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

January 2, 2019

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

RE: **Notice of Exempt Modification for Sprint DO Macro: 841288**
Verizon Site ID: 39684
2 Kaechele Pl. Bridgeport, CT 06606
Latitude: 41° 13' 24"/ Longitude: -73° 13' 0.4"

Dear Ms. Bachman:

Verizon currently maintains twelve (12) antennas at the 99-foot level of the existing 150-foot monopole tower at 2 Kaechele Pl. Bridgeport, CT. The tower is owned by Crown Castle. The property is owned by Southern New England Telecommunications. Verizon now intends to replace two (2) antennas with two (2) new antennas. These antennas would be installed at the 99-foot of the tower. Verizon also intends to replace six (6) RRUs with six (6) new RRU's.

This facility was approved by the Connecticut Siting Council, an email was sent on 09/11/18 to the City of Bridgeport Building Officials Office to ascertain the original zoning approval documents and date.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.S.C.A. § 16-50j-73, a copy of this letter is being sent to Dennis Buckley zoning administrator, City of Bridgeport, Mayor Joseph Peter Ganim, City of Bridgeport, as well as the property owner, and Crown Castle is the 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, Verizon respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,

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

Attachments:

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

cc: Zoning Administrator Dennis Buckley
City of Bridgeport
45 Lyon Terrace, Room 210
Bridgeport, CT 06604

Mayor Joseph Peter Ganim
City of Bridgeport
999 Broad Street
Bridgeport, CT 06604

Southern New England Telecommunications
C/O Frontier Communications – Tax DPMT
401 Merrit 7
Norwalk, CT 06851

205 KAECHELE PL

Location 205 KAECHELE PL

Mblu 81/ 2602/ 9/ /

Acct# R--0148640

Owner SOUTHERN NEW ENGLAND TEL

Assessment $104,120

Appraisal $148,730

PID 29859

Building Count 1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$51,340	$97,390	$148,730

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2017	$35,950	$68,170	$104,120

Owner of Record

Owner SOUTHERN NEW ENGLAND TEL
Co-Owner C/O FRONTIER COMMUNICATIONS - TAX DPMT
Address 401 MERRITT 7
NORWALK , CT 06851

Sale Price $0
Certificate
Book & Page 0/ 0
Sale Date
Instrument

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
SOUTHERN NEW ENGLAND TEL	$0		0/ 0		

Building Information

Building 1 : Section 1

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

Building Photo

Building Attributes	
Field	**Description**
Style	Vacant Land

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 Full Baths	
Total Half Baths	
Total Xtra Fixtrs:	
Total Rooms	
Bath Style:	
Kitchen Style:	
Fireplaces	
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Garages	
.	

(http://images.vgsi.com/photos2/BridgeportCTPhotos//\00\03\05/86.JPG)

Building Layout

(http://images.vgsi.com/photos2/BridgeportCTPhotos//Sketches/

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	499
Description	Utility Vac Ln
Zone	RA
Neighborhood	2080
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	0.15
Frontage	0
Depth	0
Assessed Value	$68,170
Appraised Value	$97,390

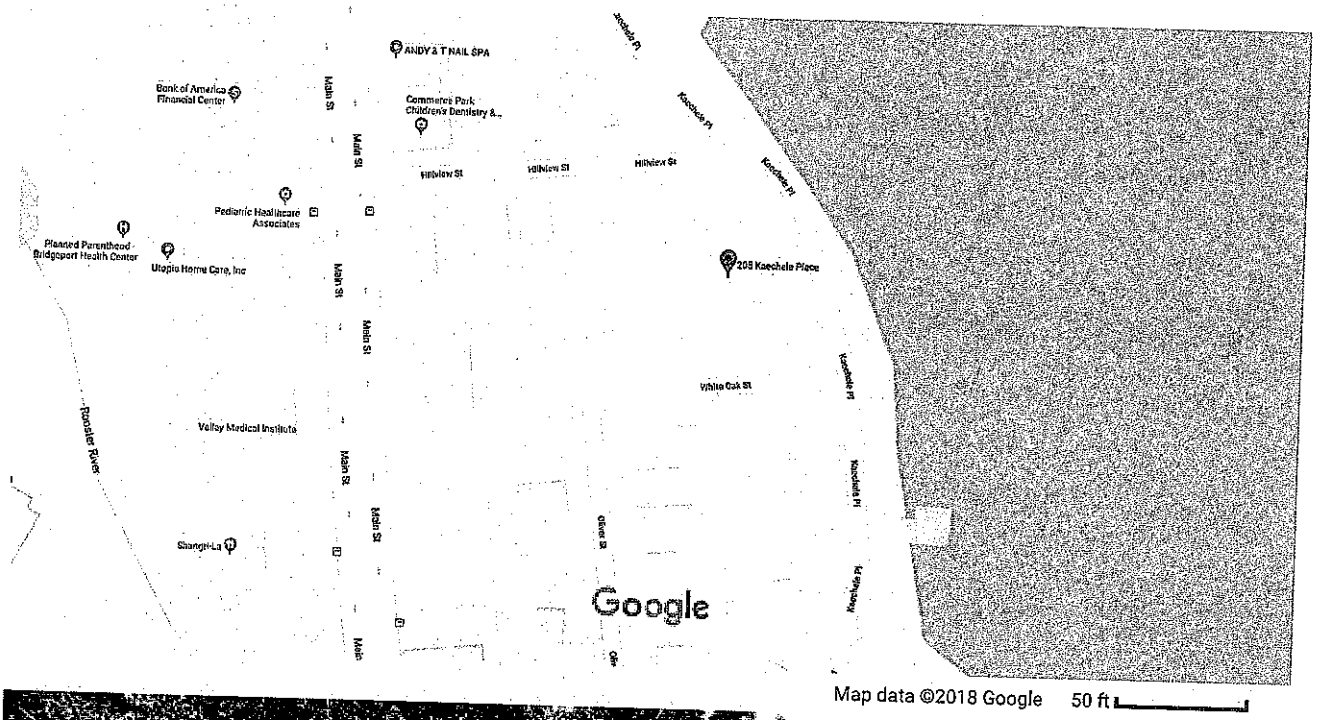
Outbuildings

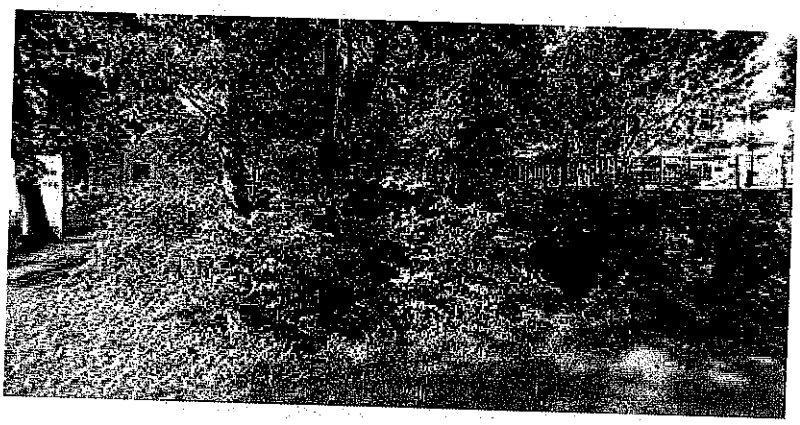
Outbuildings						Legend
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
SHD3	Shed w/ Lt	CM	Comm	384 SF	$6,910	1
SHD3	Shed w/ Lt	CM	Comm	384 SF	$6,910	1
SHD3	Shed w/ Lt	CM	Comm	576 SF	$10,370	1
FN1	Fence, Chain	8	8 ft	350 LF	$3,150	1
TWR	Tower			120 LF	$24,000	1

Valuation History

Appraisal			

Google Maps 205 Kaechele Pl





205 Kaechele Pl

Bridgeport, CT 06606

6QFM+88 Bridgeport, Connecticut

From: McKay, Kristian
To: "bruce.nelson@bridgeportct.gov"
Subject: 205 Kaechele Place. Cell Tower zoning Docs.
Date: Tuesday, September 11, 2018 11:43:00 AM

Hello Mr. Nelson,

I work for Crown Castle and have an inquiry regarding the original zoning documents for a cell tower and I am hoping your office can provide more information.

We are applying for CSC Zoning Approval for Sprint to modify their antennas and new requirements ask that we procure original zoning documents from the jurisdiction, if possible. However, if these documents are not available, please let me know.

The tower is located at 205 Kaechele Place Bridgeport, CT. 06851. I believe Southern New England Telecommunications owned the property and signed the lease at that time.

If you have any questions, please don't hesitate to call or e-mail me.

Thanks,

Kristian McKay
Real Estate Specialist – East Area
T: (704) 405-6612 | M: (704) 713-5728 | F: (724) 416-6496

CROWN CASTLE
3530 Toringdon Way, Suite 300, Charlotte, NC 28277
Crowncastle.com

From: McKay, Kristian
To: "Dennis.Buckley@bridgeportct.gov"
Subject: 205 Kaechele Place. Cell Tower zoning Docs.
Date: Tuesday, September 11, 2018 11:51:00 AM

Hello Mr. Buckley,

I work for Crown Castle and have an inquiry regarding the original zoning documents for a cell tower and I am hoping your office can provide more information.

We are applying for CSC Zoning Approval for Sprint to modify their antennas and new requirements ask that we procure original zoning documents from the jurisdiction, if possible. However, if these documents are not available, please let me know.

The tower is located at 205 Kaechele Place Bridgeport, CT. 06851. I believe Southern New England Telecommunications owned the property and signed the lease at that time.

If you have any questions, please don't hesitate to call or e-mail me.

Thanks,

Kristian McKay
Real Estate Specialist – East Area
T: (704) 405-6612 | M: (704) 713-5728 | F: (724) 416-6496

CROWN CASTLE
3530 Toringdon Way, Suite 300, Charlotte, NC 28277
Crowncastle.com

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Thursday, January 3, 2019 10:56 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 774097221637 Delivered

Your package has been delivered

Tracking # 774097221637

Ship date:
Wed, 1/2/2019

Jeff Barbadora
Crown Castle
WOBURN, MA 01801
US

Delivered

Delivery date:
Thu, 1/3/2019 10:51 am

Dennis Buckley
City of Bridgeport
45 Lyon Terrace
Room 210
BRIDGEPORT, CT 06604
US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	774097221637
Status:	Delivered: 01/03/2019 10:51 AM Signed for By: S.ROBERTSON
Reference:	1766.6680
Signed for by:	S.ROBERTSON
Delivery location:	BRIDGEPORT, CT
Delivered to:	Mailroom
Service type:	FedEx Priority Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.

Special handling/Services:	Deliver Weekday
Standard transit:	1/3/2019 by 10:30 am

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 9:55 AM CST on 01/03/2019.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Thank you for your business.

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Thursday, January 3, 2019 10:24 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 774097254845 Delivered

Your package has been delivered

Tracking # 774097254845

Ship date:
Wed, 1/2/2019

Jeff Barbadora
Crown Castle
WOBURN, MA 01801
US

Delivered

Delivery date:
Thu, 1/3/2019 10:17 am

Joseph Peter Ganim- Mayor
City of Bridgeport
999 Broad Street
BRIDGEPORT, CT 06604
US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	774097254845
Status:	Delivered: 01/03/2019 10:17 AM Signed for By: R.CABANAS
Reference:	1766.6680
Signed for by:	R.CABANAS
Delivery location:	BRIDGEPORT, CT
Delivered to:	Receptionist/Front Desk
Service type:	FedEx Priority Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday

Standard transit:	1/3/2019 by 10:30 am

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 9:23 AM CST on 01/03/2019.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Thank you for your business.

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Thursday, January 3, 2019 9:51 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 774097302119 Delivered

Your package has been delivered

Tracking # 774097302119

Ship date:
Wed, 1/2/2019

Jeff Barbadora
Crown Castle
WOBURN, MA 01801
US

Delivered

Delivery date:
Thu, 1/3/2019 9:49 am

C/O Frontier Communications
Southern New England
Telecommunicat
401 Merrit 7
NORWALK, CT 06851
US

Shipment Facts

Our records indicate that the following package has been delivered.

Tracking number:	774097302119
Status:	Delivered: 01/03/2019 09:49 AM Signed for By: M.SCOTT
Reference:	1766.6680
Signed for by:	M.SCOTT
Delivery location:	NORWALK, CT
Delivered to:	Mailroom
Service type:	FedEx Priority Overnight®
Packaging type:	FedEx® Envelope
Number of pieces:	1
Weight:	0.50 lb.
Special handling/Services:	Deliver Weekday

Standard transit:	1/3/2019 by 10:30 am

Please do not respond to this message. This email was sent from an unattended mailbox. This report was generated at approximately 8:50 AM CST on 01/03/2019.

All weights are estimated.

To track the latest status of your shipment, click on the tracking number above.

Standard transit is the date and time the package is scheduled to be delivered by, based on the selected service, destination and ship date. Limitations and exceptions may apply. Please see the FedEx Service Guide for terms and conditions of service, including the FedEx Money-Back Guarantee, or contact your FedEx Customer Support representative.

Thank you for your business.

Site Name: Trumbull SW CT

Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissible Exposure	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm^2)	(mW/cm^2)	(%)
VZW PCS	1970	1	3795	3795	100	0.1365	1.0	13.65%
VZW Cellular	869	3	377	1131	100	0.0407	0.579333333	7.02%
VZW Cellular	880	1	2566	2566	100	0.0923	0.586666667	15.73%
VZW AWS	2145	1	4067	4067	100	0.1463	1.0	14.63%
VZW 700	746	1	2235	2235	100	0.0804	0.497333333	16.16%

Total Percentage of Maximum Permissible Exposure 67.18%

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Section 1.13101 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992

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

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

PAUL J. FORD & COMPANY

Date: **October 05, 2018**

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

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

Subject:	**Structural Analysis Report**	
Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Carrier Site Number:	39684
	Carrier Site Name:	TRUMBULL SW CT
Crown Castle Designation:	**Crown Castle BU Number:**	841288
	Crown Castle Site Name:	BRIDGEPORT NORTH
	Crown Castle JDE Job Number:	535167
	Crown Castle Work Order Number:	1641661
	Crown Castle Order Number:	461618 Rev. 1
Engineering Firm Designation:	**Paul J. Ford and Company Project Number:**	37518-0456.009.7805
Site Data:	**205 KAECHELE PLACE, BRIDGEPORT, Fairfield County, CT** **Latitude *41° 13' 24.04"*, Longitude *-73° 13' 0.38"*** **150 Foot - Monopole Tower**	

Dear Denice Nicholson,

Paul J. Ford and Company is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above mentioned tower.

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

LC7: Proposed Equipment Configuration **Sufficient Capacity**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2016 Connecticut State Building Code per section 1609.3 and Appendix N, and the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 – Analysis Criteria.

Respectfully submitted by:

Aaron E. Pike, E.I.
Structural Designer
apike@pauljford.com

RMF

STATE OF CONNECTICUT
JUSTIN T. KLINE
No. 30301
LICENSED
PROFESSIONAL ENGINEER

10.9.18

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 150 ft Monopole tower designed by ITT MEYER INC.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
99.0	103.0	1	gps	GPS_A	12 2	1-5/8 1-1/4
	100.0	6	rfs celwave	FD9R6004/2C-3L		
	99.0	3	antel	BXA-171063/8CF w/ MP		
		3	antel	BXA-70063/4CF w/ MP		
		1	commscope	RC2DC-3315-PF-48		
		6	css	X7CQAP-465-VR0 w/ MP		
		3	samsung telecom.	RFV01U-D1A		
		3	samsung telecom.	RFV01U-D2A		
		1	tower mounts	T-Arm Mount [TA 602-3]		

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	154.0	3	cci antennas	HPA-65R-BUU-H6	12 2 4	1-5/8 3/8 3/4
		6	cci antennas	TPX-070821		
		3	ericsson	RRUS 11		
		3	ericsson	RRUS 32		
		3	ericsson	RRUS 32 B2		
		3	ericsson	RRUS 32 B66		
		3	powerwave tech.	1001940		
		6	powerwave tech.	7020.00		
		3	powerwave tech.	7770.00		
		3	powerwave tech.	TT19-08BP111-001		
		3	quintel technology	QS66512-2		
		2	raycap	DC6-48-60-18-8F		
	150.0	1	tower mounts	Platform Mount (LP 101-1)		
147.0	147.0	3	ericsson	RRUS 11	--	--
		1	raycap	TME-DC6-48-60-18-8F		
		1	tower mounts	Pipe Mount [PM 601-3]		
138.0	143.0	1	andrew	VHLP2-18	3 1 2	1-1/4 1-5/8 1/2
		1	andrew	VHLP2-23		
		2	dragonwave	HORIZON COMPACT		
	140.0	3	alcatel lucent	PCS 1900MHZ 4X45W-65MHZ		
		6	alcatel lucent	RRH2X50-800		
		3	commscope	NNVV-65B-R4 w/ Mount Pipe		
		3	nokia	AAHC w/ Mount Pipe		
		1	clearwire	CW JUNCTION BOX		
	138.0	1	tower mounts	Miscellaneous [NA 507-1]		
		1	tower mounts	Platform Mount [LP 301-1]		
120.0	120.0	3	commscope	LNX-6515DS-A1M	13 1	1-5/8 1-1/2
		3	ericsson	AIR -32 B2A/B66AA		
		3	ericsson	AIR 21 B2A/B4P		
		3	ericsson	KRY 112 144/1		
		3	ericsson	RRUS 11 B12		
		1	tower mounts	Platform Mount [LP 301-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
4-GEOTECHNICAL REPORTS	FDH, 08-09065E G1, 09/23/2008	5110784	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25567.42283, 10/22/2014	5401472	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25567_26102, 06/05/2015	5739992	CCISITES
4-POST-MODIFICATION INSPECTION	Crown Castle, 841288, 05/31/2017	6894091	CCISITES
4-TOWER FOUNDATION DRAWINGS/DESIGN/SPECS	FDH, 08-09065E NA, 09/23/2008	5110783	CCISITES
4-TOWER MAPPING	GPD, 2014777.841288.02, 04/11/2008	4710143	CCISITES
4-POST-MODIFICATION INSPECTION	TEP, 25567.87194, 06/08/2018	7594134	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD, 2013801.02, 04/03/2013	4945043	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD, 2008264.38, 10/15/2008	5237204	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD, 2014777.814288.03, 09/19/2014	5303781	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	GPD, 2017777.841288.07, 01/09/2017	6650617	CCISITES
4-TOWER REINFORCEMENT DESIGN/DRAWINGS/DATA	PJF, 37517-0750.003.7700, 03/31/2017	6801057	CCISITES

3.1) Analysis Method

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

3.2) Assumptions

1) Tower and structures were built and maintained in accordance with the manufacturer's specifications.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) Monopole was modified in accordance with the referenced modification documents.
4) The monopole manufacturer drawings were not available at the time of this analysis. Therefore, we have assumed pole shaft and base plate steel yield strength(s) (Fy) as shown in the attached calculations. Anchor rods are assumed to be ASTM A615 #18J, 2.25" diam. (Fu = 100 ksi, Fy = 75 ksi).

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP15.732x15x0.2188	Pole	25.2%	Pass
145 - 140	Pole	TP16.463x15.732x0.2188	Pole	39.8%	Pass
140 - 135	Pole	TP17.195x16.463x0.2188	Pole	59.9%	Pass
135 - 130	Pole	TP17.927x17.195x0.2188	Pole	78.3%	Pass
130 - 128.5	Pole	TP18.146x17.927x0.2188	Pole	83.4%	Pass
128.5 - 128.25	Pole + Reinf.	TP18.183x18.146x0.6688	Reinf. 12 Tension Rupture	42.0%	Pass
128.25 - 123.25	Pole + Reinf.	TP18.915x18.183x0.6438	Reinf. 12 Tension Rupture	51.2%	Pass
123.25 - 118.25	Pole + Reinf.	TP19.646x18.915x0.6188	Reinf. 12 Tension Rupture	61.1%	Pass
118.25 - 113.25	Pole + Reinf.	TP20.378x19.646x0.6063	Reinf. 12 Tension Rupture	72.1%	Pass
113.25 - 109	Pole + Reinf.	TP21x20.378x0.5938	Reinf. 12 Tension Rupture	81.0%	Pass
109 - 108.75	Pole + Reinf.	TP21.038x21x0.725	Reinf. 7 Tension Rupture	61.7%	Pass
108.75 - 104.17	Pole + Reinf.	TP21.729x21.038x0.7	Reinf. 7 Tension Rupture	68.5%	Pass
104.17 - 103.92	Pole + Reinf.	TP21.767x21.729x0.975	Reinf. 7 Tension Rupture	61.5%	Pass
103.92 - 103.17	Pole + Reinf.	TP21.88x21.767x0.95	Reinf. 7 Tension Rupture	62.4%	Pass
103.17 - 102.92	Pole + Reinf.	TP21.918x21.88x1.125	Reinf. 7 Tension Rupture	50.9%	Pass
102.92 - 102.42	Pole + Reinf.	TP21.994x21.918x1.1	Reinf. 7 Tension Rupture	51.4%	Pass
102.42 - 102.17	Pole + Reinf.	TP22.031x21.994x0.925	Reinf. 7 Tension Rupture	56.5%	Pass
102.17 - 100.92	Pole + Reinf.	TP22.22x22.031x0.925	Reinf. 7 Tension Rupture	58.0%	Pass
100.92 - 100.67	Pole + Reinf.	TP22.258x22.22x1	Reinf. 7 Tension Rupture	56.7%	Pass
100.67 - 99.58	Pole + Reinf.	TP22.422x22.258x1	Reinf. 7 Tension Rupture	57.9%	Pass
99.58 - 99.33	Pole + Reinf.	TP22.46x22.422x1.375	Reinf. 17 Tension Rupture	41.5%	Pass
99.33 - 95.25	Pole + Reinf.	TP23.076x22.46x1.325	Reinf. 17 Tension Rupture	45.5%	Pass
95.25 - 95	Pole + Reinf.	TP23.114x23.076x1.025	Reinf. 18 Tension Rupture	56.2%	Pass
95 - 90	Pole + Reinf.	TP23.869x23.114x1	Reinf. 18 Tension Rupture	61.7%	Pass
90 - 85	Pole + Reinf.	TP24.624x23.869x0.9625	Reinf. 18 Tension Rupture	67.0%	Pass
85 - 80.5	Pole + Reinf.	TP25.304x24.624x0.925	Reinf. 18 Tension Rupture	71.5%	Pass
80.5 - 80.25	Pole + Reinf.	TP25.341x25.304x1.3	Reinf. 6 Tension Rupture	59.3%	Pass
80.25 - 75.25	Pole + Reinf.	TP26.096x25.341x1.25	Reinf. 6 Tension Rupture	63.4%	Pass
75.25 - 73.58	Pole + Reinf.	TP26.348x26.096x1.225	Reinf. 6 Tension Rupture	64.8%	Pass
73.58 - 73.33	Pole + Reinf.	TP26.386x26.348x1.225	Reinf. 6 Tension Rupture	65.0%	Pass
73.33 - 72	Pole + Reinf.	TP27.04x26.386x1.2	Reinf. 6 Tension Rupture	66.0%	Pass
72 - 67	Pole + Reinf.	TP26.897x26.087x1.2625	Reinf. 6 Tension Rupture	67.5%	Pass
67 - 66.75	Pole + Reinf.	TP26.937x26.897x1.2625	Reinf. 6 Tension Rupture	67.7%	Pass
66.75 - 66.5	Pole + Reinf.	TP26.978x26.937x1.3625	Reinf. 5 Tension Rupture	58.9%	Pass
66.5 - 61.5	Pole + Reinf.	TP27.788x26.978x1.3125	Reinf. 5 Tension Rupture	61.8%	Pass
61.5 - 56.5	Pole + Reinf.	TP28.598x27.788x1.2625	Reinf. 5 Tension Rupture	64.6%	Pass
56.5 - 51.5	Pole + Reinf.	TP29.408x28.598x1.2375	Reinf. 5 Tension Rupture	67.2%	Pass
51.5 - 48.25	Pole + Reinf.	TP29.934x29.408x1.2125	Reinf. 5 Tension Rupture	68.9%	Pass
48.25 - 48	Pole + Reinf.	TP29.974x29.934x1.6375	Reinf. 2 Compression	60.5%	Pass
48 - 44.25	Pole + Reinf.	TP30.582x29.974x1.6125	Reinf. 2 Compression	62.1%	Pass
44.25 - 44	Pole + Reinf.	TP30.622x30.582x1.7125	Reinf. 2 Compression	58.6%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
44 - 43.08	Pole + Reinf.	TP30.771x30.622x1.7125	Reinf. 2 Compression	59.0%	Pass
43.08 - 42.83	Pole + Reinf.	TP30.812x30.771x1.7125	Reinf. 2 Compression	59.1%	Pass
42.83 - 37.83	Pole + Reinf.	TP31.622x30.812x1.6375	Reinf. 2 Compression	61.0%	Pass
37.83 - 34	Pole + Reinf.	TP32.89x31.622x1.6125	Reinf. 2 Compression	62.5%	Pass
34 - 29	Pole + Reinf.	TP32.462x31.617x1.7063	Reinf. 2 Compression	61.8%	Pass
29 - 24	Pole + Reinf.	TP33.306x32.462x1.6563	Reinf. 2 Compression	63.3%	Pass
24 - 23.75	Pole + Reinf.	TP33.348x33.306x1.6563	Reinf. 2 Compression	63.4%	Pass
23.75 - 23.5	Pole + Reinf.	TP33.391x33.348x1.6563	Reinf. 2 Compression	63.4%	Pass
23.5 - 18.5	Pole + Reinf.	TP34.235x33.391x1.6063	Reinf. 2 Compression	64.8%	Pass
18.5 - 13.5	Pole + Reinf.	TP35.08x34.235x1.5563	Reinf. 2 Compression	66.1%	Pass
13.5 - 11	Pole + Reinf.	TP35.502x35.08x1.5313	Reinf. 2 Compression	66.8%	Pass
11 - 10.75	Pole + Reinf.	TP35.544x35.502x1.2313	Reinf. 3 Tension Rupture	63.8%	Pass
10.75 - 6	Pole + Reinf.	TP36.347x35.544x1.2563	Reinf. 3 Tension Rupture	65.0%	Pass
6 - 5.75	Pole + Reinf.	TP36.389x36.347x1.5313	Reinf. 3 Tension Rupture	56.2%	Pass
5.75 - 3.25	Pole + Reinf.	TP36.811x36.389x1.5063	Reinf. 3 Tension Rupture	56.8%	Pass
3.25 - 3	Pole + Reinf.	TP36.853x36.811x1.1563	Reinf. 20 Compression	71.8%	Pass
3 - 0	Pole + Reinf.	TP37.36x36.853x1.1313	Reinf. 20 Compression	72.5%	Pass
				Summary	
			Pole	83.4%	Pass
			Reinforcement	81.0%	Pass
			Overall	83.4%	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1	Anchor Rods	0	81.6	Pass
1	Base Plate	0	53.1	Pass
1	Base Foundation Steel	0	40.8	Pass
1	Base Foundation Soil Interaction	0	47.8	Pass
1	Flange Connection	109	87.3	Pass

Structure Rating (max from all components) =	87.3%

- All structural ratings are per TIA-222-H, Section 15.5

Notes:

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

4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Tower Input Data

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

1) Tower is located in Fairfield County, Connecticut.
2) Tower base elevation above sea level: 239.0000 ft.
3) Basic wind speed of 125.00 mph.
4) Risk Category II.
5) Exposure Category B.
6) Simplified Topographic Factor Procedure for wind speed-up calculations is used.
7) Topographic Category: 1.
8) Crest Height 0.0000 ft.
9) Nominal ice thickness of 1.2750 in.
10) Ice thickness is considered to increase with height.
11) Ice density of 56.00 pcf.
12) A wind speed of 50.00 mph is used in combination with ice.
13) Temperature drop of 50.00 °F.
14) Deflections calculated using a wind speed of 60.00 mph.
15) TIA-222-H Annex S.
16) A non-linear (P-delta) analysis was used.
17) Pressures are calculated at each section.
18) Stress ratio used in pole design is 1.05.
19) 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	150.0000-145.0000	5.0000	0.00	12	15.0000	15.7317	0.2188	0.8752	A572-50 (50 ksi)
L2	145.0000-140.0000	5.0000	0.00	12	15.7317	16.4634	0.2188	0.8752	A572-50 (50 ksi)
L3	140.0000-135.0000	5.0000	0.00	12	16.4634	17.1951	0.2188	0.8752	A572-50 (50 ksi)
L4	135.0000-130.0000	5.0000	0.00	12	17.1951	17.9268	0.2188	0.8752	A572-50 (50 ksi)
L5	130.0000-128.5000	1.5000	0.00	12	17.9268	18.1463	0.2188	0.8752	A572-50 (50 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
L6	128.5000-128.2500	0.2500	0.00	12	18.1463	18.1829	0.6688	2.6752	A572-50 (50 ksi)
L7	128.2500-123.2500	5.0000	0.00	12	18.1829	18.9146	0.6438	2.5752	A572-50 (50 ksi)
L8	123.2500-118.2500	5.0000	0.00	12	18.9146	19.6463	0.6188	2.4752	A572-50 (50 ksi)
L9	118.2500-113.2500	5.0000	0.00	12	19.6463	20.3780	0.6063	2.4252	A572-50 (50 ksi)
L10	113.2500-109.0000	4.2500	0.00	12	20.3780	21.0000	0.5938	2.3752	A572-50 (50 ksi)
L11	109.0000-108.7500	0.2500	0.00	12	21.0000	21.0377	0.7250	2.9000	A572-50 (50 ksi)
L12	108.7500-104.1700	4.5800	0.00	12	21.0377	21.7293	0.7000	2.8000	A572-50 (50 ksi)
L13	104.1700-103.9200	0.2500	0.00	12	21.7293	21.7671	0.9750	3.9000	A572-50 (50 ksi)
L14	103.9200-103.1700	0.7500	0.00	12	21.7671	21.8803	0.9500	3.8000	A572-50 (50 ksi)
L15	103.1700-102.9200	0.2500	0.00	12	21.8803	21.9181	1.1250	4.5000	A572-50 (50 ksi)
L16	102.9200-102.4200	0.5000	0.00	12	21.9181	21.9936	1.1000	4.4000	A572-50 (50 ksi)
L17	102.4200-102.1700	0.2500	0.00	12	21.9936	22.0313	0.9250	3.7000	A572-50 (50 ksi)
L18	102.1700-100.9200	1.2500	0.00	12	22.0313	22.2201	0.9250	3.7000	A572-50 (50 ksi)
L19	100.9200-100.6700	0.2500	0.00	12	22.2201	22.2578	1.0000	4.0000	A572-50 (50 ksi)
L20	100.6700-99.5800	1.0900	0.00	12	22.2578	22.4224	1.0000	4.0000	A572-50 (50 ksi)
L21	99.5800-99.3300	0.2500	0.00	12	22.4224	22.4602	1.3750	5.5000	A572-50 (50 ksi)
L22	99.3300-95.2500	4.0800	0.00	12	22.4602	23.0763	1.3250	5.3000	A572-50 (50 ksi)
L23	95.2500-95.0000	0.2500	0.00	12	23.0763	23.1140	1.0250	4.1000	A572-50 (50 ksi)
L24	95.0000-90.0000	5.0000	0.00	12	23.1140	23.8690	1.0000	4.0000	A572-50 (50 ksi)
L25	90.0000-85.0000	5.0000	0.00	12	23.8690	24.6240	0.9625	3.8500	A572-50 (50 ksi)
L26	85.0000-80.5000	4.5000	0.00	12	24.6240	25.3035	0.9250	3.7000	A572-50 (50 ksi)
L27	80.5000-80.2500	0.2500	0.00	12	25.3035	25.3412	1.3000	5.2000	A572-50 (50 ksi)
L28	80.2500-75.2500	5.0000	0.00	12	25.3412	26.0963	1.2500	5.0000	A572-50 (50 ksi)
L29	75.2500-73.5800	1.6700	0.00	12	26.0963	26.3484	1.2250	4.9000	A572-50 (50 ksi)
L30	73.5800-73.3300	0.2500	0.00	12	26.3484	26.3862	1.2250	4.9000	A572-50 (50 ksi)
L31	73.3300-69.0000	4.3300	3.00	12	26.3862	27.0400	1.2000	4.8000	A572-50 (50 ksi)
L32	69.0000-67.0000	5.0000	0.00	12	26.0870	26.8969	1.2625	5.0500	A572-50 (50 ksi)
L33	67.0000-66.7500	0.2500	0.00	12	26.8969	26.9374	1.2625	5.0500	A572-50 (50 ksi)
L34	66.7500-66.5000	0.2500	0.00	12	26.9374	26.9779	1.3625	5.4500	A572-50 (50 ksi)
L35	66.5000-61.5000	5.0000	0.00	12	26.9779	27.7877	1.3125	5.2500	A572-50 (50 ksi)
L36	61.5000-56.5000	5.0000	0.00	12	27.7877	28.5976	1.2625	5.0500	A572-50 (50 ksi)
L37	56.5000-51.5000	5.0000	0.00	12	28.5976	29.4075	1.2375	4.9500	A572-50 (50 ksi)
L38	51.5000-48.2500	3.2500	0.00	12	29.4075	29.9339	1.2125	4.8500	A572-50 (50 ksi)
L39	48.2500-48.0000	0.2500	0.00	12	29.9339	29.9744	1.6375	6.5500	A572-50 (50 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
L40	48.0000-44.2500	3.7500	0.00	12	29.9744	30.5818	1.6125	6.4500	A572-50 (50 ksi)
L41	44.2500-44.0000	0.2500	0.00	12	30.5818	30.6223	1.7125	6.8500	A572-50 (50 ksi)
L42	44.0000-43.0800	0.9200	0.00	12	30.6223	30.7714	1.7125	6.8500	A572-50 (50 ksi)
L43	43.0800-42.8300	0.2500	0.00	12	30.7714	30.8118	1.7125	6.8500	A572-50 (50 ksi)
L44	42.8300-37.8300	5.0000	0.00	12	30.8118	31.6217	1.6375	6.5500	A572-50 (50 ksi)
L45	37.8300-30.0000	7.8300	4.00	12	31.6217	32.8900	1.6125	6.4500	A572-50 (50 ksi)
L46	30.0000-29.0000	5.0000	0.00	12	31.6171	32.4616	1.7063	6.8252	A572-50 (50 ksi)
L47	29.0000-24.0000	5.0000	0.00	12	32.4616	33.3062	1.6563	6.6252	A572-50 (50 ksi)
L48	24.0000-23.7500	0.2500	0.00	12	33.3062	33.3484	1.6563	6.6252	A572-50 (50 ksi)
L49	23.7500-23.5000	0.2500	0.00	12	33.3484	33.3906	1.6563	6.6252	A572-50 (50 ksi)
L50	23.5000-18.5000	5.0000	0.00	12	33.3906	34.2352	1.6063	6.4252	A572-50 (50 ksi)
L51	18.5000-13.5000	5.0000	0.00	12	34.2352	35.0797	1.5563	6.2252	A572-50 (50 ksi)
L52	13.5000-11.0000	2.5000	0.00	12	35.0797	35.5020	1.5313	6.1252	A572-50 (50 ksi)
L53	11.0000-10.7500	0.2500	0.00	12	35.5020	35.5442	1.2313	4.9252	A572-50 (50 ksi)
L54	10.7500-6.0000	4.7500	0.00	12	35.5442	36.3465	1.2563	5.0252	A572-50 (50 ksi)
L55	6.0000-5.7500	0.2500	0.00	12	36.3465	36.3888	1.5313	6.1252	A572-50 (50 ksi)
L56	5.7500-3.2500	2.5000	0.00	12	36.3888	36.8110	1.5063	6.0252	A572-50 (50 ksi)
L57	3.2500-3.0000	0.2500	0.00	12	36.8110	36.8533	1.1563	4.6252	A572-50 (50 ksi)
L58	3.0000-0.0000	3.0000		12	36.8533	37.3600	1.1313	4.5252	A572-50 (50 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	15.4520	10.4139	290.4144	5.2917	7.7700	37.3764	588.4584	5.1254	3.4336	15.693
	16.2095	10.9294	335.7134	5.5536	8.1490	41.1968	680.2464	5.3791	3.6297	16.589
L2	16.2095	10.9294	335.7134	5.5536	8.1490	41.1968	680.2464	5.3791	3.6297	16.589
	16.9670	11.4449	385.4938	5.8156	8.5280	45.2030	781.1150	5.6328	3.8258	17.485
L3	16.9670	11.4449	385.4938	5.8156	8.5280	45.2030	781.1150	5.6328	3.8258	17.485
	17.7245	11.9604	439.9668	6.0775	8.9071	49.3952	891.4921	5.8866	4.0219	18.382
L4	17.7245	11.9604	439.9668	6.0775	8.9071	49.3952	891.4921	5.8866	4.0219	18.382
	18.4820	12.4759	499.3440	6.3395	9.2861	53.7733	1011.8063	6.1403	4.2180	19.278
L5	18.4820	12.4759	499.3440	6.3395	9.2861	53.7733	1011.8063	6.1403	4.2180	19.278
	18.7093	12.6306	518.1450	6.4181	9.3998	55.1230	1049.9022	6.2164	4.2768	19.547
L6	18.5505	37.6385	1467.5033	6.2570	9.3998	156.1206	2973.5595	18.5245	3.0708	4.592
	18.5884	37.7173	1476.7384	6.2701	9.4188	156.7870	2992.2724	18.5633	3.0806	4.606
L7	18.5972	36.3592	1427.6334	6.2790	9.4188	151.5735	2892.7724	17.8949	3.1476	4.889
	19.3548	37.8761	1613.8676	6.5410	9.7978	164.7177	3270.1334	18.6415	3.3437	5.194
L8	19.3636	36.4551	1557.5743	6.5499	9.7978	158.9722	3156.0677	17.9421	3.4107	5.512
	20.1211	37.9131	1752.0243	6.8119	10.1768	172.1586	3550.0762	18.6597	3.6068	5.829
L9	20.1255	37.1716	1720.0181	6.8163	10.1768	169.0136	3485.2231	18.2947	3.6403	6.004
	20.8830	38.6001	1926.0371	7.0783	10.5558	182.4619	3902.6734	18.9978	3.8364	6.328
L10	20.8874	37.8282	1889.9083	7.0828	10.5558	179.0393	3829.4665	18.6179	3.8699	6.517
	21.5313	39.0174	2073.8075	7.3054	10.8780	190.6423	4202.0961	19.2032	4.0366	6.798
L11	21.4850	47.3320	2483.4900	7.2584	10.8780	228.3039	5032.2241	23.2954	3.6850	5.083
	21.5241	47.4201	2497.3879	7.2720	10.8976	229.1696	5060.3849	23.3387	3.6951	5.097
L12	21.5329	45.8413	2420.1851	7.2809	10.8976	222.0852	4903.9511	22.5617	3.7621	5.374
	22.2489	47.4001	2675.5691	7.5285	11.2558	237.7060	5421.4284	23.3289	3.9475	5.639

