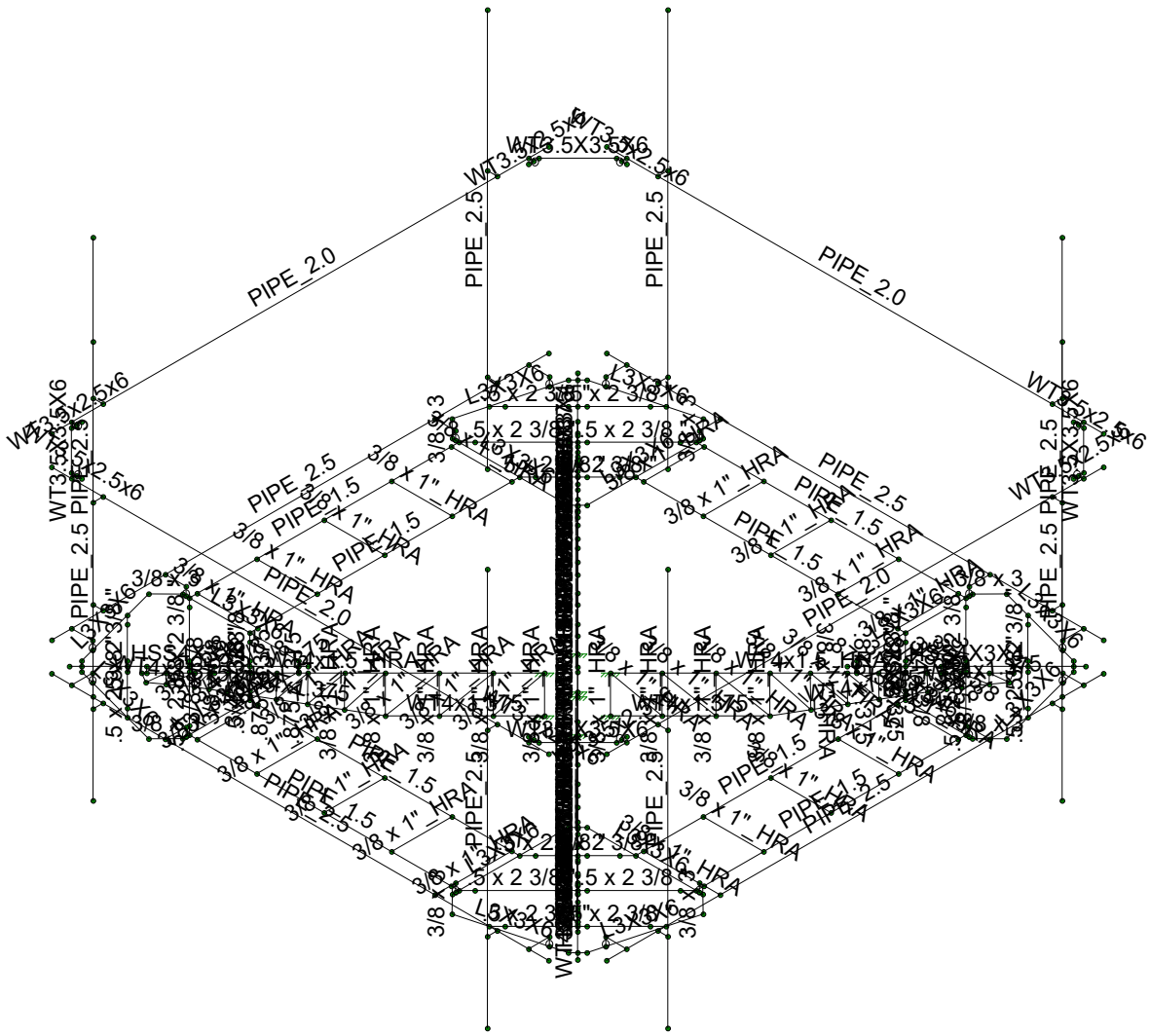

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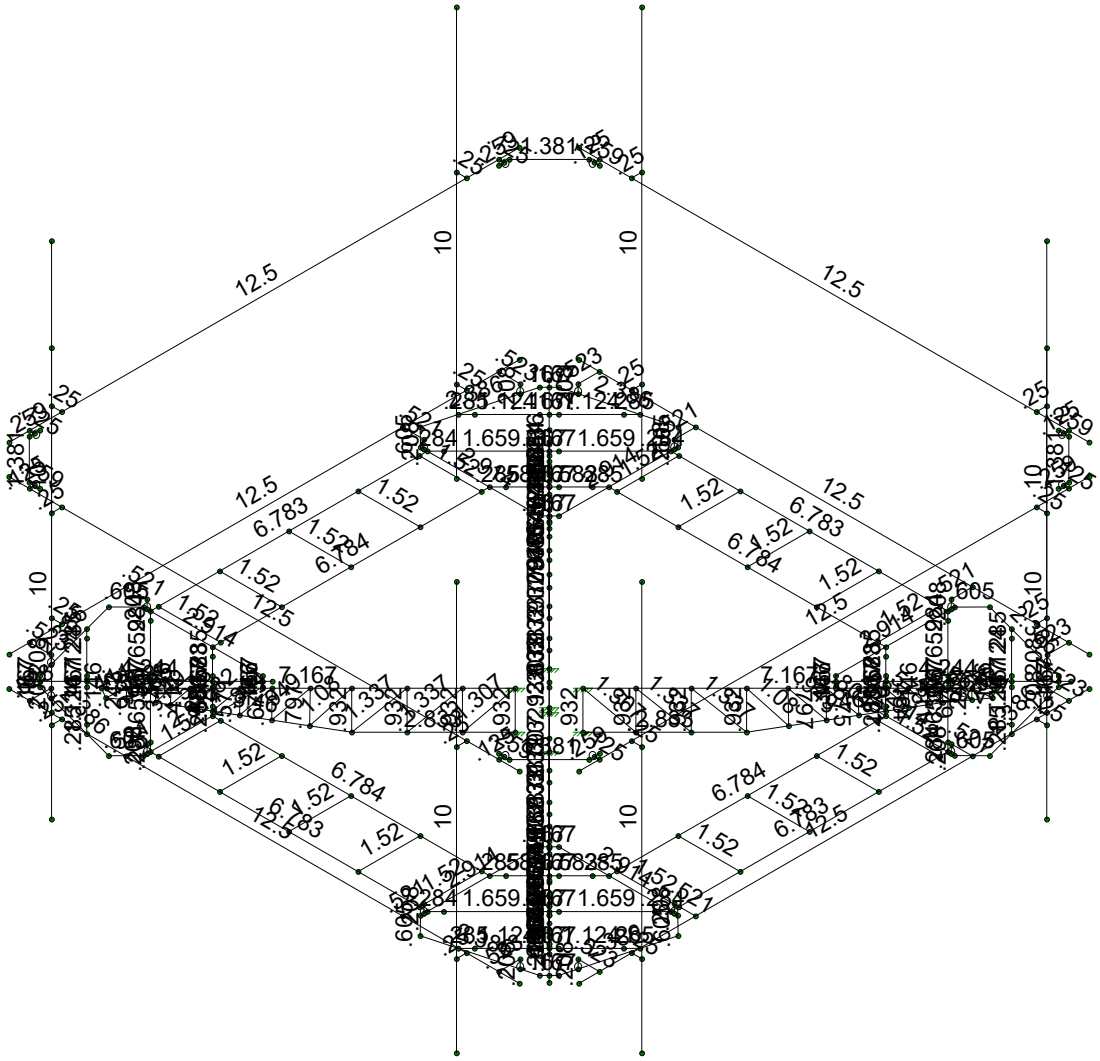

Member Length (ft) Displayed

POD	828402	SK - 7
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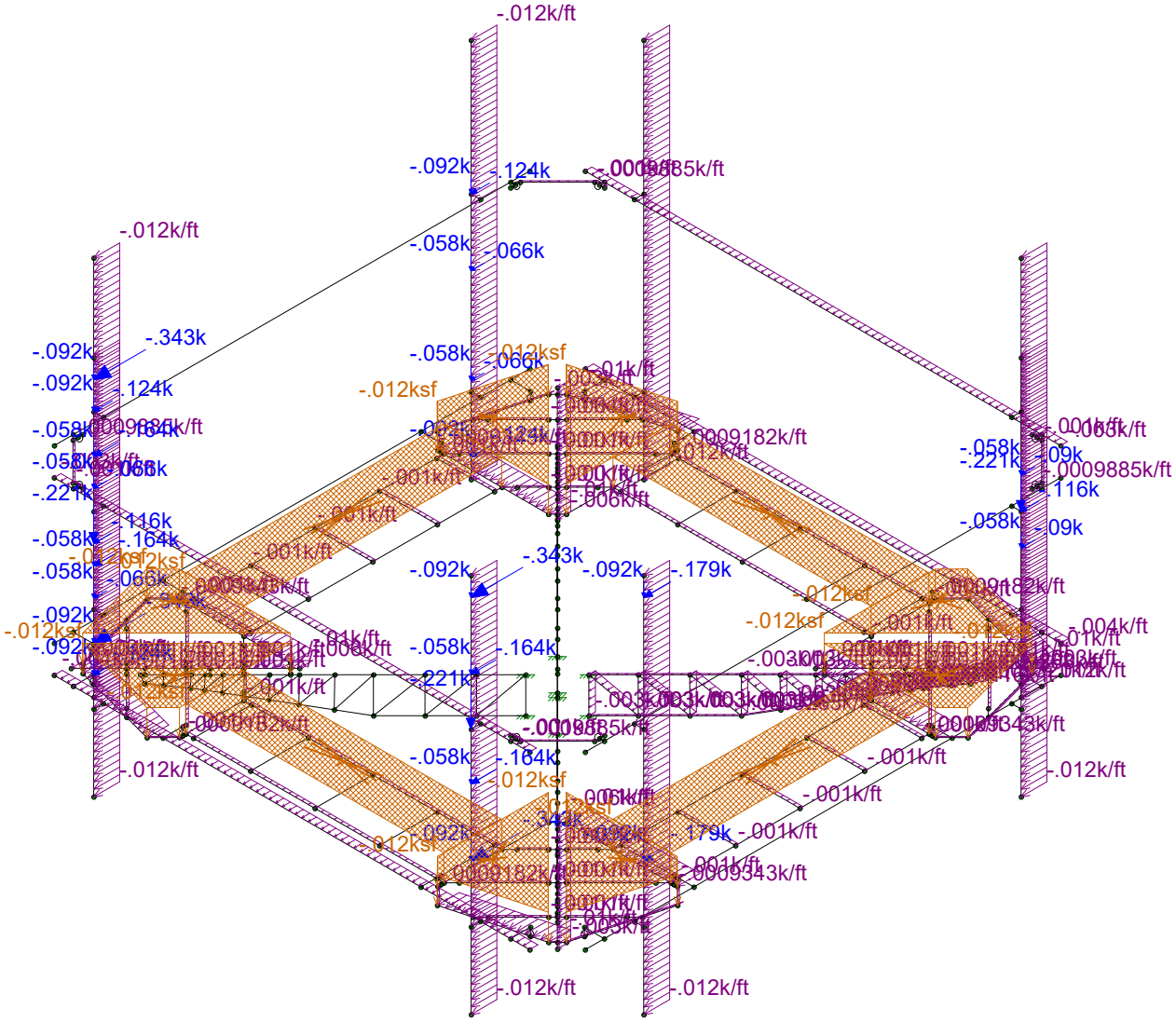

Loads: LC 2, 1.2D + 1.0W(0)

POD	828402	SK - 8
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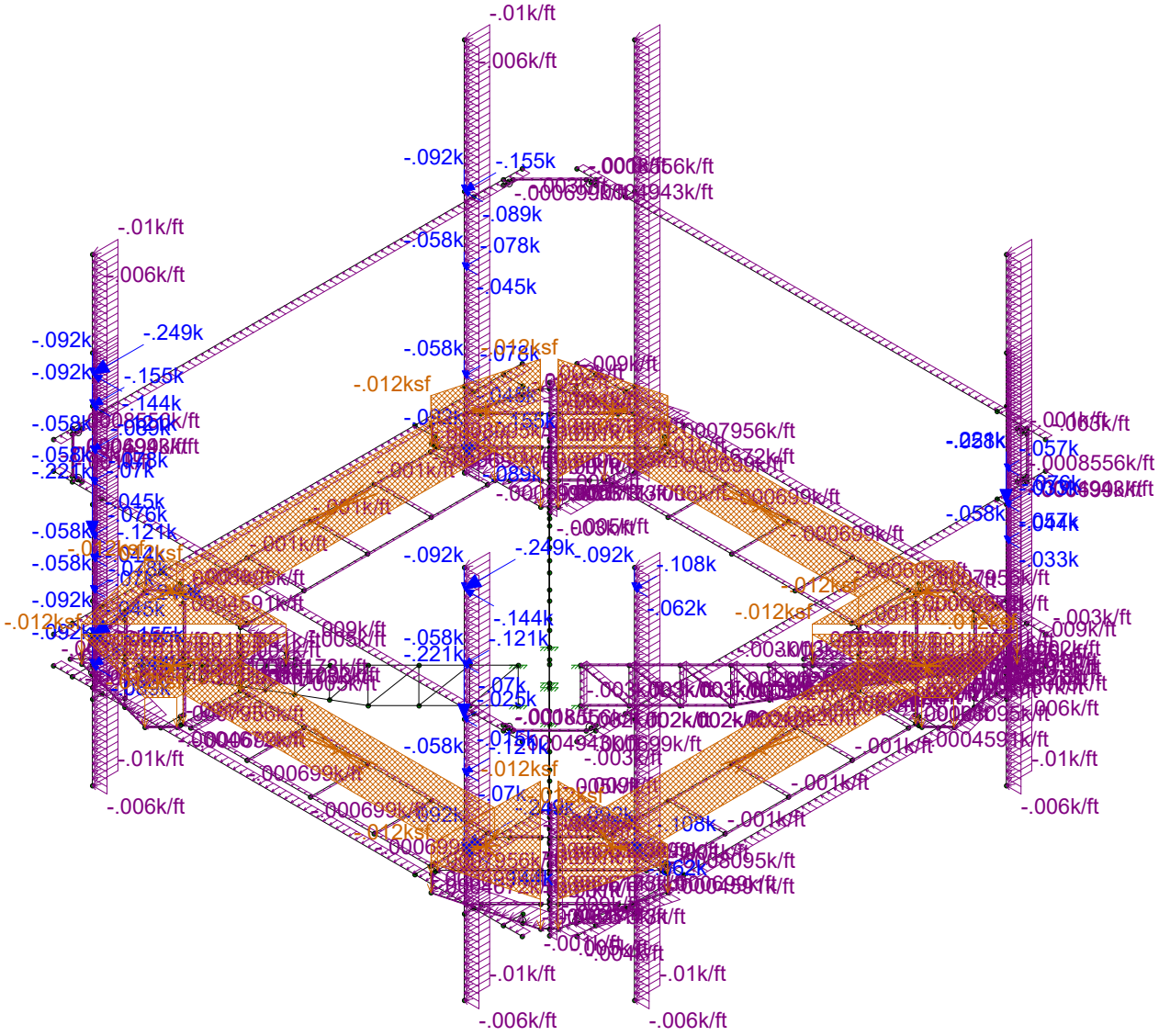

Loads: LC 5, 1.2D + 1.0W(30)

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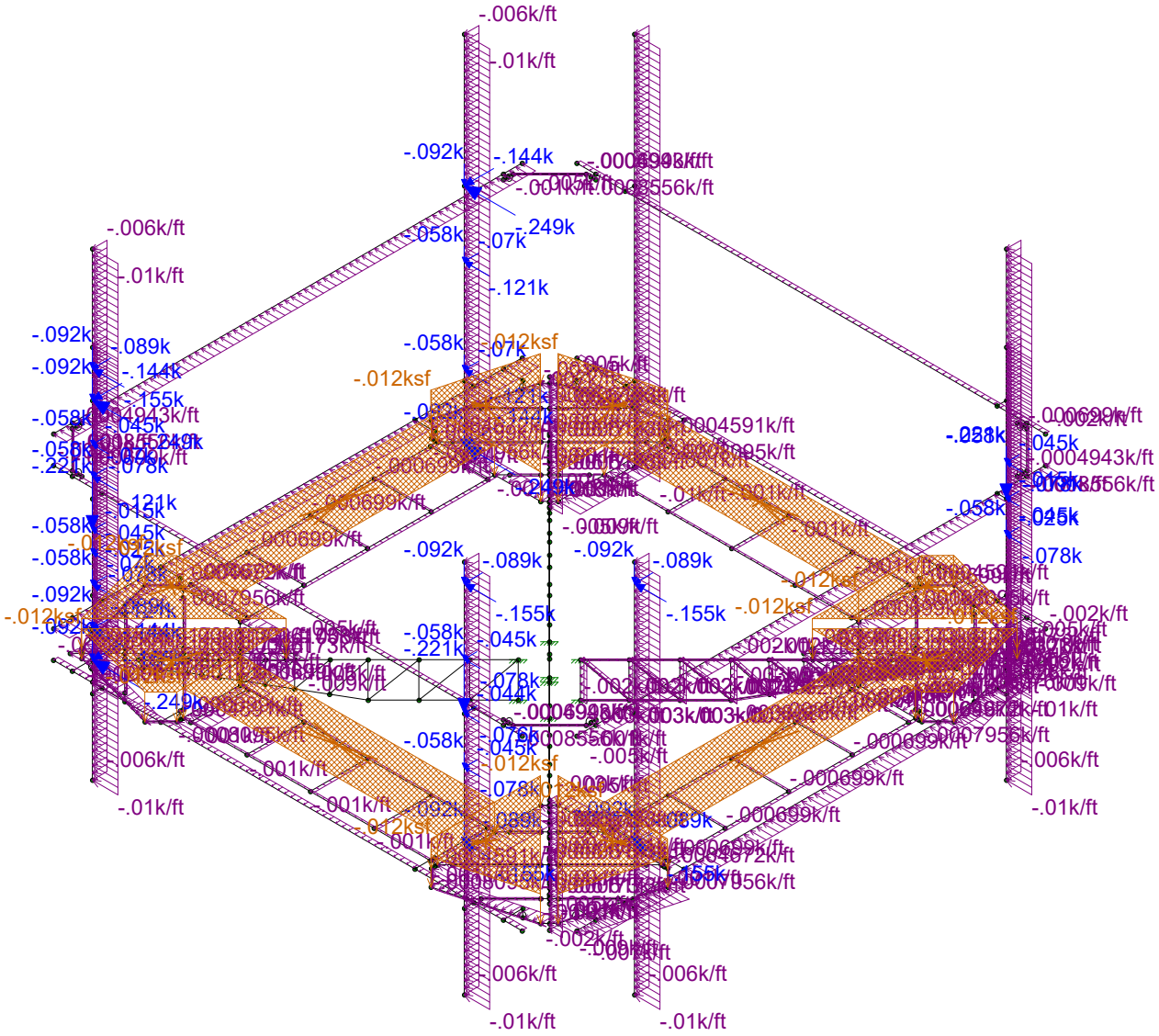

Loads: LC 8, 1.2D + 1.0W(60)

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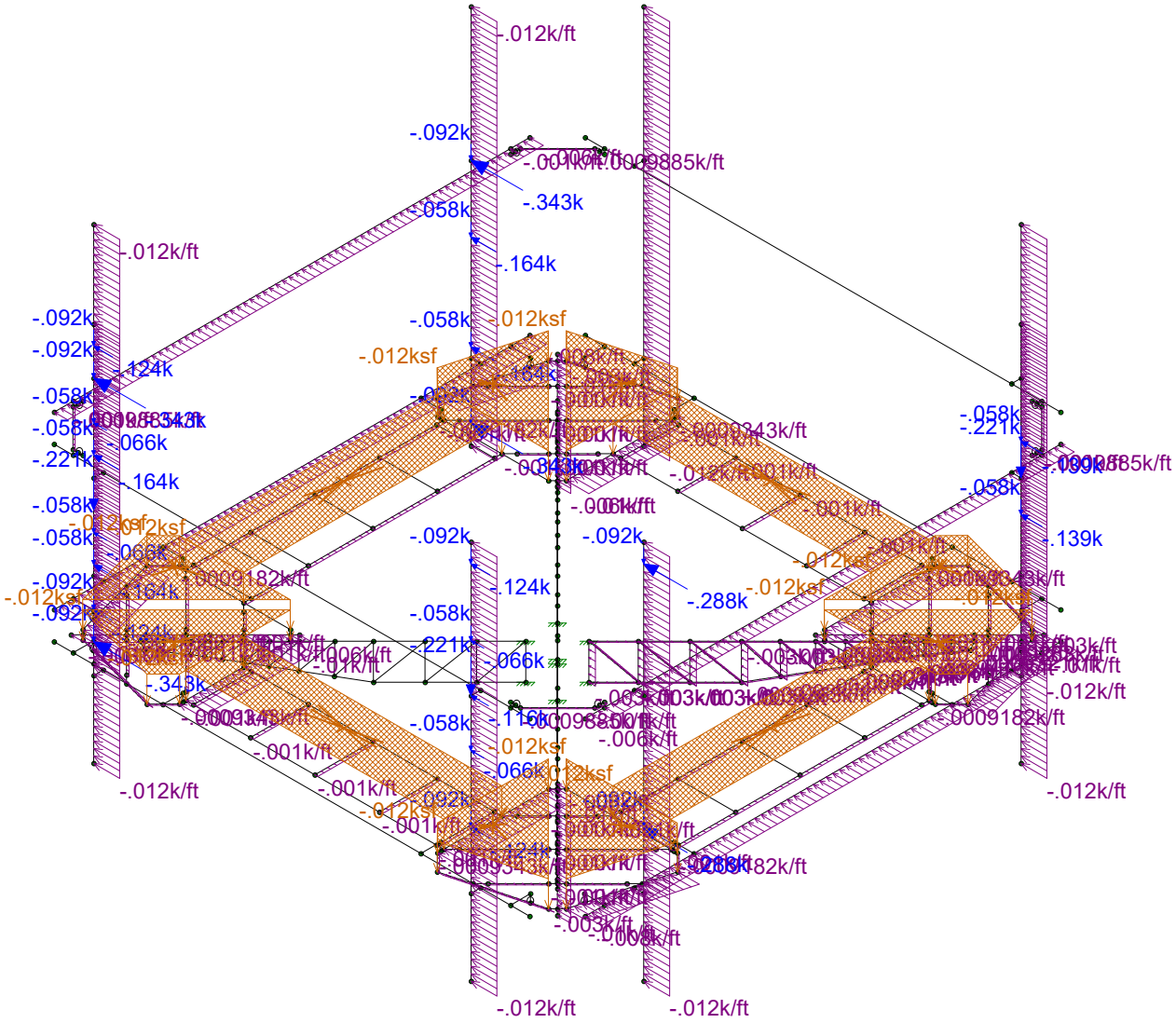

Loads: LC 11, 1.2D + 1.0W(90)

POD	828402	SK - 11
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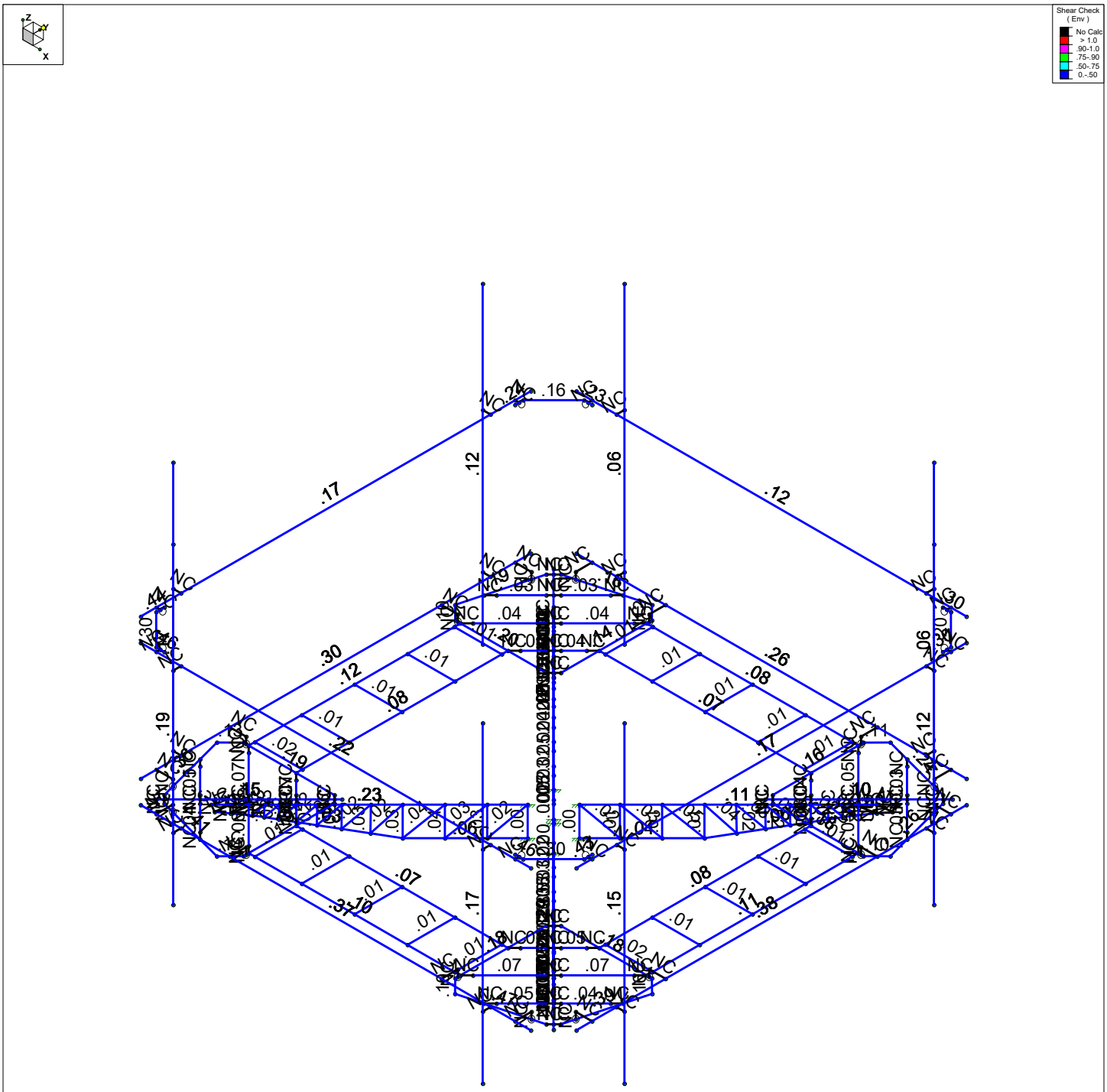

Member Shear Checks Displayed (Enveloped)
Results for LC 1, 1.4D

POD	828402	SK - 13
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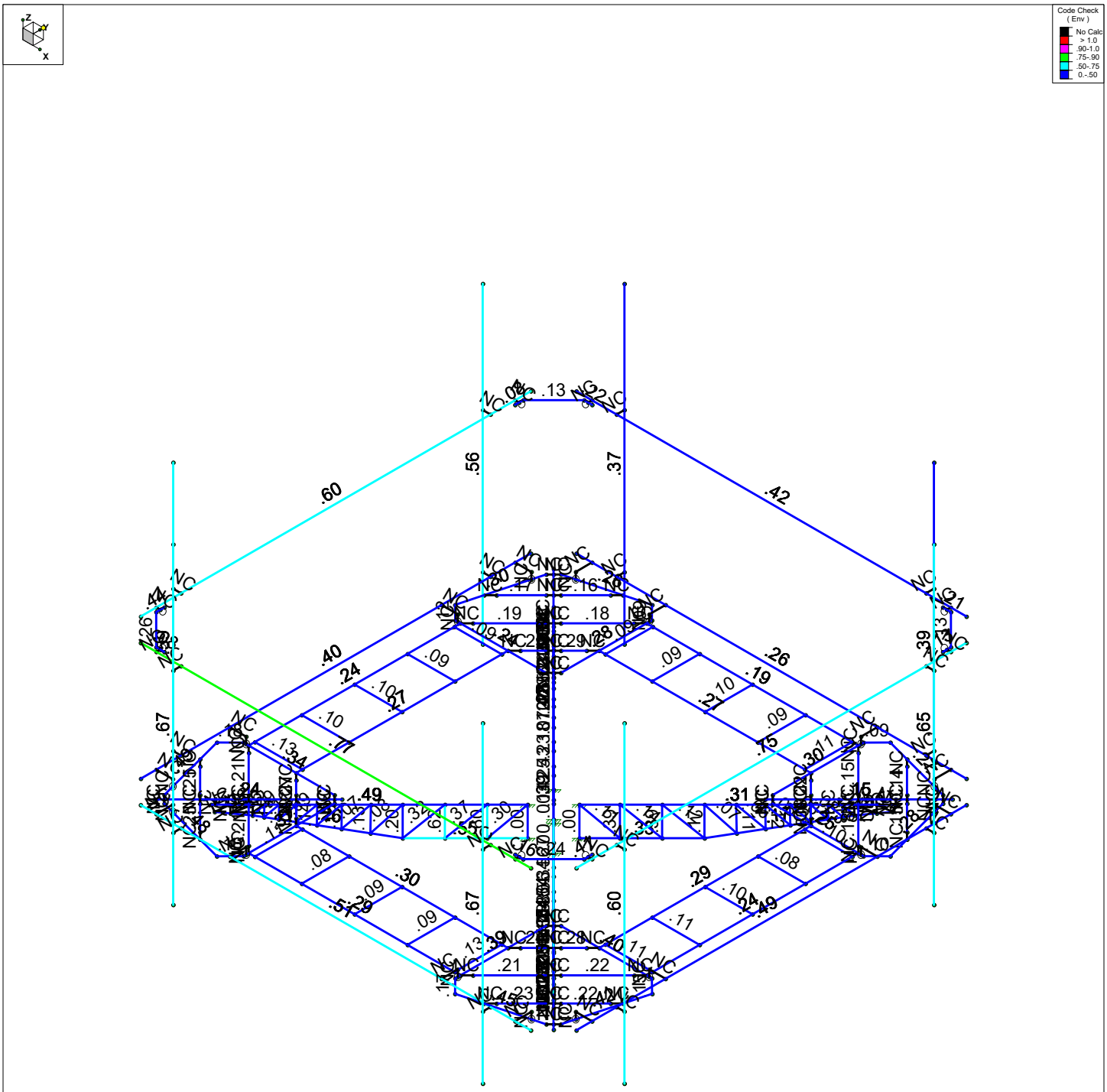