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	22.1519	65.1582	3582.3878	7.4301	11.2558	318.2706	7258.8888	32.0689	3.2105	3.293
	22.1910	65.2767	3601.9713	7.4436	11.2753	319.4555	7298.5704	32.1272	3.2206	3.303
L14	22.1998	63.6794	3522.2880	7.4525	11.2753	312.3884	7137.1104	31.3411	3.2876	3.461
	22.3171	64.0259	3580.0876	7.4931	11.3340	315.8712	7254.2281	31.5116	3.3179	3.493
L15	22.2553	75.1862	4134.1218	7.4304	11.3340	364.7536	8376.8517	37.0044	2.8489	2.532
	22.2944	75.3229	4156.7204	7.4439	11.3536	366.1159	8422.6426	37.0717	2.8590	2.541
L16	22.3032	73.7376	4079.0265	7.4529	11.3536	359.2727	8265.2136	36.2914	2.9260	2.66
	22.3814	74.0051	4123.5673	7.4799	11.3927	361.9490	8355.4653	36.4230	2.9463	2.678
L17	22.4431	62.7528	3555.4072	7.5426	11.3927	312.0784	7204.2190	30.8850	3.4153	3.692
	22.4822	62.8652	3574.5529	7.5561	11.4122	313.2213	7243.0133	30.9403	3.4254	3.703
L18	22.4822	62.8652	3574.5529	7.5561	11.4122	313.2213	7243.0133	30.9403	3.4254	3.703
	22.6776	63.4274	3671.3127	7.6236	11.5100	318.9672	7439.0750	31.2170	3.4760	3.758
L19	22.6512	68.3287	3927.1987	7.5968	11.5100	341.1988	7957.5692	33.6293	3.2750	3.275
	22.6902	68.4502	3948.1952	7.6103	11.5296	342.4412	8000.1138	33.6891	3.2851	3.285
L20	22.6902	68.4502	3948.1952	7.6103	11.5296	342.4412	8000.1138	33.6891	3.2851	3.285
	22.8606	68.9802	4040.6144	7.6692	11.6148	347.8846	8187.3803	33.9500	3.3292	3.329
L21	22.7283	93.1875	5269.1568	7.5350	11.6148	453.6583	10676.740 2	45.8640	2.3242	1.69
	22.7674	93.3546	5297.5595	7.5485	11.6344	455.3371	10734.291 7	45.9463	2.3343	1.698
L22	22.7851	90.1732	5141.3236	7.5664	11.6344	441.9083	10417.715 4	44.3805	2.4683	1.863
	23.4229	92.8017	5604.1579	7.7869	11.9535	468.8300	11355.543 2	45.6742	2.6334	1.987
L23	23.5287	72.7802	4517.1585	7.8943	11.9535	377.8943	9152.9877	35.8202	3.4374	3.354
	23.5678	72.9047	4540.3973	7.9079	11.9731	379.2180	9200.0758	35.8815	3.4476	3.363
L24	23.5766	71.2071	4444.7131	7.9168	11.9731	371.2264	9006.1939	35.0460	3.5146	3.515
	24.3582	73.6382	4915.6771	8.1871	12.3641	397.5753	9960.4945	36.2425	3.7169	3.717
L25	24.3715	70.9930	4754.6524	8.2005	12.3641	384.5517	9634.2147	34.9406	3.8174	3.966
	25.1531	73.3329	5240.4596	8.4708	12.7552	410.8478	10618.591 9	36.0922	4.0197	4.176
L26	25.1663	70.5875	5060.2692	8.4842	12.7552	396.7211	10253.477 2	34.7410	4.1202	4.454
	25.8698	72.6114	5508.1340	8.7275	13.1072	420.2369	11160.972 8	35.7371	4.3023	4.651
L27	25.7375	100.4787	7389.3951	8.5933	13.1072	563.7655	14972.917 9	49.4525	3.2973	2.536
	25.7766	100.6367	7424.3136	8.6068	13.1268	565.5858	15043.672 2	49.5303	3.3075	2.544
L28	25.7942	96.9673	7183.3965	8.6247	13.1268	547.2327	14555.508 8	47.7243	3.4415	2.753
	26.5759	100.0062	7880.1482	8.8950	13.5179	582.9436	15967.316 7	49.2200	3.6438	2.915
L29	26.5847	98.1046	7745.8797	8.9039	13.5179	573.0109	15695.252 3	48.2841	3.7108	3.029
	26.8458	99.0993	7983.8834	8.9942	13.6485	584.9650	16177.512 3	48.7737	3.7784	3.084
L30	26.8458	99.0993	7983.8834	8.9942	13.6485	584.9650	16177.512 3	48.7737	3.7784	3.084
	26.8848	99.2482	8019.9268	9.0077	13.6680	586.7651	16250.546 1	48.8470	3.7885	3.093
L31	26.8937	97.3194	7879.6959	9.0166	13.6680	576.5054	15966.400 3	47.8976	3.8555	3.213
	27.5706	99.8458	8509.4325	9.2507	14.0067	607.5250	17242.417 2	49.1410	4.0307	3.359
L32	27.0650	100.9178	7938.0666	8.8872	13.5131	587.4364	16084.675 1	49.6687	3.6078	2.858
	27.4003	104.2102	8740.6094	9.1771	13.9326	627.3502	17710.844 4	51.2891	3.8249	3.03
L33	27.4003	104.2102	8740.6094	9.1771	13.9326	627.3502	17710.844 4	51.2891	3.8249	3.03
	27.4423	104.3748	8782.0969	9.1916	13.9536	629.3804	17794.909 2	51.3701	3.8357	3.038
L34	27.4070	112.2034	9367.3963	9.1558	13.9536	671.3266	18980.884 4	55.2231	3.5677	2.619
	27.4489	112.3810	9411.9624	9.1703	13.9745	673.5080	19071.187 5	55.3105	3.5786	2.626
L35	27.4665	108.4683	9119.7655	9.1882	13.9745	652.5988	18479.117 4	53.3848	3.7126	2.829

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
	28.3050	111.8910	10010.6285	9.4781	14.3941	695.4697	20284.2473	55.0694	3.9296	2.994
L36	28.3226	107.8318	9683.9305	9.4960	14.3941	672.7730	19622.2687	53.0715	4.0636	3.219
	29.1611	111.1241	10598.3117	9.7860	14.8136	715.4460	21475.0528	54.6919	4.2807	3.391
L37	29.1699	109.0233	10416.9732	9.7949	14.8136	703.2046	21107.6119	53.6579	4.3477	3.513
	30.0084	112.2505	11369.6770	10.0849	15.2331	746.3802	23038.0480	55.2463	4.5647	3.689
L38	30.0172	110.0804	11169.6720	10.0938	15.2331	733.2505	22632.7837	54.1782	4.6317	3.82
	30.5622	112.1357	11807.0655	10.2823	15.5058	761.4623	23924.3158	55.1898	4.7728	3.936
L39	30.4122	149.2000	15248.1902	10.1301	15.5058	983.3876	30896.9673	73.4317	3.6338	2.219
	30.4542	149.4135	15313.7473	10.1446	15.5268	986.2813	31029.8038	73.5368	3.6446	2.226
L40	30.4630	147.2622	15119.8973	10.1536	15.5268	973.7964	30637.0112	72.4780	3.7116	2.302
	31.0918	150.4161	16112.2912	10.3710	15.8414	1017.1007	32647.8703	74.0302	3.8744	2.403
L41	31.0565	159.1928	16934.9112	10.3352	15.8414	1069.0292	34314.7213	78.3498	3.6064	2.106
	31.0985	159.4160	17006.2732	10.3497	15.8624	1072.1144	34459.3201	78.4597	3.6173	2.112
L42	31.0985	159.4160	17006.2732	10.3497	15.8624	1072.1144	34459.3201	78.4597	3.6173	2.112
	31.2527	160.2378	17270.6116	10.4031	15.9396	1083.5062	34994.9413	78.8642	3.6572	2.136
L43	31.2527	160.2378	17270.6116	10.4031	15.9396	1083.5062	34994.9413	78.8642	3.6572	2.136
	31.2947	160.4611	17342.9129	10.4176	15.9605	1086.6122	35141.4434	78.9741	3.6681	2.142
L44	31.3211	153.8290	16711.9248	10.4444	15.9605	1047.0779	33862.8905	75.7100	3.8691	2.363
	32.1596	158.0993	18142.6891	10.7344	16.3801	1107.6086	36762.0068	77.8117	4.0861	2.495
L45	32.1684	155.8154	17910.4265	10.7433	16.3801	1093.4290	36291.3799	76.6876	4.1531	2.576
	33.4814	162.4006	20278.5848	11.1973	17.0370	1190.2660	41089.9106	79.9286	4.4930	2.786
L46	32.8300	164.3385	18766.4049	10.7081	16.3777	1145.8542	38025.8241	80.8824	3.9005	2.286
	33.0048	168.9786	20401.3455	11.0104	16.8151	1213.2732	41338.6570	83.1661	4.1268	2.419
L47	33.0225	164.2937	19900.2642	11.0283	16.8151	1183.4737	40323.3306	80.8604	4.2608	2.573
	33.8968	168.7979	21582.2755	11.3307	17.2526	1250.9576	43731.5415	83.0772	4.4872	2.709
L48	33.8968	168.7979	21582.2755	11.3307	17.2526	1250.9576	43731.5415	83.0772	4.4872	2.709
	33.9405	169.0231	21668.7755	11.3458	17.2745	1254.3810	43906.8138	83.1880	4.4985	2.716
L49	33.9405	169.0231	21668.7755	11.3458	17.2745	1254.3810	43906.8138	83.1880	4.4985	2.716
	33.9843	169.2483	21755.5063	11.3609	17.2964	1257.8090	44082.5539	83.2989	4.5098	2.723
L50	34.0019	164.3977	21198.6417	11.3788	17.2964	1225.6135	42954.1952	80.9115	4.6438	2.891
	34.8762	168.7659	22933.7535	11.6811	17.7338	1293.2209	46470.0023	83.0615	4.8701	3.032
L51	34.8939	163.7632	22322.1894	11.6990	17.7338	1258.7352	45230.8077	80.5993	5.0041	3.215
	35.7682	167.9955	24097.9691	12.0014	18.1713	1326.1555	48829.0187	82.6823	5.2305	3.361
L52	35.7770	165.4201	23763.9521	12.0103	18.1713	1307.7739	48152.2097	81.4148	5.2975	3.459
	36.2142	167.5023	24672.6405	12.1615	18.3900	1341.6309	49993.4587	82.4395	5.4107	3.533

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
L53	36.3200	135.8760	20369.2325	12.2689	18.3900	1107.6233	41273.5874	66.8740	6.2147	5.047
	36.3637	136.0434	20444.6216	12.2840	18.4119	1110.4020	41426.3461	66.9564	6.2260	5.056
L54	36.3549	138.7045	20814.1627	12.2751	18.4119	1130.4727	42175.1366	68.2661	6.1590	4.902
	37.1855	141.9501	22309.7354	12.5623	18.8275	1184.9541	45205.5725	69.8635	6.3740	5.074
L55	37.0885	171.6665	26558.9260	12.4639	18.8275	1410.6446	53815.5846	84.4890	5.6370	3.681
	37.1322	171.8747	26655.6823	12.4790	18.8494	1414.1407	54011.6390	84.5915	5.6483	3.689
L56	37.1411	169.1900	26276.9587	12.4879	18.8494	1394.0486	53244.2423	83.2702	5.7153	3.794
	37.5782	171.2381	27242.8521	12.6391	19.0681	1428.7119	55201.4042	84.2782	5.8285	3.869
L57	37.7017	132.7528	21540.9270	12.7644	19.0681	1129.6827	43647.7581	65.3369	6.7665	5.852
	37.7454	132.9100	21617.5524	12.7795	19.0900	1132.4022	43803.0219	65.4143	6.7778	5.862
L58	37.7542	130.1275	21194.6341	12.7885	19.0900	1110.2483	42946.0748	64.0448	6.8448	6.05
	38.2788	131.9734	22109.4460	12.9699	19.3525	1142.4606	44799.7318	64.9533	6.9806	6.17

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 150.0000-145.0000				1	1	1			
L2 145.0000-140.0000				1	1	1			
L3 140.0000-135.0000				1	1	1			
L4 135.0000-130.0000				1	1	1			
L5 130.0000-128.5000				1	1	1			
L6 128.5000-128.2500				1	1	0.86658			
L7 128.2500-123.2500				1	1	0.876557			
L8 123.2500-118.2500				1	1	0.8893			
L9 118.2500-113.2500				1	1	0.886826			
L10 113.2500-109.0000				1	1	0.888572			
L11 109.0000-108.7500				1	1	0.880849			
L12 108.7500-104.1700				1	1	0.892966			
L13 104.1700-103.9200				1	1	0.971053			
L14 103.9200-103.1700				1	1	0.991449			
L15 103.1700-102.9200				1	1	0.982753			
L16 102.9200-102.4200				1	1	1.00107			

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
L17 102.4200-102.1700				1	1	1.07939			
L18 102.1700-100.9200				1	1	1.07222			
L19 100.9200-100.6700				1	1	0.993983			
L20 100.6700-99.5800				1	1	0.988267			
L21 99.5800-99.3300				1	1	0.843197			
L22 99.3300-95.2500				1	1	0.853564			
L23 95.2500-95.0000				1	1	0.82938			
L24 95.0000-90.0000				1	1	0.829373			
L25 90.0000-85.0000				1	1	0.841113			
L26 85.0000-80.5000				1	1	0.857005			
L27 80.5000-80.2500				1	1	0.817668			
L28 80.2500-75.2500				1	1	0.8289			
L29 75.2500-73.5800				1	1	0.838534			
L30 73.5800-73.3300				1	1	0.837582			
L31 73.3300-69.0000				1	1	0.849073			
L32 69.0000-67.0000				1	1	0.852502			
L33 67.0000-66.7500				1	1	0.851548			
L34 66.7500-66.5000				1	1	0.8358			
L35 66.5000-61.5000				1	1	0.846744			
L36 61.5000-56.5000				1	1	0.859921			
L37 56.5000-51.5000				1	1	0.858553			
L38 51.5000-48.2500				1	1	0.864155			
L39 48.2500-48.0000				1	1	0.780428			
L40 48.0000-44.2500				1	1	0.77929			
L41 44.2500-44.0000				1	1	0.782664			
L42 44.0000-43.0800				1	1	0.779586			
L43 43.0800-42.8300				1	1	0.778755			
L44 42.8300-37.8300				1	1	0.795543			
L45 37.8300-30.0000				1	1	0.79478			
L46 30.0000-29.0000				1	1	0.806063			
L47 29.0000-24.0000				1	1	0.813472			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_r	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
L48 24.0000-23.7500				1	1	0.812715			
L49 23.7500-23.5000				1	1	0.81196			
L50 23.5000-18.5000				1	1	0.820828			
L51 18.5000-13.5000				1	1	0.831169			
L52 13.5000-11.0000				1	1	0.836915			
L53 11.0000-10.7500				1	1	1.00049			
L54 10.7500-6.0000				1	1	0.966249			
L55 6.0000-5.7500				1	1	0.774305			
L56 5.7500-3.2500				1	1	0.78041			
L57 3.2500-3.0000				1	1	0.761			
L58 3.0000-0.0000				1	1	0.771424			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
***											

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
2.5" Solid Rod Reinforcing	C	No	No	CaAa (Out Of Face)	51.0000 - 0.0000	1	No Ice	0.2500	0.00
							1/2" Ice	0.3500	0.00
							1" Ice	0.4500	0.00
							2" Ice	0.6500	0.00
1 1/4" Flat Reinforcement	C	No	No	CaAa (Out Of Face)	130.0000 - 106.7500	2	No Ice	0.2083	0.00
							1/2" Ice	0.3194	0.00
							1" Ice	0.4306	0.00
							2" Ice	0.6528	0.00
2" Flat Reinforcing	C	No	No	CaAa (Out Of Face)	108.6700 - 0.0000	1	No Ice	0.3333	0.00
							1/2" Ice	0.5278	0.00
							1" Ice	0.6389	0.00
							2" Ice	0.8611	0.00
2" flat Climb Ladder Rail	C	No	No	CaAa (Out Of Face)	150.0000 - 0.0000	1	No Ice	0.3333	1.65
							1/2" Ice	0.4333	3.43
							1" Ice	0.5556	4.05
							2" Ice	0.7778	7.68
**********									
LDF7-50A(1-5/8)	C	No	No	CaAa (Out Of Face)	0.0000 - 99.0000	3	No Ice	0.0000	0.82
							1/2" Ice	0.0000	2.33
							1" Ice	0.0000	4.46
							2" Ice	0.0000	10.55
LDF7-50A(1-5/8)	C	No	No	CaAa (Out Of Face)	0.0000 - 99.0000	3	No Ice	0.1980	0.82
							1/2" Ice	0.2980	2.33
							1" Ice	0.3980	4.46
							2" Ice	0.5980	10.55
LDF7-50A(1-5/8)	C	No	No	Inside Pole	0.0000 - 99.0000	6	No Ice	0.0000	0.82
							1/2" Ice	0.0000	0.82

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
							1" Ice	0.0000	0.82
							2" Ice	0.0000	0.82
HB114-U6S12-XXX-LI(1-1/4)	C	No	No	CaAa (Out Of Face)	0.0000 - 99.0000	2	No Ice	0.0000	1.70
							1/2" Ice	0.0000	2.95
							1" Ice	0.0000	4.80
							2" Ice	0.0000	10.35
***									
AL7-50(1-5/8)	C	No	No	CaAa (Out Of Face)	0.0000 - 120.0000	11	No Ice	0.0000	0.52
							1/2" Ice	0.0000	2.02
							1" Ice	0.0000	4.14
							2" Ice	0.0000	10.20
MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	C	No	No	CaAa (Out Of Face)	99.0000 - 120.0000	2	No Ice	0.1625	1.07
							1/2" Ice	0.2625	2.37
							1" Ice	0.3625	4.28
							2" Ice	0.5625	9.93
MLC HYBRID 6X12 6AWGX6(1-1/2)	C	No	No	CaAa (Out Of Face)	0.0000 - 120.0000	1	No Ice	0.0000	0.59
							1/2" Ice	0.0000	1.83
							1" Ice	0.0000	3.68
							2" Ice	0.0000	9.21
***									
EC4-50(1/2)	C	No	No	Inside Pole	0.0000 - 138.0000	2	No Ice	0.0000	0.16
							1/2" Ice	0.0000	0.16
							1" Ice	0.0000	0.16
							2" Ice	0.0000	0.16
HB114-21U3M12-XXXF(1-1/4)	C	No	No	CaAa (Out Of Face)	0.0000 - 120.0000	2	No Ice	0.0000	1.22
							1/2" Ice	0.0000	2.47
							1" Ice	0.0000	4.32
							2" Ice	0.0000	9.87
HB114-21U3M12-XXXF(1-1/4)	C	No	No	CaAa (Out Of Face)	120.0000 - 138.0000	2	No Ice	0.1540	1.22
							1/2" Ice	0.2540	2.47
							1" Ice	0.3540	4.32
							2" Ice	0.5540	9.87
HB114-21U3M12-XXXF(1-1/4)	C	No	No	CaAa (Out Of Face)	0.0000 - 138.0000	1	No Ice	0.0000	1.22
							1/2" Ice	0.0000	2.47
							1" Ice	0.0000	4.32
							2" Ice	0.0000	9.87
HB158-21U6S12-60M-01(1-5/8)	C	No	No	CaAa (Out Of Face)	0.0000 - 138.0000	1	No Ice	0.0000	1.90
							1/2" Ice	0.0000	3.42
							1" Ice	0.0000	5.55
							2" Ice	0.0000	11.65
***									
FXL-1873(1-5/8)	C	No	No	Inside Pole	0.0000 - 150.0000	12	No Ice	0.0000	0.67
							1/2" Ice	0.0000	0.67
							1" Ice	0.0000	0.67
							2" Ice	0.0000	0.67
FB-L98B-034-XXXXXX(3/8)	C	No	No	Inside Pole	0.0000 - 150.0000	1	No Ice	0.0000	0.05
							1/2" Ice	0.0000	0.05
							1" Ice	0.0000	0.05
							2" Ice	0.0000	0.05
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	0.0000 - 150.0000	2	No Ice	0.0000	0.58
							1/2" Ice	0.0000	0.58
							1" Ice	0.0000	0.58
							2" Ice	0.0000	0.58
FB-L98B-034-XXXXXX(3/8)	C	No	No	Inside Pole	0.0000 - 150.0000	1	No Ice	0.0000	0.05
							1/2" Ice	0.0000	0.05
							1" Ice	0.0000	0.05
							2" Ice	0.0000	0.05
WR-VG86ST-BRD(3/4)	C	No	No	Inside Pole	0.0000 - 150.0000	2	No Ice	0.0000	0.58
							1/2" Ice	0.0000	0.58
							1" Ice	0.0000	0.58
							2" Ice	0.0000	0.58
2" (Nominal) Conduit	C	No	No	Inside Pole	150.0000 - 0.0000	2	No Ice	0.0000	0.72
							1/2" Ice	0.0000	0.72
							1" Ice	0.0000	0.72
							2" Ice	0.0000	0.72
***									

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	150.0000-145.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.667	0.07
L2	145.0000-140.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.667	0.07
L3	140.0000-135.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	2.591	0.09
L4	135.0000-130.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	3.207	0.10
L5	130.0000-128.5000	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	1.587	0.03
L6	128.5000-128.2500	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	0.264	0.00
L7	128.2500-123.2500	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	5.290	0.10
L8	123.2500-118.2500	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	5.320	0.11
L9	118.2500-113.2500	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	5.375	0.14
L10	113.2500-109.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	4.569	0.12
L11	109.0000-108.7500	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	0.269	0.01
L12	108.7500-104.1700	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	5.349	0.13
L13	104.1700-103.9200	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	0.248	0.01
L14	103.9200-103.1700	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	0.744	0.02
L15	103.1700-102.9200	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	0.248	0.01
L16	102.9200-102.4200	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	0.496	0.01
L17	102.4200-102.1700	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	0.248	0.01
L18	102.1700-100.9200	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	1.240	0.03
L19	100.9200-100.6700	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	0.248	0.01
L20	100.6700-99.5800	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	1.081	0.03
L21	99.5800-99.3300	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	0.248	0.01
L22	99.3300-95.2500	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	5.055	0.16

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
L23	95.2500-95.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.315	0.01
L24	95.0000-90.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	6.303	0.19
L25	90.0000-85.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	6.303	0.19
L26	85.0000-80.5000	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	5.673	0.18
L27	80.5000-80.2500	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	0.315	0.01
L28	80.2500-75.2500	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	6.303	0.19
L29	75.2500-73.5800	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	2.105	0.07
L30	73.5800-73.3300	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	0.315	0.01
L31	73.3300-69.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	5.459	0.17
L32	69.0000-67.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	2.521	0.08
L33	67.0000-66.7500	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	0.315	0.01
L34	66.7500-66.5000	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	0.315	0.01
L35	66.5000-61.5000	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	6.303	0.19
L36	61.5000-56.5000	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	6.303	0.19
L37	56.5000-51.5000	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	6.303	0.19
L38	51.5000-48.2500	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	4.785	0.13
L39	48.2500-48.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.378	0.01
L40	48.0000-44.2500	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	5.665	0.15
L41	44.2500-44.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.378	0.01
L42	44.0000-43.0800	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	1.390	0.04
L43	43.0800-42.8300	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	0.378	0.01
L44	42.8300-37.8300	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	7.553	0.19
L45	37.8300-30.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	11.829	0.31

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
L46	30.0000-29.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	1.511	0.04
L47	29.0000-24.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	7.553	0.19
L48	24.0000-23.7500	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	0.378	0.01
L49	23.7500-23.5000	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	0.378	0.01
L50	23.5000-18.5000	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	7.553	0.19
L51	18.5000-13.5000	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	7.553	0.19
L52	13.5000-11.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	3.777	0.10
L53	11.0000-10.7500	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	0.378	0.01
L54	10.7500-6.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	7.176	0.19
L55	6.0000-5.7500	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	0.378	0.01
L56	5.7500-3.2500	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	3.777	0.10
L57	3.2500-3.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.378	0.01
L58	3.0000-0.0000	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	4.532	0.12

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	150.0000-145.0000	A	1.481	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	3.312	0.09
L2	145.0000-140.0000	A	1.476	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	3.306	0.09
L3	140.0000-135.0000	A	1.471	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	5.989	0.18
L4	135.0000-130.0000	A	1.465	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	7.765	0.24
L5	130.0000-128.5000	A	1.462	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	3.925	0.07
L6	128.5000-128.2500	A	1.461	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	0.654	0.01
L7	128.2500-123.2500	A	1.457	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	13.063	0.23
L8	123.2500-118.2500	A	1.452	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	0.000	13.062	0.40
L9	118.2500-113.2500	A	1.445	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	13.084	0.71
L10	113.2500-109.0000	A	1.440	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	11.095	0.60
L11	109.0000-108.7500	A	1.437	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	0.652	0.04
L12	108.7500-104.1700	A	1.433	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	12.516	0.64
L13	104.1700-103.9200	A	1.430	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	0.571	0.03
L14	103.9200-103.1700	A	1.429	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	1.712	0.10
L15	103.1700-102.9200	A	1.429	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	0.570	0.03
L16	102.9200-102.4200	A	1.428	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	1.141	0.07
L17	102.4200-102.1700	A	1.428	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	0.570	0.03
L18	102.1700-100.9200	A	1.427	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	2.850	0.17
L19	100.9200-100.6700	A	1.426	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	0.570	0.03
L20	100.6700-99.5800	A	1.425	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	2.483	0.15
L21	99.5800-99.3300	A	1.424	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	0.569	0.03
L22	99.3300-95.2500	A	1.421	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	11.354	0.75
L23	95.2500-95.0000	A	1.417	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	0.706	0.05
L24	95.0000-90.0000	A	1.413	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	14.101	0.93
L25	90.0000-85.0000	A	1.406	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	14.060	0.92
L26	85.0000-80.5000	A	1.398	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	12.617	0.83
L27	80.5000-80.2500	A	1.394	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	0.700	0.05
L28	80.2500-75.2500	A	1.389	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	13.974	0.91
L29	75.2500-73.5800	A	1.383	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	4.657	0.30
L30	73.5800-73.3300	A	1.381	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	0.697	0.05
L31	73.3300-69.0000	A	1.377	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
		C		0.000	0.000	0.000	12.046	0.78
L32	69.0000-67.0000	A	1.371	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	5.564	0.36
L33	67.0000-66.7500	A	1.368	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	0.693	0.04
L34	66.7500-66.5000	A	1.368	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	0.693	0.04
L35	66.5000-61.5000	A	1.362	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	13.834	0.89
L36	61.5000-56.5000	A	1.351	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	13.777	0.88
L37	56.5000-51.5000	A	1.339	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	13.714	0.87
L38	51.5000-48.2500	A	1.329	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	10.297	0.56
L39	48.2500-48.0000	A	1.324	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	0.810	0.04
L40	48.0000-44.2500	A	1.318	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	12.130	0.64
L41	44.2500-44.0000	A	1.313	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	0.807	0.04
L42	44.0000-43.0800	A	1.311	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	2.967	0.16
L43	43.0800-42.8300	A	1.309	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	0.806	0.04
L44	42.8300-37.8300	A	1.301	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	16.064	0.85
L45	37.8300-30.0000	A	1.278	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	24.938	1.30
L46	30.0000-29.0000	A	1.261	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	3.185	0.17
L47	29.0000-24.0000	A	1.247	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	15.731	0.81
L48	24.0000-23.7500	A	1.234	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	0.783	0.04
L49	23.7500-23.5000	A	1.233	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	0.782	0.04
L50	23.5000-18.5000	A	1.219	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	15.552	0.79
L51	18.5000-13.5000	A	1.186	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	15.349	0.76
L52	13.5000-11.0000	A	1.155	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	7.577	0.37
L53	11.0000-10.7500	A	1.141	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	0.753	0.04
L54	10.7500-6.0000	A	1.112	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft²	A_F ft²	C_AA_A In Face ft²	C_AA_A Out Face ft²	Weight K
		C		0.000	0.000	0.000	14.142	0.67
L55	6.0000-5.7500	A	1.073	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	0.732	0.03
L56	5.7500-3.2500	A	1.045	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	7.235	0.33
L57	3.2500-3.0000	A	1.007	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	0.712	0.03
L58	3.0000-0.0000	A	0.936	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	8.271	0.36

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	150.0000-145.0000	-1.3979	0.8071	-1.7341	1.0012
L2	145.0000-140.0000	-1.4111	0.8147	-1.7625	1.0176
L3	140.0000-135.0000	-2.0025	1.1562	-2.7160	1.5681
L4	135.0000-130.0000	-2.3508	1.3572	-3.2297	1.8647
L5	130.0000-128.5000	-3.2658	1.8855	-4.2859	2.4745
L6	128.5000-128.2500	-3.2917	1.9005	-4.3181	2.4930
L7	128.2500-123.2500	-3.3191	1.9163	-4.3702	2.5231
L8	123.2500-118.2500	-3.3816	1.9524	-4.4721	2.5820
L9	118.2500-113.2500	-3.4524	1.9932	-4.5752	2.6415
L10	113.2500-109.0000	-3.4968	2.0189	-4.6593	2.6900
L11	109.0000-108.7500	-3.5227	2.0338	-4.7037	2.7157
L12	108.7500-104.1700	-3.7226	2.1492	-4.8510	2.8007
L13	104.1700-103.9200	-3.3997	1.9628	-4.4917	2.5933
L14	103.9200-103.1700	-3.4030	1.9647	-4.4986	2.5973
L15	103.1700-102.9200	-3.4132	1.9706	-4.5122	2.6051
L16	102.9200-102.4200	-3.4154	1.9719	-4.5171	2.6080
L17	102.4200-102.1700	-3.4124	1.9702	-4.5171	2.6079
L18	102.1700-100.9200	-3.4185	1.9737	-4.5286	2.6146
L19	100.9200-100.6700	-3.4272	1.9787	-4.5424	2.6226
L20	100.6700-99.5800	-3.4325	1.9818	-4.5526	2.6284
L21	99.5800-99.3300	-3.4508	1.9923	-4.5751	2.6414
L22	99.3300-95.2500	-3.9821	2.2991	-5.1032	2.9464
L23	95.2500-95.0000	-4.0345	2.3293	-5.1706	2.9852
L24	95.0000-90.0000	-4.0606	2.3444	-5.2163	3.0116
L25	90.0000-85.0000	-4.1092	2.3725	-5.3011	3.0606
L26	85.0000-80.5000	-4.1536	2.3981	-5.3785	3.1052
L27	80.5000-80.2500	-4.1891	2.4186	-5.4293	3.1346
L28	80.2500-75.2500	-4.2114	2.4315	-5.4689	3.1575
L29	75.2500-73.5800	-4.2405	2.4483	-5.5193	3.1866
L30	73.5800-73.3300	-4.2490	2.4532	-5.5338	3.1949

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L31	73.3300-69.0000	-4.2681	2.4642	-5.5669	3.2140
L32	69.0000-67.0000	-4.2716	2.4662	-5.5714	3.2166
L33	67.0000-66.7500	-4.2820	2.4722	-5.5834	3.2236
L34	66.7500-66.5000	-4.2878	2.4755	-5.5907	3.2278
L35	66.5000-61.5000	-4.3099	2.4883	-5.6293	3.2501
L36	61.5000-56.5000	-4.3523	2.5128	-5.7013	3.2916
L37	56.5000-51.5000	-4.3940	2.5369	-5.7702	3.3314
L38	51.5000-48.2500	-4.8883	2.8222	-6.2993	3.6369
L39	48.2500-48.0000	-4.9986	2.8859	-6.4195	3.7063
L40	48.0000-44.2500	-5.0177	2.8970	-6.4490	3.7233
L41	44.2500-44.0000	-5.0411	2.9105	-6.4821	3.7425
L42	44.0000-43.0800	-5.0468	2.9138	-6.4906	3.7474
L43	43.0800-42.8300	-5.0525	2.9171	-6.4991	3.7522
L44	42.8300-37.8300	-5.0753	2.9302	-6.5335	3.7721
L45	37.8300-30.0000	-5.1346	2.9645	-6.6166	3.8201
L46	30.0000-29.0000	-5.1448	2.9703	-6.6324	3.8292
L47	29.0000-24.0000	-5.1714	2.9857	-6.6451	3.8366
L48	24.0000-23.7500	-5.1957	2.9997	-6.6734	3.8529
L49	23.7500-23.5000	-5.1980	3.0011	-6.6759	3.8544
L50	23.5000-18.5000	-5.2202	3.0139	-6.6992	3.8678
L51	18.5000-13.5000	-5.2628	3.0385	-6.7351	3.8885
L52	13.5000-11.0000	-5.2944	3.0567	-6.7503	3.8973
L53	11.0000-10.7500	-5.2959	3.0576	-6.7420	3.8925
L54	10.7500-6.0000	-5.3178	3.0702	-6.7388	3.8907
L55	6.0000-5.7500	-5.3477	3.0875	-6.7292	3.8851
L56	5.7500-3.2500	-5.3580	3.0935	-6.7064	3.8720
L57	3.2500-3.0000	-5.3575	3.0932	-6.6577	3.8438
L58	3.0000-0.0000	-5.3697	3.1002	-6.5669	3.7914

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
7770.00	A	From Leg	4.0000 0.00 4.00	0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.5085 5.8673 6.2332 6.9859	2.9282 3.2730 3.6252 4.3517	0.04 0.07 0.11 0.20
7770.00	B	From Leg	4.0000 0.00 4.00	0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.5085 5.8673 6.2332 6.9859	2.9282 3.2730 3.6252 4.3517	0.04 0.07 0.11 0.20
7770.00	C	From Leg	4.0000 0.00 4.00	0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	5.5085 5.8673 6.2332 6.9859	2.9282 3.2730 3.6252 4.3517	0.04 0.07 0.11 0.20
TT19-08BP111-001	A	From Leg	4.0000 0.00 4.00	0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.5527 0.6487 0.7520 0.9809	0.4455 0.5342 0.6303 0.8448	0.02 0.02 0.03 0.05
TT19-08BP111-001	B	From Leg	4.0000	0.00	150.0000	No Ice	0.5527	0.4455	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"	0.6487	0.5342	0.02
			4.00			Ice	0.7520	0.6303	0.03
						1" Ice	0.9809	0.8448	0.05
						2" Ice			
TT19-08BP111-001	C	From Leg	4.0000	0.00	150.0000	No Ice	0.5527	0.4455	0.02
			0.00			1/2"	0.6487	0.5342	0.02
			4.00			Ice	0.7520	0.6303	0.03
						1" Ice	0.9809	0.8448	0.05
						2" Ice			
HPA-65R-BUU-H6	A	From Leg	4.0000	0.00	150.0000	No Ice	9.6578	6.4500	0.05
			0.00			1/2"	10.1285	6.9134	0.11
			4.00			Ice	10.6062	7.3843	0.18
						1" Ice	11.5826	8.3078	0.34
						2" Ice			
HPA-65R-BUU-H6	B	From Leg	4.0000	0.00	150.0000	No Ice	9.6578	6.4500	0.05
			0.00			1/2"	10.1285	6.9134	0.11
			4.00			Ice	10.6062	7.3843	0.18
						1" Ice	11.5826	8.3078	0.34
						2" Ice			
HPA-65R-BUU-H6	C	From Leg	4.0000	0.00	150.0000	No Ice	9.6578	6.4500	0.05
			0.00			1/2"	10.1285	6.9134	0.11
			4.00			Ice	10.6062	7.3843	0.18
						1" Ice	11.5826	8.3078	0.34
						2" Ice			
QS66512-2	A	From Leg	4.0000	0.00	150.0000	No Ice	8.3708	8.4625	0.14
			0.00			1/2"	8.9314	9.6573	0.21
			4.00			Ice	9.4571	10.5478	0.30
						1" Ice	10.5310	12.3523	0.49
						2" Ice			
QS66512-2	B	From Leg	4.0000	0.00	150.0000	No Ice	8.3708	8.4625	0.14
			0.00			1/2"	8.9314	9.6573	0.21
			4.00			Ice	9.4571	10.5478	0.30
						1" Ice	10.5310	12.3523	0.49
						2" Ice			
QS66512-2	C	From Leg	4.0000	0.00	150.0000	No Ice	8.3708	8.4625	0.14
			0.00			1/2"	8.9314	9.6573	0.21
			4.00			Ice	9.4571	10.5478	0.30
						1" Ice	10.5310	12.3523	0.49
						2" Ice			
1001940	A	From Leg	4.0000	0.00	150.0000	No Ice	0.1758	0.0833	0.00
			0.00			1/2"	0.2317	0.1264	0.00
			4.00			Ice	0.2950	0.1778	0.01
						1" Ice	0.4439	0.3045	0.01
						2" Ice			
1001940	B	From Leg	4.0000	0.00	150.0000	No Ice	0.1758	0.0833	0.00
			0.00			1/2"	0.2317	0.1264	0.00
			4.00			Ice	0.2950	0.1778	0.01
						1" Ice	0.4439	0.3045	0.01
						2" Ice			
1001940	C	From Leg	4.0000	0.00	150.0000	No Ice	0.1758	0.0833	0.00
			0.00			1/2"	0.2317	0.1264	0.00
			4.00			Ice	0.2950	0.1778	0.01
						1" Ice	0.4439	0.3045	0.01
						2" Ice			
(2) 7020.00	A	From Leg	4.0000	0.00	150.0000	No Ice	0.1021	0.1750	0.00
			0.00			1/2"	0.1469	0.2393	0.01
			4.00			Ice	0.1991	0.3109	0.01
						1" Ice	0.3258	0.4765	0.02
						2" Ice			
(2) 7020.00	B	From Leg	4.0000	0.00	150.0000	No Ice	0.1021	0.1750	0.00
			0.00			1/2"	0.1469	0.2393	0.01
			4.00			Ice	0.1991	0.3109	0.01
						1" Ice	0.3258	0.4765	0.02
						2" Ice			
(2) 7020.00	C	From Leg	4.0000	0.00	150.0000	No Ice	0.1021	0.1750	0.00

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2"	0.1469	0.2393	0.01
			4.00			Ice	0.1991	0.3109	0.01
						1" Ice	0.3258	0.4765	0.02
						2" Ice			
(2) TPX-070821	A	From Leg	4.0000	0.00	150.0000	No Ice	0.4688	0.1009	0.01
			0.00			1/2"	0.5585	0.1471	0.01
			4.00			Ice	0.6556	0.2020	0.02
						1" Ice	0.8721	0.3340	0.03
						2" Ice			
(2) TPX-070821	B	From Leg	4.0000	0.00	150.0000	No Ice	0.4688	0.1009	0.01
			0.00			1/2"	0.5585	0.1471	0.01
			4.00			Ice	0.6556	0.2020	0.02
						1" Ice	0.8721	0.3340	0.03
						2" Ice			
(2) TPX-070821	C	From Leg	4.0000	0.00	150.0000	No Ice	0.4688	0.1009	0.01
			0.00			1/2"	0.5585	0.1471	0.01
			4.00			Ice	0.6556	0.2020	0.02
						1" Ice	0.8721	0.3340	0.03
						2" Ice			
RRUS 11	A	From Leg	4.0000	0.00	150.0000	No Ice	2.7908	1.1923	0.05
			0.00			1/2"	2.9984	1.3395	0.07
			4.00			Ice	3.2134	1.4957	0.10
						1" Ice	3.6656	1.8390	0.15
						2" Ice			
RRUS 11	B	From Leg	4.0000	0.00	150.0000	No Ice	2.7908	1.1923	0.05
			0.00			1/2"	2.9984	1.3395	0.07
			4.00			Ice	3.2134	1.4957	0.10
						1" Ice	3.6656	1.8390	0.15
						2" Ice			
RRUS 11	C	From Leg	4.0000	0.00	150.0000	No Ice	2.7908	1.1923	0.05
			0.00			1/2"	2.9984	1.3395	0.07
			4.00			Ice	3.2134	1.4957	0.10
						1" Ice	3.6656	1.8390	0.15
						2" Ice			
RRUS 32	A	From Leg	4.0000	0.00	150.0000	No Ice	2.8571	1.7766	0.06
			0.00			1/2"	3.0830	1.9677	0.08
			4.00			Ice	3.3163	2.1658	0.10
						1" Ice	3.8052	2.5829	0.16
						2" Ice			
RRUS 32	B	From Leg	4.0000	0.00	150.0000	No Ice	2.8571	1.7766	0.06
			0.00			1/2"	3.0830	1.9677	0.08
			4.00			Ice	3.3163	2.1658	0.10
						1" Ice	3.8052	2.5829	0.16
						2" Ice			
RRUS 32	C	From Leg	4.0000	0.00	150.0000	No Ice	2.8571	1.7766	0.06
			0.00			1/2"	3.0830	1.9677	0.08
			4.00			Ice	3.3163	2.1658	0.10
						1" Ice	3.8052	2.5829	0.16
						2" Ice			
RRUS 32 B2	A	From Leg	4.0000	0.00	150.0000	No Ice	2.7313	1.6681	0.05
			0.00			1/2"	2.9531	1.8552	0.07
			4.00			Ice	3.1823	2.0493	0.10
						1" Ice	3.6628	2.4585	0.16
						2" Ice			
RRUS 32 B2	B	From Leg	4.0000	0.00	150.0000	No Ice	2.7313	1.6681	0.05
			0.00			1/2"	2.9531	1.8552	0.07
			4.00			Ice	3.1823	2.0493	0.10
						1" Ice	3.6628	2.4585	0.16
						2" Ice			
RRUS 32 B2	C	From Leg	4.0000	0.00	150.0000	No Ice	2.7313	1.6681	0.05
			0.00			1/2"	2.9531	1.8552	0.07
			4.00			Ice	3.1823	2.0493	0.10
						1" Ice	3.6628	2.4585	0.16
						2" Ice			
RRUS 32 B66	A	From Leg	4.0000	0.00	150.0000	No Ice	2.7427	1.6681	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment ° ft	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00 4.00			1/2" Ice 1" Ice 2" Ice	2.9647 3.1941 3.6753	1.8552 2.0493 2.4585	0.07 0.10 0.16
RRUS 32 B66	B	From Leg	4.0000 0.00 4.00	0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7427 2.9647 3.1941 3.6753	1.6681 1.8552 2.0493 2.4585	0.05 0.07 0.10 0.16
RRUS 32 B66	C	From Leg	4.0000 0.00 4.00	0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7427 2.9647 3.1941 3.6753	1.6681 1.8552 2.0493 2.4585	0.05 0.07 0.10 0.16
(2) DC6-48-60-18-8F	A	From Leg	4.0000 0.00 4.00	0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.9167 1.4583 1.6431 2.0417	0.9167 1.4583 1.6431 2.0417	0.02 0.04 0.06 0.11
Platform Mount (LP 101-1)	C	None		0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	36.2100 42.8200 49.4300 62.6500	36.2100 42.8200 49.4300 62.6500	1.50 2.30 3.10 4.70
Top Hat 20" Diameter x 3'-6" Tall	C	None		0.00	150.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.9167 4.3896 4.7056 5.3667	2.9167 4.3896 4.7056 5.3667	0.20 0.26 0.31 0.45
***									
RRUS 11	A	From Leg	1.0000 0.00 0.00	0.00	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7908 2.9984 3.2134 3.6656	1.1923 1.3395 1.4957 1.8390	0.05 0.07 0.10 0.15
RRUS 11	B	From Leg	1.0000 0.00 0.00	0.00	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7908 2.9984 3.2134 3.6656	1.1923 1.3395 1.4957 1.8390	0.05 0.07 0.10 0.15
RRUS 11	C	From Leg	1.0000 0.00 0.00	0.00	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice	2.7908 2.9984 3.2134 3.6656	1.1923 1.3395 1.4957 1.8390	0.05 0.07 0.10 0.15
TME-DC6-48-60-18-8F	B	From Leg	1.0000 0.00 0.00	0.00	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.9167 1.4583 1.6431 2.0417	0.9167 1.4583 1.6431 2.0417	0.02 0.04 0.06 0.11
Pipe Mount [PM 601-3]	C	None		0.00	147.0000	No Ice 1/2" Ice 1" Ice 2" Ice	4.3900 5.4800 6.5700 8.7500	4.3900 5.4800 6.5700 8.7500	0.20 0.24 0.28 0.36
***									
HORIZON COMPACT	B	From Leg	4.0000 0.00 5.00	0.00	138.0000	No Ice 1/2" Ice 1" Ice 2" Ice	0.7208 0.8278 0.9422 1.1933	0.3681 0.4499 0.5391 0.7396	0.01 0.02 0.03 0.05
HORIZON COMPACT	C	From Leg	4.0000 0.00 5.00	0.00	138.0000	No Ice 1/2" Ice 1" Ice	0.7208 0.8278 0.9422 1.1933	0.3681 0.4499 0.5391 0.7396	0.01 0.02 0.03 0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
							2" Ice			
CW JUNCTION BOX	A	From Leg	4.0000	0.00	0.00	138.0000	No Ice	1.2000	0.6000	0.00
			0.00				1/2" Ice	1.3370	0.7037	0.01
			5.00				1" Ice	1.4815	0.8148	0.02
							2" Ice	1.7926	1.0593	0.05
AAHC w/ Mount Pipe	A	From Leg	4.0000	0.00	0.00	138.0000	No Ice	4.4091	2.6915	0.12
			0.00				1/2" Ice	4.7270	3.0786	0.16
			2.00				1" Ice	5.0553	3.4862	0.20
							2" Ice	5.7429	4.3595	0.31
AAHC w/ Mount Pipe	B	From Leg	4.0000	0.00	0.00	138.0000	No Ice	4.4091	2.6915	0.12
			0.00				1/2" Ice	4.7270	3.0786	0.16
			2.00				1" Ice	5.0553	3.4862	0.20
							2" Ice	5.7429	4.3595	0.31
AAHC w/ Mount Pipe	C	From Leg	4.0000	0.00	0.00	138.0000	No Ice	4.4091	2.6915	0.12
			0.00				1/2" Ice	4.7270	3.0786	0.16
			2.00				1" Ice	5.0553	3.4862	0.20
							2" Ice	5.7429	4.3595	0.31
NNVV-65B-R4 w/ Mount Pipe	A	From Leg	4.0000	0.00	0.00	138.0000	No Ice	12.5086	7.4125	0.10
			0.00				1/2" Ice	13.1075	8.5976	0.19
			2.00				1" Ice	13.6715	9.4965	0.29
							2" Ice	14.8221	11.3279	0.52
NNVV-65B-R4 w/ Mount Pipe	B	From Leg	4.0000	0.00	0.00	138.0000	No Ice	12.5086	7.4125	0.10
			0.00				1/2" Ice	13.1075	8.5976	0.19
			2.00				1" Ice	13.6715	9.4965	0.29
							2" Ice	14.8221	11.3279	0.52
NNVV-65B-R4 w/ Mount Pipe	C	From Leg	4.0000	0.00	0.00	138.0000	No Ice	12.5086	7.4125	0.10
			0.00				1/2" Ice	13.1075	8.5976	0.19
			2.00				1" Ice	13.6715	9.4965	0.29
							2" Ice	14.8221	11.3279	0.52
(3) RRH2X50-800	A	From Leg	4.0000	0.00	0.00	138.0000	No Ice	1.7008	1.2822	0.05
			0.00				1/2" Ice	1.8640	1.4275	0.07
			2.00				1" Ice	2.0345	1.5803	0.09
							2" Ice	2.3979	1.9081	0.14
(3) RRH2X50-800	C	From Leg	4.0000	0.00	0.00	138.0000	No Ice	1.7008	1.2822	0.05
			0.00				1/2" Ice	1.8640	1.4275	0.07
			2.00				1" Ice	2.0345	1.5803	0.09
							2" Ice	2.3979	1.9081	0.14
(3) PCS 1900MHZ 4X45W-65MHZ	B	From Leg	4.0000	0.00	0.00	138.0000	No Ice	2.3218	2.2381	0.06
			0.00				1/2" Ice	2.5266	2.4407	0.08
			2.00				1" Ice	2.7388	2.6507	0.11
							2" Ice	3.1855	3.0929	0.17
Platform Mount [LP 301-1]	C	None			0.00	138.0000	No Ice	30.1000	30.1000	1.59
							1/2" Ice	40.8000	40.8000	2.03
							1" Ice	51.5000	51.5000	2.47
							2" Ice	72.9000	72.9000	3.35
Miscellaneous [NA 507-1]	C	None			0.00	138.0000	No Ice	4.8000	4.8000	0.25
							1/2" Ice	6.7000	6.7000	0.29
							1" Ice	8.6000	8.6000	0.34
							2" Ice	12.4000	12.4000	0.44
***										
AIR -32 B2A/B66AA	A	From Leg	4.0000	0.00	0.00	120.0000	No Ice	6.5099	4.7123	0.13
			0.00				1/2" Ice	6.8870	5.0683	0.18
			0.00				1" Ice	7.2712	5.4313	0.23

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
							1" Ice	8.0604	6.1782	0.35
							2" Ice			
AIR -32 B2A/B66AA	B	From Leg	4.0000		0.00	120.0000	No Ice	6.5099	4.7123	0.13
			0.00				1/2"	6.8870	5.0683	0.18
			0.00				Ice	7.2712	5.4313	0.23
							1" Ice	8.0604	6.1782	0.35
							2" Ice			
AIR -32 B2A/B66AA	C	From Leg	4.0000		0.00	120.0000	No Ice	6.5099	4.7123	0.13
			0.00				1/2"	6.8870	5.0683	0.18
			0.00				Ice	7.2712	5.4313	0.23
							1" Ice	8.0604	6.1782	0.35
							2" Ice			
AIR 21 B2A/B4P	A	From Leg	4.0000		0.00	120.0000	No Ice	5.9244	4.2192	0.08
			0.00				1/2"	6.2883	4.5624	0.12
			0.00				Ice	6.6592	4.9126	0.17
							1" Ice	7.4219	5.6341	0.28
							2" Ice			
AIR 21 B2A/B4P	B	From Leg	4.0000		0.00	120.0000	No Ice	5.9244	4.2192	0.08
			0.00				1/2"	6.2883	4.5624	0.12
			0.00				Ice	6.6592	4.9126	0.17
							1" Ice	7.4219	5.6341	0.28
							2" Ice			
AIR 21 B2A/B4P	C	From Leg	4.0000		0.00	120.0000	No Ice	5.9244	4.2192	0.08
			0.00				1/2"	6.2883	4.5624	0.12
			0.00				Ice	6.6592	4.9126	0.17
							1" Ice	7.4219	5.6341	0.28
							2" Ice			
LNX-6515DS-A1M	A	From Leg	4.0000		0.00	120.0000	No Ice	11.4453	7.6964	0.05
			0.00				1/2"	12.0637	8.2889	0.12
			0.00				Ice	12.6895	8.8888	0.19
							1" Ice	13.9412	10.1108	0.36
							2" Ice			
LNX-6515DS-A1M	B	From Leg	4.0000		0.00	120.0000	No Ice	11.4453	7.6964	0.05
			0.00				1/2"	12.0637	8.2889	0.12
			0.00				Ice	12.6895	8.8888	0.19
							1" Ice	13.9412	10.1108	0.36
							2" Ice			
LNX-6515DS-A1M	C	From Leg	4.0000		0.00	120.0000	No Ice	11.4453	7.6964	0.05
			0.00				1/2"	12.0637	8.2889	0.12
			0.00				Ice	12.6895	8.8888	0.19
							1" Ice	13.9412	10.1108	0.36
							2" Ice			
KRY 112 144/1	A	From Leg	4.0000		0.00	120.0000	No Ice	0.3500	0.1750	0.01
			0.00				1/2"	0.4259	0.2343	0.01
			0.00				Ice	0.5093	0.3009	0.02
							1" Ice	0.6981	0.4565	0.03
							2" Ice			
KRY 112 144/1	B	From Leg	4.0000		0.00	120.0000	No Ice	0.3500	0.1750	0.01
			0.00				1/2"	0.4259	0.2343	0.01
			0.00				Ice	0.5093	0.3009	0.02
							1" Ice	0.6981	0.4565	0.03
							2" Ice			
KRY 112 144/1	C	From Leg	4.0000		0.00	120.0000	No Ice	0.3500	0.1750	0.01
			0.00				1/2"	0.4259	0.2343	0.01
			0.00				Ice	0.5093	0.3009	0.02
							1" Ice	0.6981	0.4565	0.03
							2" Ice			
RRUS 11 B12	A	From Leg	4.0000		0.00	120.0000	No Ice	2.8333	1.1821	0.05
			0.00				1/2"	3.0426	1.3299	0.07
			0.00				Ice	3.2593	1.4848	0.10
							1" Ice	3.7148	1.8259	0.15
							2" Ice			
RRUS 11 B12	B	From Leg	4.0000		0.00	120.0000	No Ice	2.8333	1.1821	0.05
			0.00				1/2"	3.0426	1.3299	0.07
			0.00				Ice	3.2593	1.4848	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Vert ft	ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
								1" Ice	3.7148	1.8259	0.15
								2" Ice			
RRUS 11 B12	C	From Leg	4.0000			0.00	120.0000	No Ice	2.8333	1.1821	0.05
			0.00					1/2"	3.0426	1.3299	0.07
			0.00					Ice	3.2593	1.4848	0.10
								1" Ice	3.7148	1.8259	0.15
								2" Ice			
Platform Mount [LP 301-1]	C	None				0.00	120.0000	No Ice	30.1000	30.1000	1.59
								1/2"	40.8000	40.8000	2.03
								Ice	51.5000	51.5000	2.47
								1" Ice	72.9000	72.9000	3.35
								2" Ice			
***											
GPS_A	A	From Leg	4.0000			0.00	99.0000	No Ice	0.2550	0.2550	0.00
			0.00					1/2"	0.3205	0.3205	0.00
			4.00					Ice	0.3934	0.3934	0.01
								1" Ice	0.5614	0.5614	0.02
								2" Ice			
BXA-171063/8CF w/ Mount Pipe	A	From Leg	4.0000			0.00	99.0000	No Ice	3.1574	3.3303	0.03
			0.00					1/2"	3.5312	3.9423	0.06
			0.00					Ice	3.9033	4.5633	0.10
								1" Ice	4.6625	5.8553	0.19
								2" Ice			
BXA-171063/8CF w/ Mount Pipe	B	From Leg	4.0000			0.00	99.0000	No Ice	3.1574	3.3303	0.03
			0.00					1/2"	3.5312	3.9423	0.06
			0.00					Ice	3.9033	4.5633	0.10
								1" Ice	4.6625	5.8553	0.19
								2" Ice			
BXA-171063/8CF w/ Mount Pipe	C	From Leg	4.0000			0.00	99.0000	No Ice	3.1574	3.3303	0.03
			0.00					1/2"	3.5312	3.9423	0.06
			0.00					Ice	3.9033	4.5633	0.10
								1" Ice	4.6625	5.8553	0.19
								2" Ice			
BXA-70063/4CF w/ Mount Pipe	A	From Leg	4.0000			0.00	99.0000	No Ice	4.9453	3.6158	0.03
			0.00					1/2"	5.3243	4.2169	0.07
			0.00					Ice	5.7120	4.8343	0.12
								1" Ice	6.5142	6.1053	0.23
								2" Ice			
BXA-70063/4CF w/ Mount Pipe	B	From Leg	4.0000			0.00	99.0000	No Ice	4.9453	3.6158	0.03
			0.00					1/2"	5.3243	4.2169	0.07
			0.00					Ice	5.7120	4.8343	0.12
								1" Ice	6.5142	6.1053	0.23
								2" Ice			
BXA-70063/4CF w/ Mount Pipe	C	From Leg	4.0000			0.00	99.0000	No Ice	4.9453	3.6158	0.03
			0.00					1/2"	5.3243	4.2169	0.07
			0.00					Ice	5.7120	4.8343	0.12
								1" Ice	6.5142	6.1053	0.23
								2" Ice			
(2) FD9R6004/2C-3L	A	From Leg	4.0000			0.00	99.0000	No Ice	0.3142	0.0762	0.00
			0.00					1/2"	0.3862	0.1189	0.01
			1.00					Ice	0.4656	0.1685	0.01
								1" Ice	0.6468	0.2940	0.02
								2" Ice			
(2) FD9R6004/2C-3L	B	From Leg	4.0000			0.00	99.0000	No Ice	0.3142	0.0762	0.00
			0.00					1/2"	0.3862	0.1189	0.01
			1.00					Ice	0.4656	0.1685	0.01
								1" Ice	0.6468	0.2940	0.02
								2" Ice			
(2) FD9R6004/2C-3L	C	From Leg	4.0000			0.00	99.0000	No Ice	0.3142	0.0762	0.00
			0.00					1/2"	0.3862	0.1189	0.01
			1.00					Ice	0.4656	0.1685	0.01
								1" Ice	0.6468	0.2940	0.02
								2" Ice			
(2) X7CQAP-465-VR0 w/ Mount Pipe	A	From Leg	4.0000			0.00	99.0000	No Ice	6.5999	4.7322	0.06
			0.00						7.0185	5.3944	0.11

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	7.4400	6.0396	0.17
						8.3095	7.3786	0.32	
						1" Ice			
						2" Ice			
(2) X7CQAP-465-VR0 w/ Mount Pipe	B	From Leg	4.0000	0.00	99.0000	No Ice	6.5999	4.7322	0.06
			0.00			1/2" Ice	7.0185	5.3944	0.11
			0.00				7.4400	6.0396	0.17
						1" Ice	8.3095	7.3786	0.32
						2" Ice			
(2) X7CQAP-465-VR0 w/ Mount Pipe	C	From Leg	4.0000	0.00	99.0000	No Ice	6.5999	4.7322	0.06
			0.00			1/2" Ice	7.0185	5.3944	0.11
			0.00				7.4400	6.0396	0.17
						1" Ice	8.3095	7.3786	0.32
						2" Ice			
(3) RFV01U-D1A	A	From Leg	4.0000	0.00	99.0000	No Ice	1.8750	1.2500	0.08
			0.00			1/2" Ice	2.0454	1.3926	0.10
			0.00				2.2231	1.5426	0.12
						1" Ice	2.6009	1.8648	0.18
						2" Ice			
RFV01U-D2A	A	From Leg	4.0000	0.00	99.0000	No Ice	1.8750	1.0125	0.07
			0.00			1/2" Ice	2.0454	1.1445	0.09
			0.00				2.2231	1.2840	0.11
						1" Ice	2.6009	1.5851	0.15
						2" Ice			
(2) RFV01U-D2A	B	From Leg	4.0000	0.00	99.0000	No Ice	1.8750	1.0125	0.07
			0.00			1/2" Ice	2.0454	1.1445	0.09
			0.00				2.2231	1.2840	0.11
						1" Ice	2.6009	1.5851	0.15
						2" Ice			
RC2DC-3315-PF-48	A	From Leg	4.0000	0.00	99.0000	No Ice	3.7922	2.5116	0.03
			0.00			1/2" Ice	4.0441	2.7247	0.06
			0.00				4.3033	2.9449	0.10
						1" Ice	4.8439	3.4142	0.18
						2" Ice			
T-Arm Mount [TA 602-3]	C	None		0.00	99.0000	No Ice	11.5900	11.5900	0.77
						1/2" Ice	15.4400	15.4400	0.99
							19.2900	19.2900	1.21
						1" Ice	26.9900	26.9900	1.64
						2" Ice			

Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft		Aperture Area ft^2	Weight K
VHLP2-23	B	Paraboloid w/o Radome	From Leg	4.0000	0.00		138.0000	2.1750	No Ice	3.7200	0.03
				0.00					1/2" Ice	4.0100	0.05
				5.00					1" Ice	4.3000	0.07
									2" Ice	4.8800	0.11
VHLP2-18	C	Paraboloid w/o Radome	From Leg	4.0000	0.00		138.0000	2.1750	No Ice	3.7200	0.03
				0.00					1/2" Ice	4.0100	0.05
				5.00					1" Ice	4.3000	0.07
									2" Ice	4.8800	0.11

Tower Pressures - No Ice

$G_H = 1.100$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 150.0000-145.0000	147.4802	1.104	39.520	6.596	A	0.000	6.596	6.596	100.00	0.000	0.000
					B	0.000	6.596		100.00	0.000	0.000
					C	0.000	6.596		100.00	0.000	1.667
L2 145.0000-140.0000	142.4811	1.093	39.133	6.912	A	0.000	6.912	6.912	100.00	0.000	0.000
					B	0.000	6.912		100.00	0.000	0.000
					C	0.000	6.912		100.00	0.000	1.667
L3 140.0000-135.0000	137.4819	1.082	38.735	7.227	A	0.000	7.227	7.227	100.00	0.000	0.000
					B	0.000	7.227		100.00	0.000	0.000
					C	0.000	7.227		100.00	0.000	2.591
L4 135.0000-130.0000	132.4826	1.071	38.328	7.543	A	0.000	7.543	7.543	100.00	0.000	0.000
					B	0.000	7.543		100.00	0.000	0.000
					C	0.000	7.543		100.00	0.000	3.207
L5 130.0000-128.5000	129.2485	1.063	38.058	2.324	A	0.000	2.324	2.324	100.00	0.000	0.000
					B	0.000	2.324		100.00	0.000	0.000
					C	0.000	2.324		100.00	0.000	1.587
L6 128.5000-128.2500	128.3750	1.061	37.984	0.387	A	0.000	0.387	0.387	100.00	0.000	0.000
					B	0.000	0.387		100.00	0.000	0.000
					C	0.000	0.387		100.00	0.000	0.264
L7 128.2500-123.2500	125.7336	1.055	37.759	7.907	A	0.000	7.907	7.907	100.00	0.000	0.000
					B	0.000	7.907		100.00	0.000	0.000
					C	0.000	7.907		100.00	0.000	5.290
L8 123.2500-118.2500	120.7342	1.043	37.324	8.226	A	0.000	8.226	8.226	100.00	0.000	0.000
					B	0.000	8.226		100.00	0.000	0.000
					C	0.000	8.226		100.00	0.000	5.320
L9 118.2500-113.2500	115.7348	1.03	36.876	8.543	A	0.000	8.543	8.543	100.00	0.000	0.000
					B	0.000	8.543		100.00	0.000	0.000
					C	0.000	8.543		100.00	0.000	5.375
L10 113.2500-109.0000	111.1144	1.018	36.449	7.512	A	0.000	7.512	7.512	100.00	0.000	0.000
					B	0.000	7.512		100.00	0.000	0.000
					C	0.000	7.512		100.00	0.000	4.569
L11 109.0000-108.7500	108.8750	1.013	36.238	0.448	A	0.000	0.448	0.448	100.00	0.000	0.000
					B	0.000	0.448		100.00	0.000	0.000
					C	0.000	0.448		100.00	0.000	0.269
L12 108.7500-104.1700	106.4477	1.006	36.005	8.355	A	0.000	8.355	8.355	100.00	0.000	0.000
					B	0.000	8.355		100.00	0.000	0.000
					C	0.000	8.355		100.00	0.000	5.349
L13 104.1700-103.9200	104.0450	0.999	35.771	0.462	A	0.000	0.462	0.462	100.00	0.000	0.000
					B	0.000	0.462		100.00	0.000	0.000
					C	0.000	0.462		100.00	0.000	0.248
L14 103.9200-103.1700	103.5447	0.998	35.722	1.391	A	0.000	1.391	1.391	100.00	0.000	0.000
					B	0.000	1.391		100.00	0.000	0.000
					C	0.000	1.391		100.00	0.000	0.744
L15 103.1700-102.9200	103.0450	0.997	35.672	0.464	A	0.000	0.464	0.464	100.00	0.000	0.000
					B	0.000	0.464		100.00	0.000	0.000
					C	0.000	0.464		100.00	0.000	0.248
L16 102.9200-102.4200	102.6699	0.996	35.635	0.931	A	0.000	0.931	0.931	100.00	0.000	0.000
					B	0.000	0.931		100.00	0.000	0.000
					C	0.000	0.931		100.00	0.000	0.496
L17 102.4200-102.1700	102.2950	0.995	35.598	0.468	A	0.000	0.468	0.468	100.00	0.000	0.000
					B	0.000	0.468		100.00	0.000	0.000
					C	0.000	0.468		100.00	0.000	0.248
L18 102.1700-100.9200	101.5441	0.993	35.523	2.352	A	0.000	2.352	2.352	100.00	0.000	0.000
					B	0.000	2.352		100.00	0.000	0.000
					C	0.000	2.352		100.00	0.000	1.240
L19 100.9200-100.6700	100.7950	0.99	35.448	0.472	A	0.000	0.472	0.472	100.00	0.000	0.000
					B	0.000	0.472		100.00	0.000	0.000
					C	0.000	0.472		100.00	0.000	0.248
L20 100.6700-99.5800	100.1243	0.989	35.380	2.069	A	0.000	2.069	2.069	100.00	0.000	0.000
					B	0.000	2.069		100.00	0.000	0.000
					C	0.000	2.069		100.00	0.000	1.081
L21 99.5800-99.3300	99.4550	0.987	35.313	0.474	A	0.000	0.474	0.474	100.00	0.000	0.000
					B	0.000	0.474		100.00	0.000	0.000
					C	0.000	0.474		100.00	0.000	0.248