Member Code Checks Displayed (Enveloped)
Results for LC 1, 1.4D

POD	828402	SK - 12
AC		Apr 14, 2022 at 8:43 AM
22-126480		(PL40)824439.r3d

APPENDIX B

Software Input Calculations

POD Job #	**22-126480**
Site Number	**828402**
Site Name	**Thompson/ I-395 X99_1**

General Site Information

Mount Type	SFP	Risk Category	II	I (seismic)	1	
V (Wind Speed)	120	I(ice)	1	Sms	0.275	
Zs	623			Sm1	0.151	
ti	1	Ss	0.172	Sds	0.183	
Vi	50	S1	0.063	Sd1	0.101	
Kzt	1	Soil Site Class	D (assumed)	Seismic Design Category		
Exposure	C	Fa	1.600		B	
zg	900	Fv	2.400	Seismic Analysis Not Required		
α	9.5			R	2	TIA-222-H 16.7
Kmin	0.85	Tower Type	Monopole	As	1	TIA-222-H 16.7
G_H	1	Tower Height	156	Cs, Min	0.03	TIA-222-H 2.7.7.1.1
Ke	0.98			Cs	0.091733333	TIA-222-H 2.7.7.1.1
K_D	0.95					
K_a	0.9					

Appurtenance Information

Model	Shielded	% Shielded	Centerline	Centerline on MP	Spacing (in)	Azimuth	Sector	Quantity		MP #
AIR 6419 B41_TMO			143	6.5	30		A/B	1	1	4
APXVAARR24_43-U-NA20			143	6.5	72		A/B	1	1	4
RADIO 4449 B71/B85A	Front	100	143	6.5			A/B	1	1	
RADIO 4460 B2/B25 B66_TA	Front	100	143	6.5			A/B	1	1	
AIR 6419 B41_TMO			143	6.5	20	30	D	1	1	
APXVAARR24_43-U-NA20			143	6.5	72	30	D	1	1	4
RADIO 4449 B71/B85A	Front	100	143	6.5			D	1	1	
RADIO 4460 B2/B25 B66_TA	Front	100	143	6.5			D	1	1	

Mount Information

Elevation (ft)	141	Grating Thickness (in)	1
K_z	1.36	Grating Ice Weight (k/ft^2)	0.014
Kiz	1.16		
tiz	1.16		

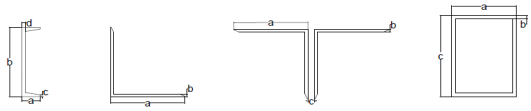
	Length (ft)	Width (in)	Centerline
Mount Pipes	10	2.875	141

Round Members

Member	Length (ft)	Width (in)	Frame Member	# of Members
FACE ON	14.5	2.875	Yes	3
FACE OFF	14.5	2.875	No	1
RAIL ON	12.5	2.375	Yes	3
RAIL OFF	12.5	2.375	No	1
GR	6.79	1.875	No	8

Flat Members

Member	Length (ft)	Width (in)	Shape	A	B	C	D	Frame Member	# of Members
VERT	0.871	0.875	Channel		0.875		0.375	No	40
SUPPORT	2.9	3	Angle	3	0.375			No	16
SO	8.5	0.375	Channel		0.375		4	No	32
HSS	4.24	4	Square HSS	4	0.25	3		No	4
HORIZ	1.04	1	Channel		1		0.375	No	64
DIAG	1.26	1	Channel		1		0.375	No	40
BRACE	1.12	0.5	Channel		0.5		2.375	No	24
GRPL	1.8	0.4	Channel		0.5		2.375	No	20
PLATE	0.7	0.375	Channel		0.375		3	No	8



Version 3.41

Appurtenance Wind Calculations

									Wind Force (Kips)				
Model	Height	Width	Depth	Weight (lbs)	Kz	qz (lb/ft$_2$)	$(EPA)_N$ (ft^2)	$(EPA)_T$(ft^2)	Front	Side	Front	Beta	Gamma
AIR 6419 B41_TMO	36.3	20.9	9.0	96.5	1.36	46.72	7.00	2.83	0.327	0.132	0.454	0.181	0.278
APXVAARR24_43-U-NA20	95.9	24.0	8.7	153.3	1.36	46.72	14.67	5.32	0.685	0.249	0.494	0.358	0.576
RADIO 4449 B71/B85A	15.0	13.2	8.7	75.0	1.36	46.72	1.48	0.98	0.000	0.046	0.213	0.034	0.011
RADIO 4460 B2/B25 B66_TA	17.0	15.1	11.9	109.0	1.36	46.72	1.93	1.52	0.000	0.071	0.030	0.053	0.018
AIR 6419 B41_TMO	36.3	20.9	9.0	96.5	1.36	46.72	7.00	2.83	0.327	0.132	0.097	0.278	0.181
APXVAARR24_43-U-NA20	95.9	24.0	8.7	153.3	1.36	46.72	14.67	5.32	0.685	0.249	0.070	0.576	0.358
RADIO 4449 B71/B85A	15.0	13.2	8.7	75.0	1.36	46.72	1.48	0.98	0.000	0.046		0.034	0.011
RADIO 4460 B2/B25 B66_TA	17.0	15.1	11.9	109.0	1.36	46.72	1.93	1.52	0.000	0.071		0.053	0.018

Appurtenance Ice Calculations

											Wind Force (Kips)				
Model	tiz (in)	Height	Width	Depth	Weight (lbs)	Kiz	qz (lb/ft$_2$)	$(EPA)_N$ (ft^2)	$(EPA)_T$(ft^2)	Front	Side	Alpha	Beta	Gamma
AIR 6419 B41_TMO	1.16	38.57	23.23	11.34	107.49	1.16	8.11	7.43	3.43	0.060	0.028	0.052	0.036	0.052
APXVAARR24_43-U-NA20	1.16	98.22	26.32	11.02	273.78	1.16	8.11	14.82	6.21	0.120	0.050	0.103	0.068	0.103
RADIO 4449 B71/B85A	1.16	17.28	15.51	11.02	40.00	1.16	8.11	1.17	0.83	0.000	0.007	0.002	0.005	0.002
RADIO 4460 B2/B25 B66_TA	1.16	19.32	17.42	14.22	55.98	1.16	8.11	1.47	1.20	0.000	0.010	0.002	0.007	0.002
AIR 6419 B41_TMO	1.16	38.57	23.23	11.34	107.49	1.16	8.11	7.43	3.43	0.060	0.028	0.067	0.052	0.036
APXVAARR24_43-U-NA20	1.16	98.22	26.32	11.02	273.78	1.16	8.11	14.82	6.21	0.120	0.050	0.133	0.103	0.068
RADIO 4449 B71/B85A	1.16	17.28	15.51	11.02	40.00	1.16	8.11	1.17	0.83	0.000	0.007	0.002	0.005	0.002
RADIO 4460 B2/B25 B66_TA	1.16	19.32	17.42	14.22	55.98	1.16	8.11	1.47	1.20	0.000	0.010	0.002	0.007	0.002

Round Members

	Wind Calculations							Ice Calculations							
Member	q_z (lb/ft^2)	Ar	C	Rr	Cf	EPA (ft^2)	Load (k/ft)	Width (in)	Weight (k/ft)	q_z (lb/ft^2)	Arice	qz (lb/ft2)	Cf	EPA (ft^2)	Load (k/ft)
FACE ON	46.59	10.42	32.69	0.63	1.20	2.38	0.008	5.19	0.01	8.09	18.81	2.70	1.20	5.47	0.003
FACE OFF	46.59	3.47	32.69	0.63	1.20	2.38	0.004	5.19	0.01	8.09	6.27	2.70	1.20	5.47	0.002
RAIL ON	46.59	7.42	27.00	0.63	1.20	1.70	0.006	4.69	0.00	8.09	14.65		1.20	4.26	0.003
RAIL OFF	46.59	2.47	27.00	0.63	1.20	1.70	0.003	4.69	0.00	8.09	4.88		1.20	4.26	0.001
GR	46.59	8.49	21.32	0.63	1.20	0.73	0.002	4.19	0.00	8.09	18.96		1.20	2.07	0.001

Flat Members

	Wind Calculations					Ice Calculations							
Member	q_z (lb/ft^2)	Af	Cf	EPA	Load (k/ft)	Width (in)	Weight (k/ft)	q_z (lb/ft^2)	Arice	qz (lb/ft2)	Cf	EPA	Load (k/ft)
VERT	46.59	2.54	2.00	0.11	0.003	3.19	0.00	8.09	9.25	2.70	2.00	0.34	0.002
SUPPORT	46.59	11.60	2.00	1.31	0.010	5.31	0.01	8.09	20.54	2.70	2.00	1.87	0.003
SO	46.59	8.50	2.00	0.48	0.001	2.69	0.01	8.09	60.92	2.70	2.00	2.77	0.001
HSS	46.59	5.65	1.25	1.59	0.009	6.31	0.01	8.09	8.92	2.70	1.25	2.03	0.002
HORIZ	46.59	5.55	2.00	0.16	0.003	3.31	0.00	8.09	18.37	2.70	2.00	0.42	0.002
DIAG	46.59	4.20	2.00	0.19	0.003	3.31	0.00	8.09	13.91	2.70	2.00	0.51	0.002
BRACE	46.59	1.12	2.00	0.08	0.002	2.81	0.00	8.09	6.30	2.70	2.00	0.38	0.001
GRPL	46.59	1.20	2.00	0.11	0.001	2.71	0.00	8.09	8.14	2.70	2.00	0.59	0.001
PLATE	46.59	0.18	2.00	0.04	0.001	2.69	0.01	8.09	1.25	2.70	2.00	0.23	0.001

Appurtenance Seismic Calculations

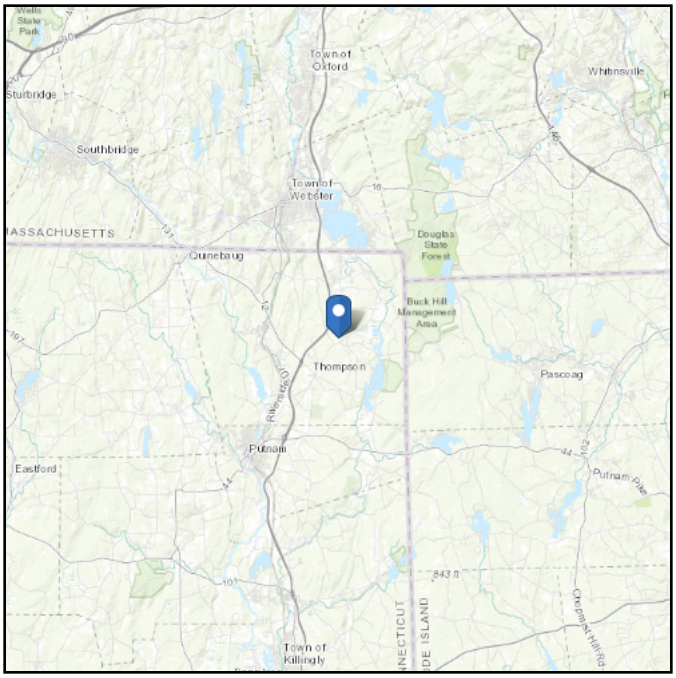
Model	Weight	Sds	ρ	Cs	As	Ev	Eh
AIR 6419 B41_TMO	96.5	0.183	1.000	0.092	1.000	0.004	0.009
APXVAARR24_43-U-NA20	153.3	0.183	1.000	0.092	1.000	0.006	0.014
RADIO 4449 B71/B85A	75.0	0.183	1.000	0.092	1.000	0.003	0.007
RADIO 4460 B2/B25 B66_TA	109.0	0.183	1.000	0.092	1.000	0.004	0.010
AIR 6419 B41_TMO	96.5	0.183	1.000	0.092	1.000	0.004	0.009
APXVAARR24_43-U-NA20	153.3	0.183	1.000	0.092	1.000	0.006	0.014
RADIO 4449 B71/B85A	75.0	0.183	1.000	0.092	1.000	0.003	0.007
RADIO 4460 B2/B25 B66_TA	109.0	0.183	1.000	0.092	1.000	0.004	0.010

Version 3.41

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	623.8 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.977706
Soil Class:	D - Stiff Soil	**Longitude:**	-71.846542



Wind

Results:

Wind Speed	127 Vmph
10-year MRI	78 Vmph
25-year MRI	88 Vmph
50-year MRI	96 Vmph
100-year MRI	104 Vmph

Data Source: ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, and Section 26.5.2, incorporating errata of March 12, 2014

Date Accessed: Thu Feb 10 2022

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).

Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

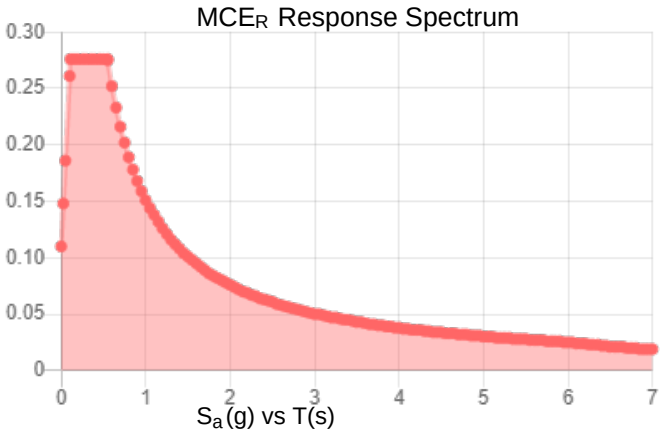
Seismic

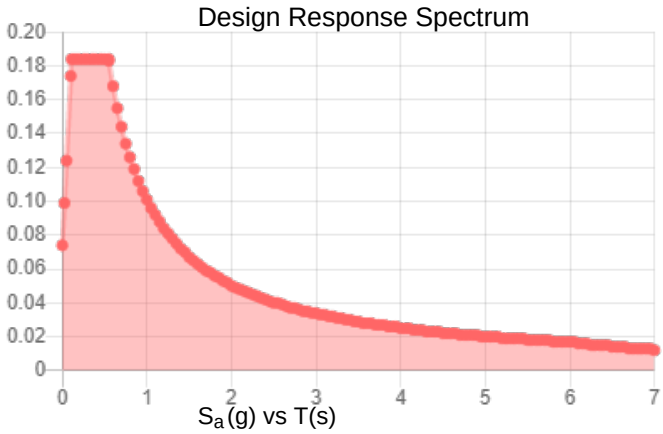
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.172	S_{DS} :	0.184
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.085
S_{MS} :	0.276	PGA_M :	0.137
S_{M1} :	0.151	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: **Thu Feb 10 2022**

Date Source:

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Wed Feb 09 2022

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 500-year mean recurrence interval, and temperatures concurrent with ice thicknesses due to freezing rain. Thicknesses for ice accretions caused by other sources shall be obtained from local meteorological studies. Ice thicknesses in exposed locations at elevations higher than the surrounding terrain and in valleys and gorges may exceed the mapped values.