Section Elevation ft	z ft	K_z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L22 99.3300-95.2500	97.2808	0.98	35.090	7.855	A	0.000	7.855	7.855	100.00	0.000	0.000
					B	0.000	7.855		100.00	0.000	0.000
					C	0.000	7.855		100.00	0.000	5.055
L23 95.2500-95.0000	95.1250	0.974	34.866	0.491	A	0.000	0.491	0.491	100.00	0.000	0.000
					B	0.000	0.491		100.00	0.000	0.000
					C	0.000	0.491		100.00	0.000	0.315
L24 95.0000-90.0000	92.4866	0.966	34.587	9.986	A	0.000	9.986	9.986	100.00	0.000	0.000
					B	0.000	9.986		100.00	0.000	0.000
					C	0.000	9.986		100.00	0.000	6.303
L25 90.0000-85.0000	87.4870	0.951	34.042	10.318	A	0.000	10.318	10.318	100.00	0.000	0.000
					B	0.000	10.318		100.00	0.000	0.000
					C	0.000	10.318		100.00	0.000	6.303
L26 85.0000-80.5000	82.7398	0.936	33.504	9.569	A	0.000	9.569	9.569	100.00	0.000	0.000
					B	0.000	9.569		100.00	0.000	0.000
					C	0.000	9.569		100.00	0.000	5.673
L27 80.5000-80.2500	80.3750	0.928	33.228	0.537	A	0.000	0.537	0.537	100.00	0.000	0.000
					B	0.000	0.537		100.00	0.000	0.000
					C	0.000	0.537		100.00	0.000	0.315
L28 80.2500-75.2500	77.7378	0.92	32.912	10.910	A	0.000	10.910	10.910	100.00	0.000	0.000
					B	0.000	10.910		100.00	0.000	0.000
					C	0.000	10.910		100.00	0.000	6.303
L29 75.2500-73.5800	74.4137	0.908	32.504	3.718	A	0.000	3.718	3.718	100.00	0.000	0.000
					B	0.000	3.718		100.00	0.000	0.000
					C	0.000	3.718		100.00	0.000	2.105
L30 73.5800-73.3300	73.4550	0.905	32.384	0.560	A	0.000	0.560	0.560	100.00	0.000	0.000
					B	0.000	0.560		100.00	0.000	0.000
					C	0.000	0.560		100.00	0.000	0.315
L31 73.3300-69.0000	71.1562	0.897	32.091	9.826	A	0.000	9.826	9.826	100.00	0.000	0.000
					B	0.000	9.826		100.00	0.000	0.000
					C	0.000	9.826		100.00	0.000	5.459
L32 69.0000-67.0000	67.9980	0.885	31.677	4.539	A	0.000	4.539	4.539	100.00	0.000	0.000
					B	0.000	4.539		100.00	0.000	0.000
					C	0.000	4.539		100.00	0.000	2.521
L33 67.0000-66.7500	66.8750	0.881	31.527	0.571	A	0.000	0.571	0.571	100.00	0.000	0.000
					B	0.000	0.571		100.00	0.000	0.000
					C	0.000	0.571		100.00	0.000	0.315
L34 66.7500-66.5000	66.6250	0.88	31.493	0.571	A	0.000	0.571	0.571	100.00	0.000	0.000
					B	0.000	0.571		100.00	0.000	0.000
					C	0.000	0.571		100.00	0.000	0.315
L35 66.5000-61.5000	63.9877	0.87	31.132	11.619	A	0.000	11.619	11.619	100.00	0.000	0.000
					B	0.000	11.619		100.00	0.000	0.000
					C	0.000	11.619		100.00	0.000	6.303
L36 61.5000-56.5000	58.9880	0.85	30.417	11.976	A	0.000	11.976	11.976	100.00	0.000	0.000
					B	0.000	11.976		100.00	0.000	0.000
					C	0.000	11.976		100.00	0.000	6.303
L37 56.5000-51.5000	53.9884	0.829	29.657	12.329	A	0.000	12.329	12.329	100.00	0.000	0.000
					B	0.000	12.329		100.00	0.000	0.000
					C	0.000	12.329		100.00	0.000	6.303
L38 51.5000-48.2500	49.8702	0.81	28.992	8.203	A	0.000	8.203	8.203	100.00	0.000	0.000
					B	0.000	8.203		100.00	0.000	0.000
					C	0.000	8.203		100.00	0.000	4.785
L39 48.2500-48.0000	48.1250	0.802	28.698	0.634	A	0.000	0.634	0.634	100.00	0.000	0.000
					B	0.000	0.634		100.00	0.000	0.000
					C	0.000	0.634		100.00	0.000	0.378
L40 48.0000-44.2500	46.1187	0.792	28.351	9.618	A	0.000	9.618	9.618	100.00	0.000	0.000
					B	0.000	9.618		100.00	0.000	0.000
					C	0.000	9.618		100.00	0.000	5.665
L41 44.2500-44.0000	44.1250	0.782	27.996	0.647	A	0.000	0.647	0.647	100.00	0.000	0.000
					B	0.000	0.647		100.00	0.000	0.000
					C	0.000	0.647		100.00	0.000	0.378
L42 44.0000-43.0800	43.5396	0.779	27.889	2.390	A	0.000	2.390	2.390	100.00	0.000	0.000
					B	0.000	2.390		100.00	0.000	0.000
					C	0.000	2.390		100.00	0.000	1.390
L43 43.0800-42.8300	42.9550	0.776	27.781	0.652	A	0.000	0.652	0.652	100.00	0.000	0.000
					B	0.000	0.652		100.00	0.000	0.000
					C	0.000	0.652		100.00	0.000	0.378
L44 42.8300-37.8300	40.3192	0.762	27.283	13.225	A	0.000	13.225	13.225	100.00	0.000	0.000
					B	0.000	13.225		100.00	0.000	0.000

Section Elevation ft	z ft	K_z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	13.225		100.00	0.000	7.553
L45 37.8300-30.0000	33.8893	0.725	25.962	21.418	A	0.000	21.418	21.418	100.00	0.000	0.000
					B	0.000	21.418		100.00	0.000	0.000
					C	0.000	21.418		100.00	0.000	11.829
L46 30.0000-29.0000	29.4996	0.7	25.052	2.743	A	0.000	2.743	2.743	100.00	0.000	0.000
					B	0.000	2.743		100.00	0.000	0.000
					C	0.000	2.743		100.00	0.000	1.511
L47 29.0000-24.0000	26.4893	0.7	25.052	13.942	A	0.000	13.942	13.942	100.00	0.000	0.000
					B	0.000	13.942		100.00	0.000	0.000
					C	0.000	13.942		100.00	0.000	7.553
L48 24.0000-23.7500	23.8750	0.7	25.052	0.707	A	0.000	0.707	0.707	100.00	0.000	0.000
					B	0.000	0.707		100.00	0.000	0.000
					C	0.000	0.707		100.00	0.000	0.378
L49 23.7500-23.5000	23.6250	0.7	25.052	0.708	A	0.000	0.708	0.708	100.00	0.000	0.000
					B	0.000	0.708		100.00	0.000	0.000
					C	0.000	0.708		100.00	0.000	0.378
L50 23.5000-18.5000	20.9896	0.7	25.052	14.350	A	0.000	14.350	14.350	100.00	0.000	0.000
					B	0.000	14.350		100.00	0.000	0.000
					C	0.000	14.350		100.00	0.000	7.553
L51 18.5000-13.5000	15.9898	0.7	25.052	14.721	A	0.000	14.721	14.721	100.00	0.000	0.000
					B	0.000	14.721		100.00	0.000	0.000
					C	0.000	14.721		100.00	0.000	7.553
L52 13.5000-11.0000	12.2475	0.7	25.052	7.499	A	0.000	7.499	7.499	100.00	0.000	0.000
					B	0.000	7.499		100.00	0.000	0.000
					C	0.000	7.499		100.00	0.000	3.777
L53 11.0000-10.7500	10.8750	0.7	25.052	0.757	A	0.000	0.757	0.757	100.00	0.000	0.000
					B	0.000	0.757		100.00	0.000	0.000
					C	0.000	0.757		100.00	0.000	0.378
L54 10.7500-6.0000	8.3662	0.7	25.052	14.555	A	0.000	14.555	14.555	100.00	0.000	0.000
					B	0.000	14.555		100.00	0.000	0.000
					C	0.000	14.555		100.00	0.000	7.176
L55 6.0000-5.7500	5.8750	0.7	25.052	0.773	A	0.000	0.773	0.773	100.00	0.000	0.000
					B	0.000	0.773		100.00	0.000	0.000
					C	0.000	0.773		100.00	0.000	0.378
L56 5.7500-3.2500	4.4976	0.7	25.052	7.783	A	0.000	7.783	7.783	100.00	0.000	0.000
					B	0.000	7.783		100.00	0.000	0.000
					C	0.000	7.783		100.00	0.000	3.777
L57 3.2500-3.0000	3.1250	0.7	25.052	0.786	A	0.000	0.786	0.786	100.00	0.000	0.000
					B	0.000	0.786		100.00	0.000	0.000
					C	0.000	0.786		100.00	0.000	0.378
L58 3.0000-0.0000	1.4966	0.7	25.052	9.504	A	0.000	9.504	9.504	100.00	0.000	0.000
					B	0.000	9.504		100.00	0.000	0.000
					C	0.000	9.504		100.00	0.000	4.532

Tower Pressure - With Ice

$G_H = 1.100$

Section Elevation ft	z ft	K_z	q_z psf	t_z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 150.0000-145.0000	147.4802	1.104	6.323	1.4809	7.830	A	0.000	7.830	7.830	100.00	0.000	0.000
						B	0.000	7.830		100.00	0.000	0.000
						C	0.000	7.830		100.00	0.000	3.312
L2 145.0000-140.0000	142.4811	1.093	6.261	1.4758	8.142	A	0.000	8.142	8.142	100.00	0.000	0.000
						B	0.000	8.142		100.00	0.000	0.000
						C	0.000	8.142		100.00	0.000	3.306
L3 140.0000-135.0000	137.4819	1.082	6.198	1.4706	8.453	A	0.000	8.453	8.453	100.00	0.000	0.000
						B	0.000	8.453		100.00	0.000	0.000
						C	0.000	8.453		100.00	0.000	5.989
L4 135.0000-130.0000	132.4826	1.071	6.132	1.4651	8.764	A	0.000	8.764	8.764	100.00	0.000	0.000
						B	0.000	8.764		100.00	0.000	0.000
						C	0.000	8.764		100.00	0.000	7.765
L5 130.0000-128.5000	129.2485	1.063	6.089	1.4615	2.690	A	0.000	2.690	2.690	100.00	0.000	0.000
						B	0.000	2.690		100.00	0.000	0.000
						C	0.000	2.690		100.00	0.000	3.925

Section Elevation ft	z ft	K_z	q_z psf	t_z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L6 128.5000-128.2500	128.3750	1.061	6.077	1.4605	0.448	A	0.000	0.448	0.448	100.00	0.000	0.000
						B	0.000	0.448		100.00	0.000	0.000
						C	0.000	0.448		100.00	0.000	0.654
L7 128.2500-123.2500	125.7336	1.055	6.041	1.4575	9.121	A	0.000	9.121	9.121	100.00	0.000	0.000
						B	0.000	9.121		100.00	0.000	0.000
						C	0.000	9.121		100.00	0.000	13.063
L8 123.2500-118.2500	120.7342	1.043	5.972	1.4516	9.436	A	0.000	9.436	9.436	100.00	0.000	0.000
						B	0.000	9.436		100.00	0.000	0.000
						C	0.000	9.436		100.00	0.000	13.062
L9 118.2500-113.2500	115.7348	1.03	5.900	1.4455	9.748	A	0.000	9.748	9.748	100.00	0.000	0.000
						B	0.000	9.748		100.00	0.000	0.000
						C	0.000	9.748		100.00	0.000	13.084
L10 113.2500-109.0000	111.1144	1.018	5.832	1.4396	8.531	A	0.000	8.531	8.531	100.00	0.000	0.000
						B	0.000	8.531		100.00	0.000	0.000
						C	0.000	8.531		100.00	0.000	11.095
L11 109.0000-108.7500	108.8750	1.013	5.798	1.4367	0.508	A	0.000	0.508	0.508	100.00	0.000	0.000
						B	0.000	0.508		100.00	0.000	0.000
						C	0.000	0.508		100.00	0.000	0.652
L12 108.7500-104.1700	106.4477	1.006	5.761	1.4334	9.449	A	0.000	9.449	9.449	100.00	0.000	0.000
						B	0.000	9.449		100.00	0.000	0.000
						C	0.000	9.449		100.00	0.000	12.516
L13 104.1700-103.9200	104.0450	0.999	5.723	1.4301	0.521	A	0.000	0.521	0.521	100.00	0.000	0.000
						B	0.000	0.521		100.00	0.000	0.000
						C	0.000	0.521		100.00	0.000	0.571
L14 103.9200-103.1700	103.5447	0.998	5.715	1.4295	1.570	A	0.000	1.570	1.570	100.00	0.000	0.000
						B	0.000	1.570		100.00	0.000	0.000
						C	0.000	1.570		100.00	0.000	1.712
L15 103.1700-102.9200	103.0450	0.997	5.708	1.4288	0.524	A	0.000	0.524	0.524	100.00	0.000	0.000
						B	0.000	0.524		100.00	0.000	0.000
						C	0.000	0.524		100.00	0.000	0.570
L16 102.9200-102.4200	102.6699	0.996	5.702	1.4282	1.050	A	0.000	1.050	1.050	100.00	0.000	0.000
						B	0.000	1.050		100.00	0.000	0.000
						C	0.000	1.050		100.00	0.000	1.141
L17 102.4200-102.1700	102.2950	0.995	5.696	1.4277	0.527	A	0.000	0.527	0.527	100.00	0.000	0.000
						B	0.000	0.527		100.00	0.000	0.000
						C	0.000	0.527		100.00	0.000	0.570
L18 102.1700-100.9200	101.5441	0.993	5.684	1.4267	2.649	A	0.000	2.649	2.649	100.00	0.000	0.000
						B	0.000	2.649		100.00	0.000	0.000
						C	0.000	2.649		100.00	0.000	2.850
L19 100.9200-100.6700	100.7950	0.99	5.672	1.4256	0.532	A	0.000	0.532	0.532	100.00	0.000	0.000
						B	0.000	0.532		100.00	0.000	0.000
						C	0.000	0.532		100.00	0.000	0.570
L20 100.6700-99.5800	100.1243	0.989	5.661	1.4247	2.328	A	0.000	2.328	2.328	100.00	0.000	0.000
						B	0.000	2.328		100.00	0.000	0.000
						C	0.000	2.328		100.00	0.000	2.483
L21 99.5800-99.3300	99.4550	0.987	5.650	1.4237	0.533	A	0.000	0.533	0.533	100.00	0.000	0.000
						B	0.000	0.533		100.00	0.000	0.000
						C	0.000	0.533		100.00	0.000	0.569
L22 99.3300-95.2500	97.2808	0.98	5.614	1.4206	8.821	A	0.000	8.821	8.821	100.00	0.000	0.000
						B	0.000	8.821		100.00	0.000	0.000
						C	0.000	8.821		100.00	0.000	11.354
L23 95.2500-95.0000	95.1250	0.974	5.579	1.4174	0.550	A	0.000	0.550	0.550	100.00	0.000	0.000
						B	0.000	0.550		100.00	0.000	0.000
						C	0.000	0.550		100.00	0.000	0.706
L24 95.0000-90.0000	92.4866	0.966	5.534	1.4134	11.164	A	0.000	11.164	11.164	100.00	0.000	0.000
						B	0.000	11.164		100.00	0.000	0.000
						C	0.000	11.164		100.00	0.000	14.101
L25 90.0000-85.0000	87.4870	0.951	5.447	1.4056	11.489	A	0.000	11.489	11.489	100.00	0.000	0.000
						B	0.000	11.489		100.00	0.000	0.000
						C	0.000	11.489		100.00	0.000	14.060
L26 85.0000-80.5000	82.7398	0.936	5.361	1.3978	10.618	A	0.000	10.618	10.618	100.00	0.000	0.000
						B	0.000	10.618		100.00	0.000	0.000
						C	0.000	10.618		100.00	0.000	12.617
L27 80.5000-80.2500	80.3750	0.928	5.316	1.3937	0.595	A	0.000	0.595	0.595	100.00	0.000	0.000
						B	0.000	0.595		100.00	0.000	0.000
						C	0.000	0.595		100.00	0.000	0.700
L28 80.2500-75.2500	77.7378	0.92	5.266	1.3891	12.068	A	0.000	12.068	12.068	100.00	0.000	0.000
						B	0.000	12.068		100.00	0.000	0.000

Section Elevation ft	z ft	K_z	q_z psf	t_z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						C	0.000	12.068		100.00	0.000	13.974
L29 75.2500-73.5800	74.4137	0.908	5.201	1.3830	4.103	A	0.000	4.103	4.103	100.00	0.000	0.000
						B	0.000	4.103		100.00	0.000	0.000
						C	0.000	4.103		100.00	0.000	4.657
L30 73.5800-73.3300	73.4550	0.905	5.181	1.3812	0.617	A	0.000	0.617	0.617	100.00	0.000	0.000
						B	0.000	0.617		100.00	0.000	0.000
						C	0.000	0.617		100.00	0.000	0.697
L31 73.3300-69.0000	71.1562	0.897	5.135	1.3768	10.820	A	0.000	10.820	10.820	100.00	0.000	0.000
						B	0.000	10.820		100.00	0.000	0.000
						C	0.000	10.820		100.00	0.000	12.046
L32 69.0000-67.0000	67.9980	0.885	5.068	1.3706	4.998	A	0.000	4.998	4.998	100.00	0.000	0.000
						B	0.000	4.998		100.00	0.000	0.000
						C	0.000	4.998		100.00	0.000	5.564
L33 67.0000-66.7500	66.8750	0.881	5.044	1.3683	0.628	A	0.000	0.628	0.628	100.00	0.000	0.000
						B	0.000	0.628		100.00	0.000	0.000
						C	0.000	0.628		100.00	0.000	0.693
L34 66.7500-66.5000	66.6250	0.88	5.039	1.3678	0.628	A	0.000	0.628	0.628	100.00	0.000	0.000
						B	0.000	0.628		100.00	0.000	0.000
						C	0.000	0.628		100.00	0.000	0.693
L35 66.5000-61.5000	63.9877	0.87	4.981	1.3623	12.754	A	0.000	12.754	12.754	100.00	0.000	0.000
						B	0.000	12.754		100.00	0.000	0.000
						C	0.000	12.754		100.00	0.000	13.834
L36 61.5000-56.5000	58.9880	0.85	4.867	1.3512	13.102	A	0.000	13.102	13.102	100.00	0.000	0.000
						B	0.000	13.102		100.00	0.000	0.000
						C	0.000	13.102		100.00	0.000	13.777
L37 56.5000-51.5000	53.9884	0.829	4.745	1.3393	13.445	A	0.000	13.445	13.445	100.00	0.000	0.000
						B	0.000	13.445		100.00	0.000	0.000
						C	0.000	13.445		100.00	0.000	13.714
L38 51.5000-48.2500	49.8702	0.81	4.639	1.3287	8.923	A	0.000	8.923	8.923	100.00	0.000	0.000
						B	0.000	8.923		100.00	0.000	0.000
						C	0.000	8.923		100.00	0.000	10.297
L39 48.2500-48.0000	48.1250	0.802	4.592	1.3240	0.689	A	0.000	0.689	0.689	100.00	0.000	0.000
						B	0.000	0.689		100.00	0.000	0.000
						C	0.000	0.689		100.00	0.000	0.810
L40 48.0000-44.2500	46.1187	0.792	4.536	1.3184	10.442	A	0.000	10.442	10.442	100.00	0.000	0.000
						B	0.000	10.442		100.00	0.000	0.000
						C	0.000	10.442		100.00	0.000	12.130
L41 44.2500-44.0000	44.1250	0.782	4.479	1.3126	0.702	A	0.000	0.702	0.702	100.00	0.000	0.000
						B	0.000	0.702		100.00	0.000	0.000
						C	0.000	0.702		100.00	0.000	0.807
L42 44.0000-43.0800	43.5396	0.779	4.462	1.3108	2.591	A	0.000	2.591	2.591	100.00	0.000	0.000
						B	0.000	2.591		100.00	0.000	0.000
						C	0.000	2.591		100.00	0.000	2.967
L43 43.0800-42.8300	42.9550	0.776	4.445	1.3091	0.706	A	0.000	0.706	0.706	100.00	0.000	0.000
						B	0.000	0.706		100.00	0.000	0.000
						C	0.000	0.706		100.00	0.000	0.806
L44 42.8300-37.8300	40.3192	0.762	4.365	1.3008	14.309	A	0.000	14.309	14.309	100.00	0.000	0.000
						B	0.000	14.309		100.00	0.000	0.000
						C	0.000	14.309		100.00	0.000	16.064
L45 37.8300-30.0000	33.8893	0.725	4.154	1.2784	23.087	A	0.000	23.087	23.087	100.00	0.000	0.000
						B	0.000	23.087		100.00	0.000	0.000
						C	0.000	23.087		100.00	0.000	24.938
L46 30.0000-29.0000	29.4996	0.7	4.008	1.2608	2.956	A	0.000	2.956	2.956	100.00	0.000	0.000
						B	0.000	2.956		100.00	0.000	0.000
						C	0.000	2.956		100.00	0.000	3.185
L47 29.0000-24.0000	26.4893	0.7	4.008	1.2473	14.981	A	0.000	14.981	14.981	100.00	0.000	0.000
						B	0.000	14.981		100.00	0.000	0.000
						C	0.000	14.981		100.00	0.000	15.731
L48 24.0000-23.7500	23.8750	0.7	4.008	1.2344	0.758	A	0.000	0.758	0.758	100.00	0.000	0.000
						B	0.000	0.758		100.00	0.000	0.000
						C	0.000	0.758		100.00	0.000	0.783
L49 23.7500-23.5000	23.6250	0.7	4.008	1.2331	0.759	A	0.000	0.759	0.759	100.00	0.000	0.000
						B	0.000	0.759		100.00	0.000	0.000
						C	0.000	0.759		100.00	0.000	0.782
L50 23.5000-18.5000	20.9896	0.7	4.008	1.2186	15.365	A	0.000	15.365	15.365	100.00	0.000	0.000
						B	0.000	15.365		100.00	0.000	0.000
						C	0.000	15.365		100.00	0.000	15.552

Section Elevation ft	z ft	K_z	q_z psf	t_z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L51 18.5000-13.5000	15.9898	0.7	4.008	1.1859	15.710	A	0.000	15.710	15.710	100.00	0.000	0.000
						B	0.000	15.710		100.00	0.000	0.000
						C	0.000	15.710		100.00	0.000	15.349
L52 13.5000-11.0000	12.2475	0.7	4.008	1.1547	7.980	A	0.000	7.980	7.980	100.00	0.000	0.000
						B	0.000	7.980		100.00	0.000	0.000
						C	0.000	7.980		100.00	0.000	7.577
L53 11.0000-10.7500	10.8750	0.7	4.008	1.1410	0.805	A	0.000	0.805	0.805	100.00	0.000	0.000
						B	0.000	0.805		100.00	0.000	0.000
						C	0.000	0.805		100.00	0.000	0.753
L54 10.7500-6.0000	8.3662	0.7	4.008	1.1115	15.435	A	0.000	15.435	15.435	100.00	0.000	0.000
						B	0.000	15.435		100.00	0.000	0.000
						C	0.000	15.435		100.00	0.000	14.142
L55 6.0000-5.7500	5.8750	0.7	4.008	1.0729	0.818	A	0.000	0.818	0.818	100.00	0.000	0.000
						B	0.000	0.818		100.00	0.000	0.000
						C	0.000	0.818		100.00	0.000	0.732
L56 5.7500-3.2500	4.4976	0.7	4.008	1.0446	8.219	A	0.000	8.219	8.219	100.00	0.000	0.000
						B	0.000	8.219		100.00	0.000	0.000
						C	0.000	8.219		100.00	0.000	7.235
L57 3.2500-3.0000	3.1250	0.7	4.008	1.0073	0.828	A	0.000	0.828	0.828	100.00	0.000	0.000
						B	0.000	0.828		100.00	0.000	0.000
						C	0.000	0.828		100.00	0.000	0.712
L58 3.0000-0.0000	1.4966	0.7	4.008	0.9358	9.972	A	0.000	9.972	9.972	100.00	0.000	0.000
						B	0.000	9.972		100.00	0.000	0.000
						C	0.000	9.972		100.00	0.000	8.271

Tower Pressure - Service

$G_H = 1.100$

Section Elevation ft	z ft	K_z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1 150.0000-145.0000	147.4802	1.104	8.147	6.596	A	0.000	6.596	6.596	100.00	0.000	0.000
					B	0.000	6.596		100.00	0.000	0.000
					C	0.000	6.596		100.00	0.000	1.667
L2 145.0000-140.0000	142.4811	1.093	8.067	6.912	A	0.000	6.912	6.912	100.00	0.000	0.000
					B	0.000	6.912		100.00	0.000	0.000
					C	0.000	6.912		100.00	0.000	1.667
L3 140.0000-135.0000	137.4819	1.082	7.985	7.227	A	0.000	7.227	7.227	100.00	0.000	0.000
					B	0.000	7.227		100.00	0.000	0.000
					C	0.000	7.227		100.00	0.000	2.591
L4 135.0000-130.0000	132.4826	1.071	7.901	7.543	A	0.000	7.543	7.543	100.00	0.000	0.000
					B	0.000	7.543		100.00	0.000	0.000
					C	0.000	7.543		100.00	0.000	3.207
L5 130.0000-128.5000	129.2485	1.063	7.846	2.324	A	0.000	2.324	2.324	100.00	0.000	0.000
					B	0.000	2.324		100.00	0.000	0.000
					C	0.000	2.324		100.00	0.000	1.587
L6 128.5000-128.2500	128.3750	1.061	7.830	0.387	A	0.000	0.387	0.387	100.00	0.000	0.000
					B	0.000	0.387		100.00	0.000	0.000
					C	0.000	0.387		100.00	0.000	0.264
L7 128.2500-123.2500	125.7336	1.055	7.784	7.907	A	0.000	7.907	7.907	100.00	0.000	0.000
					B	0.000	7.907		100.00	0.000	0.000
					C	0.000	7.907		100.00	0.000	5.290
L8 123.2500-118.2500	120.7342	1.043	7.694	8.226	A	0.000	8.226	8.226	100.00	0.000	0.000
					B	0.000	8.226		100.00	0.000	0.000
					C	0.000	8.226		100.00	0.000	5.320
L9 118.2500-113.2500	115.7348	1.03	7.602	8.543	A	0.000	8.543	8.543	100.00	0.000	0.000
					B	0.000	8.543		100.00	0.000	0.000
					C	0.000	8.543		100.00	0.000	5.375
L10 113.2500-109.0000	111.1144	1.018	7.514	7.512	A	0.000	7.512	7.512	100.00	0.000	0.000
					B	0.000	7.512		100.00	0.000	0.000
					C	0.000	7.512		100.00	0.000	4.569
L11 109.0000-108.7500	108.8750	1.013	7.470	0.448	A	0.000	0.448	0.448	100.00	0.000	0.000
					B	0.000	0.448		100.00	0.000	0.000
					C	0.000	0.448		100.00	0.000	0.269

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L12 108.7500-104.1700	106.4477	1.006	7.422	8.355	A	0.000	8.355	8.355	100.00	0.000	0.000
					B	0.000	8.355		100.00	0.000	0.000
					C	0.000	8.355		100.00	0.000	5.349
L13 104.1700-103.9200	104.0450	0.999	7.374	0.462	A	0.000	0.462	0.462	100.00	0.000	0.000
					B	0.000	0.462		100.00	0.000	0.000
					C	0.000	0.462		100.00	0.000	0.248
L14 103.9200-103.1700	103.5447	0.998	7.364	1.391	A	0.000	1.391	1.391	100.00	0.000	0.000
					B	0.000	1.391		100.00	0.000	0.000
					C	0.000	1.391		100.00	0.000	0.744
L15 103.1700-102.9200	103.0450	0.997	7.354	0.464	A	0.000	0.464	0.464	100.00	0.000	0.000
					B	0.000	0.464		100.00	0.000	0.000
					C	0.000	0.464		100.00	0.000	0.248
L16 102.9200-102.4200	102.6699	0.996	7.346	0.931	A	0.000	0.931	0.931	100.00	0.000	0.000
					B	0.000	0.931		100.00	0.000	0.000
					C	0.000	0.931		100.00	0.000	0.496
L17 102.4200-102.1700	102.2950	0.995	7.338	0.468	A	0.000	0.468	0.468	100.00	0.000	0.000
					B	0.000	0.468		100.00	0.000	0.000
					C	0.000	0.468		100.00	0.000	0.248
L18 102.1700-100.9200	101.5441	0.993	7.323	2.352	A	0.000	2.352	2.352	100.00	0.000	0.000
					B	0.000	2.352		100.00	0.000	0.000
					C	0.000	2.352		100.00	0.000	1.240
L19 100.9200-100.6700	100.7950	0.99	7.307	0.472	A	0.000	0.472	0.472	100.00	0.000	0.000
					B	0.000	0.472		100.00	0.000	0.000
					C	0.000	0.472		100.00	0.000	0.248
L20 100.6700-99.5800	100.1243	0.989	7.294	2.069	A	0.000	2.069	2.069	100.00	0.000	0.000
					B	0.000	2.069		100.00	0.000	0.000
					C	0.000	2.069		100.00	0.000	1.081
L21 99.5800-99.3300	99.4550	0.987	7.280	0.474	A	0.000	0.474	0.474	100.00	0.000	0.000
					B	0.000	0.474		100.00	0.000	0.000
					C	0.000	0.474		100.00	0.000	0.248
L22 99.3300-95.2500	97.2808	0.98	7.234	7.855	A	0.000	7.855	7.855	100.00	0.000	0.000
					B	0.000	7.855		100.00	0.000	0.000
					C	0.000	7.855		100.00	0.000	5.055
L23 95.2500-95.0000	95.1250	0.974	7.188	0.491	A	0.000	0.491	0.491	100.00	0.000	0.000
					B	0.000	0.491		100.00	0.000	0.000
					C	0.000	0.491		100.00	0.000	0.315
L24 95.0000-90.0000	92.4866	0.966	7.130	9.986	A	0.000	9.986	9.986	100.00	0.000	0.000
					B	0.000	9.986		100.00	0.000	0.000
					C	0.000	9.986		100.00	0.000	6.303
L25 90.0000-85.0000	87.4870	0.951	7.018	10.318	A	0.000	10.318	10.318	100.00	0.000	0.000
					B	0.000	10.318		100.00	0.000	0.000
					C	0.000	10.318		100.00	0.000	6.303
L26 85.0000-80.5000	82.7398	0.936	6.907	9.569	A	0.000	9.569	9.569	100.00	0.000	0.000
					B	0.000	9.569		100.00	0.000	0.000
					C	0.000	9.569		100.00	0.000	5.673
L27 80.5000-80.2500	80.3750	0.928	6.850	0.537	A	0.000	0.537	0.537	100.00	0.000	0.000
					B	0.000	0.537		100.00	0.000	0.000
					C	0.000	0.537		100.00	0.000	0.315
L28 80.2500-75.2500	77.7378	0.92	6.785	10.910	A	0.000	10.910	10.910	100.00	0.000	0.000
					B	0.000	10.910		100.00	0.000	0.000
					C	0.000	10.910		100.00	0.000	6.303
L29 75.2500-73.5800	74.4137	0.908	6.701	3.718	A	0.000	3.718	3.718	100.00	0.000	0.000
					B	0.000	3.718		100.00	0.000	0.000
					C	0.000	3.718		100.00	0.000	2.105
L30 73.5800-73.3300	73.4550	0.905	6.676	0.560	A	0.000	0.560	0.560	100.00	0.000	0.000
					B	0.000	0.560		100.00	0.000	0.000
					C	0.000	0.560		100.00	0.000	0.315
L31 73.3300-69.0000	71.1562	0.897	6.615	9.826	A	0.000	9.826	9.826	100.00	0.000	0.000
					B	0.000	9.826		100.00	0.000	0.000
					C	0.000	9.826		100.00	0.000	5.459
L32 69.0000-67.0000	67.9980	0.885	6.530	4.539	A	0.000	4.539	4.539	100.00	0.000	0.000
					B	0.000	4.539		100.00	0.000	0.000
					C	0.000	4.539		100.00	0.000	2.521
L33 67.0000-66.7500	66.8750	0.881	6.499	0.571	A	0.000	0.571	0.571	100.00	0.000	0.000
					B	0.000	0.571		100.00	0.000	0.000
					C	0.000	0.571		100.00	0.000	0.315
L34 66.7500-66.5000	66.6250	0.88	6.492	0.571	A	0.000	0.571	0.571	100.00	0.000	0.000
					B	0.000	0.571		100.00	0.000	0.000