APPENDIX C

Software Analysis Output

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
1	VERT38	N415	N406		315	3/8 x 5/8	Beam	RECT	A992	Typical
2	VERT37	N414	N405		315	3/8 x 5/8	Beam	RECT	A992	Typical
3	VERT31	N413	N404		315	3/4 x 3/8	Beam	RECT	A992	Typical
4	VERT26	N411	N403		315.015	.875 x .375	Beam	RECT	A992	Typical
5	VERT25	N412	N388		315.008	.875 x .375	Beam	RECT	A992	Typical
6	VERT15	N410	N401		315.008	3/8 x 1"_HRA	Beam	RECT	A992	Typical
7	VERT14	N392	N394		315	3/8 x 1"_HRA	Beam	RECT	A992	Typical
8	VERT13	N429	N430		315	3/8 x 1"_HRA	Beam	RECT	A992	Typical
9	VERT12	N433	N434		315	3/8 x 1"_HRA	Beam	RECT	A992	Typical
10	VERT11	R3A	R3		315	3/8 x 1"_HRA	Beam	RECT	A992	Typical
11	SUPPORT16	N167	N168		270	L3X3X6	Beam	Single Angle	Q235	Typical
12	SUPPORT15	N179	N180		360	L3X3X6	Beam	Single Angle	Q235	Typical
13	SUPPORT14	N181	N186		90	L3X3X6	Beam	Single Angle	Q235	Typical
14	SUPPORT13	N169	N187		180	L3X3X6	Beam	Single Angle	Q235	Typical
15	SUPPORT12	N232	N233		270	L3X3X6	Beam	Single Angle	Q235	Typical
16	SUPPORT11	N244	N245		180	L3X3X6	Beam	Single Angle	Q235	Typical
17	SUPPORT10	N246	N251		270	L3X3X6	Beam	Single Angle	Q235	Typical
18	SUPPORT9	N234	N252			L3X3X6	Beam	Single Angle	Q235	Typical
19	SUPPORT8	N50	N52		90	L3X3X6	Beam	Single Angle	Q235	Typical
20	SUPPORT7	N78	N79A		180	L3X3X6	Beam	Single Angle	Q235	Typical
21	SUPPORT6	N80	N60		270	L3X3X6	Beam	Single Angle	Q235	Typical
22	SUPPORT5	N52A	N62		360	L3X3X6	Beam	Single Angle	Q235	Typical
23	SUPPORT4	N102	N103		90	L3X3X6	Beam	Single Angle	Q235	Typical
24	SUPPORT3	N114	N115			L3X3X6	Beam	Single Angle	Q235	Typical
25	SUPPORT2	N116	N121		90	L3X3X6	Beam	Single Angle	Q235	Typical
26	SUPPORT1	N104	N122		180	L3X3X6	Beam	Single Angle	Q235	Typical
27	SO TOP1	N391	R3		270	WT4x1.5_HRA	Beam	RECT	A992	Typical
28	SO BOT3	N392	R3A		90	WT4x1.375	Beam	RECT	A992	Typical
29	SO BOT2	N416	N392		90	WT4x1.375	Beam	RECT	A992	Typical
30	SO BOT1	N393	N416		90	WT4x1.375	Beam	RECT	A992	Typical
31	RAIL4	N485	N484		360	PIPE_2.0	Beam	Pipe	Q235	Typical
32	RAIL3	N479	N481			PIPE_2.0	Beam	Pipe	Q235	Typical
33	RAIL2	N483	N482		360	PIPE_2.0	Beam	Pipe	Q235	Typical
34	RAIL1	N480	N478			PIPE_2.0	Beam	Pipe	Q235	Typical
35	PLATE8	N180	N186		90	3/8 x 3	Beam	RECT	Q235	Typical
36	PLATE7	N168	N187		90	3/8 x 3	Beam	RECT	Q235	Typical
37	PLATE6	N245	N251		90	3/8 x 3	Beam	RECT	Q235	Typical
38	PLATE5	N233	N252		90	3/8 x 3	Beam	RECT	Q235	Typical
39	PLATE4	N79A	N60		90	3/8 x 3	Beam	RECT	Q235	Typical
40	PLATE3	N52	N62		90	3/8 x 3	Beam	RECT	Q235	Typical
41	PLATE2	N115	N121		90	3/8 x 3	Beam	RECT	Q235	Typical
42	PLATE1	N103	N122		90	3/8 x 3	Beam	RECT	Q235	Typical
43	MP GAMMA4	N458	N442		360	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical
44	MP GAMMA1	N459	N443		360	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical
45	MP DELTA4	N466	N450		360	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical
46	MP DELTA1	N467	N451		360	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical
47	MP BETA4	N438A	N454		360	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical
48	MP BETA1	N439A	N455		360	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical
49	MP ALPHA4	N456	N440		360	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical
50	MP ALPHA1	N457	N441A		360	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical
51	HSS4	N150	N151			HSS4X3X4	Beam	Tube	Q235	Typical
52	HSS3	N215	N216			HSS4X3X4	Beam	Tube	Q235	Typical
53	HSS2	N74A	N75A			HSS4X3X4	Beam	Tube	Q235	Typical
54	HSS1	N85	N86			HSS4X3X4	Beam	Tube	Q235	Typical
55	GRPL20	N543A	N544A		90	3/8 x 1" HRA	Beam	RECT	A992	Typical
56	GRPL19	N540	N541		270	3/8 x 1" HRA	Beam	RECT	A992	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
57	GRPL18	N537A	N538		270	3/8 x 1" HRA	Beam	RECT	A992	Typical
58	GRPL17	N549	N550		90	3/8 x 1" HRA	Beam	RECT	A992	Typical
59	GRPL16	N547	N548		90	3/8 x 1" HRA	Beam	RECT	A992	Typical
60	GRPL15	N545	N546		90	3/8 x 1" HRA	Beam	RECT	A992	Typical
61	GRPL14	N543	N544		90	3/8 x 1" HRA	Beam	RECT	A992	Typical
62	GRPL13	N536	N537		270	3/8 x 1" HRA	Beam	RECT	A992	Typical
63	GRPL12	N534	N535		270	3/8 x 1" HRA	Beam	RECT	A992	Typical
64	GRPL11	N532	N533		270	3/8 x 1" HRA	Beam	RECT	A992	Typical
65	GRPL10	N530	N531		270	3/8 x 1" HRA	Beam	RECT	A992	Typical
66	GRPL9	N523	N524		270	3/8 x 1" HRA	Beam	RECT	A992	Typical
67	GRPL8	N521	N522		270	3/8 x 1" HRA	Beam	RECT	A992	Typical
68	GRPL7	N519	N520		270	3/8 x 1" HRA	Beam	RECT	A992	Typical
69	GRPL6	N517	N518		270	3/8 x 1" HRA	Beam	RECT	A992	Typical
70	GRPL5	N510	N511		90	3/8 x 1" HRA	Beam	RECT	A992	Typical
71	GRPL4	N508	N509		90	3/8 x 1" HRA	Beam	RECT	A992	Typical
72	GRPL3	N506	N507		90	3/8 x 1" HRA	Beam	RECT	A992	Typical
73	GRPL2	N504	N505		90	3/8 x 1" HRA	Beam	RECT	A992	Typical
74	GRPL1	N502	N503		90	3/8 x 1" HRA	Beam	RECT	A992	Typical
75	GR8	N41	N111		180	PIPE 1.5	Beam	Pipe	A53 Gr.B	Typical
76	GR7	N41A	N112		180	PIPE 1.5	Beam	Pipe	A53 Gr.B	Typical
77	GR6	N227	N72		180	PIPE 1.5	Beam	Pipe	A53 Gr.B	Typical
78	GR5	N228	N73		180	PIPE 1.5	Beam	Pipe	A53 Gr.B	Typical
79	GR4	N162	N241		360	PIPE 1.5	Beam	Pipe	A53 Gr.B	Typical
80	GR3	N163	N242		360	PIPE 1.5	Beam	Pipe	A53 Gr.B	Typical
81	GR2	N97	N176			PIPE 1.5	Beam	Pipe	A53 Gr.B	Typical
82	GR1	N98	N177			PIPE 1.5	Beam	Pipe	A53 Gr.B	Typical
83	FACE4	N437	N436		360	PIPE 2.5	Beam	Pipe	Q235	Typical
84	FACE3	N261B	N263B			PIPE 2.5	Beam	Pipe	Q235	Typical
85	FACE2	N266B	N264B		360	PIPE 2.5	Beam	Pipe	Q235	Typical
86	FACE1	N262B	N260C			PIPE 2.5	Beam	Pipe	Q235	Typical
87	DIAG38	N416	N406		305	3/8 x 5/8	Beam	RECT	A992	Typical
88	DIAG37	N415	N405		305	3/8 x 5/8	Beam	RECT	A992	Typical
89	DIAG30	N414	N404		305	3/4 x 3/8	Beam	RECT	A992	Typical
90	DIAG29	N413	N403		305	3/4 x 3/8	Beam	RECT	A992	Typical
91	DIAG23	N411	N388		305.108	.875 x .375	Beam	RECT	A992	Typical
92	DIAG15	N401	N412		55	3/8 x 1" HRA	Beam	RECT	A992	Typical
93	DIAG14	N394	N410		55	3/8 x 1" HRA	Beam	RECT	A992	Typical
94	DIAG13	N392	N430		305	3/8 x 1" HRA	Beam	RECT	A992	Typical
95	DIAG12	N429	N434		305	3/8 x 1" HRA	Beam	RECT	A992	Typical
96	DIAG11	N433	R3		305	3/8 x 1" HRA	None	None	A992	Typical
97	CON2A D	N487A	N488A		360	WT3.5x2.5x6	Beam	W Tee	A36 Gr.36	Typical
98	CON2A C	N478E	N479C		180	WT3.5x2.5x6	Beam	W Tee	A36 Gr.36	Typical
99	CON2A B	N469A	N470C		180	WT3.5x2.5x6	Beam	W Tee	A36 Gr.36	Typical
100	CON2A	N480C	N481C			WT3.5x2.5x6	Beam	W Tee	A36 Gr.36	Typical
101	CON1A D	N486A	N485B		180	WT3.5x2.5x6	Beam	W Tee	A36 Gr.36	Typical
102	CON1A C	N477B	N476B		180	WT3.5x2.5x6	Beam	W Tee	A36 Gr.36	Typical
103	CON1A B	N468B	N467C			WT3.5x2.5x6	Beam	W Tee	A36 Gr.36	Typical
104	CON1A	N479B	N478D		360	WT3.5x2.5x6	Beam	W Tee	A36 Gr.36	Typical
105	CON1 D	N487A	N486A		180	WT3.5X3.5X6	Beam	W Tee	A36 Gr.36	Typical
106	CON1 C	N478E	N477B		180	WT3.5X3.5X6	Beam	W Tee	A36 Gr.36	Typical
107	CON1 B	N469A	N468B			WT3.5X3.5X6	Beam	W Tee	A36 Gr.36	Typical
108	CON1	N480C	N479B			WT3.5X3.5X6	Beam	W Tee	A36 Gr.36	Typical
109	BRACE24	N159	N154		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
110	BRACE23	N160	N157		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
111	BRACE22	N161	N158		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
112	BRACE21	N173	N170		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
113	BRACE20	N174	N171		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
114	BRACE19	N175	N172		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
115	BRACE18	N224	N219		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
116	BRACE17	N225	N222		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
117	BRACE16	N226	N223		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
118	BRACE15	N238	N235		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
119	BRACE14	N239	N236		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
120	BRACE13	N240	N237		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
121	BRACE12	N35	N79		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
122	BRACE11	N38	N29		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
123	BRACE10	N39	N31		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
124	BRACE9	N69	N64		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
125	BRACE8	N70	N67		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
126	BRACE7	N71	N68		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
127	BRACE6	N94	N89		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
128	BRACE5	N95	N92		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
129	BRACE4	N96	N93		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
130	BRACE3	N108	N105		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
131	BRACE2	N109	N106		90	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
132	BRACE1	N110	N107		270	.5 x 2 3/8 "	Beam	RECT	Q235	Typical
133	201	N386	N486B		45	RIGID	None	None	RIGID	Typical
134	200	N483C	N481D		360	RIGID	None	None	RIGID	Typical
135	199	N482C	N484B		180	RIGID	None	None	RIGID	Typical
136	198	N474A	N472B		180	RIGID	None	None	RIGID	Typical
137	197	N473B	N475		180	RIGID	None	None	RIGID	Typical
138	196	N465B	N463A		180	RIGID	None	None	RIGID	Typical
139	195	N464A	N466C			RIGID	None	None	RIGID	Typical
140	180	N471	N543B		360	RIGID	None	None	RIGID	Typical
141	178	N542	N470			RIGID	None	None	RIGID	Typical
142	173	N553A	N552B		180	RIGID	None	None	RIGID	Typical
143	172	N486	N480B		360	RIGID	None	None	RIGID	Typical
144	171	N393	N552B		180	RIGID	None	None	RIGID	Typical
145	170	N487	N481B		360	RIGID	None	None	RIGID	Typical
146	168	N488	N478B			RIGID	None	None	RIGID	Typical
147	167	N489	N479A			RIGID	None	None	RIGID	Typical
148	166	N490	N482B		360	RIGID	None	None	RIGID	Typical
149	165	N491	N483B		360	RIGID	None	None	RIGID	Typical
150	164	N484A	N492			RIGID	None	None	RIGID	Typical
151	162	N485A	N493			RIGID	None	None	RIGID	Typical
152	158	N460	N450A		270	RIGID	None	None	RIGID	Typical
153	153	N385	N165		270	RIGID	None	None	RIGID	Typical
154	152	N451A	N476		270	RIGID	None	None	RIGID	Typical
155	151	N429A	N419		180	RIGID	None	None	RIGID	Typical
156	146	N329	N100		180	RIGID	None	None	RIGID	Typical
157	145	N420	N445		180	RIGID	None	None	RIGID	Typical
158	144	N398	N388A		90	RIGID	None	None	RIGID	Typical
159	139	N272A	N47		90	RIGID	None	None	RIGID	Typical
160	137	N47	N50			RIGID	None	None	RIGID	Typical
161	136	N31	N42			RIGID	None	None	RIGID	Typical
162	135	N29	N41A			RIGID	None	None	RIGID	Typical
163	134	N79	N41			RIGID	None	None	RIGID	Typical
164	133	N28	N39			RIGID	None	None	RIGID	Typical
165	132	N27	N38			RIGID	None	None	RIGID	Typical
166	131	N77	N35			RIGID	None	None	RIGID	Typical
167	130	N49	N52A			RIGID	None	None	RIGID	Typical
168	129	N65	N63			RIGID	None	None	RIGID	Typical