Section Elevation ft	z ft	K_z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
					C	0.000	0.571		100.00	0.000	0.315
L35 66.5000-61.5000	63.9877	0.87	6.418	11.619	A	0.000	11.619	11.619	100.00	0.000	0.000
					B	0.000	11.619		100.00	0.000	0.000
					C	0.000	11.619		100.00	0.000	6.303
L36 61.5000-56.5000	58.9880	0.85	6.270	11.976	A	0.000	11.976	11.976	100.00	0.000	0.000
					B	0.000	11.976		100.00	0.000	0.000
					C	0.000	11.976		100.00	0.000	6.303
L37 56.5000-51.5000	53.9884	0.829	6.114	12.329	A	0.000	12.329	12.329	100.00	0.000	0.000
					B	0.000	12.329		100.00	0.000	0.000
					C	0.000	12.329		100.00	0.000	6.303
L38 51.5000-48.2500	49.8702	0.81	5.977	8.203	A	0.000	8.203	8.203	100.00	0.000	0.000
					B	0.000	8.203		100.00	0.000	0.000
					C	0.000	8.203		100.00	0.000	4.785
L39 48.2500-48.0000	48.1250	0.802	5.916	0.634	A	0.000	0.634	0.634	100.00	0.000	0.000
					B	0.000	0.634		100.00	0.000	0.000
					C	0.000	0.634		100.00	0.000	0.378
L40 48.0000-44.2500	46.1187	0.792	5.845	9.618	A	0.000	9.618	9.618	100.00	0.000	0.000
					B	0.000	9.618		100.00	0.000	0.000
					C	0.000	9.618		100.00	0.000	5.665
L41 44.2500-44.0000	44.1250	0.782	5.771	0.647	A	0.000	0.647	0.647	100.00	0.000	0.000
					B	0.000	0.647		100.00	0.000	0.000
					C	0.000	0.647		100.00	0.000	0.378
L42 44.0000-43.0800	43.5396	0.779	5.749	2.390	A	0.000	2.390	2.390	100.00	0.000	0.000
					B	0.000	2.390		100.00	0.000	0.000
					C	0.000	2.390		100.00	0.000	1.390
L43 43.0800-42.8300	42.9550	0.776	5.727	0.652	A	0.000	0.652	0.652	100.00	0.000	0.000
					B	0.000	0.652		100.00	0.000	0.000
					C	0.000	0.652		100.00	0.000	0.378
L44 42.8300-37.8300	40.3192	0.762	5.624	13.225	A	0.000	13.225	13.225	100.00	0.000	0.000
					B	0.000	13.225		100.00	0.000	0.000
					C	0.000	13.225		100.00	0.000	7.553
L45 37.8300-30.0000	33.8893	0.725	5.352	21.418	A	0.000	21.418	21.418	100.00	0.000	0.000
					B	0.000	21.418		100.00	0.000	0.000
					C	0.000	21.418		100.00	0.000	11.829
L46 30.0000-29.0000	29.4996	0.7	5.164	2.743	A	0.000	2.743	2.743	100.00	0.000	0.000
					B	0.000	2.743		100.00	0.000	0.000
					C	0.000	2.743		100.00	0.000	1.511
L47 29.0000-24.0000	26.4893	0.7	5.164	13.942	A	0.000	13.942	13.942	100.00	0.000	0.000
					B	0.000	13.942		100.00	0.000	0.000
					C	0.000	13.942		100.00	0.000	7.553
L48 24.0000-23.7500	23.8750	0.7	5.164	0.707	A	0.000	0.707	0.707	100.00	0.000	0.000
					B	0.000	0.707		100.00	0.000	0.000
					C	0.000	0.707		100.00	0.000	0.378
L49 23.7500-23.5000	23.6250	0.7	5.164	0.708	A	0.000	0.708	0.708	100.00	0.000	0.000
					B	0.000	0.708		100.00	0.000	0.000
					C	0.000	0.708		100.00	0.000	0.378
L50 23.5000-18.5000	20.9896	0.7	5.164	14.350	A	0.000	14.350	14.350	100.00	0.000	0.000
					B	0.000	14.350		100.00	0.000	0.000
					C	0.000	14.350		100.00	0.000	7.553
L51 18.5000-13.5000	15.9898	0.7	5.164	14.721	A	0.000	14.721	14.721	100.00	0.000	0.000
					B	0.000	14.721		100.00	0.000	0.000
					C	0.000	14.721		100.00	0.000	7.553
L52 13.5000-11.0000	12.2475	0.7	5.164	7.499	A	0.000	7.499	7.499	100.00	0.000	0.000
					B	0.000	7.499		100.00	0.000	0.000
					C	0.000	7.499		100.00	0.000	3.777
L53 11.0000-10.7500	10.8750	0.7	5.164	0.757	A	0.000	0.757	0.757	100.00	0.000	0.000
					B	0.000	0.757		100.00	0.000	0.000
					C	0.000	0.757		100.00	0.000	0.378
L54 10.7500-6.0000	8.3662	0.7	5.164	14.555	A	0.000	14.555	14.555	100.00	0.000	0.000
					B	0.000	14.555		100.00	0.000	0.000
					C	0.000	14.555		100.00	0.000	7.176
L55 6.0000-5.7500	5.8750	0.7	5.164	0.773	A	0.000	0.773	0.773	100.00	0.000	0.000
					B	0.000	0.773		100.00	0.000	0.000
					C	0.000	0.773		100.00	0.000	0.378
L56 5.7500-3.2500	4.4976	0.7	5.164	7.783	A	0.000	7.783	7.783	100.00	0.000	0.000
					B	0.000	7.783		100.00	0.000	0.000
					C	0.000	7.783		100.00	0.000	3.777

Section Elevation ft	z ft	K_z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L57 3.2500-3.0000	3.1250	0.7	5.164	0.786	A	0.000	0.786	0.786	100.00	0.000	0.000
					B	0.000	0.786		100.00	0.000	0.000
					C	0.000	0.786		100.00	0.000	0.378
L58 3.0000-0.0000	1.4966	0.7	5.164	9.504	A	0.000	9.504	9.504	100.00	0.000	0.000
					B	0.000	9.504		100.00	0.000	0.000
					C	0.000	9.504		100.00	0.000	4.532

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	150 - 145	Pole	Max Tension	26	0.00	-0.00	0.00
			Max. Compression	26	-10.68	-0.09	0.70
			Max. Mx	8	-3.68	-50.12	0.17
			Max. My	2	-3.68	-0.02	50.30
			Max. Vy	20	-7.17	50.06	0.17
			Max. Vx	2	-7.17	-0.02	50.30
			Max. Torque	20			-0.38
L2	145 - 140	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-11.36	-0.05	0.24
			Max. Mx	8	-4.00	-87.96	0.42
			Max. My	2	-4.00	-0.02	87.91
			Max. Vy	20	-7.90	87.91	0.41
			Max. Vx	2	-7.88	-0.02	87.91
			Max. Torque	20			-0.33
L3	140 - 135	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-19.00	-0.30	-0.02
			Max. Mx	8	-7.51	-144.40	1.00
			Max. My	2	-7.50	-0.18	144.13
			Max. Vy	20	-12.18	144.09	0.84
			Max. Vx	2	-12.19	-0.18	144.13
			Max. Torque	4			-0.58
L4	135 - 130	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-19.68	-0.15	-0.10
			Max. Mx	8	-7.93	-206.27	1.70
			Max. My	2	-7.93	-0.23	206.05
			Max. Vy	20	-12.59	206.02	1.39
			Max. Vx	2	-12.60	-0.23	206.05
			Max. Torque	4			-0.57
L5	130 - 128.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-19.88	-0.10	-0.12
			Max. Mx	8	-8.06	-225.24	1.91
			Max. My	2	-8.06	-0.25	225.04
			Max. Vy	20	-12.74	225.01	1.55
			Max. Vx	2	-12.75	-0.25	225.04
			Max. Torque	4			-0.52
L6	128.5 - 128.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-19.94	-0.09	-0.12
			Max. Mx	8	-8.12	-228.42	1.94
			Max. My	2	-8.11	-0.25	228.22
			Max. Vy	20	-12.76	228.20	1.58
			Max. Vx	2	-12.76	-0.25	228.22
			Max. Torque	6			-0.49
L7	128.25 - 123.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-21.04	0.06	-0.21
			Max. Mx	8	-8.89	-293.59	2.65
			Max. My	2	-8.89	-0.30	293.44
			Max. Vy	20	-13.33	293.43	2.13
			Max. Vx	2	-13.34	-0.30	293.44
			Max. Torque	6			-0.49
L8	123.25 - 118.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.45	0.35	-0.36
			Max. Mx	8	-12.43	-368.12	3.34
			Max. My	2	-12.42	-0.34	368.03
			Max. Vy	20	-17.62	368.04	2.68
			Max. Vx	2	-17.63	-0.34	368.03
			Max. Torque	23			0.61
L9	118.25 - 113.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.06	0.88	-0.65
			Max. Mx	20	-13.33	457.57	3.21
			Max. My	2	-13.32	-0.35	457.49
			Max. Vy	20	-18.18	457.57	3.21
			Max. Vx	2	-18.19	-0.35	457.49

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	23			0.77
L10	113.25 - 109	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.45	1.35	-0.90
			Max. Mx	20	-14.11	535.82	3.67
			Max. My	2	-14.11	-0.36	535.69
			Max. Vy	20	-18.64	535.82	3.67
			Max. Vx	2	-18.65	-0.36	535.69
			Max. Torque	23			0.90
L11	109 - 108.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.53	1.38	-0.92
			Max. Mx	20	-14.18	540.48	3.69
			Max. My	2	-14.17	-0.36	540.35
			Max. Vy	20	-18.66	540.48	3.69
			Max. Vx	2	-18.67	-0.36	540.35
			Max. Torque	23			0.91
L12	108.75 - 104.17	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.17	1.89	-1.20
			Max. Mx	20	-15.15	627.18	4.18
			Max. My	2	-15.15	-0.37	626.98
			Max. Vy	20	-19.19	627.18	4.18
			Max. Vx	2	-19.20	-0.37	626.98
			Max. Torque	23			1.07
L13	104.17 - 103.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.28	1.92	-1.22
			Max. Mx	20	-15.24	631.99	4.21
			Max. My	2	-15.23	-0.36	631.78
			Max. Vy	20	-19.21	631.99	4.21
			Max. Vx	2	-19.22	-0.36	631.78
			Max. Torque	23			1.08
L14	103.92 - 103.17	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.61	2.01	-1.26
			Max. Mx	20	-15.46	646.43	4.29
			Max. My	2	-15.45	-0.37	646.22
			Max. Vy	20	-19.30	646.43	4.29
			Max. Vx	2	-19.31	-0.37	646.22
			Max. Torque	23			1.10
L15	103.17 - 102.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.74	2.04	-1.28
			Max. Mx	20	-15.55	651.27	4.32
			Max. My	2	-15.54	-0.36	651.05
			Max. Vy	20	-19.33	651.27	4.32
			Max. Vx	2	-19.34	-0.36	651.05
			Max. Torque	23			1.11
L16	102.92 - 102.42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.98	2.09	-1.31
			Max. Mx	20	-15.72	660.95	4.37
			Max. My	2	-15.71	-0.37	660.73
			Max. Vy	20	-19.39	660.95	4.37
			Max. Vx	2	-19.40	-0.37	660.73
			Max. Torque	23			1.13
L17	102.42 - 102.17	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.10	2.12	-1.32
			Max. Mx	20	-15.80	665.80	4.40
			Max. My	2	-15.79	-0.36	665.58
			Max. Vy	20	-19.42	665.80	4.40
			Max. Vx	2	-19.43	-0.36	665.58
			Max. Torque	23			1.13
L18	102.17 - 100.92	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.68	2.26	-1.40
			Max. Mx	20	-16.19	690.18	4.53
			Max. My	2	-16.18	-0.37	689.94
			Max. Vy	20	-19.57	690.18	4.53

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-19.58	-0.37	689.94
			Max. Torque	23			1.17
L19	100.92 - 100.67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.79	2.29	-1.42
			Max. Mx	20	-16.28	695.08	4.56
			Max. My	2	-16.27	-0.37	694.83
			Max. Vy	20	-19.60	695.08	4.56
			Max. Vx	2	-19.60	-0.37	694.83
			Max. Torque	23			1.18
L20	100.67 - 99.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.30	2.42	-1.49
			Max. Mx	20	-16.62	716.52	4.67
			Max. My	2	-16.61	-0.37	716.26
			Max. Vy	20	-19.73	716.52	4.67
			Max. Vx	2	-19.74	-0.37	716.26
			Max. Torque	25			1.21
L21	99.58 - 99.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.43	2.45	-1.50
			Max. Mx	20	-16.71	721.46	4.70
			Max. My	2	-16.71	-0.36	721.19
			Max. Vy	20	-19.76	721.46	4.70
			Max. Vx	2	-19.76	-0.36	721.19
			Max. Torque	25			1.22
L22	99.33 - 95.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.78	1.88	1.32
			Max. Mx	8	-20.20	-813.59	7.94
			Max. My	2	-20.19	-0.96	815.12
			Max. Vy	20	-23.02	812.80	6.74
			Max. Vx	2	-23.13	-0.96	815.12
			Max. Torque	25			1.22
L23	95.25 - 95	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.90	1.92	1.30
			Max. Mx	8	-20.29	-819.35	7.97
			Max. My	2	-20.27	-0.95	820.91
			Max. Vy	20	-23.05	818.57	6.78
			Max. Vx	2	-23.16	-0.95	820.91
			Max. Torque	17			-0.75
L24	95 - 90	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.32	2.72	0.86
			Max. Mx	8	-21.80	-935.96	8.52
			Max. My	2	-21.79	-0.80	938.11
			Max. Vy	20	-23.66	935.40	7.41
			Max. Vx	2	-23.76	-0.80	938.11
			Max. Torque	24			0.95
L25	90 - 85	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.75	3.54	0.40
			Max. Mx	8	-23.35	-1055.53	9.07
			Max. My	2	-23.34	-0.64	1058.27
			Max. Vy	20	-24.24	1055.21	8.04
			Max. Vx	2	-24.35	-0.64	1058.27
			Max. Torque	24			1.19
L26	85 - 80.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.94	4.29	-0.01
			Max. Mx	8	-24.77	-1165.59	9.57
			Max. My	2	-24.76	-0.50	1168.87
			Max. Vy	20	-24.75	1165.49	8.61
			Max. Vx	2	-24.86	-0.50	1168.87
			Max. Torque	24			1.40
L27	80.5 - 80.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.08	4.34	-0.04
			Max. Mx	8	-24.88	-1171.78	9.59
			Max. My	2	-24.87	-0.49	1175.09
			Max. Vy	20	-24.78	1171.69	8.64
			Max. Vx	2	-24.88	-0.49	1175.09
			Max. Torque	24			1.42

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L28	80.25 - 75.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-52.94	5.19	-0.51
			Max. Mx	20	-26.84	1297.16	9.26
			Max. My	2	-26.83	-0.33	1300.90
			Max. Vy	20	-25.38	1297.16	9.26
			Max. Vx	2	-25.49	-0.33	1300.90
			Max. Torque	24			1.66
L29	75.25 - 73.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.90	5.48	-0.68
			Max. Mx	20	-27.49	1339.73	9.47
			Max. My	2	-27.49	-0.28	1343.59
			Max. Vy	20	-25.59	1339.73	9.47
			Max. Vx	2	-25.69	-0.28	1343.59
			Max. Torque	24			1.74
L30	73.58 - 73.33	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.04	5.52	-0.70
			Max. Mx	20	-27.61	1346.13	9.50
			Max. My	2	-27.60	-0.27	1350.01
			Max. Vy	20	-25.61	1346.13	9.50
			Max. Vx	2	-25.71	-0.27	1350.01
			Max. Torque	24			1.75
L31	73.33 - 69	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-54.80	5.75	-0.83
			Max. Mx	20	-28.13	1380.31	9.66
			Max. My	2	-28.12	-0.22	1384.28
			Max. Vy	20	-25.77	1380.31	9.66
			Max. Vx	2	-25.87	-0.22	1384.28
			Max. Torque	24			1.82
L32	69 - 67	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.95	6.63	-1.32
			Max. Mx	20	-31.23	1510.92	10.28
			Max. My	2	-31.22	-0.05	1515.23
			Max. Vy	20	-26.42	1510.92	10.28
			Max. Vx	2	-26.53	-0.05	1515.23
			Max. Torque	24			2.06
L33	67 - 66.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.10	6.68	-1.35
			Max. Mx	20	-31.34	1517.54	10.31
			Max. My	2	-31.34	-0.04	1521.86
			Max. Vy	20	-26.45	1517.54	10.31
			Max. Vx	2	-26.55	-0.04	1521.86
			Max. Torque	24			2.08
L34	66.75 - 66.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-59.25	6.72	-1.37
			Max. Mx	20	-31.46	1524.15	10.34
			Max. My	2	-31.45	-0.04	1528.50
			Max. Vy	20	-26.48	1524.15	10.34
			Max. Vx	2	-26.58	-0.04	1528.50
			Max. Torque	24			2.09
L35	66.5 - 61.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.33	7.60	-1.87
			Max. Mx	20	-33.67	1657.98	10.96
			Max. My	2	-33.66	0.13	1662.66
			Max. Vy	20	-27.03	1657.98	10.96
			Max. Vx	2	-27.14	0.13	1662.66
			Max. Torque	24			2.33
L36	61.5 - 56.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-65.42	8.50	-2.37
			Max. Mx	20	-35.91	1794.51	11.58
			Max. My	2	-35.91	0.31	1799.52
			Max. Vy	20	-27.56	1794.51	11.58
			Max. Vx	2	-27.67	0.31	1799.52
			Max. Torque	24			2.58
L37	56.5 - 51.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.53	9.41	-2.88
			Max. Mx	20	-38.18	1933.64	12.18

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-38.18	0.49	1938.97
			Max. Vy	20	-28.07	1933.64	12.18
			Max. Vx	2	-28.18	0.49	1938.97
			Max. Torque	24			2.83
L38	51.5 - 48.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.56	10.00	-3.22
			Max. Mx	20	-39.67	2025.45	12.58
			Max. My	2	-39.67	0.61	2030.99
			Max. Vy	20	-28.41	2025.45	12.58
			Max. Vx	2	-28.52	0.61	2030.99
			Max. Torque	24			3.02
L39	48.25 - 48	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.74	10.05	-3.25
			Max. Mx	20	-39.82	2032.56	12.60
			Max. My	2	-39.81	0.62	2038.11
			Max. Vy	20	-28.43	2032.56	12.60
			Max. Vx	2	-28.53	0.62	2038.11
			Max. Torque	24			3.03
L40	48 - 44.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.38	10.74	-3.64
			Max. Mx	20	-41.82	2140.02	13.06
			Max. My	2	-41.81	0.75	2145.81
			Max. Vy	20	-28.85	2140.02	13.06
			Max. Vx	2	-28.96	0.75	2145.81
			Max. Torque	24			3.25
L41	44.25 - 44	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.57	10.79	-3.67
			Max. Mx	20	-41.97	2147.24	13.09
			Max. My	2	-41.96	0.77	2153.04
			Max. Vy	20	-28.88	2147.24	13.09
			Max. Vx	2	-28.98	0.77	2153.04
			Max. Torque	24			3.27
L42	44 - 43.08	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.25	10.96	-3.76
			Max. Mx	20	-42.49	2173.87	13.20
			Max. My	2	-42.48	0.80	2179.73
			Max. Vy	20	-28.98	2173.87	13.20
			Max. Vx	2	-29.09	0.80	2179.73
			Max. Torque	24			3.32
L43	43.08 - 42.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-74.44	11.01	-3.79
			Max. Mx	20	-42.64	2181.12	13.23
			Max. My	2	-42.63	0.81	2187.00
			Max. Vy	20	-29.01	2181.12	13.23
			Max. Vx	2	-29.11	0.81	2187.00
			Max. Torque	24			3.34
L44	42.83 - 37.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78.12	11.94	-4.32
			Max. Mx	20	-45.47	2327.57	13.82
			Max. My	2	-45.47	1.00	2333.74
			Max. Vy	20	-29.54	2327.57	13.82
			Max. Vx	2	-29.65	1.00	2333.74
			Max. Torque	24			3.63
L45	37.83 - 30	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-80.95	12.66	-4.73
			Max. Mx	20	-47.67	2441.49	14.27
			Max. My	2	-47.67	1.15	2447.90
			Max. Vy	20	-29.92	2441.49	14.27
			Max. Vx	2	-30.03	1.15	2447.90
			Max. Torque	24			3.85
L46	30 - 29	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-87.12	13.59	-5.26
			Max. Mx	20	-52.78	2592.73	14.86
			Max. My	2	-52.78	1.34	2599.43
			Max. Vy	20	-30.52	2592.73	14.86
			Max. Vx	2	-30.62	1.34	2599.43
			Max. Torque	24			4.14

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L47	29 - 24	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-91.00	14.50	-5.78
			Max. Mx	20	-55.87	2746.52	15.45
			Max. My	2	-55.86	1.54	2753.51
			Max. Vy	20	-30.97	2746.52	15.45
			Max. Vx	2	-31.08	1.54	2753.51
			Max. Torque	24			4.42
L48	24 - 23.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-91.20	14.55	-5.81
			Max. Mx	20	-56.03	2754.27	15.48
			Max. My	2	-56.03	1.55	2761.27
			Max. Vy	20	-30.99	2754.27	15.48
			Max. Vx	2	-31.09	1.55	2761.27
			Max. Torque	24			4.44
L49	23.75 - 23.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-91.39	14.59	-5.83
			Max. Mx	20	-56.19	2762.03	15.51
			Max. My	2	-56.18	1.56	2769.04
			Max. Vy	20	-31.01	2762.03	15.51
			Max. Vx	2	-31.11	1.56	2769.04
			Max. Torque	24			4.45
L50	23.5 - 18.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-95.28	15.47	-6.34
			Max. Mx	20	-59.30	2918.29	16.09
			Max. My	2	-59.29	1.76	2925.58
			Max. Vy	20	-31.46	2918.29	16.09
			Max. Vx	2	-31.57	1.76	2925.58
			Max. Torque	24			4.75
L51	18.5 - 13.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-99.16	16.34	-6.84
			Max. Mx	20	-62.44	3076.74	16.66
			Max. My	2	-62.44	1.96	3084.31
			Max. Vy	20	-31.89	3076.74	16.66
			Max. Vx	2	-32.00	1.96	3084.31
			Max. Torque	24			5.05
L52	13.5 - 11	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-101.10	16.77	-7.09
			Max. Mx	20	-64.02	3156.77	16.94
			Max. My	2	-64.02	2.07	3164.48
			Max. Vy	20	-32.11	3156.77	16.94
			Max. Vx	2	-32.22	2.07	3164.48
			Max. Torque	24			5.20
L53	11 - 10.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-101.29	16.82	-7.12
			Max. Mx	20	-64.19	3164.81	16.97
			Max. My	2	-64.19	2.08	3172.52
			Max. Vy	20	-32.12	3164.81	16.97
			Max. Vx	2	-32.22	2.08	3172.52
			Max. Torque	24			5.21
L54	10.75 - 6	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-104.88	17.61	-7.57
			Max. Mx	20	-67.14	3318.34	17.51
			Max. My	2	-67.14	2.27	3326.30
			Max. Vy	20	-32.50	3318.34	17.51
			Max. Vx	2	-32.60	2.27	3326.30
			Max. Torque	24			5.51
L55	6 - 5.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-105.06	17.65	-7.60
			Max. Mx	20	-67.31	3326.47	17.53
			Max. My	2	-67.31	2.28	3334.44
			Max. Vy	20	-32.50	3326.47	17.53
			Max. Vx	2	-32.60	2.28	3334.44
			Max. Torque	24			5.53
L56	5.75 - 3.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-106.89	18.04	-7.82
			Max. Mx	20	-68.82	3408.04	17.81
			Max. My	2	-68.82	2.39	3416.13
			Max. Vy	20	-32.72	3408.04	17.81
			Max. Vx	2	-32.83	2.39	3416.13

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	24			5.68
L57	3.25 - 3	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-107.04	18.08	-7.85
			Max. Mx	20	-68.95	3416.22	17.84
			Max. My	2	-68.95	2.40	3424.33
			Max. Vy	20	-32.72	3416.22	17.84
			Max. Vx	2	-32.83	2.40	3424.33
			Max. Torque	24			5.70
L58	3 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-108.79	18.50	-8.09
			Max. Mx	20	-70.40	3514.78	18.17
			Max. My	2	-70.40	2.53	3523.04
			Max. Vy	20	-32.95	3514.78	18.17
			Max. Vx	2	-33.06	2.53	3523.04
			Max. Torque	24			5.89

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	108.79	-0.00	0.00
	Max. H_x	21	52.81	32.92	0.13
	Max. H_z	3	52.81	0.01	33.03
	Max. M_x	2	3523.04	0.01	33.03
	Max. M_z	8	3510.06	-32.92	0.11
	Max. Torsion	24	5.89	16.54	28.49
	Min. Vert	21	52.81	32.92	0.13
	Min. H_x	9	52.81	-32.92	0.11
	Min. H_z	15	52.81	-0.01	-32.90
	Min. M_x	14	-3503.94	-0.01	-32.90
	Min. M_z	20	-3514.78	32.92	0.13
	Min. Torsion	12	-5.55	-16.40	-28.49

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	58.67	-0.00	-0.00	0.29	1.92	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	70.41	-0.01	-33.03	-3523.04	2.53	-5.12
0.9 Dead+1.0 Wind 0 deg - No Ice	52.81	-0.01	-33.03	-3479.79	1.94	-5.13
1.2 Dead+1.0 Wind 30 deg - No Ice	70.41	16.53	-28.48	-3032.87	-1764.60	-2.98
0.9 Dead+1.0 Wind 30 deg - No Ice	52.81	16.53	-28.48	-2995.65	-1743.42	-2.99
1.2 Dead+1.0 Wind 60 deg - No Ice	70.41	28.52	-16.49	-1759.03	-3041.15	-0.21
0.9 Dead+1.0 Wind 60 deg - No Ice	52.81	28.52	-16.49	-1737.45	-3004.28	-0.22
1.2 Dead+1.0 Wind 90 deg - No Ice	70.41	32.92	-0.11	-17.80	-3510.06	2.58
0.9 Dead+1.0 Wind 90 deg - No Ice	52.81	32.92	-0.11	-17.60	-3467.50	2.57
1.2 Dead+1.0 Wind 120 deg - No Ice	70.41	28.61	16.34	1735.05	-3053.33	4.71
0.9 Dead+1.0 Wind 120 deg - No Ice	52.81	28.61	16.34	1713.70	-3016.29	4.70
1.2 Dead+1.0 Wind 150 deg - No Ice	70.41	16.40	28.49	3033.40	-1742.99	5.55
0.9 Dead+1.0 Wind 150 deg - No Ice	52.81	16.40	28.49	2996.05	-1722.13	5.55

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
1.2 Dead+1.0 Wind 180 deg - No Ice	70.41	0.01	32.90	3503.94	2.16	5.13
0.9 Dead+1.0 Wind 180 deg - No Ice	52.81	0.01	32.90	3460.81	1.56	5.13
1.2 Dead+1.0 Wind 210 deg - No Ice	70.41	-16.38	28.48	3033.23	1747.36	3.33
0.9 Dead+1.0 Wind 210 deg - No Ice	52.81	-16.38	28.48	2995.87	1725.30	3.34
1.2 Dead+1.0 Wind 240 deg - No Ice	70.41	-28.60	16.33	1734.75	3057.85	0.41
0.9 Dead+1.0 Wind 240 deg - No Ice	52.81	-28.60	16.33	1713.38	3019.61	0.42
1.2 Dead+1.0 Wind 270 deg - No Ice	70.41	-32.92	-0.13	-18.17	3514.78	-2.58
0.9 Dead+1.0 Wind 270 deg - No Ice	52.81	-32.92	-0.13	-17.99	3471.01	-2.57
1.2 Dead+1.0 Wind 300 deg - No Ice	70.41	-28.53	-16.51	-1759.36	3046.05	-4.92
0.9 Dead+1.0 Wind 300 deg - No Ice	52.81	-28.53	-16.51	-1737.80	3007.98	-4.91
1.2 Dead+1.0 Wind 330 deg - No Ice	70.41	-16.54	-28.49	-3033.07	1769.62	-5.89
0.9 Dead+1.0 Wind 330 deg - No Ice	52.81	-16.54	-28.49	-2995.86	1747.25	-5.89
1.2 Dead+1.0 Ice+1.0 Temp	108.79	0.00	-0.00	8.09	18.50	-0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	108.79	-0.00	-8.45	-921.39	18.77	-1.87
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	108.79	4.22	-7.29	-793.01	-447.06	-1.12
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	108.79	7.30	-4.22	-456.04	-784.54	-0.12
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	108.79	8.42	-0.02	4.47	-908.49	0.91
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	108.79	7.31	4.19	467.38	-787.18	1.70
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	108.79	4.20	7.29	809.38	-442.72	2.04
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	108.79	0.00	8.42	933.56	18.51	1.86
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	108.79	-4.20	7.29	809.25	479.76	1.19
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	108.79	-7.31	4.19	467.15	824.32	0.16
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	108.79	-8.42	-0.03	4.20	945.78	-0.91
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	108.79	-7.30	-4.22	-456.28	821.96	-1.75
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	108.79	-4.23	-7.29	-793.15	484.57	-2.11
Dead+Wind 0 deg - Service	58.67	-0.00	-6.81	-721.02	2.00	-1.06
Dead+Wind 30 deg - Service	58.67	3.41	-5.87	-620.74	-359.80	-0.62
Dead+Wind 60 deg - Service	58.67	5.88	-3.40	-359.94	-621.16	-0.04
Dead+Wind 90 deg - Service	58.67	6.79	-0.02	-3.44	-717.11	0.53
Dead+Wind 120 deg - Service	58.67	5.90	3.37	355.44	-623.65	0.97
Dead+Wind 150 deg - Service	58.67	3.38	5.87	621.25	-355.37	1.15
Dead+Wind 180 deg - Service	58.67	0.00	6.78	717.50	1.92	1.06
Dead+Wind 210 deg - Service	58.67	-3.38	5.87	621.22	359.23	0.69
Dead+Wind 240 deg - Service	58.67	-5.90	3.37	355.38	627.54	0.09
Dead+Wind 270 deg - Service	58.67	-6.79	-0.03	-3.51	721.03	-0.53
Dead+Wind 300 deg - Service	58.67	-5.88	-3.40	-360.01	625.13	-1.02
Dead+Wind 330 deg - Service	58.67	-3.41	-5.87	-620.78	363.79	-1.22

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	-58.67	0.00	0.00	58.67	0.00	0.000%
2	-0.01	-70.41	-33.03	0.01	70.41	33.03	0.001%
3	-0.01	-52.81	-33.03	0.01	52.81	33.03	0.000%
4	16.53	-70.41	-28.48	-16.53	70.41	28.48	0.000%
5	16.53	-52.81	-28.48	-16.53	52.81	28.48	0.000%
6	28.52	-70.41	-16.49	-28.52	70.41	16.49	0.000%
7	28.52	-52.81	-16.49	-28.52	52.81	16.49	0.000%
8	32.93	-70.41	-0.11	-32.92	70.41	0.11	0.002%
9	32.93	-52.81	-0.11	-32.92	52.81	0.11	0.002%
10	28.61	-70.41	16.34	-28.61	70.41	-16.34	0.000%
11	28.61	-52.81	16.34	-28.61	52.81	-16.34	0.000%
12	16.40	-70.41	28.49	-16.40	70.41	-28.49	0.000%
13	16.40	-52.81	28.49	-16.40	52.81	-28.49	0.000%
14	0.01	-70.41	32.90	-0.01	70.41	-32.90	0.001%
15	0.01	-52.81	32.90	-0.01	52.81	-32.90	0.000%
16	-16.38	-70.41	28.48	16.38	70.41	-28.48	0.000%
17	-16.38	-52.81	28.48	16.38	52.81	-28.48	0.000%
18	-28.60	-70.41	16.33	28.60	70.41	-16.33	0.000%
19	-28.60	-52.81	16.33	28.60	52.81	-16.33	0.000%
20	-32.93	-70.41	-0.13	32.92	70.41	0.13	0.002%
21	-32.93	-52.81	-0.13	32.92	52.81	0.13	0.002%
22	-28.53	-70.41	-16.51	28.53	70.41	16.51	0.000%
23	-28.53	-52.81	-16.51	28.53	52.81	16.51	0.000%
24	-16.54	-70.41	-28.49	16.54	70.41	28.49	0.000%
25	-16.54	-52.81	-28.49	16.54	52.81	28.49	0.000%
26	0.00	-108.79	0.00	-0.00	108.79	0.00	0.000%
27	-0.00	-108.79	-8.45	0.00	108.79	8.45	0.000%
28	4.22	-108.79	-7.29	-4.22	108.79	7.29	0.000%
29	7.30	-108.79	-4.22	-7.30	108.79	4.22	0.000%
30	8.42	-108.79	-0.02	-8.42	108.79	0.02	0.000%
31	7.31	-108.79	4.19	-7.31	108.79	-4.19	0.000%
32	4.20	-108.79	7.29	-4.20	108.79	-7.29	0.000%
33	0.00	-108.79	8.42	-0.00	108.79	-8.42	0.000%
34	-4.20	-108.79	7.29	4.20	108.79	-7.29	0.000%
35	-7.31	-108.79	4.19	7.31	108.79	-4.19	0.000%
36	-8.42	-108.79	-0.03	8.42	108.79	0.03	0.000%
37	-7.30	-108.79	-4.22	7.30	108.79	4.22	0.000%
38	-4.23	-108.79	-7.29	4.23	108.79	7.29	0.000%
39	-0.00	-58.67	-6.81	0.00	58.67	6.81	0.002%
40	3.41	-58.67	-5.87	-3.41	58.67	5.87	0.000%
41	5.88	-58.67	-3.40	-5.88	58.67	3.40	0.000%
42	6.79	-58.67	-0.02	-6.79	58.67	0.02	0.002%
43	5.90	-58.67	3.37	-5.90	58.67	-3.37	0.000%
44	3.38	-58.67	5.87	-3.38	58.67	-5.87	0.000%
45	0.00	-58.67	6.78	-0.00	58.67	-6.78	0.002%
46	-3.38	-58.67	5.87	3.38	58.67	-5.87	0.000%
47	-5.90	-58.67	3.37	5.90	58.67	-3.37	0.000%
48	-6.79	-58.67	-0.03	6.79	58.67	0.03	0.002%
49	-5.88	-58.67	-3.40	5.88	58.67	3.40	0.000%
50	-3.41	-58.67	-5.87	3.41	58.67	5.87	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00000001
2	Yes	20	0.00000001	0.00014014
3	Yes	20	0.00000001	0.00010971
4	Yes	24	0.00000001	0.00014826
5	Yes	24	0.00000001	0.00010523
6	Yes	25	0.00000001	0.00007406
7	Yes	24	0.00000001	0.00010728
8	Yes	18	0.00002956	0.00012705
9	Yes	18	0.00001930	0.00010075
10	Yes	25	0.00000001	0.00007476
11	Yes	24	0.00000001	0.00010840
12	Yes	24	0.00000001	0.00014381
13	Yes	24	0.00000001	0.00010213
14	Yes	20	0.00000001	0.00014071
15	Yes	20	0.00000001	0.00011022
16	Yes	25	0.00000001	0.00007421
17	Yes	24	0.00000001	0.00010763
18	Yes	24	0.00000001	0.00014830
19	Yes	24	0.00000001	0.00010530
20	Yes	18	0.00002956	0.00012951
21	Yes	18	0.00001930	0.00010280
22	Yes	24	0.00000001	0.00014704
23	Yes	24	0.00000001	0.00010429
24	Yes	25	0.00000001	0.00007630
25	Yes	24	0.00000001	0.00011062
26	Yes	15	0.00000001	0.00009546
27	Yes	22	0.00000001	0.00009642
28	Yes	22	0.00000001	0.00011527
29	Yes	22	0.00000001	0.00011615
30	Yes	22	0.00000001	0.00009461
31	Yes	22	0.00000001	0.00011796
32	Yes	22	0.00000001	0.00011543
33	Yes	22	0.00000001	0.00009685
34	Yes	22	0.00000001	0.00012135
35	Yes	22	0.00000001	0.00012051
36	Yes	22	0.00000001	0.00009768
37	Yes	22	0.00000001	0.00011911
38	Yes	22	0.00000001	0.00012161
39	Yes	16	0.00009412	0.00009959
40	Yes	18	0.00000001	0.00009376
41	Yes	18	0.00000001	0.00010018
42	Yes	16	0.00009415	0.00005105
43	Yes	18	0.00000001	0.00010886
44	Yes	18	0.00000001	0.00008841
45	Yes	16	0.00009410	0.00009887
46	Yes	18	0.00000001	0.00010715
47	Yes	18	0.00000001	0.00009594
48	Yes	16	0.00009410	0.00005127
49	Yes	18	0.00000001	0.00009157
50	Yes	18	0.00000001	0.00011597