169	128	N64A	N65		360	RIGID	None	None	RIGID	Typical
170	127	N61	N62A		360	RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
171	126	N59A	N59			RIGID	None	None	RIGID	Typical
172	125	N60A	N61		360	RIGID	None	None	RIGID	Typical
173	124	N58	N59A		360	RIGID	None	None	RIGID	Typical
174	123	N55	N56			RIGID	None	None	RIGID	Typical
175	122	N431A	N647			RIGID	None	None	RIGID	Typical
176	121	N430A	N646			RIGID	None	None	RIGID	Typical
177	120	N643	N276		360	RIGID	None	None	RIGID	Typical
178	119	N642	N275		360	RIGID	None	None	RIGID	Typical
179	118	N639	N264			RIGID	None	None	RIGID	Typical
180	117	N638	N263			RIGID	None	None	RIGID	Typical
181	116	N54	N55		360	RIGID	None	None	RIGID	Typical
182	115	N635A	N268		360	RIGID	None	None	RIGID	Typical
183	114	N634A	N267		360	RIGID	None	None	RIGID	Typical
184	113	N49	N80			RIGID	None	None	RIGID	Typical
185	112	N47	N78			RIGID	None	None	RIGID	Typical
186	111	N68	N74			RIGID	None	None	RIGID	Typical
187	110	N67	N73			RIGID	None	None	RIGID	Typical
188	109	N64	N72			RIGID	None	None	RIGID	Typical
189	108	N28	N71			RIGID	None	None	RIGID	Typical
190	107	N27	N70			RIGID	None	None	RIGID	Typical
191	106	N77	N69			RIGID	None	None	RIGID	Typical
192	105	N391	N437A		360	RIGID	None	None	RIGID	Typical
193	104	N407	N553A		360	RIGID	None	None	RIGID	Typical
194	103	N441	N230		360	RIGID	None	None	RIGID	Typical
195	102	N416	N407		.000108	RIGID	None	None	RIGID	Typical
196	101	N393	N391			RIGID	None	None	RIGID	Typical
197	100	N385	N165		360	RIGID	None	None	RIGID	Typical
198	99	N329	N100		360	RIGID	None	None	RIGID	Typical
199	98	N260	N258			RIGID	None	None	RIGID	Typical
200	97	N259	N260		360	RIGID	None	None	RIGID	Typical
201	96	N256	N257			RIGID	None	None	RIGID	Typical
202	95	N255	N256		360	RIGID	None	None	RIGID	Typical
203	93	N254	N250		360	RIGID	None	None	RIGID	Typical
204	92	N253	N254		360	RIGID	None	None	RIGID	Typical
205	91	N248	N249		360	RIGID	None	None	RIGID	Typical
206	90	N247	N248		360	RIGID	None	None	RIGID	Typical
207	89	N231	N246			RIGID	None	None	RIGID	Typical
208	88	N230	N244			RIGID	None	None	RIGID	Typical
209	87	N237	N243			RIGID	None	None	RIGID	Typical
210	86	N236	N242			RIGID	None	None	RIGID	Typical
211	85	N235	N241			RIGID	None	None	RIGID	Typical
212	83	N221	N240			RIGID	None	None	RIGID	Typical
213	82	N220	N239			RIGID	None	None	RIGID	Typical
214	81	N218	N238			RIGID	None	None	RIGID	Typical
215	74	N231	N234			RIGID	None	None	RIGID	Typical
216	71	N230	N232			RIGID	None	None	RIGID	Typical
217	69	N223	N229			RIGID	None	None	RIGID	Typical
218	67	N222	N228			RIGID	None	None	RIGID	Typical
219	65	N219	N227			RIGID	None	None	RIGID	Typical
220	60	N221	N226			RIGID	None	None	RIGID	Typical
221	58	N220	N225			RIGID	None	None	RIGID	Typical
222	56	N218	N224			RIGID	None	None	RIGID	Typical
223	51	N272A	N47		360	RIGID	None	None	RIGID	Typical
224	49	N195	N193			RIGID	None	None	RIGID	Typical
225	48	N194	N195		360	RIGID	None	None	RIGID	Typical
226	47	N191	N192		360	RIGID	None	None	RIGID	Typical
227	46	N190	N191		360	RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
228	45	N189	N185			RIGID	None	None	RIGID	Typical
229	44	N188	N189		360	RIGID	None	None	RIGID	Typical
230	43	N183	N184			RIGID	None	None	RIGID	Typical
231	42	N182	N183		360	RIGID	None	None	RIGID	Typical
232	41	N166	N181			RIGID	None	None	RIGID	Typical
233	40	N165	N179			RIGID	None	None	RIGID	Typical
234	39	N172	N178			RIGID	None	None	RIGID	Typical
235	38	N171	N177			RIGID	None	None	RIGID	Typical
236	37	N170	N176			RIGID	None	None	RIGID	Typical
237	36	N156	N175			RIGID	None	None	RIGID	Typical
238	35	N155	N174			RIGID	None	None	RIGID	Typical
239	34	N153	N173			RIGID	None	None	RIGID	Typical
240	33	N166	N169			RIGID	None	None	RIGID	Typical
241	32	N165	N167			RIGID	None	None	RIGID	Typical
242	30	N158	N164			RIGID	None	None	RIGID	Typical
243	29	N157	N163			RIGID	None	None	RIGID	Typical
244	28	N154	N162			RIGID	None	None	RIGID	Typical
245	27	N156	N161			RIGID	None	None	RIGID	Typical
246	26	N155	N160			RIGID	None	None	RIGID	Typical
247	25	N153	N159			RIGID	None	None	RIGID	Typical
248	24	N130	N128			RIGID	None	None	RIGID	Typical
249	23	N129	N130		360	RIGID	None	None	RIGID	Typical
250	22	N126	N127			RIGID	None	None	RIGID	Typical
251	21	N125	N126		360	RIGID	None	None	RIGID	Typical
252	20	N124	N120		360	RIGID	None	None	RIGID	Typical
253	19	N123	N124		360	RIGID	None	None	RIGID	Typical
254	18	N118	N119		360	RIGID	None	None	RIGID	Typical
255	17	N117	N118		360	RIGID	None	None	RIGID	Typical
256	16	N101	N116			RIGID	None	None	RIGID	Typical
257	15	N100	N114			RIGID	None	None	RIGID	Typical
258	14	N107	N113			RIGID	None	None	RIGID	Typical
259	13	N106	N112			RIGID	None	None	RIGID	Typical
260	12	N105	N111			RIGID	None	None	RIGID	Typical
261	11	N91	N110			RIGID	None	None	RIGID	Typical
262	10	N90	N109			RIGID	None	None	RIGID	Typical
263	9	N88	N108			RIGID	None	None	RIGID	Typical
264	8	N101	N104			RIGID	None	None	RIGID	Typical
265	7	N100	N102			RIGID	None	None	RIGID	Typical
266	6	N93	N99			RIGID	None	None	RIGID	Typical
267	5	N92	N98			RIGID	None	None	RIGID	Typical
268	4	N89	N97			RIGID	None	None	RIGID	Typical
269	3	N91	N96			RIGID	None	None	RIGID	Typical
270	2	N90	N95			RIGID	None	None	RIGID	Typical
271	1	N88	N94			RIGID	None	None	RIGID	Typical
272	M296	N427	N420A		225.041	3/8 x 5/8	Beam	RECT	A992	Typical
273	M297	N426	N419A		225.03	3/8 x 5/8	Beam	RECT	A992	Typical
274	M298	N425	N418		225.021	3/4 x 3/8	Beam	RECT	A992	Typical
275	M299	N423	N417		225.031	.875 x .375	Beam	RECT	A992	Typical
276	M300	N424	N411A		225.012	.875 x .375	Beam	RECT	A992	Typical
277	M301	N422	N416A		225.016	3/8 x 1" HRA	Beam	RECT	A992	Typical
278	M302	N413A	N415A		225	3/8 x 1" HRA	Beam	RECT	A992	Typical
279	M303	N429B	N430B		225	3/8 x 1" HRA	Beam	RECT	A992	Typical
280	M304	N431	N432		225	3/8 x 1" HRA	Beam	RECT	A992	Typical
281	M305	N434A	N433A		225	3/8 x 1" HRA	Beam	RECT	A992	Typical
282	M306	N412A	N433A		270	WT4x1.5 HRA	Beam	RECT	A992	Typical
283	M307	N413A	N434A		90	WT4x1.375	Beam	RECT	A992	Typical
284	M308	N428	N413A		107.976	WT4x1.375	Beam	RECT	A992	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
285	M309	N414A	N428		101.081	WT4x1.375	Beam	RECT	A992	Typical
286	M310	N428	N420A		235.846	3/8 x 5/8	Beam	RECT	A992	Typical
287	M311	N427	N419A		238.37	3/8 x 5/8	Beam	RECT	A992	Typical
288	M312	N426	N418		238.41	3/4 x 3/8	Beam	RECT	A992	Typical
289	M313	N425	N417		238.482	3/4 x 3/8	Beam	RECT	A992	Typical
290	M314	N423	N411A		238.578	.875 x .375	Beam	RECT	A992	Typical
291	M315	N416A	N424		121.645	3/8 x 1" HRA	Beam	RECT	A992	Typical
292	M316	N415A	N422		123.848	3/8 x 1"_HRA	Beam	RECT	A992	Typical
293	M317	N413A	N430B		239.556	3/8 x 1" HRA	Beam	RECT	A992	Typical
294	M318	N429B	N432		239.556	3/8 x 1"_HRA	Beam	RECT	A992	Typical
295	M319	N431	N433A		238.214	3/8 x 1" HRA	None	None	A992	Typical
296	M320	N435	N436A		90	RIGID	None	None	RIGID	Typical
297	M321	N414A	N436A		132.466	RIGID	None	None	RIGID	Typical
298	M322	N421	N435		41.424	RIGID	None	None	RIGID	Typical
299	M323	N428	N421		270.056	RIGID	None	None	RIGID	Typical
300	M324	N414A	N412A		274.579	RIGID	None	None	RIGID	Typical
301	VERT10	N454A	N447		135	3/8 x 5/8	Beam	RECT	A992	Typical
302	VERT9	N453	N446		135	3/8 x 5/8	Beam	RECT	A992	Typical
303	VERT8	N452	N445A		135	3/4 x 3/8	Beam	RECT	A992	Typical
304	VERT7	N450B	N444		135.015	.875 x .375	Beam	RECT	A992	Typical
305	VERT6	N451B	N438		135.008	.875 x .375	Beam	RECT	A992	Typical
306	VERT5	N449	N443A		135.008	3/8 x 1"_HRA	Beam	RECT	A992	Typical
307	VERT4	N440A	N442A		135	3/8 x 1" HRA	Beam	RECT	A992	Typical
308	VERT3	N456A	N457A		135	3/8 x 1"_HRA	Beam	RECT	A992	Typical
309	VERT2	N458A	N459A		135	3/8 x 1" HRA	Beam	RECT	A992	Typical
310	VERT1	N461	N460A		135	3/8 x 1"_HRA	Beam	RECT	A992	Typical
311	M335	N439	N460A		90	WT4x1.5_HRA	Beam	RECT	A992	Typical
312	M336	N440A	N461		270	WT4x1.375	Beam	RECT	A992	Typical
313	M337	N455A	N440A		270	WT4x1.375	Beam	RECT	A992	Typical
314	M338	N441B	N455A		270	WT4x1.375	Beam	RECT	A992	Typical
315	DIAG10	N455A	N447		125	3/8 x 5/8	Beam	RECT	A992	Typical
316	DIAG9	N454A	N446		125	3/8 x 5/8	Beam	RECT	A992	Typical
317	DIAG8	N453	N445A		125	3/4 x 3/8	Beam	RECT	A992	Typical
318	DIAG7	N452	N444		125	3/4 x 3/8	Beam	RECT	A992	Typical
319	DIAG6	N450B	N438		125.108	.875 x .375	Beam	RECT	A992	Typical
320	DIAG5	N443A	N451B		235	3/8 x 1"_HRA	Beam	RECT	A992	Typical
321	DIAG4	N442A	N449		235	3/8 x 1" HRA	Beam	RECT	A992	Typical
322	DIAG3	N440A	N457A		125	3/8 x 1"_HRA	Beam	RECT	A992	Typical
323	DIAG2	N456A	N459A		125	3/8 x 1" HRA	Beam	RECT	A992	Typical
324	DIAG1	N458A	N460A		125	3/8 x 1"_HRA	None	None	A992	Typical
325	M349	N462	N463		360	RIGID	None	None	RIGID	Typical
326	M350	N441B	N463		360	RIGID	None	None	RIGID	Typical
327	M351	N448	N462		180	RIGID	None	None	RIGID	Typical
328	M352	N455A	N448		180	RIGID	None	None	RIGID	Typical
329	M353	N441B	N439		180	RIGID	None	None	RIGID	Typical
330	M354	N481E	N474		45.041	3/8 x 5/8	Beam	RECT	A992	Typical
331	M355	N480D	N473		45.03	3/8 x 5/8	Beam	RECT	A992	Typical
332	M356	N479D	N472		45.021	3/4 x 3/8	Beam	RECT	A992	Typical
333	M357	N477	N471B		45.031	.875 x .375	Beam	RECT	A992	Typical
334	M358	N478C	T2		45.012	.875 x .375	Beam	RECT	A992	Typical
335	M359	N476C	N470B		45.016	3/8 x 1" HRA	Beam	RECT	A992	Typical
336	M360	N467B	N469		45	3/8 x 1"_HRA	Beam	RECT	A992	Typical
337	M361	N483D	N484C		45	3/8 x 1" HRA	Beam	RECT	A992	Typical
338	M362	N485C	N486C		45	3/8 x 1"_HRA	Beam	RECT	A992	Typical
339	M363	N488B	N487B		45	3/8 x 1" HRA	Beam	RECT	A992	Typical
340	M364	N466B	N487B		90	WT4x1.5_HRA	Beam	RECT	A992	Typical
341	M365	N467B	N488B		270	WT4x1.375	Beam	RECT	A992	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(...	Section/Shape	Type	Design List	Material	Design R...
342	M366	N482D	N467B		287.976	WT4x1.375	Beam	RECT	A992	Typical
343	M367	N468	N482D		281.081	WT4x1.375	Beam	RECT	A992	Typical
344	M368	N482D	N474		55.846	3/8 x 5/8	Beam	RECT	A992	Typical
345	M369	N481E	N473		58.37	3/8 x 5/8	Beam	RECT	A992	Typical
346	M370	N480D	N472		58.41	3/4 x 3/8	Beam	RECT	A992	Typical
347	M371	N479D	N471B		58.482	3/4 x 3/8	Beam	RECT	A992	Typical
348	M372	N477	T2		58.578	.875 x .375	Beam	RECT	A992	Typical
349	M373	N470B	N478C		301.645	3/8 x 1" HRA	Beam	RECT	A992	Typical
350	M374	N469	N476C		303.848	3/8 x 1"_HRA	Beam	RECT	A992	Typical
351	M375	N467B	N484C		59.556	3/8 x 1" HRA	Beam	RECT	A992	Typical
352	M376	N483D	N486C		59.556	3/8 x 1"_HRA	Beam	RECT	A992	Typical
353	M377	N485C	N487B		58.214	3/8 x 1" HRA	None	None	A992	Typical
354	M378	N489A	N490A		270	RIGID	None	None	RIGID	Typical
355	M379	N468	N490A		312.466	RIGID	None	None	RIGID	Typical
356	M380	N475B	N489A		221.424	RIGID	None	None	RIGID	Typical
357	M381	N482D	N475B		90.056	RIGID	None	None	RIGID	Typical