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	21.18	39	1.53	0.00
L2	145 - 140	19.59	39	1.50	0.00
L3	140 - 135	18.05	39	1.44	0.00
L4	135 - 130	16.58	39	1.36	0.00
L5	130 - 128.5	15.21	39	1.26	0.00
L6	128.5 - 128.25	14.82	39	1.22	0.00
L7	128.25 - 123.25	14.76	39	1.22	0.00
L8	123.25 - 118.25	13.51	39	1.17	0.00
L9	118.25 - 113.25	12.31	39	1.11	0.00

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L10	113.25 - 109	11.19	39	1.04	0.00
L11	109 - 108.75	10.29	39	0.98	0.00
L12	108.75 - 104.17	10.23	39	0.98	0.00
L13	104.17 - 103.92	9.32	39	0.92	0.00
L14	103.92 - 103.17	9.28	39	0.91	0.00
L15	103.17 - 102.92	9.13	39	0.91	0.00
L16	102.92 - 102.42	9.09	39	0.90	0.00
L17	102.42 - 102.17	8.99	39	0.90	0.00
L18	102.17 - 100.92	8.94	39	0.90	0.00
L19	100.92 - 100.67	8.71	39	0.88	0.00
L20	100.67 - 99.58	8.67	39	0.88	0.00
L21	99.58 - 99.33	8.47	39	0.87	0.00
L22	99.33 - 95.25	8.42	39	0.87	0.00
L23	95.25 - 95	7.69	39	0.83	0.00
L24	95 - 90	7.65	39	0.83	0.00
L25	90 - 85	6.81	39	0.78	0.00
L26	85 - 80.5	6.02	39	0.72	0.00
L27	80.5 - 80.25	5.37	39	0.66	0.00
L28	80.25 - 75.25	5.34	39	0.66	0.00
L29	75.25 - 73.58	4.67	39	0.61	0.00
L30	73.58 - 73.33	4.46	39	0.60	0.00
L31	73.33 - 69	4.43	39	0.59	0.00
L32	72 - 67	4.26	39	0.58	0.00
L33	67 - 66.75	3.67	39	0.55	0.00
L34	66.75 - 66.5	3.64	39	0.54	0.00
L35	66.5 - 61.5	3.61	39	0.54	0.00
L36	61.5 - 56.5	3.07	39	0.49	0.00
L37	56.5 - 51.5	2.58	39	0.44	0.00
L38	51.5 - 48.25	2.14	39	0.39	0.00
L39	48.25 - 48	1.89	49	0.36	0.00
L40	48 - 44.25	1.87	49	0.36	0.00
L41	44.25 - 44	1.60	49	0.33	0.00
L42	44 - 43.08	1.58	49	0.33	0.00
L43	43.08 - 42.83	1.52	49	0.32	0.00
L44	42.83 - 37.83	1.50	49	0.32	0.00
L45	37.83 - 30	1.19	49	0.28	0.00
L46	34 - 29	0.97	49	0.25	0.00
L47	29 - 24	0.72	49	0.23	0.00
L48	24 - 23.75	0.50	49	0.19	0.00
L49	23.75 - 23.5	0.49	49	0.19	0.00
L50	23.5 - 18.5	0.48	49	0.19	0.00
L51	18.5 - 13.5	0.30	49	0.15	0.00
L52	13.5 - 11	0.16	49	0.11	0.00
L53	11 - 10.75	0.11	49	0.09	0.00
L54	10.75 - 6	0.10	49	0.09	0.00
L55	6 - 5.75	0.03	49	0.05	0.00
L56	5.75 - 3.25	0.03	49	0.05	0.00
L57	3.25 - 3	0.01	49	0.03	0.00
L58	3 - 0	0.01	49	0.03	0.00

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.0000	7770.00	39	21.18	1.53	0.00	6546
147.0000	RRUS 11	39	20.23	1.51	0.00	6546
143.0000	VHLP2-23	39	18.97	1.48	0.00	5264
138.0000	HORIZON COMPACT	39	17.45	1.41	0.00	3686
120.0000	AIR -32 B2A/B66AA	39	12.72	1.13	0.00	4855
99.0000	GPS_A	39	8.36	0.87	0.00	6274

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	150 - 145	103.39	2	7.47	0.01
L2	145 - 140	95.65	2	7.33	0.01
L3	140 - 135	88.13	2	7.05	0.01
L4	135 - 130	80.95	2	6.66	0.01
L5	130 - 128.5	74.26	2	6.13	0.01
L6	128.5 - 128.25	72.36	2	5.96	0.01
L7	128.25 - 123.25	72.05	2	5.95	0.01
L8	123.25 - 118.25	65.96	2	5.70	0.01
L9	118.25 - 113.25	60.14	2	5.42	0.01
L10	113.25 - 109	54.64	2	5.10	0.01
L11	109 - 108.75	50.24	2	4.80	0.01
L12	108.75 - 104.17	49.99	2	4.78	0.01
L13	104.17 - 103.92	45.55	2	4.48	0.01
L14	103.92 - 103.17	45.31	2	4.47	0.01
L15	103.17 - 102.92	44.62	2	4.43	0.01
L16	102.92 - 102.42	44.38	2	4.42	0.01
L17	102.42 - 102.17	43.92	2	4.40	0.01
L18	102.17 - 100.92	43.69	2	4.38	0.01
L19	100.92 - 100.67	42.56	2	4.32	0.01
L20	100.67 - 99.58	42.33	2	4.31	0.01
L21	99.58 - 99.33	41.35	2	4.25	0.01
L22	99.33 - 95.25	41.13	2	4.24	0.01
L23	95.25 - 95	37.58	2	4.08	0.01
L24	95 - 90	37.37	2	4.06	0.01
L25	90 - 85	33.25	2	3.80	0.01
L26	85 - 80.5	29.43	2	3.51	0.01
L27	80.5 - 80.25	26.25	2	3.24	0.01
L28	80.25 - 75.25	26.08	2	3.23	0.01
L29	75.25 - 73.58	22.82	2	3.00	0.01
L30	73.58 - 73.33	21.78	2	2.92	0.01
L31	73.33 - 69	21.63	2	2.91	0.01
L32	72 - 67	20.83	2	2.84	0.01
L33	67 - 66.75	17.93	2	2.67	0.00
L34	66.75 - 66.5	17.79	2	2.66	0.00
L35	66.5 - 61.5	17.65	2	2.65	0.00
L36	61.5 - 56.5	15.01	2	2.41	0.00
L37	56.5 - 51.5	12.61	2	2.17	0.00
L38	51.5 - 48.25	10.48	2	1.92	0.00
L39	48.25 - 48	9.22	2	1.76	0.00
L40	48 - 44.25	9.13	2	1.75	0.00
L41	44.25 - 44	7.81	2	1.61	0.00
L42	44 - 43.08	7.73	2	1.60	0.00
L43	43.08 - 42.83	7.42	2	1.57	0.00
L44	42.83 - 37.83	7.34	2	1.56	0.00
L45	37.83 - 30	5.81	2	1.37	0.00
L46	34 - 29	4.76	2	1.23	0.00
L47	29 - 24	3.52	2	1.12	0.00
L48	24 - 23.75	2.44	2	0.94	0.00
L49	23.75 - 23.5	2.39	2	0.93	0.00
L50	23.5 - 18.5	2.34	2	0.92	0.00
L51	18.5 - 13.5	1.48	2	0.74	0.00
L52	13.5 - 11	0.80	2	0.55	0.00
L53	11 - 10.75	0.53	2	0.46	0.00
L54	10.75 - 6	0.51	2	0.45	0.00
L55	6 - 5.75	0.16	2	0.25	0.00
L56	5.75 - 3.25	0.15	2	0.24	0.00
L57	3.25 - 3	0.05	2	0.15	0.00
L58	3 - 0	0.04	2	0.14	0.00

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
150.0000	7770.00	2	103.39	7.47	0.01	1401
147.0000	RRUS 11	2	98.73	7.39	0.01	1401
143.0000	VHLP2-23	2	92.61	7.23	0.01	1121
138.0000	HORIZON COMPACT	2	85.21	6.91	0.01	778
120.0000	AIR -32 B2A/B66AA	2	62.14	5.52	0.01	1011
99.0000	GPS_A	2	40.84	4.23	0.01	1298

Compression Checks
Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K
L1	150 - 145 (1)	TP15.7317x15x0.2188	5.0000	0.0000	0.0	10.9294	-3.68
L2	145 - 140 (2)	TP16.4634x15.7317x0.2188	5.0000	0.0000	0.0	11.4449	-4.00
L3	140 - 135 (3)	TP17.1951x16.4634x0.2188	5.0000	0.0000	0.0	11.9604	-7.50
L4	135 - 130 (4)	TP17.9268x17.1951x0.2188	5.0000	0.0000	0.0	12.4759	-7.93
L5	130 - 128.5 (5)	TP18.1463x17.9268x0.2188	1.5000	0.0000	0.0	12.6306	-8.06
L6	128.5 - 128.25 (6)	TP18.1829x18.1463x0.6688	0.2500	0.0000	0.0	37.7173	-8.12
L7	128.25 - 123.25 (7)	TP18.9146x18.1829x0.6438	5.0000	0.0000	0.0	37.8761	-8.89
L8	123.25 - 118.25 (8)	TP19.6463x18.9146x0.6188	5.0000	0.0000	0.0	37.9131	-12.43
L9	118.25 - 113.25 (9)	TP20.378x19.6463x0.6063	5.0000	0.0000	0.0	38.6001	-13.32
L10	113.25 - 109 (10)	TP21x20.378x0.5938	4.2500	0.0000	0.0	39.0174	-14.11
L11	109 - 108.75 (11)	TP21.0378x21x0.725	0.2500	0.0000	0.0	47.4201	-14.18
L12	108.75 - 104.17 (12)	TP21.7293x21.0378x0.7	4.5800	0.0000	0.0	47.4001	-15.15
L13	104.17 - 103.92 (13)	TP21.7671x21.7293x0.975	0.2500	0.0000	0.0	65.2767	-15.24
L14	103.92 - 103.17 (14)	TP21.8803x21.7671x0.95	0.7500	0.0000	0.0	64.0259	-15.46
L15	103.17 - 102.92 (15)	TP21.9181x21.8803x1.125	0.2500	0.0000	0.0	75.3229	-15.55
L16	102.92 - 102.42 (16)	TP21.9936x21.9181x1.1	0.5000	0.0000	0.0	74.0051	-15.72
L17	102.42 - 102.17 (17)	TP22.0313x21.9936x0.925	0.2500	0.0000	0.0	62.8652	-15.80
L18	102.17 - 100.92 (18)	TP22.2201x22.0313x0.925	1.2500	0.0000	0.0	63.4274	-16.19
L19	100.92 - 100.67 (19)	TP22.2578x22.2201x1	0.2500	0.0000	0.0	68.4502	-16.28
L20	100.67 - 99.58 (20)	TP22.4224x22.2578x1	1.0900	0.0000	0.0	68.9802	-16.62
L21	99.58 - 99.33 (21)	TP22.4602x22.4224x1.375	0.2500	0.0000	0.0	93.3546	-16.71
L22	99.33 - 95.25 (22)	TP23.0763x22.4602x1.325	4.0800	0.0000	0.0	92.8017	-20.19
L23	95.25 - 95 (23)	TP23.114x23.0763x1.025	0.2500	0.0000	0.0	72.9047	-20.27
L24	95 - 90 (24)	TP23.869x23.114x1	5.0000	0.0000	0.0	73.6382	-21.79
L25	90 - 85 (25)	TP24.624x23.869x0.9625	5.0000	0.0000	0.0	73.3329	-23.34
L26	85 - 80.5 (26)	TP25.3035x24.624x0.925	4.5000	0.0000	0.0	72.6114	-24.76

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K
L27	80.5 - 80.25 (27)	TP25.3413x25.3035x1.3	0.2500	0.0000	0.0	100.6370	-24.87
L28	80.25 - 75.25 (28)	TP26.0963x25.3413x1.25	5.0000	0.0000	0.0	100.0060	-26.83
L29	75.25 - 73.58 (29)	TP26.3484x26.0963x1.225	1.6700	0.0000	0.0	99.0993	-27.49
L30	73.58 - 73.33 (30)	TP26.3862x26.3484x1.225	0.2500	0.0000	0.0	99.2482	-27.60
L31	73.33 - 69 (31)	TP27.04x26.3862x1.2	4.3300	0.0000	0.0	98.0954	-28.12
L32	69 - 67 (32)	TP26.8969x26.087x1.2625	5.0000	0.0000	0.0	104.2100	-31.22
L33	67 - 66.75 (33)	TP26.9374x26.8969x1.2625	0.2500	0.0000	0.0	104.3750	-31.34
L34	66.75 - 66.5 (34)	TP26.9779x26.9374x1.3625	0.2500	0.0000	0.0	112.3810	-31.45
L35	66.5 - 61.5 (35)	TP27.7878x26.9779x1.3125	5.0000	0.0000	0.0	111.8910	-33.66
L36	61.5 - 56.5 (36)	TP28.5976x27.7878x1.2625	5.0000	0.0000	0.0	111.1240	-35.91
L37	56.5 - 51.5 (37)	TP29.4075x28.5976x1.2375	5.0000	0.0000	0.0	112.2500	-38.18
L38	51.5 - 48.25 (38)	TP29.9339x29.4075x1.2125	3.2500	0.0000	0.0	112.1360	-39.67
L39	48.25 - 48 (39)	TP29.9744x29.9339x1.6375	0.2500	0.0000	0.0	149.4140	-39.81
L40	48 - 44.25 (40)	TP30.5818x29.9744x1.6125	3.7500	0.0000	0.0	150.4160	-41.81
L41	44.25 - 44 (41)	TP30.6223x30.5818x1.7125	0.2500	0.0000	0.0	159.4160	-41.96
L42	44 - 43.08 (42)	TP30.7714x30.6223x1.7125	0.9200	0.0000	0.0	160.2380	-42.48
L43	43.08 - 42.83 (43)	TP30.8118x30.7714x1.7125	0.2500	0.0000	0.0	160.4610	-42.63
L44	42.83 - 37.83 (44)	TP31.6217x30.8118x1.6375	5.0000	0.0000	0.0	158.0990	-45.47
L45	37.83 - 30 (45)	TP32.89x31.6217x1.6125	7.8300	0.0000	0.0	159.0370	-47.67
L46	30 - 29 (46)	TP32.4616x31.6171x1.7063	5.0000	0.0000	0.0	168.9790	-52.78
L47	29 - 24 (47)	TP33.3062x32.4616x1.6563	5.0000	0.0000	0.0	168.7980	-55.86
L48	24 - 23.75 (48)	TP33.3484x33.3062x1.6563	0.2500	0.0000	0.0	169.0230	-56.03
L49	23.75 - 23.5 (49)	TP33.3906x33.3484x1.6563	0.2500	0.0000	0.0	169.2480	-56.18
L50	23.5 - 18.5 (50)	TP34.2352x33.3906x1.6063	5.0000	0.0000	0.0	168.7660	-59.29
L51	18.5 - 13.5 (51)	TP35.0797x34.2352x1.5563	5.0000	0.0000	0.0	167.9950	-62.44
L52	13.5 - 11 (52)	TP35.502x35.0797x1.5313	2.5000	0.0000	0.0	167.5020	-64.02
L53	11 - 10.75 (53)	TP35.5442x35.502x1.2313	0.2500	0.0000	0.0	136.0430	-64.19
L54	10.75 - 6 (54)	TP36.3465x35.5442x1.2563	4.7500	0.0000	0.0	141.9500	-67.14
L55	6 - 5.75 (55)	TP36.3888x36.3465x1.5313	0.2500	0.0000	0.0	171.6670	-67.16
L56	5.75 - 3.25 (56)	TP36.811x36.3888x1.5063	2.5000	0.0000	0.0	169.1900	-67.32
L57	3.25 - 3 (57)	TP36.8533x36.811x1.1563	0.2500	0.0000	0.0	132.7530	-68.83
L58	3 - 0 (58)	TP37.36x36.8533x1.1313	3.0000	0.0000	0.0	130.1280	-68.97

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft
L1	150 - 145 (1)	TP15.7317x15x0.2188	50.30
L2	145 - 140 (2)	TP16.4634x15.7317x0.2188	87.97
L3	140 - 135 (3)	TP17.1951x16.4634x0.2188	144.40
L4	135 - 130 (4)	TP17.9268x17.1951x0.2188	206.36
L5	130 - 128.5 (5)	TP18.1463x17.9268x0.2188	225.35
L6	128.5 - 128.25 (6)	TP18.1829x18.1463x0.6688	228.54
L7	128.25 - 123.25 (7)	TP18.9146x18.1829x0.6438	293.80
L8	123.25 - 118.25 (8)	TP19.6463x18.9146x0.6188	368.40
L9	118.25 - 113.25 (9)	TP20.378x19.6463x0.6063	457.88
L10	113.25 - 109 (10)	TP21x20.378x0.5938	536.08
L11	109 - 108.75 (11)	TP21.0378x21x0.725	540.74
L12	108.75 - 104.17 (12)	TP21.7293x21.0378x0.7	627.42
L13	104.17 - 103.92 (13)	TP21.7671x21.7293x0.975	632.23
L14	103.92 - 103.17 (14)	TP21.8803x21.7671x0.95	646.68
L15	103.17 - 102.92 (15)	TP21.9181x21.8803x1.125	651.52
L16	102.92 - 102.42 (16)	TP21.9936x21.9181x1.1	661.20
L17	102.42 - 102.17 (17)	TP22.0313x21.9936x0.925	666.06
L18	102.17 - 100.92 (18)	TP22.2201x22.0313x0.925	690.45
L19	100.92 - 100.67 (19)	TP22.2578x22.2201x1	695.35
L20	100.67 - 99.58 (20)	TP22.4224x22.2578x1	716.79
L21	99.58 - 99.33 (21)	TP22.4602x22.4224x1.375	721.73
L22	99.33 - 95.25 (22)	TP23.0763x22.4602x1.325	815.13
L23	95.25 - 95 (23)	TP23.114x23.0763x1.025	820.91
L24	95 - 90 (24)	TP23.869x23.114x1	938.11
L25	90 - 85 (25)	TP24.624x23.869x0.9625	1058.27
L26	85 - 80.5 (26)	TP25.3035x24.624x0.925	1168.88
L27	80.5 - 80.25 (27)	TP25.3413x25.3035x1.3	1175.08
L28	80.25 - 75.25 (28)	TP26.0963x25.3413x1.25	1300.90
L29	75.25 - 73.58 (29)	TP26.3484x26.0963x1.225	1343.59
L30	73.58 - 73.33 (30)	TP26.3862x26.3484x1.225	1350.01
L31	73.33 - 69 (31)	TP27.04x26.3862x1.2	1384.28
L32	69 - 67 (32)	TP26.8969x26.087x1.2625	1515.23
L33	67 - 66.75 (33)	TP26.9374x26.8969x1.2625	1521.86
L34	66.75 - 66.5 (34)	TP26.9779x26.9374x1.3625	1528.50
L35	66.5 - 61.5 (35)	TP27.7878x26.9779x1.3125	1662.66

Section No.	Elevation ft	Size	M_{ux} kip-ft
L36	61.5 - 56.5 (36)	TP28.5976x27.7878x1.26 25	1799.52
L37	56.5 - 51.5 (37)	TP29.4075x28.5976x1.23 75	1938.97
L38	51.5 - 48.25 (38)	TP29.9339x29.4075x1.21 25	2030.99
L39	48.25 - 48 (39)	TP29.9744x29.9339x1.63 75	2038.12
L40	48 - 44.25 (40)	TP30.5818x29.9744x1.61 25	2145.81
L41	44.25 - 44 (41)	TP30.6223x30.5818x1.71 25	2153.04
L42	44 - 43.08 (42)	TP30.7714x30.6223x1.71 25	2179.72
L43	43.08 - 42.83 (43)	TP30.8118x30.7714x1.71 25	2186.99
L44	42.83 - 37.83 (44)	TP31.6217x30.8118x1.63 75	2333.74
L45	37.83 - 30 (45)	TP32.89x31.6217x1.6125	2447.90
L46	30 - 29 (46)	TP32.4616x31.6171x1.70 63	2599.43
L47	29 - 24 (47)	TP33.3062x32.4616x1.65 63	2753.51
L48	24 - 23.75 (48)	TP33.3484x33.3062x1.65 63	2761.28
L49	23.75 - 23.5 (49)	TP33.3906x33.3484x1.65 63	2769.04
L50	23.5 - 18.5 (50)	TP34.2352x33.3906x1.60 63	2925.58
L51	18.5 - 13.5 (51)	TP35.0797x34.2352x1.55 63	3084.31
L52	13.5 - 11 (52)	TP35.502x35.0797x1.531 3	3164.47
L53	11 - 10.75 (53)	TP35.5442x35.502x1.231 3	3172.53
L54	10.75 - 6 (54)	TP36.3465x35.5442x1.25 63	3326.30
L55	6 - 5.75 (55)	TP36.3888x36.3465x1.53 13	3326.30
L56	5.75 - 3.25 (56)	TP36.811x36.3888x1.506 3	3334.44
L57	3.25 - 3 (57)	TP36.8533x36.811x1.156 3	3416.13
L58	3 - 0 (58)	TP37.36x36.8533x1.1313	3424.33

Pole Shear Design Data

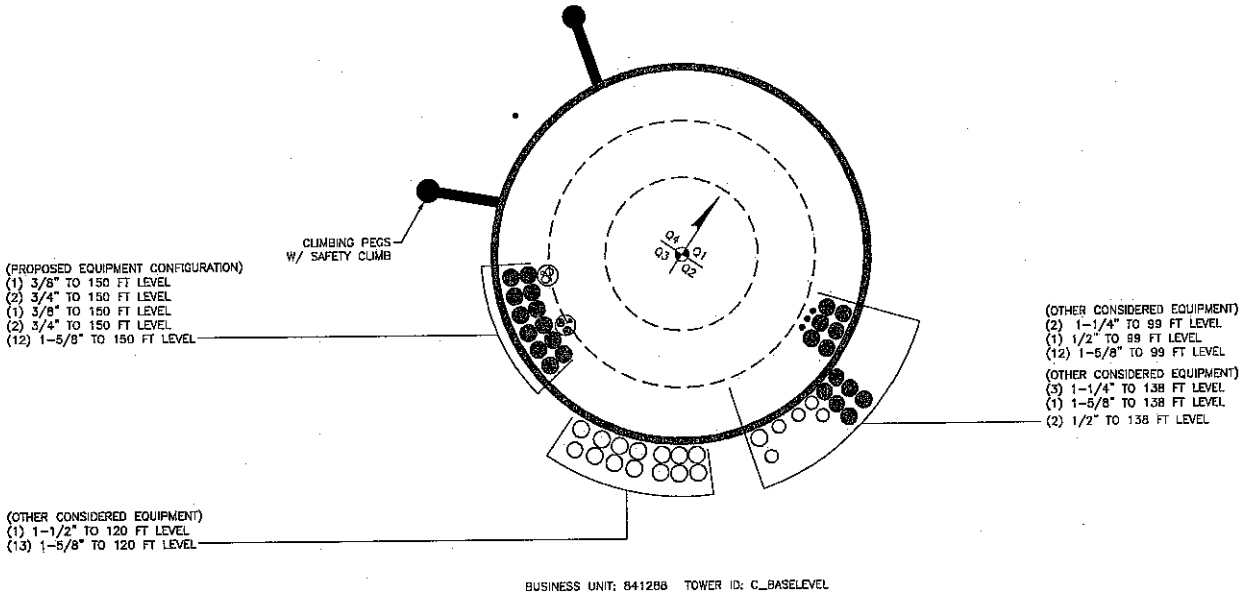
Section No.	Elevation ft	Size	Actual V_u K	Actual T_u kip-ft
L1	150 - 145 (1)	TP15.7317x15x0.2188	7.17	0.02
L2	145 - 140 (2)	TP16.4634x15.7317x0.21 88	7.90	0.11
L3	140 - 135 (3)	TP17.1951x16.4634x0.21 88	12.20	0.49
L4	135 - 130 (4)	TP17.9268x17.1951x0.21 88	12.61	0.49
L5	130 - 128.5 (5)	TP18.1463x17.9268x0.21 88	12.76	0.49
L6	128.5 - 128.25 (6)	TP18.1829x18.1463x0.66 88	12.78	0.49
L7	128.25 - 123.25 (7)	TP18.9146x18.1829x0.64 38	13.35	0.49
L8	123.25 - 118.25 (8)	TP19.6463x18.9146x0.61 88	17.64	0.49
L9	118.25 - 113.25 (9)	TP20.378x19.6463x0.606 3	18.19	0.49

Section No.	Elevation ft	Size	Actual V_u K	Actual T_u kip-ft
L10	113.25 - 109 (10)	TP21x20.378x0.5938	18.65	0.49
L11	109 - 108.75 (11)	TP21.0378x21x0.725	18.68	0.49
L12	108.75 - 104.17 (12)	TP21.7293x21.0378x0.7	19.19	0.29
L13	104.17 - 103.92 (13)	TP21.7671x21.7293x0.975	19.23	0.29
L14	103.92 - 103.17 (14)	TP21.8803x21.7671x0.95	19.31	0.29
L15	103.17 - 102.92 (15)	TP21.9181x21.8803x1.125	19.35	0.29
L16	102.92 - 102.42 (16)	TP21.9936x21.9181x1.1	19.40	0.29
L17	102.42 - 102.17 (17)	TP22.0313x21.9936x0.925	19.44	0.29
L18	102.17 - 100.92 (18)	TP22.2201x22.0313x0.925	19.58	0.29
L19	100.92 - 100.67 (19)	TP22.2578x22.2201x1	19.62	0.29
L20	100.67 - 99.58 (20)	TP22.4224x22.2578x1	19.73	0.29
L21	99.58 - 99.33 (21)	TP22.4602x22.4224x1.375	19.78	0.29
L22	99.33 - 95.25 (22)	TP23.0763x22.4602x1.325	23.13	0.63
L23	95.25 - 95 (23)	TP23.114x23.0763x1.025	23.16	0.64
L24	95 - 90 (24)	TP23.869x23.114x1	23.76	0.84
L25	90 - 85 (25)	TP24.624x23.869x0.9625	24.35	1.05
L26	85 - 80.5 (26)	TP25.3035x24.624x0.925	24.86	1.24
L27	80.5 - 80.25 (27)	TP25.3413x25.3035x1.3	24.88	1.25
L28	80.25 - 75.25 (28)	TP26.0963x25.3413x1.25	25.49	1.46
L29	75.25 - 73.58 (29)	TP26.3484x26.0963x1.225	25.69	1.53
L30	73.58 - 73.33 (30)	TP26.3862x26.3484x1.225	25.71	1.54
L31	73.33 - 69 (31)	TP27.04x26.3862x1.2	25.87	1.60
L32	69 - 67 (32)	TP26.8969x26.087x1.2625	26.53	1.81
L33	67 - 66.75 (33)	TP26.9374x26.8969x1.2625	26.55	1.82
L34	66.75 - 66.5 (34)	TP26.9779x26.9374x1.3625	26.58	1.83
L35	66.5 - 61.5 (35)	TP27.7878x26.9779x1.3125	27.14	2.04
L36	61.5 - 56.5 (36)	TP28.5976x27.7878x1.2625	27.67	2.25
L37	56.5 - 51.5 (37)	TP29.4075x28.5976x1.2375	28.18	2.47
L38	51.5 - 48.25 (38)	TP29.9339x29.4075x1.2125	28.52	2.63
L39	48.25 - 48 (39)	TP29.9744x29.9339x1.6375	28.53	2.64
L40	48 - 44.25 (40)	TP30.5818x29.9744x1.6125	28.96	2.84
L41	44.25 - 44 (41)	TP30.6223x30.5818x1.7125	28.98	2.85
L42	44 - 43.08 (42)	TP30.7714x30.6223x1.7125	29.09	2.90
L43	43.08 - 42.83 (43)	TP30.8118x30.7714x1.7125	29.11	2.91
L44	42.83 - 37.83 (44)	TP31.6217x30.8118x1.6375	29.65	3.16
L45	37.83 - 30 (45)	TP32.89x31.6217x1.6125	30.03	3.35

Section No.	Elevation ft	Size	Actual V_u K	Actual T_u kip-ft
L46	30 - 29 (46)	TP32.4616x31.6171x1.70 63	30.62	3.60
L47	29 - 24 (47)	TP33.3062x32.4616x1.65 63	31.08	3.85
L48	24 - 23.75 (48)	TP33.3484x33.3062x1.65 63	31.09	3.86
L49	23.75 - 23.5 (49)	TP33.3906x33.3484x1.65 63	31.11	3.88
L50	23.5 - 18.5 (50)	TP34.2352x33.3906x1.60 63	31.57	4.13
L51	18.5 - 13.5 (51)	TP35.0797x34.2352x1.55 63	32.00	4.39
L52	13.5 - 11 (52)	TP35.502x35.0797x1.531 3	32.22	4.52
L53	11 - 10.75 (53)	TP35.5442x35.502x1.231 3	32.22	4.54
L54	10.75 - 6 (54)	TP36.3465x35.5442x1.25 63	32.60	4.79
L55	6 - 5.75 (55)	TP36.3888x36.3465x1.53 13	32.60	4.81
L56	5.75 - 3.25 (56)	TP36.811x36.3888x1.506 3	32.73	4.87
L57	3.25 - 3 (57)	TP36.8533x36.811x1.156 3	32.83	4.96
L58	3 - 0 (58)	TP37.36x36.8533x1.1313	32.92	5.01

APPENDIX B

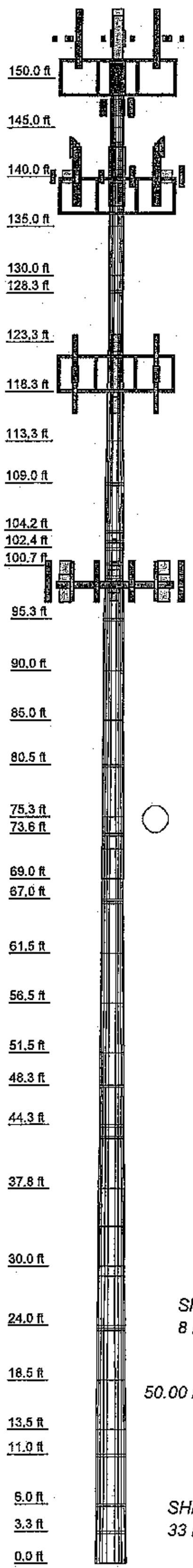
BASE LEVEL DRAWING



BUSINESS UNIT: 841288 TOWER ID: C_BASELEVEL

APPENDIX C

ADDITIONAL CALCULATIONS



Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.0000	12	0.2188		15.0000	15.7317	A572-50	0.2
2	5.0000	12	0.2188		15.7317	16.4634	A572-50	0.2
3	5.0000	12	0.2188		16.4634	17.1951	A572-50	0.2
8	5.0000	12	0.6188		18.9146	19.6463	A572-50	0.6
9	5.0000	12	0.6063		19.6463	20.3780	A572-50	0.6
25	5.0000	12	0.9625		23.8690	24.6240	A572-50	1.0
31	[illegible]	12	[illegible]	3.0000	[illegible]	[illegible]	A572-50	1.2
36	5.0000	12	1.2625		27.7877	28.5976	A572-50	1.8
37	5.0000	12	1.2375		28.5976	29.4075	A572-50	1.6
45	[illegible]	12	1.6125	4.0000	31.6217	32.8900	A572-50	3.4
51	5.0000	12	1.5563		[illegible]	[illegible]	A572-50	2.3
Total								42.7

MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi			

TOWER DESIGN NOTES

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

ALL REACTIONS ARE FACTORED

AXIAL 109 K
SHEAR 8 K — *MOMENT 947 kip-ft*
TORQUE 2 kip-ft
50.00 mph WIND - 1.2750 in ICE

AXIAL 70 K
SHEAR 33 K — *MOMENT 3523 kip-ft*
TORQUE 6 kip-ft
REACTIONS - 125.00 mph WIND

Paul J. Ford and Company	Job: 150' Monopole / Bridgeport, CT		
250 East Broad st., Suite 600	Project: BU 841288 / PJF# 37518-0456		
Columbus, OH 43215	Client: Crown Castle	Drawn by: apike	App'd:
Phone: (614) 221-6679	Code: TIA-222-H	Date: 10/08/18	Scale: NTS
FAX:	Path:		Dwg No. E-1

CCIpole

per TIA-222- H

Site BU: 841288

Work Order:

CROWN CASTLE

Pole Geometry

	Pole Height Above Base (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Bend Radius (in)	Pole Material
1	150	41	0	12	15	21	0.2188	Auto	A572-50
2	109	40	3	12	21.00	27.04	0.25	Auto	A572-50
3	72	42	4	12	26.09	32.89	0.3125	Auto	A572-50
4	34	34	0	12	31.62	37.36	0.4063	Auto	A572-50

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	0	11	solid round	yldag; (2.5 Max); (2.5	4												
2	11	48.25	solid round	yldag; (2.5 Max); (2.5	4												
3	3.25	23.75	plate	6.5 x 1.25; (1) (1.1875)	4												
4	23.75	44.25	plate	6.5 x 1.25; (1) (1.1875)	4												
5	44.25	66.75	plate	5 x 1.25; (1) (1.1875)	4												
6	66.75	80.5	plate	4 x 1.25; (1) (1.1875)	4												
7	95.25	109	plate	5 x 1.25; (1) (1.1875)	2												
8	95.25	100.92	plate	5 x 1.25; (1) (1.1875)	1												
9	0	0	plate	5 x 1.25; (1) (1.1875)	1												
10	100.92	109	plate	5 x 1.25; (1) (1.1875)	1												
11	102.42	109	plate	5 x 1.25; (1) (1.1875)	1												
12	109	128.5	plate	4 x 1.25; (1) (1.1875)	4												
13	6	43.08	plate	inst pole w/ FP 6 x 1; (	1												
14	11	43.08	plate	inst pole w/ FP 6 x 1; (	2												
15	6	43.08	plate	inst pole w/ FP 6 x 1; (	1												
16	43.08	73.58	plate	inst pole w/ FP 6 x 1; (	4												
17	73.58	104.17	plate	inst pole w/ FP 6 x 1; (	2												
18	73.58	99.58	plate	inst pole w/ FP 6 x 1; (	1												
19	73.58	103.17	plate	inst pole w/ FP 6 x 1; (	1												
20	0	6	plate	FP 1.25 x 6.75_1	2												
21	0	11	plate	FP 1.25 x 6.75_1	2												
22																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in²)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_t (in)	Net Area (in²)	Bolt Hole Size (in)	Reinforcement Material
1	-	-	4.908738521	3.9375	n/a	n/a	34.440	4.909	0.0000	A722-07
2	-	-	4.908738521	3.9375	n/a	n/a	34.440	4.909	0.0000	A722-07
3	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
4	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
5	5	1.25	6.25	0.625	27.000	27.000	18.000	4.688	1.1875	A572-65
6	4	1.25	5	0.625	18.000	18.000	18.000	3.438	1.1875	A572-65
7	5	1.25	6.25	0.625	27.000	27.000	18.000	4.688	1.1875	A572-65
8	5	1.25	6.25	0.625	27.000	27.000	18.000	4.688	1.1875	A572-65
9	5	1.25	6.25	0.625	n/a	n/a	18.000	4.688	1.1875	A572-65
10	5	1.25	6.25	0.625	27.000	27.000	18.000	4.688	1.1875	A572-65
11	5	1.25	6.25	0.625	27.000	27.000	18.000	4.688	1.1875	A572-65
12	4	1.25	5	0.625	18.000	18.000	18.000	3.438	1.1875	A572-65
13	5.40898723	1.941213679	10.5	0.970606839	45.000	54.000	17.000	8.073	1.1875	A572-65
14	5.40898723	1.941213679	10.5	0.970606839	39.000	54.000	17.000	8.073	1.1875	A572-65
15	5.40898723	1.941213679	10.5	0.970606839	39.000	54.000	17.000	8.073	1.1875	A572-65
16	5.40898723	1.941213679	10.5	0.970606839	54.000	54.000	20.000	8.073	1.1875	A572-65
17	5.40898723	1.941213679	10.5	0.970606839	54.000	54.000	20.000	8.073	1.1875	A572-65
18	5.40898723	1.941213679	10.5	0.970606839	54.000	54.000	20.000	8.073	1.1875	A572-65
19	5.40898723	1.941213679	10.5	0.970606839	54.000	54.000	20.000	8.073	1.1875	A572-65
20	1.25	6.75	8.4375	3.375	n/a	n/a	6.000	8.438	0.0000	A572-65
21	1.25	6.75	8.4375	3.375	n/a	n/a	6.000	8.438	0.0000	A572-65

TNX Geometry Input

Increment (ft): 5

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	150 - 145	5		12	15.000	15.732	0.2188	A572-50	1.000
2	145 - 140	5		12	15.732	16.463	0.2188	A572-50	1.000
3	140 - 135	5		12	16.463	17.195	0.2188	A572-50	1.000
4	135 - 130	5		12	17.195	17.927	0.2188	A572-50	1.000
5	130 - 128.5	1.5		12	17.927	18.146	0.2188	A572-50	1.000
6	128.5 - 128.25	0.25		12	18.146	18.183	0.6688	A572-50	0.867
7	128.25 - 123.25	5		12	18.183	18.915	0.6438	A572-50	0.877
8	123.25 - 118.25	5		12	18.915	19.646	0.6188	A572-50	0.889
9	118.25 - 113.25	5		12	19.646	20.378	0.6063	A572-50	0.887
10	113.25 - 109	4.25	0	12	20.378	21.000	0.5938	A572-50	0.889
11	109 - 108.75	0.25		12	21.000	21.038	0.725	A572-50	0.881
12	108.75 - 104.17	4.58		12	21.038	21.729	0.7	A572-50	0.893
13	104.17 - 103.92	0.25		12	21.729	21.767	0.975	A572-50	0.971
14	103.92 - 103.17	0.75		12	21.767	21.880	0.95	A572-50	0.991
15	103.17 - 102.92	0.25		12	21.880	21.918	1.125	A572-50	0.983
16	102.92 - 102.42	0.5		12	21.918	21.994	1.1	A572-50	1.001
17	102.42 - 102.17	0.25		12	21.994	22.031	0.925	A572-50	1.079
18	102.17 - 100.92	1.25		12	22.031	22.220	0.925	A572-50	1.072
19	100.92 - 100.67	0.25		12	22.220	22.258	1	A572-50	0.994
20	100.67 - 99.58	1.09		12	22.258	22.422	1	A572-50	0.988
21	99.58 - 99.33	0.25		12	22.422	22.460	1.375	A572-50	0.843
22	99.33 - 95.25	4.08		12	22.460	23.076	1.325	A572-50	0.854
23	95.25 - 95	0.25		12	23.076	23.114	1.025	A572-50	0.829
24	95 - 90	5		12	23.114	23.869	1	A572-50	0.829
25	90 - 85	5		12	23.869	24.624	0.9625	A572-50	0.841
26	85 - 80.5	4.5		12	24.624	25.304	0.925	A572-50	0.857
27	80.5 - 80.25	0.25		12	25.304	25.341	1.3	A572-50	0.818
28	80.25 - 75.25	5		12	25.341	26.096	1.25	A572-50	0.829
29	75.25 - 73.58	1.67		12	26.096	26.348	1.225	A572-50	0.839
30	73.58 - 73.33	0.25		12	26.348	26.386	1.225	A572-50	0.838
31	73.33 - 72	4.33	3	12	26.386	27.040	1.2	A572-50	0.849
32	72 - 67	5		12	26.087	26.897	1.2625	A572-50	0.853
33	67 - 66.75	0.25		12	26.897	26.937	1.2625	A572-50	0.852
34	66.75 - 66.5	0.25		12	26.937	26.978	1.3625	A572-50	0.836
35	66.5 - 61.5	5		12	26.978	27.788	1.3125	A572-50	0.847
36	61.5 - 56.5	5		12	27.788	28.598	1.2625	A572-50	0.860
37	56.5 - 51.5	5		12	28.598	29.408	1.2375	A572-50	0.859
38	51.5 - 48.25	3.25		12	29.408	29.934	1.2125	A572-50	0.864
39	48.25 - 48	0.25		12	29.934	29.974	1.6375	A572-50	0.780
40	48 - 44.25	3.75		12	29.974	30.582	1.6125	A572-50	0.779
41	44.25 - 44	0.25		12	30.582	30.622	1.7125	A572-50	0.783
42	44 - 43.08	0.92		12	30.622	30.771	1.7125	A572-50	0.780
43	43.08 - 42.83	0.25		12	30.771	30.812	1.7125	A572-50	0.779
44	42.83 - 37.83	5		12	30.812	31.622	1.6375	A572-50	0.796
45	37.83 - 34	7.83	4	12	31.622	32.890	1.6125	A572-50	0.795
46	34 - 29	5		12	31.617	32.462	1.7063	A572-50	0.806
47	29 - 24	5		12	32.462	33.306	1.6563	A572-50	0.813
48	24 - 23.75	0.25		12	33.306	33.348	1.6563	A572-50	0.813
49	23.75 - 23.5	0.25		12	33.348	33.391	1.6563	A572-50	0.812
50	23.5 - 18.5	5		12	33.391	34.235	1.6063	A572-50	0.821
51	18.5 - 13.5	5		12	34.235	35.080	1.5563	A572-50	0.831
52	13.5 - 11	2.5		12	35.080	35.502	1.5313	A572-50	0.837
53	11 - 10.75	0.25		12	35.502	35.544	1.2313	A572-50	1.000
54	10.75 - 6	4.75		12	35.544	36.347	1.2563	A572-50	0.966
55	6 - 5.75	0.25		12	36.347	36.389	1.5313	A572-50	0.774
56	5.75 - 3.25	2.5		12	36.389	36.811	1.5063	A572-50	0.780
57	3.25 - 3	0.25		12	36.811	36.853	1.1563	A572-50	0.761
58	3 - 0	3		12	36.853	37.360	1.1313	A572-50	0.771

TNX Section Forces

Increment (ft): 5

	Section Height (ft)	TNX Output		
		P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	150 - 145	3.68	50.30	7.17
2	145 - 140	4.00	87.97	7.90
3	140 - 135	7.50	144.40	12.20
4	135 - 130	7.93	206.36	12.61
5	130 - 128.5	8.06	225.35	12.76
6	128.5 - 128.25	8.12	228.54	12.78
7	128.25 - 123.25	8.89	293.79	13.35
8	123.25 - 118.25	12.43	368.40	17.64
9	118.25 - 113.25	13.32	457.88	18.19
10	113.25 - 109	14.11	536.07	18.65
11	109 - 108.75	14.18	540.74	18.68
12	108.75 - 104.17	15.15	627.42	19.19
13	104.17 - 103.92	15.24	632.23	19.23
14	103.92 - 103.17	15.46	646.68	19.31
15	103.17 - 102.92	15.55	651.52	19.35
16	102.92 - 102.42	15.72	661.20	19.40
17	102.42 - 102.17	15.80	666.06	19.44
18	102.17 - 100.92	16.19	690.45	19.58
19	100.92 - 100.67	16.28	695.35	19.62
20	100.67 - 99.58	16.62	716.79	19.73
21	99.58 - 99.33	16.71	721.73	19.78
22	99.33 - 95.25	20.19	815.12	23.13
23	95.25 - 95	20.27	820.91	23.16
24	95 - 90	21.79	938.11	23.76
25	90 - 85	23.34	1058.27	24.35
26	85 - 80.5	24.76	1168.87	24.86
27	80.5 - 80.25	24.87	1175.09	24.88
28	80.25 - 75.25	26.83	1300.90	25.49
29	75.25 - 73.58	27.49	1343.59	25.69
30	73.58 - 73.33	27.60	1350.01	25.71
31	73.33 - 72	28.12	1384.28	25.87
32	72 - 67	31.22	1515.23	26.53
33	67 - 66.75	31.34	1521.86	26.55
34	66.75 - 66.5	31.45	1528.50	26.58
35	66.5 - 61.5	33.66	1662.66	27.14
36	61.5 - 56.5	35.91	1799.52	27.67
37	56.5 - 51.5	38.18	1938.97	28.18
38	51.5 - 48.25	39.67	2030.99	28.52
39	48.25 - 48	39.81	2038.11	28.53
40	48 - 44.25	41.81	2145.81	28.96
41	44.25 - 44	41.96	2153.04	28.98
42	44 - 43.08	42.48	2179.73	29.09
43	43.08 - 42.83	42.63	2187.00	29.11
44	42.83 - 37.83	45.47	2333.74	29.65
45	37.83 - 34	47.67	2447.90	30.03
46	34 - 29	52.78	2599.43	30.62
47	29 - 24	55.86	2753.51	31.08
48	24 - 23.75	56.03	2761.27	31.09
49	23.75 - 23.5	56.18	2769.04	31.11
50	23.5 - 18.5	59.29	2925.58	31.57
51	18.5 - 13.5	62.44	3084.31	32.00
52	13.5 - 11	64.02	3164.48	32.22
53	11 - 10.75	64.19	3172.52	32.22
54	10.75 - 6	67.14	3326.30	32.60
55	6 - 5.75	67.31	3334.44	32.60
56	5.75 - 3.25	68.82	3416.14	32.83
57	3.25 - 3	68.95	3424.33	32.83
58	3 - 0	70.40	3523.04	33.06

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
150 - 145	Pole	TP15.732x15x0.2188	Pole	25.2%	Pass
145 - 140	Pole	TP16.463x15.732x0.2188	Pole	39.8%	Pass
140 - 135	Pole	TP17.195x16.463x0.2188	Pole	59.9%	Pass
135 - 130	Pole	TP17.927x17.195x0.2188	Pole	78.3%	Pass
130 - 128.5	Pole	TP18.146x17.927x0.2188	Pole	83.4%	Pass
128.5 - 128.25	Pole + Reinf.	TP18.183x18.146x0.6688	Reinf. 12 Tension Rupture	42.0%	Pass
128.25 - 123.25	Pole + Reinf.	TP18.915x18.183x0.6438	Reinf. 12 Tension Rupture	51.2%	Pass
123.25 - 118.25	Pole + Reinf.	TP19.646x18.915x0.6188	Reinf. 12 Tension Rupture	61.1%	Pass
118.25 - 113.25	Pole + Reinf.	TP20.378x19.646x0.6063	Reinf. 12 Tension Rupture	72.1%	Pass
113.25 - 109	Pole + Reinf.	TP21x20.378x0.5938	Reinf. 12 Tension Rupture	81.0%	Pass
109 - 108.75	Pole + Reinf.	TP21.038x21x0.725	Reinf. 7 Tension Rupture	61.7%	Pass
108.75 - 104.17	Pole + Reinf.	TP21.729x21.038x0.7	Reinf. 7 Tension Rupture	68.5%	Pass
104.17 - 103.92	Pole + Reinf.	TP21.767x21.729x0.975	Reinf. 7 Tension Rupture	61.5%	Pass
103.92 - 103.17	Pole + Reinf.	TP21.88x21.767x0.95	Reinf. 7 Tension Rupture	62.4%	Pass
103.17 - 102.92	Pole + Reinf.	TP21.918x21.88x1.125	Reinf. 7 Tension Rupture	50.9%	Pass
102.92 - 102.42	Pole + Reinf.	TP21.994x21.918x1.1	Reinf. 7 Tension Rupture	51.4%	Pass
102.42 - 102.17	Pole + Reinf.	TP22.031x21.994x0.925	Reinf. 7 Tension Rupture	56.5%	Pass
102.17 - 100.92	Pole + Reinf.	TP22.22x22.031x0.925	Reinf. 7 Tension Rupture	58.0%	Pass
100.92 - 100.67	Pole + Reinf.	TP22.258x22.22x1	Reinf. 7 Tension Rupture	56.7%	Pass
100.67 - 99.58	Pole + Reinf.	TP22.422x22.258x1	Reinf. 7 Tension Rupture	57.9%	Pass
99.58 - 99.33	Pole + Reinf.	TP22.46x22.422x1.375	Reinf. 17 Tension Rupture	41.5%	Pass
99.33 - 95.25	Pole + Reinf.	TP23.076x22.46x1.325	Reinf. 17 Tension Rupture	45.5%	Pass
95.25 - 95	Pole + Reinf.	TP23.114x23.076x1.025	Reinf. 18 Tension Rupture	56.2%	Pass
95 - 90	Pole + Reinf.	TP23.869x23.114x1	Reinf. 18 Tension Rupture	61.7%	Pass
90 - 85	Pole + Reinf.	TP24.624x23.869x0.9625	Reinf. 18 Tension Rupture	67.0%	Pass
85 - 80.5	Pole + Reinf.	TP25.304x24.624x0.925	Reinf. 18 Tension Rupture	71.5%	Pass
80.5 - 80.25	Pole + Reinf.	TP25.341x25.304x1.3	Reinf. 6 Tension Rupture	59.3%	Pass
80.25 - 75.25	Pole + Reinf.	TP26.096x25.341x1.25	Reinf. 6 Tension Rupture	63.4%	Pass
75.25 - 73.58	Pole + Reinf.	TP26.348x26.096x1.225	Reinf. 6 Tension Rupture	64.8%	Pass
73.58 - 73.33	Pole + Reinf.	TP26.386x26.348x1.225	Reinf. 6 Tension Rupture	65.0%	Pass
73.33 - 72	Pole + Reinf.	TP27.04x26.386x1.2	Reinf. 6 Tension Rupture	66.0%	Pass
72 - 67	Pole + Reinf.	TP26.897x26.087x1.2625	Reinf. 6 Tension Rupture	67.5%	Pass
67 - 66.75	Pole + Reinf.	TP26.937x26.897x1.2625	Reinf. 6 Tension Rupture	67.7%	Pass
66.75 - 66.5	Pole + Reinf.	TP26.978x26.937x1.3625	Reinf. 5 Tension Rupture	58.9%	Pass
66.5 - 61.5	Pole + Reinf.	TP27.788x26.978x1.3125	Reinf. 5 Tension Rupture	61.8%	Pass
61.5 - 56.5	Pole + Reinf.	TP28.598x27.788x1.2625	Reinf. 5 Tension Rupture	64.6%	Pass
56.5 - 51.5	Pole + Reinf.	TP29.408x28.598x1.2375	Reinf. 5 Tension Rupture	67.2%	Pass
51.5 - 48.25	Pole + Reinf.	TP29.934x29.408x1.2125	Reinf. 5 Tension Rupture	68.9%	Pass
48.25 - 48	Pole + Reinf.	TP29.974x29.934x1.6375	Reinf. 2 Compression	60.5%	Pass
48 - 44.25	Pole + Reinf.	TP30.582x29.974x1.6125	Reinf. 2 Compression	62.1%	Pass
44.25 - 44	Pole + Reinf.	TP30.622x30.582x1.7125	Reinf. 2 Compression	58.6%	Pass
44 - 43.08	Pole + Reinf.	TP30.771x30.622x1.7125	Reinf. 2 Compression	59.0%	Pass
43.08 - 42.83	Pole + Reinf.	TP30.812x30.771x1.7125	Reinf. 2 Compression	59.1%	Pass
42.83 - 37.83	Pole + Reinf.	TP31.622x30.812x1.6375	Reinf. 2 Compression	61.0%	Pass
37.83 - 34	Pole + Reinf.	TP32.89x31.622x1.6125	Reinf. 2 Compression	62.5%	Pass
34 - 29	Pole + Reinf.	TP32.462x31.617x1.7063	Reinf. 2 Compression	61.8%	Pass
29 - 24	Pole + Reinf.	TP33.306x32.462x1.6563	Reinf. 2 Compression	63.3%	Pass
24 - 23.75	Pole + Reinf.	TP33.348x33.306x1.6563	Reinf. 2 Compression	63.4%	Pass
23.75 - 23.5	Pole + Reinf.	TP33.391x33.348x1.6563	Reinf. 2 Compression	63.4%	Pass
23.5 - 18.5	Pole + Reinf.	TP34.235x33.391x1.6063	Reinf. 2 Compression	64.8%	Pass
18.5 - 13.5	Pole + Reinf.	TP35.08x34.235x1.5563	Reinf. 2 Compression	66.1%	Pass
13.5 - 11	Pole + Reinf.	TP35.502x35.08x1.5313	Reinf. 2 Compression	66.8%	Pass
11 - 10.75	Pole + Reinf.	TP35.544x35.502x1.2313	Reinf. 3 Tension Rupture	63.8%	Pass
10.75 - 6	Pole + Reinf.	TP36.347x35.544x1.2563	Reinf. 3 Tension Rupture	65.0%	Pass
6 - 5.75	Pole + Reinf.	TP36.389x36.347x1.5313	Reinf. 3 Tension Rupture	56.2%	Pass
5.75 - 3.25	Pole + Reinf.	TP36.811x36.389x1.5063	Reinf. 3 Tension Rupture	56.8%	Pass
3.25 - 3	Pole + Reinf.	TP36.853x36.811x1.1563	Reinf. 20 Compression	71.8%	Pass
3 - 0	Pole + Reinf.	TP37.36x36.853x1.1313	Reinf. 20 Compression	72.5%	Pass
				Summary	
			Pole	83.4%	Pass
			Reinforcement	81.0%	Pass
			Overall	83.4%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in⁴)			Area (in²)			% Capacity*																					
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17	R18	R19	R20	R21
150 - 145	336	n/a	336	10.91	n/a	10.91	25.2%																					
145 - 140	386	n/a	386	11.43	n/a	11.43	39.8%																					
140 - 135	441	n/a	441	11.94	n/a	11.94	59.9%																					
135 - 130	500	n/a	500	12.46	n/a	12.46	78.3%																					
130 - 128.5	519	n/a	519	12.61	n/a	12.61	83.4%																					
128.5 - 128.25	522	959	1481	12.64	20.00	32.64	28.7%												42.0%									
128.25 - 123.25	588	1031	1620	13.15	20.00	33.15	36.1%												51.2%									
123.25 - 118.25	660	1106	1767	13.67	20.00	33.67	42.0%												61.1%									
118.25 - 113.25	738	1184	1922	14.18	20.00	34.18	49.7%												72.1%									
113.25 - 109	808	1252	2060	14.62	20.00	34.62	56.2%												81.6%									
109 - 108.75	824	1680	2504	16.71	25.00	41.71	46.4%						61.7%				61.7%	61.7%										
108.75 - 104.17	1020	1678	2697	17.27	25.00	42.27	51.6%						68.5%				68.5%	68.5%										
104.17 - 103.92	1158	2575	3733	17.30	46.00	63.30	47.6%						61.5%				49.6%	38.2%						39.6%				
103.92 - 103.17	1173	2608	3781	17.39	46.00	63.39	48.4%						62.4%				50.4%	38.8%						40.2%				
103.17 - 102.92	1031	3169	4201	17.42	56.50	73.92	40.9%						60.0%				34.0%	36.3%						40.0%		34.5%		
102.92 - 102.42	1106	3127	4233	17.48	56.50	73.98	41.4%						61.4%				34.4%	36.7%						41.2%		34.9%		
102.42 - 102.17	1073	2543	3617	17.51	50.25	67.76	45.5%						66.6%				38.4%							51.6%		38.0%		
102.17 - 100.92	1101	2583	3684	17.66	50.25	67.91	46.7%						68.9%				36.4%							52.3%		36.9%		
100.92 - 100.67	1122	2888	4010	17.69	50.25	67.94	44.7%						66.7%	41.1%										46.2%		41.2%		
100.67 - 99.58	1147	2927	4074	17.82	50.25	68.07	45.7%						67.9%	42.0%										47.2%		42.1%		
99.58 - 99.33	1128	4186	5314	17.85	60.75	78.60	32.6%						39.2%	37.2%										41.5%	36.5%	40.3%		
99.33 - 95.25	1215	4398	5622	18.35	60.75	79.10	35.8%						43.0%	40.8%										45.5%	40.0%	44.2%		
95.25 - 95	1230	3354	4583	18.38	42.00	60.38	42.3%																	56.2%	56.2%	56.2%		
95 - 90	1356	3555	4911	18.59	42.00	60.59	46.8%																	61.7%	61.7%	61.7%		
90 - 85	1490	3763	5253	19.59	42.00	61.59	51.4%																	67.0%	67.0%	67.0%		
85 - 80.5	1618	3955	5573	20.14	42.00	62.14	55.4%																	71.5%	71.5%	71.5%		
80.5 - 80.25	1625	5748	7373	20.17	62.00	82.17	42.3%					59.3%												54.4%	54.4%	54.4%		
80.25 - 75.25	1776	6069	7845	20.78	62.00	82.78	45.7%					63.4%												58.2%	58.2%	58.2%		
75.25 - 73.58	1829	6178	8007	20.98	62.00	82.98	46.8%					64.8%												59.4%	59.4%	59.4%		
73.58 - 73.33	1837	6195	8032	21.01	62.00	83.01	47.0%					65.0%											59.6%					
73.33 - 72	1880	6287	8167	21.17	62.00	83.17	47.9%					66.0%											60.5%					
72 - 67	2416	6419	8836	26.71	62.00	88.71	47.1%					67.5%											61.9%					
67 - 66.75	2427	6437	8865	26.75	62.00	88.75	47.2%					67.7%											62.0%					
66.75 - 66.5	2439	6966	9405	26.79	67.00	93.79	44.8%					58.9%											58.8%					
66.5 - 61.5	2568	7360	10028	27.61	67.00	94.61	47.1%					61.8%											61.7%					
61.5 - 56.5	2910	7766	10676	28.42	67.00	95.42	49.3%					64.8%											64.4%					
56.5 - 51.5	3168	8182	11350	29.23	67.00	96.23	51.3%					67.2%											67.0%					
51.5 - 48.25	3343	8458	11801	29.76	67.00	96.76	52.9%					68.9%											68.7%					
48.25 - 48	3356	12004	15360	29.80	86.63	116.44	40.9%		60.5%			53.2%											53.1%					
48 - 44.25	3567	12443	16010	30.41	86.63	117.05	42.0%		62.1%			54.8%											54.6%					
44.25 - 44	3581	13457	17038	30.45	94.13	124.59	40.1%		58.6%		48.1%												51.6%					
44 - 43.08	3634	13574	17209	30.61	94.13	124.74	40.5%		59.0%		48.4%												51.9%					
43.08 - 42.83	3649	13607	17258	30.65	94.13	124.78	40.6%		59.1%		48.5%									52.0%	52.0%	52.0%						
42.83 - 37.83	3947	14253	18205	31.48	94.13	125.59	42.5%		61.6%		50.3%									54.0%	54.0%	54.0%						
37.83 - 34	4187	14767	18953	32.08	94.13	126.22	43.9%		62.5%		51.7%									55.4%	55.4%	55.4%						
34 - 29	5568	14849	20457	41.88	94.13	136.01	42.3%		61.5%		51.2%									54.8%	54.8%	54.8%						
29 - 24	5955	15661	21616	42.58	94.13	137.12	43.5%		63.3%		52.6%									56.3%	56.3%	56.3%						
24 - 23.75	5978	15697	21675	43.04	94.13	137.17	43.6%		63.4%		52.7%									56.4%	56.4%	56.4%						
23.75 - 23.5	6003	15733	21784	43.09	94.13	137.23	43.6%		63.4%	52.8%										56.5%	56.5%	56.5%						
23.5 - 18.5	6474	16464	22937	44.19	94.13	138.33	44.8%		64.8%	54.1%										57.9%	57.9%	57.9%						
18.5 - 13.5	6971	17211	24182	45.30	94.13	139.43	45.9%		66.1%	55.4%										59.3%	59.3%	59.3%						
13.5 - 11	7228	17591	24819	45.85	94.13	139.98	46.4%		66.8%	56.1%										60.0%	60.0%	60.0%						
11 - 10.75	7255	13339	20593	45.90	90.01	135.91	57.8%	36.3%		63.8%										55.2%		55.5%						50.5%
10.75 - 6	7763	14489	22251	46.95	90.01	136.96	57.6%	36.8%		65.0%										56.7%		56.7%						51.4%
6 - 5.75	7790	19023	26813	47.01	85.88	132.89	46.6%	29.0%		56.2%																		55.6%	55.6%
5.75 - 3.25	8068	19409	27477	47.56	85.88	133.44	47.3%	29.5%		56.8%																		56.1%	56.1%
3.25 - 3	8096	13491	21587	47.61	53.38	101.00	62.4%	37.5%																				71.8%	71.8%
3 - 0	8438	13803	22241	48.28	53.38	101.66	63.1%	37.6%																				72.5%	72.5%

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

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v2.1, Effective Date: 05-03-17

Date: 10/8/2018
Project No: 37518-0456.008.7805
Site Name:
Site Number/BUN: 841288
Description: 150' Monopole
Owner: CCI
Engineer: AEP

Welded Bridge Stiffener Analysis per TIA-222-G & AISC 13th Ed. (Black)

General Parameters and Loading:

Flange Elevation:	109.00	ft
TIA Reference Standard:	TIA-222-G	
AISC Manual:	13th Ed. (Black)	
Method:	LRFD	
ASD Stress Increase, ASIF:	N/A	
Moment, Muf:	536.1	k-ft
Axial, Puf:	14.1	kips
Shear, Vf:	18.7	kips

Pole Parameters:

	Upper Pole	Lower Pole	
Pole Diameter, Dp:	21.00	21.00	in
Pole Thickness, tp:	0.2188	0.2500	in
Pole Fy:	50	50	ksi
Pole Fu:	65	65	ksi
Flange Diameter, Df:	28.50	28.50	in

Bridge Stiffener Parameters:

	Stiffener Type 1	Stiffener Type 2	
Qty. Stiffeners:	4	0	
Upper Weld Length, L1:	30.00	0.00	in
Lower Weld Length, L2:	30.00	0.00	in
Weld Size, w:	0.3750	0.0000	in
Electrode:	E70	E70	
Effective Stiffener Width, Ws:	4.00	0.00	in
Stiffener Thickness, ts:	1.25	0.00	in
Notch, n:	2.25	0.00	in
Stiffener Fy:	65	0	ksi
Stiffener Fu:	80	0	ksi
Unbraced Length, L:	15.00	0.00	in
K:	0.80	0.00	
Stiffener Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	0	0	degrees
Stiffener Circle:	37.00	28.50	in = Df + 2 n + Ws
Upper Eccentricity, e1:	8.00	3.75	in = (Df - Dp) / 2 + n + Ws / 2
Lower Eccentricity, e2:	8.00	3.75	in = (Df - Dp) / 2 + n + Ws / 2

Flange Bolt Parameters:

Number of Bolt Circles: (1) Bolt Circle

	Bolt Circle 1	Bolt Circle 2	
Qty. Bolts:	0	0	
Bolt Diameter:	1.00	0.00	in
Bolt Circle:	26.00	0.00	in
Bolt Spacing:	Symmetric	Symmetric	
Start Angle, for Symmetric:	0	0	degrees
Bolt Area, Ag:	0.0000	0.0000	in
Max. Tension:	0.00	0.00	kips
Max. Net Tension:	0.00	0.00	kips
Max. Net Compression:	0.00	0.00	kips
Moment to Bolt Circle:	0.00	0.00	k-ft
Axial to Bolt Circle:	0.00	0.00	kips
Shear to Bolt Circle:	0.00	0.00	kips
Equivalent Bolt Circle:	0.00	0.00	in

Weld Analysis per AISC Tables 8-4 & 8-3:

Upper Pole	Stiffener Type 1	Stiffener Type 2	
D:	6	0	Num. of Sixteenths in Weld
a:	0.2667	0.0000	= e1 / L1
k:	0	0	
C:	3.2367	3.7100	Tabulated Coefficient
C1:	1.0000	1.0000	Coefficient for Electrode
Φ:	0.7500	0.7500	
Stiffener Axial, Pu:	177.6	0.0	kips
Axial Capacity, ΦPn:	437.0	0.0	kips = Φ C C1 D L
Ratio:	40.6%	0.0%	

Lower Pole	Stiffener Type 1	Stiffener Type 2	
D:	6	0	Num. of Sixteenths in Weld
a:	0.2667	0.0000	= e2 / L2
k:	0	0	
C:	3.2367	3.7100	Tabulated Coefficient
C1:	1.0000	1.0000	Coefficient for Electrode
Φ:	0.7500	0.7500	
Stiffener Axial, Pu:	177.6	0.0	kips
Axial Capacity, ΦPn:	437.0	0.0	kips = Φ C C1 D L
Ratio:	40.6%	0.0%	

Pole Analysis per AISC Table J2.5 & Sect. J4.2:

Upper Pole	Stiffener Type 1	Stiffener Type 2	
Stiffener Axial, Pu:	177.6	0.0	kips
Effective Throat, te:	0.2651	0.0000	in = 0.707 w
Shear Stress, fuv:	3.0	0.0	kips/in= Pu / (2 L1)
Section Modulus, S:	300.0	0.0	$in^2 = L1^2 / 3$
Bending Stress, fub:	4.7	0.0	kips/in = Pu e1 / S
Combined Stress, fu:	5.6	0.0	kips/in = $(fuv^2 + fub^2)^{1/2}$
Φ:	0.7500	0.0000	
Stress Capacity, ΦFn	6.4	0.0	kips/in = Φ 0.6 Fu tp
Ratio:	87.3%	0.0%	

Lower Pole	Stiffener Type 1	Stiffener Type 2	
Stiffener Axial, Pu:	177.6	0.0	kips
Effective Throat, te:	0.2651	0.0000	in = 0.707 w
Shear Stress, fuv:	3.0	0.0	ksi = Pu / (2 L2)
Section Modulus, S:	300.0	0.0	$in^2 = L2^2 / 3$
Bending Stress, fub:	4.7	0.0	ksi = Pu e2 / S
Combined Stress, fu:	5.6	0.0	kips/in = $(fuv^2 + fub^2)^{1/2}$
Φ:	0.7500	0.0000	
Stress Capacity, ΦFn	7.3	0.0	kips/in = Φ 0.6 Fu lp
Ratio:	76.4%	0.0%	