358	M382	N468	N466B		94.579	RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	VERT38						Yes				None
2	VERT37						Yes				None
3	VERT31						Yes				None
4	VERT26						Yes				None
5	VERT25						Yes				None
6	VERT15						Yes				None
7	VERT14						Yes				None
8	VERT13						Yes				None
9	VERT12						Yes				None
10	VERT11						Yes				None
11	SUPPORT16						Yes				None
12	SUPPORT15						Yes				None
13	SUPPORT14						Yes				None
14	SUPPORT13						Yes				None
15	SUPPORT12						Yes				None
16	SUPPORT11						Yes				None
17	SUPPORT10						Yes				None
18	SUPPORT9						Yes				None
19	SUPPORT8						Yes				None
20	SUPPORT7						Yes				None
21	SUPPORT6						Yes				None
22	SUPPORT5						Yes				None
23	SUPPORT4						Yes				None
24	SUPPORT3						Yes				None
25	SUPPORT2						Yes				None
26	SUPPORT1						Yes				None
27	SO TOP1						Yes	Default			None
28	SO BOT3						Yes				None
29	SO BOT2						Yes				None
30	SO BOT1						Yes				None
31	RAIL4						Yes				None
32	RAIL3						Yes				None
33	RAIL2						Yes				None
34	RAIL1						Yes				None
35	PLATE8						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
36	PLATE7						Yes				None
37	PLATE6						Yes				None
38	PLATE5						Yes				None
39	PLATE4						Yes				None
40	PLATE3						Yes				None
41	PLATE2						Yes				None
42	PLATE1						Yes				None
43	MP GAMM...						Yes				None
44	MP GAMM...						Yes				None
45	MP DELTA4						Yes				None
46	MP DELTA1						Yes				None
47	MP BETA4						Yes				None
48	MP BETA1						Yes				None
49	MP ALPHA4						Yes				None
50	MP ALPHA1						Yes				None
51	HSS4						Yes				None
52	HSS3						Yes				None
53	HSS2						Yes				None
54	HSS1						Yes				None
55	GRPL20						Yes				None
56	GRPL19						Yes				None
57	GRPL18						Yes				None
58	GRPL17						Yes				None
59	GRPL16						Yes				None
60	GRPL15						Yes				None
61	GRPL14						Yes				None
62	GRPL13						Yes				None
63	GRPL12						Yes				None
64	GRPL11						Yes				None
65	GRPL10						Yes				None
66	GRPL9						Yes				None
67	GRPL8						Yes				None
68	GRPL7						Yes				None
69	GRPL6						Yes				None
70	GRPL5						Yes				None
71	GRPL4						Yes				None
72	GRPL3						Yes				None
73	GRPL2						Yes				None
74	GRPL1						Yes				None
75	GR8						Yes				None
76	GR7						Yes				None
77	GR6						Yes				None
78	GR5						Yes				None
79	GR4						Yes				None
80	GR3						Yes				None
81	GR2						Yes				None
82	GR1						Yes				None
83	FACE4						Yes				None
84	FACE3						Yes				None
85	FACE2						Yes				None
86	FACE1						Yes	Default			None
87	DIAG38						Yes				None
88	DIAG37						Yes				None
89	DIAG30						Yes				None
90	DIAG29						Yes				None
91	DIAG23						Yes				None
92	DIAG15						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
93	DIAG14						Yes				None
94	DIAG13						Yes				None
95	DIAG12						Yes				None
96	DIAG11						Yes	** NA **			None
97	CON2A D						Yes				None
98	CON2A C						Yes				None
99	CON2A B						Yes				None
100	CON2A						Yes				None
101	CON1A D						Yes				None
102	CON1A C						Yes				None
103	CON1A B						Yes				None
104	CON1A						Yes				None
105	CON1 D						Yes	Default			None
106	CON1 C						Yes	Default			None
107	CON1 B						Yes	Default			None
108	CON1						Yes	Default			None
109	BRACE24						Yes				None
110	BRACE23						Yes				None
111	BRACE22						Yes				None
112	BRACE21						Yes				None
113	BRACE20						Yes				None
114	BRACE19						Yes				None
115	BRACE18						Yes				None
116	BRACE17						Yes				None
117	BRACE16						Yes				None
118	BRACE15						Yes				None
119	BRACE14						Yes				None
120	BRACE13						Yes				None
121	BRACE12						Yes				None
122	BRACE11						Yes				None
123	BRACE10						Yes				None
124	BRACE9						Yes				None
125	BRACE8						Yes				None
126	BRACE7						Yes				None
127	BRACE6						Yes				None
128	BRACE5						Yes				None
129	BRACE4						Yes				None
130	BRACE3						Yes				None
131	BRACE2						Yes				None
132	BRACE1						Yes				None
133	201						Yes	** NA **			None
134	200	OOOXOO					Yes	** NA **			None
135	199		OOOXOO				Yes	** NA **			None
136	198	OOOXOO					Yes	** NA **			None
137	197		OOOXOO				Yes	** NA **			None
138	196	OOOXOO					Yes	** NA **			None
139	195		OOOXOO				Yes	** NA **			None
140	180		OOOXOO				Yes	** NA **			None
141	178	OOOXOO					Yes	** NA **			None
142	173						Yes	** NA **			None
143	172						Yes	** NA **			None
144	171						Yes	** NA **			None
145	170						Yes	** NA **			None
146	168						Yes	** NA **			None
147	167						Yes	** NA **			None
148	166						Yes	** NA **			None
149	165						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
150	164						Yes	** NA **			None
151	162						Yes	** NA **			None
152	158						Yes	** NA **			None
153	153						Yes	** NA **			None
154	152					Compres...	Yes	** NA **			None
155	151						Yes	** NA **			None
156	146						Yes	** NA **			None
157	145					Compres...	Yes	** NA **			None
158	144						Yes	** NA **			None
159	139						Yes	** NA **			None
160	137						Yes	** NA **			None
161	136						Yes	** NA **			None
162	135						Yes	** NA **			None
163	134						Yes	** NA **			None
164	133						Yes	** NA **			None
165	132						Yes	** NA **			None
166	131						Yes	** NA **			None
167	130						Yes	** NA **			None
168	129						Yes	** NA **			None
169	128		OOOXOO				Yes	** NA **			None
170	127						Yes	** NA **			None
171	126						Yes	** NA **			None
172	125		OOOXOO				Yes	** NA **			None
173	124		OOOXOO				Yes	** NA **			None
174	123						Yes	** NA **			None
175	122						Yes	** NA **			None
176	121						Yes	** NA **			None
177	120						Yes	** NA **			None
178	119						Yes	** NA **			None
179	118						Yes	** NA **			None
180	117						Yes	** NA **			None
181	116		OOOXOO				Yes	** NA **			None
182	115						Yes	** NA **			None
183	114						Yes	** NA **			None
184	113						Yes	** NA **			None
185	112						Yes	** NA **			None
186	111						Yes	** NA **			None
187	110						Yes	** NA **			None
188	109						Yes	** NA **			None
189	108						Yes	** NA **			None
190	107						Yes	** NA **			None
191	106						Yes	** NA **			None
192	105					Compres...	Yes	** NA **			None
193	104						Yes	** NA **			None
194	103						Yes	** NA **			None
195	102						Yes	** NA **			None
196	101						Yes	** NA **			None
197	100						Yes	** NA **			None
198	99						Yes	** NA **			None
199	98						Yes	** NA **			None
200	97		OOOXOO				Yes	** NA **			None
201	96						Yes	** NA **			None
202	95		OOOXOO				Yes	** NA **			None
203	93						Yes	** NA **			None
204	92		OOOXOO				Yes	** NA **			None
205	91						Yes	** NA **			None
206	90		OOOXOO				Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
207	89						Yes	** NA **			None
208	88						Yes	** NA **			None
209	87						Yes	** NA **			None
210	86						Yes	** NA **			None
211	85						Yes	** NA **			None
212	83						Yes	** NA **			None
213	82						Yes	** NA **			None
214	81						Yes	** NA **			None
215	74						Yes	** NA **			None
216	71						Yes	** NA **			None
217	69						Yes	** NA **			None
218	67						Yes	** NA **			None
219	65						Yes	** NA **			None
220	60						Yes	** NA **			None
221	58						Yes	** NA **			None
222	56						Yes	** NA **			None
223	51						Yes	** NA **			None
224	49						Yes	** NA **			None
225	48		OOOXOO				Yes	** NA **			None
226	47						Yes	** NA **			None
227	46		OOOXOO				Yes	** NA **			None
228	45						Yes	** NA **			None
229	44		OOOXOO				Yes	** NA **			None
230	43						Yes	** NA **			None
231	42		OOOXOO				Yes	** NA **			None
232	41						Yes	** NA **			None
233	40						Yes	** NA **			None
234	39						Yes	** NA **			None
235	38						Yes	** NA **			None
236	37						Yes	** NA **			None
237	36						Yes	** NA **			None
238	35						Yes	** NA **			None
239	34						Yes	** NA **			None
240	33						Yes	** NA **			None
241	32						Yes	** NA **			None
242	30						Yes	** NA **			None
243	29						Yes	** NA **			None
244	28						Yes	** NA **			None
245	27						Yes	** NA **			None
246	26						Yes	** NA **			None
247	25						Yes	** NA **			None
248	24						Yes	** NA **			None
249	23		OOOXOO				Yes	** NA **			None
250	22						Yes	** NA **			None
251	21		OOOXOO				Yes	** NA **			None
252	20						Yes	** NA **			None
253	19		OOOXOO				Yes	** NA **			None
254	18						Yes	** NA **			None
255	17		OOOXOO				Yes	** NA **			None
256	16						Yes	** NA **			None
257	15						Yes	** NA **			None
258	14						Yes	** NA **			None
259	13						Yes	** NA **			None
260	12						Yes	** NA **			None
261	11						Yes	** NA **			None
262	10						Yes	** NA **			None
263	9						Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
264	8						Yes	** NA **			None
265	7						Yes	** NA **			None
266	6						Yes	** NA **			None
267	5						Yes	** NA **			None
268	4						Yes	** NA **			None
269	3						Yes	** NA **			None
270	2						Yes	** NA **			None
271	1						Yes	** NA **			None
272	M296						Yes				None
273	M297						Yes				None
274	M298						Yes				None
275	M299						Yes				None
276	M300						Yes				None
277	M301						Yes				None
278	M302						Yes				None
279	M303						Yes				None
280	M304						Yes				None
281	M305						Yes				None
282	M306						Yes	Default			None
283	M307						Yes				None
284	M308						Yes				None
285	M309						Yes				None
286	M310						Yes				None
287	M311						Yes				None
288	M312						Yes				None
289	M313						Yes				None
290	M314						Yes				None
291	M315						Yes				None
292	M316						Yes				None
293	M317						Yes				None
294	M318						Yes				None
295	M319						Yes	** NA **			None
296	M320						Yes	** NA **			None
297	M321						Yes	** NA **			None
298	M322						Yes	** NA **			None
299	M323						Yes	** NA **			None
300	M324						Yes	** NA **			None
301	VERT10						Yes				None
302	VERT9						Yes				None
303	VERT8						Yes				None
304	VERT7						Yes				None
305	VERT6						Yes				None
306	VERT5						Yes				None
307	VERT4						Yes				None
308	VERT3						Yes				None
309	VERT2						Yes				None
310	VERT1						Yes				None
311	M335						Yes	Default			None
312	M336						Yes				None
313	M337						Yes				None
314	M338						Yes				None
315	DIAG10						Yes				None
316	DIAG9						Yes				None
317	DIAG8						Yes				None
318	DIAG7						Yes				None
319	DIAG6						Yes				None
320	DIAG5						Yes				None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
321	DIAG4						Yes				None
322	DIAG3						Yes				None
323	DIAG2						Yes				None
324	DIAG1						Yes	** NA **			None
325	M349						Yes	** NA **			None
326	M350						Yes	** NA **			None
327	M351						Yes	** NA **			None
328	M352						Yes	** NA **			None
329	M353						Yes	** NA **			None
330	M354						Yes				None
331	M355						Yes				None
332	M356						Yes				None
333	M357						Yes				None
334	M358						Yes				None
335	M359						Yes				None
336	M360						Yes				None
337	M361						Yes				None
338	M362						Yes				None
339	M363						Yes				None
340	M364						Yes	Default			None
341	M365						Yes				None
342	M366						Yes				None
343	M367						Yes				None
344	M368						Yes				None
345	M369						Yes				None
346	M370						Yes				None
347	M371						Yes				None
348	M372						Yes				None
349	M373						Yes				None
350	M374						Yes				None
351	M375						Yes				None
352	M376						Yes				None
353	M377						Yes	** NA **			None
354	M378						Yes	** NA **			None
355	M379						Yes	** NA **			None
356	M380						Yes	** NA **			None
357	M381						Yes	** NA **			None
358	M382						Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
1	VERT38	3/8 x 5/8	.349			Lbyy						Lateral
2	VERT37	3/8 x 5/8	.411			Lbyy						Lateral
3	VERT31	3/4 x 3/8	.484			Lbyy						Lateral
4	VERT26	.875 x .375	.571			Lbyy						Lateral
5	VERT25	.875 x .375	.675			Lbyy						Lateral
6	VERT15	3/8 x 1"_H...	.797			Lbyy						Lateral
7	VERT14	3/8 x 1"_H...	.932			Lbyy						Lateral
8	VERT13	3/8 x 1"_H...	.932			Lbyy						Lateral
9	VERT12	3/8 x 1"_H...	.932			Lbyy						Lateral
10	VERT11	3/8 x 1"_H...	.932			Lbyy						Lateral
11	SUPPORT16	L3X3X6	2.914			Lbyy						Lateral
12	SUPPORT15	L3X3X6	2.914			Lbyy						Lateral
13	SUPPORT14	L3X3X6	2.386			Lbyy						Lateral
14	SUPPORT13	L3X3X6	2.386			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
15	SUPPORT12	L3X3X6	2.914			Lbyy						Lateral
16	SUPPORT11	L3X3X6	2.914			Lbyy						Lateral
17	SUPPORT10	L3X3X6	2.386			Lbyy						Lateral
18	SUPPORT9	L3X3X6	2.386			Lbyy						Lateral
19	SUPPORT8	L3X3X6	2.914			Lbyy						Lateral
20	SUPPORT7	L3X3X6	2.914			Lbyy						Lateral
21	SUPPORT6	L3X3X6	2.386			Lbyy						Lateral
22	SUPPORT5	L3X3X6	2.386			Lbyy						Lateral
23	SUPPORT4	L3X3X6	2.914			Lbyy						Lateral
24	SUPPORT3	L3X3X6	2.914			Lbyy						Lateral
25	SUPPORT2	L3X3X6	2.386			Lbyy						Lateral
26	SUPPORT1	L3X3X6	2.386			Lbyy						Lateral
27	SO TOP1	WT4x1.5_...	7.167	Segment	Segment	Lbyy						Lateral
28	SO BOT3	WT4x1.375	2.833	Segment	Segment	Lbyy						Lateral
29	SO BOT2	WT4x1.375	3.46	Segment	Segment	Lbyy						Lateral
30	SO BOT1	WT4x1.375	.865	Segment	Segment	Lbyy						Lateral
31	RAIL4	PIPE_2.0	12.5			Lbyy						Lateral
32	RAIL3	PIPE_2.0	12.5			Lbyy						Lateral
33	RAIL2	PIPE_2.0	12.5			Lbyy						Lateral
34	RAIL1	PIPE_2.0	12.5			Lbyy						Lateral
35	PLATE8	3/8 x 3	.605			Lbyy						Lateral
36	PLATE7	3/8 x 3	.605			Lbyy						Lateral
37	PLATE6	3/8 x 3	.605			Lbyy						Lateral
38	PLATE5	3/8 x 3	.605			Lbyy						Lateral
39	PLATE4	3/8 x 3	.605			Lbyy						Lateral
40	PLATE3	3/8 x 3	.605			Lbyy						Lateral
41	PLATE2	3/8 x 3	.605			Lbyy						Lateral
42	PLATE1	3/8 x 3	.605			Lbyy						Lateral
43	MP GAMMA4	PIPE_2.5	10			Lbyy						Lateral
44	MP GAMMA1	PIPE_2.5	10			Lbyy						Lateral
45	MP DELTA4	PIPE_2.5	10			Lbyy						Lateral
46	MP DELTA1	PIPE_2.5	10			Lbyy						Lateral
47	MP BETA4	PIPE_2.5	10			Lbyy						Lateral
48	MP BETA1	PIPE_2.5	10			Lbyy						Lateral
49	MP ALPHA4	PIPE_2.5	10			Lbyy						Lateral
50	MP ALPHA1	PIPE_2.5	10			Lbyy						Lateral
51	HSS4	HSS4X3X4	4.244			Lbyy						Lateral
52	HSS3	HSS4X3X4	4.244			Lbyy						Lateral
53	HSS2	HSS4X3X4	4.244			Lbyy						Lateral
54	HSS1	HSS4X3X4	4.244			Lbyy						Lateral
55	GRPL20	3/8 x 1"_H...	1.52			Lbyy						Lateral
56	GRPL19	3/8 x 1"_H...	1.52			Lbyy						Lateral
57	GRPL18	3/8 x 1"_H...	1.52			Lbyy						Lateral
58	GRPL17	3/8 x 1"_H...	1.52			Lbyy						Lateral
59	GRPL16	3/8 x 1"_H...	1.52			Lbyy						Lateral
60	GRPL15	3/8 x 1"_H...	1.52			Lbyy						Lateral
61	GRPL14	3/8 x 1"_H...	1.52			Lbyy						Lateral
62	GRPL13	3/8 x 1"_H...	1.52			Lbyy						Lateral
63	GRPL12	3/8 x 1"_H...	1.52			Lbyy						Lateral
64	GRPL11	3/8 x 1"_H...	1.52			Lbyy						Lateral
65	GRPL10	3/8 x 1"_H...	1.52			Lbyy						Lateral
66	GRPL9	3/8 x 1"_H...	1.52			Lbyy						Lateral
67	GRPL8	3/8 x 1"_H...	1.52			Lbyy						Lateral
68	GRPL7	3/8 x 1"_H...	1.52			Lbyy						Lateral
69	GRPL6	3/8 x 1"_H...	1.52			Lbyy						Lateral
70	GRPL5	3/8 x 1"_H...	1.52			Lbyy						Lateral
71	GRPL4	3/8 x 1"_H...	1.52			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
72	GRPL3	3/8 x 1"_H...	1.52			Lbyy						Lateral
73	GRPL2	3/8 x 1"_H...	1.52			Lbyy						Lateral
74	GRPL1	3/8 x 1"_H...	1.52			Lbyy						Lateral
75	GR8	PIPE_1.5	6.784			Lbyy						Lateral
76	GR7	PIPE_1.5	6.783			Lbyy						Lateral
77	GR6	PIPE_1.5	6.784			Lbyy						Lateral
78	GR5	PIPE_1.5	6.783			Lbyy						Lateral
79	GR4	PIPE_1.5	6.784			Lbyy						Lateral
80	GR3	PIPE_1.5	6.783			Lbyy						Lateral
81	GR2	PIPE_1.5	6.784			Lbyy						Lateral
82	GR1	PIPE_1.5	6.783			Lbyy						Lateral
83	FACE4	PIPE_2.5	12.5			Lbyy						Lateral
84	FACE3	PIPE_2.5	12.5			Lbyy						Lateral
85	FACE2	PIPE_2.5	12.5			Lbyy						Lateral
86	FACE1	PIPE_2.5	12.5			Lbyy						Lateral
87	DIAG38	3/8 x 5/8	.405			Lbyy						Lateral
88	DIAG37	3/8 x 5/8	.49			Lbyy						Lateral
89	DIAG30	3/4 x 3/8	.578			Lbyy						Lateral
90	DIAG29	3/4 x 3/8	.682			Lbyy						Lateral
91	DIAG23	.875 x .375	.804			Lbyy						Lateral
92	DIAG15	3/8 x 1"_H...	.949			Lbyy						Lateral
93	DIAG14	3/8 x 1"_H...	1.08			Lbyy						Lateral
94	DIAG13	3/8 x 1"_H...	1.337			Lbyy						Lateral
95	DIAG12	3/8 x 1"_H...	1.337			Lbyy						Lateral
96	DIAG11	3/8 x 1"_H...	1.307			Lbyy						Lateral
97	CON2A D	WT3.5x2.5...	.259									Lateral
98	CON2A C	WT3.5x2.5...	.259									Lateral
99	CON2A B	WT3.5x2.5...	.259									Lateral
100	CON2A	WT3.5x2.5...	.259									Lateral
101	CON1A D	WT3.5x2.5...	.259									Lateral
102	CON1A C	WT3.5x2.5...	.259									Lateral
103	CON1A B	WT3.5x2.5...	.259									Lateral
104	CON1A	WT3.5x2.5...	.259									Lateral
105	CON1 D	WT3.5X3.5...	1.381			Lbyy						Lateral
106	CON1 C	WT3.5X3.5...	1.381			Lbyy						Lateral
107	CON1 B	WT3.5X3.5...	1.381			Lbyy						Lateral
108	CON1	WT3.5X3.5...	1.381			Lbyy						Lateral
109	BRACE24	.5 x 2 3/8 "	.583			Lbyy						Lateral
110	BRACE23	.5 x 2 3/8 "	1.659			Lbyy						Lateral
111	BRACE22	.5 x 2 3/8 "	1.124			Lbyy						Lateral
112	BRACE21	.5 x 2 3/8 "	.583			Lbyy						Lateral
113	BRACE20	.5 x 2 3/8 "	1.659			Lbyy						Lateral
114	BRACE19	.5 x 2 3/8 "	1.124			Lbyy						Lateral
115	BRACE18	.5 x 2 3/8 "	.583			Lbyy						Lateral
116	BRACE17	.5 x 2 3/8 "	1.659			Lbyy						Lateral
117	BRACE16	.5 x 2 3/8 "	1.124			Lbyy						Lateral
118	BRACE15	.5 x 2 3/8 "	.583			Lbyy						Lateral
119	BRACE14	.5 x 2 3/8 "	1.659			Lbyy						Lateral
120	BRACE13	.5 x 2 3/8 "	1.124			Lbyy						Lateral
121	BRACE12	.5 x 2 3/8 "	.583			Lbyy						Lateral
122	BRACE11	.5 x 2 3/8 "	1.659			Lbyy						Lateral
123	BRACE10	.5 x 2 3/8 "	1.124			Lbyy						Lateral
124	BRACE9	.5 x 2 3/8 "	.583			Lbyy						Lateral
125	BRACE8	.5 x 2 3/8 "	1.659			Lbyy						Lateral
126	BRACE7	.5 x 2 3/8 "	1.124			Lbyy						Lateral
127	BRACE6	.5 x 2 3/8 "	.583			Lbyy						Lateral
128	BRACE5	.5 x 2 3/8 "	1.659			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
129	BRACE4	.5 x 2 3/8 "	1.124			Lbyy						Lateral
130	BRACE3	.5 x 2 3/8 "	.583			Lbyy						Lateral
131	BRACE2	.5 x 2 3/8 "	1.659			Lbyy						Lateral
132	BRACE1	.5 x 2 3/8 "	1.124			Lbyy						Lateral
133	M296	3/8 x 5/8	.349			Lbyy						Lateral
134	M297	3/8 x 5/8	.411			Lbyy						Lateral
135	M298	3/4 x 3/8	.484			Lbyy						Lateral
136	M299	.875 x .375	.571			Lbyy						Lateral
137	M300	.875 x .375	.675			Lbyy						Lateral
138	M301	3/8 x 1"_H...	.797			Lbyy						Lateral
139	M302	3/8 x 1"_H...	.932			Lbyy						Lateral
140	M303	3/8 x 1"_H...	.932			Lbyy						Lateral
141	M304	3/8 x 1"_H...	.932			Lbyy						Lateral
142	M305	3/8 x 1"_H...	.932			Lbyy						Lateral
143	M306	WT4x1.5_...	7.167	Segment	Segment	Lbyy						Lateral
144	M307	WT4x1.375	2.833	Segment	Segment	Lbyy						Lateral
145	M308	WT4x1.375	3.46	Segment	Segment	Lbyy						Lateral
146	M309	WT4x1.375	.865	Segment	Segment	Lbyy						Lateral
147	M310	3/8 x 5/8	.405			Lbyy						Lateral
148	M311	3/8 x 5/8	.49			Lbyy						Lateral
149	M312	3/4 x 3/8	.578			Lbyy						Lateral
150	M313	3/4 x 3/8	.682			Lbyy						Lateral
151	M314	.875 x .375	.804			Lbyy						Lateral
152	M315	3/8 x 1"_H...	.949			Lbyy						Lateral
153	M316	3/8 x 1"_H...	1.08			Lbyy						Lateral
154	M317	3/8 x 1"_H...	1.337			Lbyy						Lateral
155	M318	3/8 x 1"_H...	1.337			Lbyy						Lateral
156	M319	3/8 x 1"_H...	1.307			Lbyy						Lateral
157	VERT10	3/8 x 5/8	.349			Lbyy						Lateral
158	VERT9	3/8 x 5/8	.411			Lbyy						Lateral
159	VERT8	3/4 x 3/8	.484			Lbyy						Lateral
160	VERT7	.875 x .375	.571			Lbyy						Lateral
161	VERT6	.875 x .375	.675			Lbyy						Lateral
162	VERT5	3/8 x 1"_H...	.797			Lbyy						Lateral
163	VERT4	3/8 x 1"_H...	.932			Lbyy						Lateral
164	VERT3	3/8 x 1"_H...	.932			Lbyy						Lateral
165	VERT2	3/8 x 1"_H...	.932			Lbyy						Lateral
166	VERT1	3/8 x 1"_H...	.932			Lbyy						Lateral
167	M335	WT4x1.5_...	7.167	Segment	Segment	Lbyy						Lateral
168	M336	WT4x1.375	2.833	Segment	Segment	Lbyy						Lateral
169	M337	WT4x1.375	3.46	Segment	Segment	Lbyy						Lateral
170	M338	WT4x1.375	.865	Segment	Segment	Lbyy						Lateral
171	DIAG10	3/8 x 5/8	.405			Lbyy						Lateral
172	DIAG9	3/8 x 5/8	.49			Lbyy						Lateral
173	DIAG8	3/4 x 3/8	.578			Lbyy						Lateral
174	DIAG7	3/4 x 3/8	.682			Lbyy						Lateral
175	DIAG6	.875 x .375	.804			Lbyy						Lateral
176	DIAG5	3/8 x 1"_H...	.949			Lbyy						Lateral
177	DIAG4	3/8 x 1"_H...	1.08			Lbyy						Lateral
178	DIAG3	3/8 x 1"_H...	1.337			Lbyy						Lateral
179	DIAG2	3/8 x 1"_H...	1.337			Lbyy						Lateral
180	DIAG1	3/8 x 1"_H...	1.307			Lbyy						Lateral
181	M354	3/8 x 5/8	.349			Lbyy						Lateral
182	M355	3/8 x 5/8	.411			Lbyy						Lateral
183	M356	3/4 x 3/8	.484			Lbyy						Lateral
184	M357	.875 x .375	.571			Lbyy						Lateral
185	M358	.875 x .375	.675			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[...	Lcomp bot[...	L-torq...	Kyy	Kzz	Cb	Functi...
186	M359	3/8 x 1"_H...	.797			Lbyy						Lateral
187	M360	3/8 x 1"_H...	.932			Lbyy						Lateral
188	M361	3/8 x 1"_H...	.932			Lbyy						Lateral
189	M362	3/8 x 1"_H...	.932			Lbyy						Lateral
190	M363	3/8 x 1"_H...	.932			Lbyy						Lateral
191	M364	WT4x1.5_...	7.167	Segment	Segment	Lbyy						Lateral
192	M365	WT4x1.375	2.833	Segment	Segment	Lbyy						Lateral
193	M366	WT4x1.375	3.46	Segment	Segment	Lbyy						Lateral
194	M367	WT4x1.375	.865	Segment	Segment	Lbyy						Lateral
195	M368	3/8 x 5/8	.405			Lbyy						Lateral
196	M369	3/8 x 5/8	.49			Lbyy						Lateral
197	M370	3/4 x 3/8	.578			Lbyy						Lateral
198	M371	3/4 x 3/8	.682			Lbyy						Lateral
199	M372	.875 x .375	.804			Lbyy						Lateral
200	M373	3/8 x 1"_H...	.949			Lbyy						Lateral
201	M374	3/8 x 1"_H...	1.08			Lbyy						Lateral
202	M375	3/8 x 1"_H...	1.337			Lbyy						Lateral
203	M376	3/8 x 1"_H...	1.337			Lbyy						Lateral
204	M377	3/8 x 1"_H...	1.307			Lbyy						Lateral

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
8	Q235	29000	11154	.3	.65	.49	35	1.5	58	1.2

Member Point Loads (BLC 1 : Live Load)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	FACE1	Z	-.5	0

Member Point Loads (BLC 2 : Wind Load (0))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP ALPHA1	Y	-.164	7.75
2	MP ALPHA1	Y	-.164	5.25
3	MP BETA1	Y	-.066	7.75
4	MP BETA1	Y	-.066	5.25
5	MP ALPHA4	Y	-.164	7.75
6	MP ALPHA4	Y	-.164	5.25
7	MP BETA4	Y	-.066	7.75
8	MP BETA4	Y	-.066	5.25
9	MP ALPHA1	Y	-.343	9.5
10	MP ALPHA1	Y	-.343	3.5
11	MP BETA1	Y	-.124	9.5
12	MP BETA1	Y	-.124	3.5
13	MP ALPHA4	Y	-.343	9.5
14	MP ALPHA4	Y	-.343	3.5
15	MP BETA4	Y	-.124	9.5
16	MP BETA4	Y	-.124	3.5

Member Point Loads (BLC 2 : Wind Load (0)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
17	MP ALPHA1	Y	0	6.5
18	MP BETA1	Y	-.046	6.5
19	MP ALPHA1	Y	0	6.5
20	MP BETA1	Y	-.071	6.5
21	MP DELTA1	Y	-.09	7.333
22	MP DELTA1	Y	-.09	5.667
23	MP DELTA4	Y	-.179	9.5
24	MP DELTA4	Y	-.179	3.5
25	MP DELTA1	Y	-.046	6.5
26	MP DELTA1	Y	-.071	6.5

Member Point Loads (BLC 3 : Dead Load)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP ALPHA1	Z	-.048	7.75
2	MP ALPHA1	Z	-.048	5.25
3	MP BETA1	Z	-.048	7.75
4	MP BETA1	Z	-.048	5.25
5	MP ALPHA4	Z	-.048	7.75
6	MP ALPHA4	Z	-.048	5.25
7	MP BETA4	Z	-.048	7.75
8	MP BETA4	Z	-.048	5.25
9	MP ALPHA1	Z	-.077	9.5
10	MP ALPHA1	Z	-.077	3.5
11	MP BETA1	Z	-.077	9.5
12	MP BETA1	Z	-.077	3.5
13	MP ALPHA4	Z	-.077	9.5
14	MP ALPHA4	Z	-.077	3.5
15	MP BETA4	Z	-.077	9.5
16	MP BETA4	Z	-.077	3.5
17	MP ALPHA1	Z	-.075	6.5
18	MP BETA1	Z	-.075	6.5
19	MP ALPHA1	Z	-.109	6.5
20	MP BETA1	Z	-.109	6.5
21	MP DELTA1	Z	-.048	7.333
22	MP DELTA1	Z	-.048	5.667
23	MP DELTA4	Z	-.077	9.5
24	MP DELTA4	Z	-.077	3.5
25	MP DELTA1	Z	-.075	6.5
26	MP DELTA1	Z	-.109	6.5

Member Point Loads (BLC 4 : Wind Load (30))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP ALPHA1	Y	-.121	7.75
2	MP ALPHA1	Y	-.121	5.25
3	MP ALPHA1	X	-.07	7.75
4	MP ALPHA1	X	-.07	5.25
5	MP BETA1	Y	-.078	7.75
6	MP BETA1	Y	-.078	5.25
7	MP BETA1	X	-.045	7.75
8	MP BETA1	X	-.045	5.25
9	MP ALPHA4	Y	-.121	7.75
10	MP ALPHA4	Y	-.121	5.25
11	MP ALPHA4	X	-.07	7.75
12	MP ALPHA4	X	-.07	5.25
13	MP BETA4	Y	-.078	7.75
14	MP BETA4	Y	-.078	5.25

Member Point Loads (BLC 4 : Wind Load (30)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
15	MP BETA4	X	-.045	7.75
16	MP BETA4	X	-.045	5.25
17	MP ALPHA1	Y	-.249	9.5
18	MP ALPHA1	Y	-.249	3.5
19	MP ALPHA1	X	-.144	9.5
20	MP ALPHA1	X	-.144	3.5
21	MP BETA1	Y	-.155	9.5
22	MP BETA1	Y	-.155	3.5
23	MP BETA1	X	-.089	9.5
24	MP BETA1	X	-.089	3.5
25	MP ALPHA4	Y	-.249	9.5
26	MP ALPHA4	Y	-.249	3.5
27	MP ALPHA4	X	-.144	9.5
28	MP ALPHA4	X	-.144	3.5
29	MP BETA4	Y	-.155	9.5
30	MP BETA4	Y	-.155	3.5
31	MP BETA4	X	-.089	9.5
32	MP BETA4	X	-.089	3.5
33	MP ALPHA1	Y	-.01	6.5
34	MP ALPHA1	X	-.006	6.5
35	MP BETA1	Y	-.03	6.5
36	MP BETA1	X	-.017	6.5
37	MP ALPHA1	Y	-.015	6.5
38	MP ALPHA1	X	-.009	6.5
39	MP BETA1	Y	-.046	6.5
40	MP BETA1	X	-.027	6.5
41	MP DELTA1	Y	-.057	7.333
42	MP DELTA1	Y	-.057	5.667
43	MP DELTA1	X	-.033	7.333
44	MP DELTA1	X	-.033	5.667
45	MP DELTA4	Y	-.108	9.5
46	MP DELTA4	Y	-.108	3.5
47	MP DELTA4	X	-.062	9.5
48	MP DELTA4	X	-.062	3.5
49	MP DELTA1	Y	-.03	6.5
50	MP DELTA1	X	-.017	6.5
51	MP DELTA1	Y	-.046	6.5
52	MP DELTA1	X	-.027	6.5

Member Point Loads (BLC 5 : Wind Load (60))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP ALPHA1	Y	-.045	7.75
2	MP ALPHA1	Y	-.045	5.25
3	MP ALPHA1	X	-.078	7.75
4	MP ALPHA1	X	-.078	5.25
5	MP BETA1	Y	-.07	7.75
6	MP BETA1	Y	-.07	5.25
7	MP BETA1	X	-.121	7.75
8	MP BETA1	X	-.121	5.25
9	MP ALPHA4	Y	-.045	7.75
10	MP ALPHA4	Y	-.045	5.25
11	MP ALPHA4	X	-.078	7.75
12	MP ALPHA4	X	-.078	5.25
13	MP BETA4	Y	-.07	7.75
14	MP BETA4	Y	-.07	5.25
15	MP BETA4	X	-.121	7.75

Member Point Loads (BLC 5 : Wind Load (60)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
16	MP BETA4	X	-.121	5.25
17	MP ALPHA1	Y	-.089	9.5
18	MP ALPHA1	Y	-.089	3.5
19	MP ALPHA1	X	-.155	9.5
20	MP ALPHA1	X	-.155	3.5
21	MP BETA1	Y	-.144	9.5
22	MP BETA1	Y	-.144	3.5
23	MP BETA1	X	-.249	9.5
24	MP BETA1	X	-.249	3.5
25	MP ALPHA4	Y	-.089	9.5
26	MP ALPHA4	Y	-.089	3.5
27	MP ALPHA4	X	-.155	9.5
28	MP ALPHA4	X	-.155	3.5
29	MP BETA4	Y	-.144	9.5
30	MP BETA4	Y	-.144	3.5
31	MP BETA4	X	-.249	9.5
32	MP BETA4	X	-.249	3.5
33	MP ALPHA1	Y	-.017	6.5
34	MP ALPHA1	X	-.03	6.5
35	MP BETA1	Y	-.006	6.5
36	MP BETA1	X	-.01	6.5
37	MP ALPHA1	Y	-.027	6.5
38	MP ALPHA1	X	-.046	6.5
39	MP BETA1	Y	-.009	6.5
40	MP BETA1	X	-.015	6.5
41	MP DELTA1	Y	-.045	7.333
42	MP DELTA1	Y	-.045	5.667
43	MP DELTA1	X	-.078	7.333
44	MP DELTA1	X	-.078	5.667
45	MP DELTA4	Y	-.089	9.5
46	MP DELTA4	Y	-.089	3.5
47	MP DELTA4	X	-.155	9.5
48	MP DELTA4	X	-.155	3.5
49	MP DELTA1	Y	-.006	6.5
50	MP DELTA1	X	-.01	6.5
51	MP DELTA1	Y	-.009	6.5
52	MP DELTA1	X	-.015	6.5

Member Point Loads (BLC 6 : Wind Load (90))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP ALPHA1	X	-.066	7.75
2	MP ALPHA1	X	-.066	5.25
3	MP BETA1	X	-.164	7.75
4	MP BETA1	X	-.164	5.25
5	MP ALPHA4	X	-.066	7.75
6	MP ALPHA4	X	-.066	5.25
7	MP BETA4	X	-.164	7.75
8	MP BETA4	X	-.164	5.25
9	MP ALPHA1	X	-.124	9.5
10	MP ALPHA1	X	-.124	3.5
11	MP BETA1	X	-.343	9.5
12	MP BETA1	X	-.343	3.5
13	MP ALPHA4	X	-.124	9.5
14	MP ALPHA4	X	-.124	3.5
15	MP BETA4	X	-.343	9.5
16	MP BETA4	X	-.343	3.5

Member Point Loads (BLC 6 : Wind Load (90)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
17	MP ALPHA1	X	-.046	6.5
18	MP BETA1	X	0	6.5
19	MP ALPHA1	X	-.071	6.5
20	MP BETA1	X	0	6.5
21	MP DELTA1	X	-.139	7.333
22	MP DELTA1	X	-.139	5.667
23	MP DELTA4	X	-.288	9.5
24	MP DELTA4	X	-.288	3.5
25	MP DELTA1	X	0	6.5
26	MP DELTA1	X	0	6.5

Member Point Loads (BLC 7 : Wind Load (120))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP ALPHA1	Y	.045	7.75
2	MP ALPHA1	Y	.045	5.25
3	MP ALPHA1	X	-.078	7.75
4	MP ALPHA1	X	-.078	5.25
5	MP BETA1	Y	.07	7.75
6	MP BETA1	Y	.07	5.25
7	MP BETA1	X	-.121	7.75
8	MP BETA1	X	-.121	5.25
9	MP ALPHA4	Y	.045	7.75
10	MP ALPHA4	Y	.045	5.25
11	MP ALPHA4	X	-.078	7.75
12	MP ALPHA4	X	-.078	5.25
13	MP BETA4	Y	.07	7.75
14	MP BETA4	Y	.07	5.25
15	MP BETA4	X	-.121	7.75
16	MP BETA4	X	-.121	5.25
17	MP ALPHA1	Y	.089	9.5
18	MP ALPHA1	Y	.089	3.5
19	MP ALPHA1	X	-.155	9.5
20	MP ALPHA1	X	-.155	3.5
21	MP BETA1	Y	.144	9.5
22	MP BETA1	Y	.144	3.5
23	MP BETA1	X	-.249	9.5
24	MP BETA1	X	-.249	3.5
25	MP ALPHA4	Y	.089	9.5
26	MP ALPHA4	Y	.089	3.5
27	MP ALPHA4	X	-.155	9.5
28	MP ALPHA4	X	-.155	3.5
29	MP BETA4	Y	.144	9.5
30	MP BETA4	Y	.144	3.5
31	MP BETA4	X	-.249	9.5
32	MP BETA4	X	-.249	3.5
33	MP ALPHA1	Y	.017	6.5
34	MP ALPHA1	X	-.03	6.5
35	MP BETA1	Y	.006	6.5
36	MP BETA1	X	-.01	6.5
37	MP ALPHA1	Y	.027	6.5
38	MP ALPHA1	X	-.046	6.5
39	MP BETA1	Y	.009	6.5
40	MP BETA1	X	-.015	6.5
41	MP DELTA1	Y	.082	7.333
42	MP DELTA1	Y	.082	5.667
43	MP DELTA1	X	-.142	7.333

Member Point Loads (BLC 7 : Wind Load (120)) (Continued)

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
44	MP DELTA1	X	-.142	5.667
45	MP DELTA4	Y	.171	9.5
46	MP DELTA4	Y	.171	3.5
47	MP DELTA4	X	-.297	9.5
48	MP DELTA4	X	-.297	3.5
49	MP DELTA1	Y	.006	6.5
50	MP DELTA1	X	-.01	6.5
51	MP DELTA1	Y	.009	6.5
52	MP DELTA1	X	-.015	6.5

Member Point Loads (BLC 8 : Wind Load (150))

	Member Label	Direction	Magnitude[k,k-ft]	Location[ft,%]
1	MP ALPHA1	Y	.121	7.75
2	MP ALPHA1	Y	.121	5.25
3	MP ALPHA1	X	-.07	7.75
4	MP ALPHA1	X	-.07	5.25
5	MP BETA1	Y	.078	7.75
6	MP BETA1	Y	.078	5.25
7	MP BETA1	X	-.045	7.75
8	MP BETA1	X	-.045	5.25
9	MP ALPHA4	Y	.121	7.75
10	MP ALPHA4	Y	.121	5.25
11	MP ALPHA4	X	-.07	7.75
12	MP ALPHA4	X	-.07	5.25
13	MP BETA4	Y	.078	7.75
14	MP BETA4	Y	.078	5.25
15	MP BETA4	X	-.045	7.75
16	MP BETA4	X	-.045	5.25
17	MP ALPHA1	Y	.249	9.5
18	MP ALPHA1	Y	.249	3.5
19	MP ALPHA1	X	-.144	9.5
20	MP ALPHA1	X	-.144	3.5
21	MP BETA1	Y	.155	9.5
22	MP BETA1	Y	.155	3.5
23	MP BETA1	X	-.089	9.5
24	MP BETA1	X	-.089	3.5
25	MP ALPHA4	Y	.249	9.5
26	MP ALPHA4	Y	.249	3.5
27	MP ALPHA4	X	-.144	9.5
28	MP ALPHA4	X	-.144	3.5
29	MP BETA4	Y	.155	9.5
30	MP BETA4	Y	.155	3.5
31	MP BETA4	X	-.089	9.5
32	MP BETA4	X	-.089	3.5
33	MP ALPHA1	Y	.01	6.5
34	MP ALPHA1	X	-.006	6.5
35	MP BETA1	Y	.03	6.5
36	MP BETA1	X	-.017	6.5
37	MP ALPHA1	Y	.015	6.5
38	MP ALPHA1	X	-.009	6.5
39	MP BETA1	Y	.046	6.5
40	MP BETA1	X	-.027	6.5
41	MP DELTA1	Y	.121	7.333
42	MP DELTA1	Y	.121	5.667
43	MP DELTA1	X	-.07	7.333
44	MP DELTA1	X	-.07	5.667