Stiffener 1 Analysis per AISC Sect. D2, E3 & E7

	Stiffener Type 1	
Gross Area, Ag:	5.0000	in^2
Effective Net Area, Aen:	5.0000	in^2 = Ag U, where U = 1.000
Stiffener Axial, Pu:	177.6	kips
Stiffener Stress, fu:	35.5	ksi = Pu / Ag
b:	10.0000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	8.0000	in
Q, Where Qa = 1.0:	1.0000	
r:	0.3608	in^3
K L / r:	33.2554	
Φ:	0.9000	
Axial Capacity, ΦFcr:	52.66	ksi = Φ $[0.658^{Fy/Fe}]$ Fy
Φ:	0.9000	
Ten. Yielding Cap., ΦFnt:	58.50	ksi = Φ Fy
Φ:	0.7500	
Ten. Rupture Cap., ΦFnr:	60.00	ksi = Φ Fu (Aen / Ag)
Ratio:	67.4%	

Stiffener 2 Analysis per AISC Sect. D2, E3 & E7

	Stiffener Type 2	
Gross Area, Ag:	0.0000	in^2
Effective Net Area, Aen:	0.0000	in^2 = Ag U, where U = 1.000
Stiffener Axial, Pu:	0.0	kips
Stiffener Stress, fu:	0.0	ksi = Pu / Ag
b:	0.0000	in = (Df - Dp) / 2 + n + Ws, Upper Pole
b / ts:	0.0000	in
Q, Where Qa = 1.0:	0.0000	
r:	0.0000	in^3
K L / r:	0.0000	
Φ:	0.0000	
Axial Capacity, ΦFcr:	0.00	ksi = Φ Fy
Φ:	0.0000	
Ten. Yielding Cap., ΦFnt:	0.00	ksi = Φ Fy
Φ:	0.0000	
Ten. Rupture Cap., ΦFnr:		ksi = Φ Fu (Aen / Ag)
Ratio:	0.0%	

Analysis Summary:

Bridge Stiffener Type 1	Bridge Stiffener Type 2
Weld Analysis Ratio: 40.6% PASS	Weld Analysis Ratio: 0.0% PASS
Pole Analysis Ratio: 87.3% PASS	Pole Analysis Ratio: 0.0% PASS
Stiffener Analysis Ratio: 67.4% PASS	Stiffener Analysis Ratio: 0.0% PASS

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v4.5.1 - Effective 09-27-18

Date: 10/8/2018
PJF Project: 37518-0456.009.7805
Client Ref. # 5/14/4203
Site Name: Bridgeport North
Description: 150' Monopole
Owner: Crown Castle
Engineer: AEP

Asymmetric Anchor Rod Analysis

Moment =	3523	k-ft	TIA Ref.	H	
Axial =	70.4	kips (+Comp, -Tension)	ASIF =	N/A	
Shear =	33.1	kips	Max Ratio =	100.0%	
Anchor Qty =	20		Location =	Base Plate	

η =	N/A	for Base Plates, Rev. G Sect. 4.9.9
Threads =	N/A	for Flange Plates, Rev. G & H
lar =	2.75	in, for Base Plates, Rev. H Sect 4.9.9 (Max of Original Items)
Grout =	0.00	psi, for Base Plates, Rev. H Sect 4.9.9 (Note)

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

Item	Nominal Anchor Dia, in	Spec	Fy, ksi	Fu, ksi	Location, degrees	Anchor Circle, in	Type	Area Override, in²	Area, in²	Max Net Comp, kips	Max Net Tension, kips	Tension Override, kips	Comp Override, kips	Tension Cap, kips	Comp Cap, kips	Capacity Ratio
1	2.250	#18J A615 Gr 75	75	100	37.0	43.00	Original	0.00	3.98	189.38	171.78	0.00	0.00	243.75	243.75	81.7%
2	2.250	#18J A615 Gr 75	75	100	53.0	43.00	Original	0.00	3.98	189.38	171.78	0.00	0.00	243.75	243.75	81.7%
3	2.250	#18J A615 Gr 75	75	100	127.0	43.00	Original	0.00	3.98	189.38	171.78	0.00	0.00	243.75	243.75	81.7%
4	2.250	#18J A615 Gr 75	75	100	143.0	43.00	Original	0.00	3.98	189.38	171.78	0.00	0.00	243.75	243.75	81.7%
5	2.250	#18J A615 Gr 75	75	100	217.0	43.00	Original	0.00	3.98	189.38	171.78	0.00	0.00	243.75	243.75	81.7%
6	2.250	#18J A615 Gr 75	75	100	233.0	43.00	Original	0.00	3.98	189.38	171.78	0.00	0.00	243.75	243.75	81.7%
7	2.250	#18J A615 Gr 75	75	100	307.0	43.00	Original	0.00	3.98	189.38	171.78	0.00	0.00	243.75	243.75	81.7%
8	2.250	#18J A615 Gr 75	75	100	323.0	43.00	Original	0.00	3.98	189.38	171.78	0.00	0.00	243.75	243.75	81.7%
9	2.500	Dywidag (150 ksi)	125	125	75.0	42.74	Post-Installed	0.00	5.35	241.22	241.22	0.00	0.00	483.75	645.00	35.6%
10	2.500	Dywidag (150 ksi)	125	125	165.0	42.74	Post-Installed	0.00	5.35	241.22	241.22	0.00	0.00	483.75	645.00	35.6%
11	2.500	Dywidag (150 ksi)	125	125	255.0	42.74	Post-Installed	0.00	5.35	241.22	241.22	0.00	0.00	483.75	645.00	35.6%
12	2.500	Dywidag (150 ksi)	125	125	345.0	42.74	Post-Installed	0.00	5.35	241.22	241.22	0.00	0.00	483.75	645.00	35.6%
13	2.250	A193 Gr B7	105	125	0.0	49.00	Post-Installed	0.00	3.98	205.57	205.57	0.00	0.00	304.47	341.01	57.4%
14	2.250	A193 Gr B7	105	125	90.0	49.00	Post-Installed	0.00	3.98	205.57	205.57	0.00	0.00	304.47	341.01	57.4%
15	2.250	A193 Gr B7	105	125	180.0	49.00	Post-Installed	0.00	3.98	205.57	205.57	0.00	0.00	304.47	341.01	57.4%
16	2.250	A193 Gr B7	105	125	270.0	49.00	Post-Installed	0.00	3.98	205.57	205.57	0.00	0.00	304.47	341.01	57.4%
17	1.750	A193 Gr B7	105	125	45.0	49.86	Post-Installed	0.00	2.41	126.54	126.54	0.00	0.00	178.07	199.44	60.4%
18	1.750	A193 Gr B7	105	125	135.0	49.86	Post-Installed	0.00	2.41	126.54	126.54	0.00	0.00	178.07	199.44	60.4%
19	1.750	A193 Gr B7	105	125	225.0	49.86	Post-Installed	0.00	2.41	126.54	126.54	0.00	0.00	178.07	199.44	60.4%
20	1.750	A193 Gr B7	105	125	315.0	49.86	Post-Installed	0.00	2.41	126.54	126.54	0.00	0.00	178.07	199.44	60.4%
									78.76							

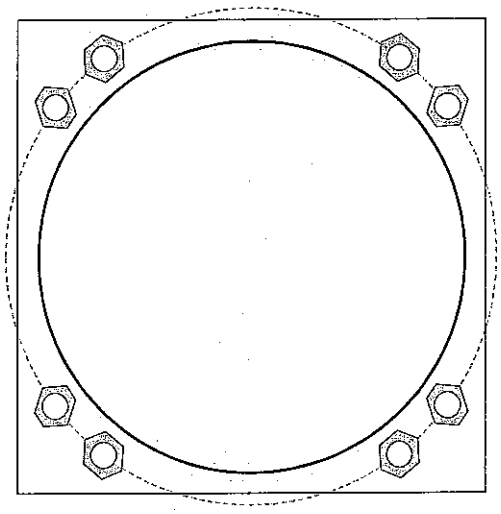
Monopole Base Plate Connection

CROWN CASTLE

Site Info	
BU #	841288
Site Name	Bridgeport North
Order #	

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{gr} (in)	2.75

Applied Loads	
Moment (kip-ft)	1294.10
Axial Force (kips)	70.40
Shear Force (kips)	33.06



Connection Properties

Anchor Rod Data

(8) 2-1/4" ø bolts (A615-75 X; Fy=75 ksi, Fu=100 ksi) on 43" BC

Base Plate Data

41" OD x 2.75" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Stiffener Data

N/A

Pole Data

37.36" x 0.4063" 12-sided pole (A572-50; Fy=50 ksi, Fu=65 ksi)

Analysis Results

Anchor Rod Summary		*(units of kips, kip-in)*
Pu = 189.17	ϕPn = 243.75	**Stress Rating**
Vu = 4.13	ϕVn = 73.13	**81.6%**
Mu = 7.39	ϕMn = 94.7	**Pass**

Base Plate Summary		
Max Stress (ksi):	25.09	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**53.1%**	**Pass**

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Job Number:	37518-1833.001.7700	Page:	1 of 1
Engineer:	KAT	Date:	10/8/2018
Site Number:	806586	Version:	2.0
Site Name:	NY Springfield Gardens 95836	Effective:	5/22/2018

Flexible Foundation Analysis

(W) RISA-3D Plate Forces		(L) RISA-3D Plate Forces	
Comp (1.2)	Tension (0.9)	Comp (1.2)	Tension (0.9)
27.423	21.422	32.037	24.915
27.703	21.411	32.829	24.348
28.044	21.309	33.597	23.803
28.515	21.085	34.477	23.169
29.177	20.72	35.582	22.348
30.087	20.188	37.028	21.222
31.316	19.435	38.962	19.64
32.961	18.37	41.594	17.388
35.171	16.855	45.258	14.128
38.176	14.679	50.499	9.308
42.337	11.506	58.235	1.996
48.225	6.782	70.045	-9.412
56.732	-0.428	88.569	-27.595
69.223	-11.734	118.234	-57.034
87.665	-29.819	164.158	-102.914
114.329	-59.169	226.957	-165.885
150.401	-104.973	294.138	-233.38
193.172	-167.884	339.477	-278.972
233.792	-235.339	339.477	-278.972
259.167	-280.91	294.138	-233.38
259.167	-280.91	226.957	-165.885
233.792	-235.339	164.158	-102.914
193.172	-167.884	118.234	-57.034
150.401	-104.973	88.569	-27.595
114.329	-59.169	70.045	-9.412
87.665	-29.819	58.235	1.996
69.223	-11.734	50.499	9.308
56.732	-0.428	45.258	14.128
48.225	6.782	41.594	17.388
42.337	11.506	38.962	19.64
38.176	14.679	37.028	21.222
35.171	16.855	35.582	22.348
32.961	18.37	34.477	23.169
31.316	19.435	33.597	23.803
30.087	20.188	32.829	24.348
29.177	20.72	32.037	24.915
28.515	21.085		
28.044	21.309		
27.703	21.411		
27.423	21.422		
3127.232	-1352.988	3483.352	-1345.854 k-ft
1563.616	-676.494	1741.676	-672.927 k-ft

(per linear ft of plate)
(Multiply by 0.5 ft length plate)

Applied Reactions for RISA 3D

TNX Moment =	3523	k-ft
TNX Axial =	70	kips
TNX Shear =	33	kips
Total Unfactored Axial =	58.33	kips
Side Bending Moment =	3523	k-ft

Anchor Spring Constant

Ag =	2.66	in^2
E =	29000	ksi
Lu =	21.83333	ft
k = An*E / Lu =	294.43	k/in

Soil Spring Constant

Vertical Subgrade Modulus =	3000	lb/in^3
k_s =	5184	k/ft^3

Foundation Weight

Number Sides =	4	
Pier Width/Diameter =	5	ft
Pier Height =	0	ft
Height Above Grade =	0.8	ft
Pad Thickness =	6.83333	ft
Pad Width =	20	ft
Pad Length =	18	ft
Concrete Density =	150	pcf
Volume =	0	ft^3
Weight =	0	kips

Soil Weight

Soil Unit Weight=		pcf
Apply Soil Weight =		
Volume =		ft^3
Weight =		kips
Weight per Sq. Ft =		ksf

Passive Pressure on Mat/Pad

Horizontal Subgrade Modulus =	25	kcf
Plate Width =	0.5	ft
Depth to Ignore =	3.333333	ft
Pad/Mat Thickness =	6.83333	ft
k (side) =	2.812	k/in
k (corner) =	1.406	k/in

Pad/Mat Analysis

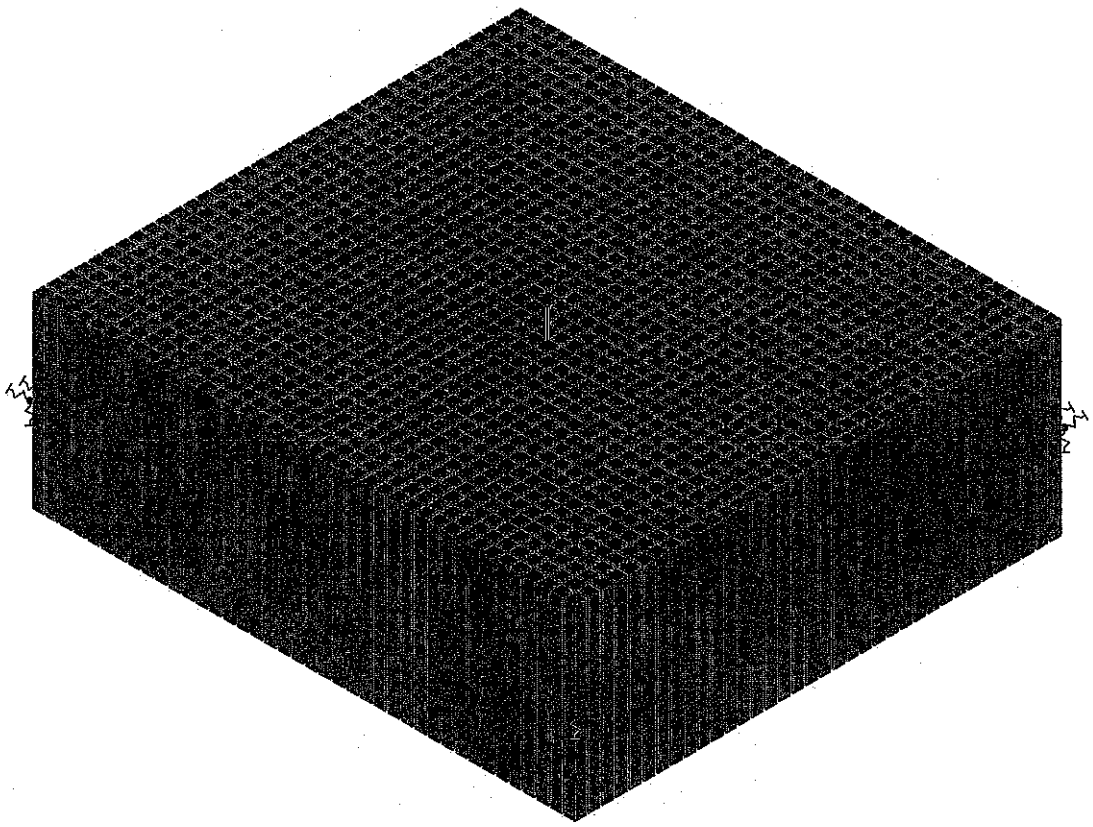
	Width	Length	
Thickness	6.83333	6.83333	ft
Width	20	18	ft
f'c	3	3	ksi
Top Bar Quantity	11	11	
Top Bar Size #	10	10	
Top Clear Spacing	3	3	in
Bot Bar Quantity	11	11	
Bot Bar Size #	10	10	
Bot Clear Spacing	3	3	in
As,min	35.4239827	31.881584	in^2
As, compression	13.97	13.97	in^2
d,compression	77.09496	77.09496	in
a	16.4	18.3	in
c	34.4	34.0	in
c/d	0.447	0.441	
Ø	0.793	0.801	
ØMn,compression	4232	4268	k-ft
Mu	676.5	672.9	k-ft
Ratio =	16.0%	15.8%	
As, Tension	13.97	13.97	in^2
d,tension	77.09496	77.09496	in
a	16.4	18.3	in
c	34.4	34.0	in
c/d	0.447	0.441	
Ø	0.793	0.801	
ØMn,tension	4232	4268	k-ft
Mu	1563.6	1741.7	k-ft
Ratio =	36.9%	40.8%	

Anchor Capacity

Max Tension from RISA =	17.048	kips
Anchor Type =	Rock Anchor	
Pile Type =	1.75" WILLIAMS R71	
Fu =	150	ksi
An =	2.6	in^2
Capacity = 0.8*Fu*An =	312	kips
Capacity Override =		kips
Ratio = 17.048 / 312 =	**5.5%**	

Bearing Check

Max Bearing Load =	2.689	kip
Plate Width =	0.5	ft
Plate Length =	0.5	ft
Ult. Bearing Capacity =	30	ksf
Bearing Pressure =	10.756	ksf
Ratio =	47.8%	



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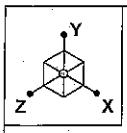

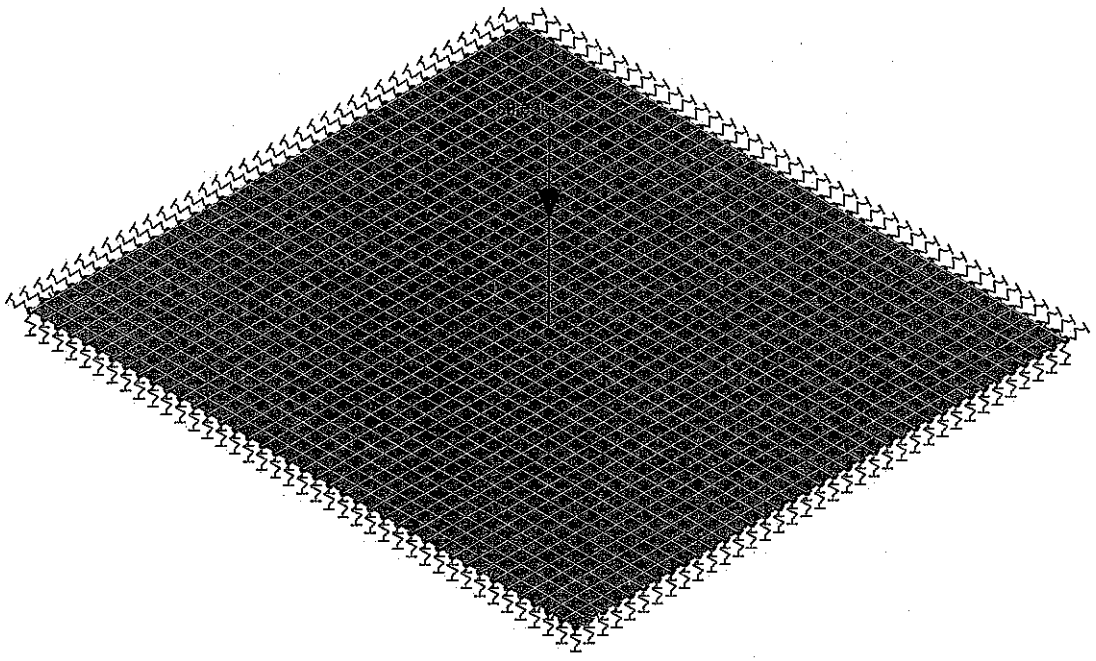

Loads: BLC 1, Dead

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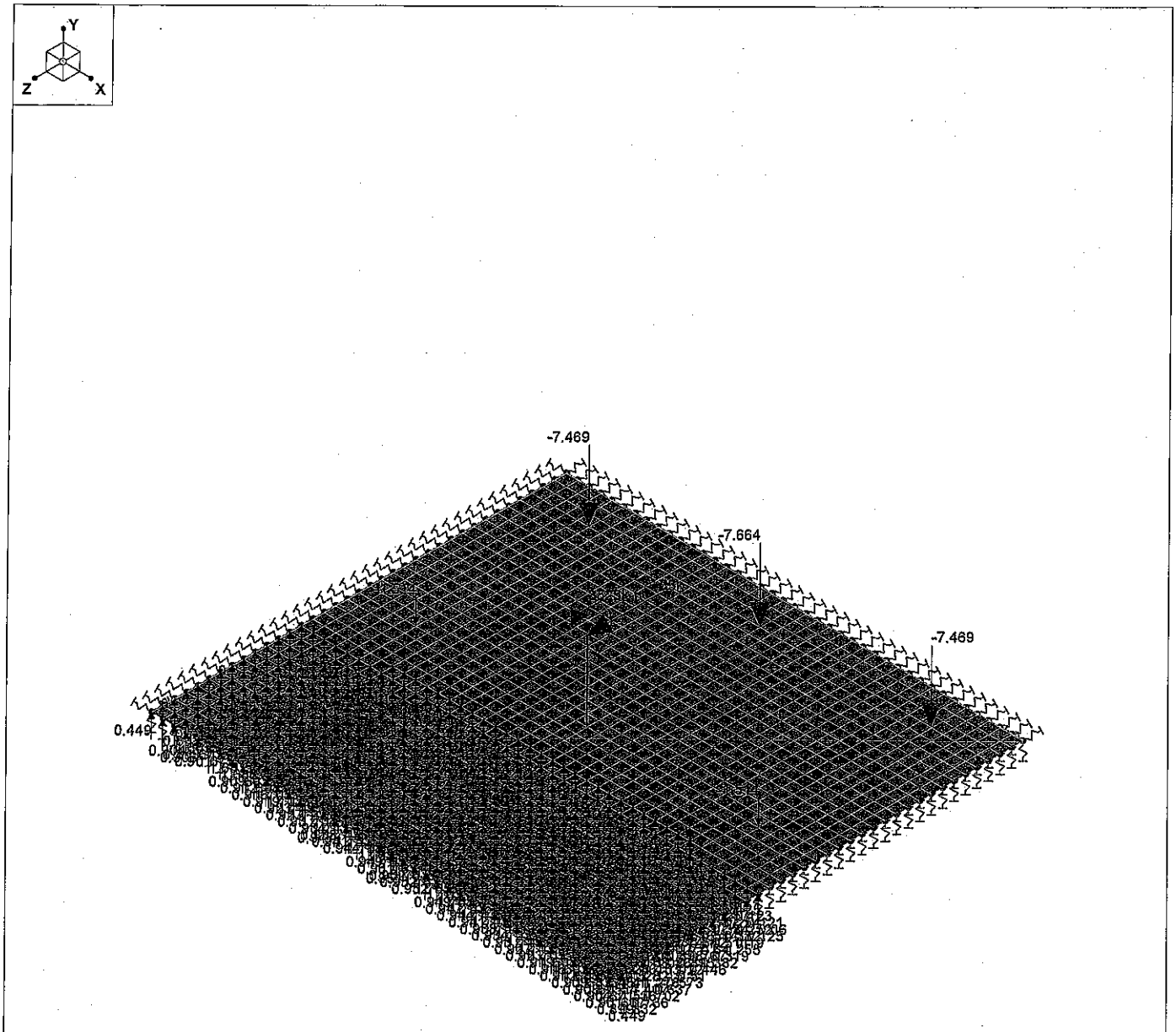

Loads: BLC 2, Wind 0
Y-direction Reaction Units are k and k-ft

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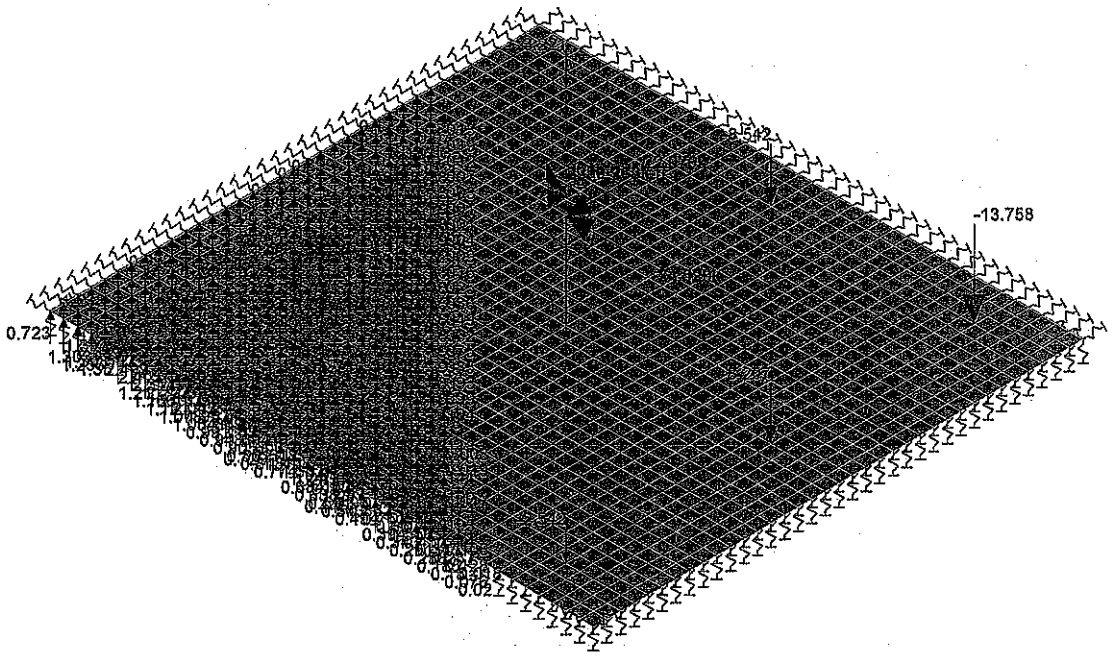

Loads: BLC 3, WIND 48
Y-direction Reaction Units are k and k-ft

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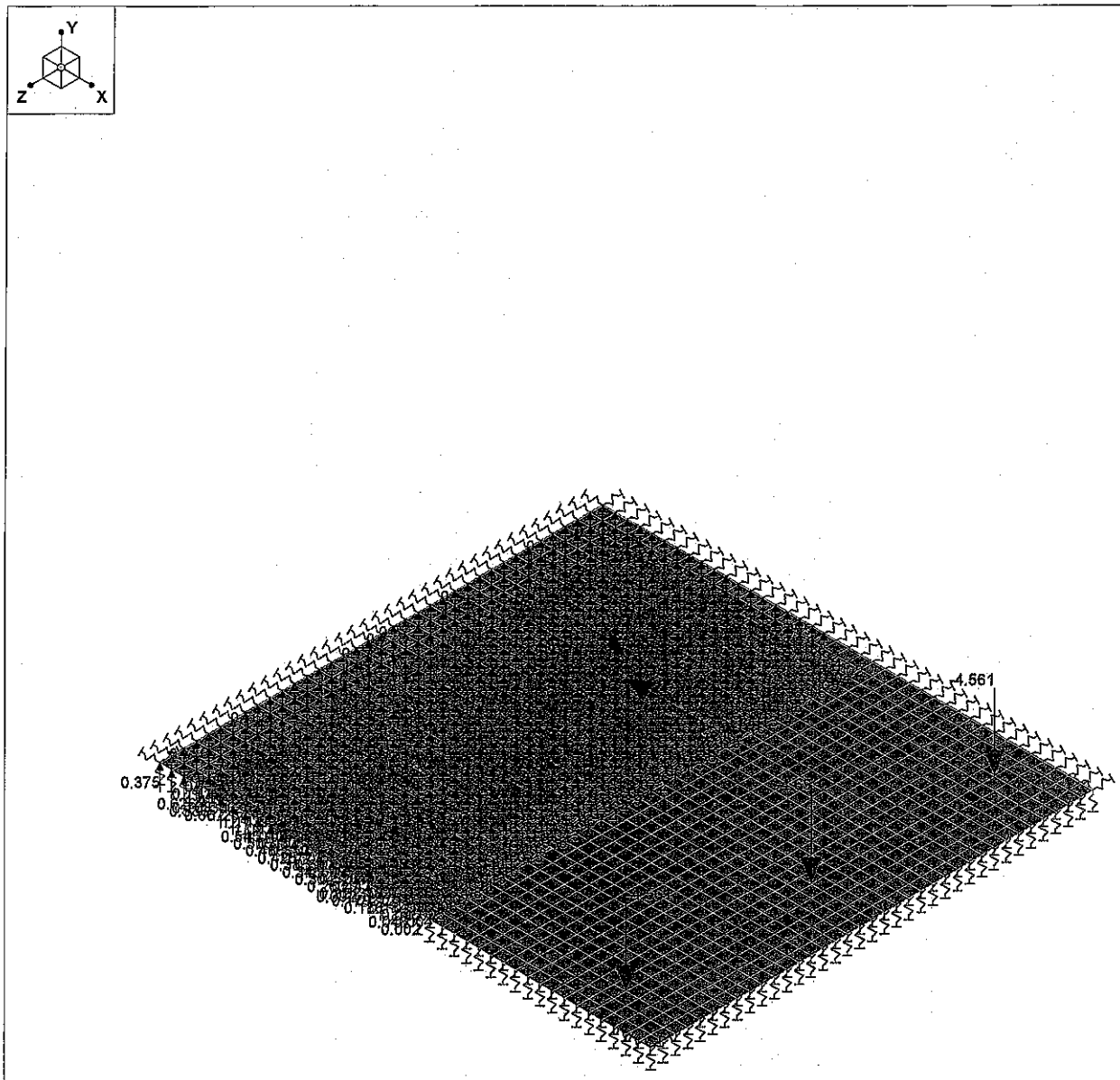

Loads: BLC 4, Wind 90
Y-direction Reaction Units are k and k-ft

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(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	None
RISAConnection Code	None
Cold Formed Steel Code	None
Wood Code	None
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	None
Aluminum Code	None - Building

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parme Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	Yes
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	Yes
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR_SET_ASTMA615
Min % Steel for Column	1
Max % Steel for Column	8

(Global) Model Settings, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	4
Cd X	4
Rho Z	1
Rho X	1

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(...
1	Dead	None		-1		1				
2	Wind 0	None				2				
3	WIND 48	None				4				
4	Wind 90	None				2				

Load Combinations

	Description	S...	PDelta	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.2 Dead + 1.0 Wind 0	Y...	Y		1	1.2	2	1																		
2	0.9 Dead + 1.0 Wind 0	Y...	Y		1	.9	2	1																		
3	1.2 Dead + 1.0 Wind 48	Y...	Y		1	1.2	3	1																		
4	0.9 Dead + 1.0 Wind 48	Y...	Y		1	.9	3	1																		
5	1.2 Dead + 1.0 Wind 90	Y...	Y		1	1.2	4	1																		
6	0.9 Dead + 1.0 Wind 90	Y...	Y		1	.9	4	1																		

Joint Loads and Enforced Displacements (BLC 1 : Dead)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1	CENTER	L	Y	-58.33

Joint Loads and Enforced Displacements (BLC 2 : Wind 0)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1	CENTER	L	Mx	3523
2	CENTER	L	Z	33

Joint Loads and Enforced Displacements (BLC 3 : WIND 48)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1	CENTER	L	Mz	2618.625

Joint Loads and Enforced Displacements (BLC 3 : WIND 48) (Continued)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
2	CENTER	L	Mx	2356.763
3	CENTER	L	X	-24.529
4	CENTER	L	Z	22.076

Joint Loads and Enforced Displacements (BLC 4 : Wind 90)

	Joint Label	L,D,M	Direction	Magnitude[(k,k-ft), (in,rad), (k*s^2/ft, k*s^2*ft)]
1	CENTER	L	Mz	3523
2	CENTER	L	X	-33

Concrete Properties

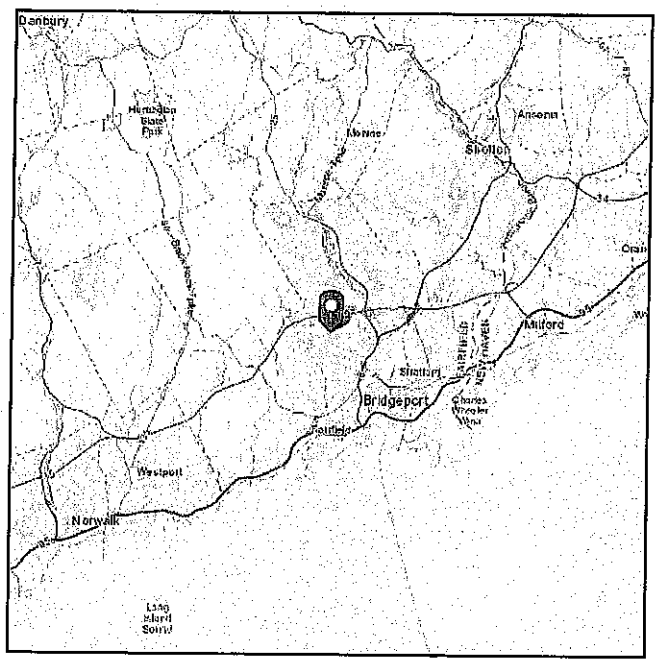
	Label	E [ksi]	G [ksi]	Nu	Therm (\1E...	Density[k/ft...	f'c[ksi]	Lambda	Flex Steel[...	Shear Stee...
1	Conc3000NW	3156	1372	.15	.6	.145	3	1	60	60
2	Conc3500NW	3409	1482	.15	.6	.145	3.5	1	60	60
3	Conc4000NW	3644	1584	.15	.6	.145	4	1	60	60
4	Conc3000LW	2085	907	.15	.6	.11	3	.75	60	60
5	Conc3500LW	2252	979	.15	.6	.11	3.5	.75	60	60
6	Conc4000LW	2408	1047	.15	.6	.11	4	.75	60	60

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 238.94 ft (NAVD 88)
Latitude: 41.2233
Longitude: -73.2168



Wind

Results:

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

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

Date Accessed: Thu Oct 04 2018

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

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

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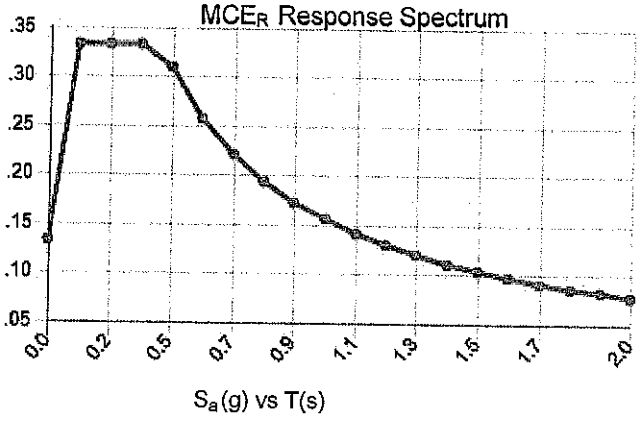
Seismic

Site Soil Class: D - Stiff Soil

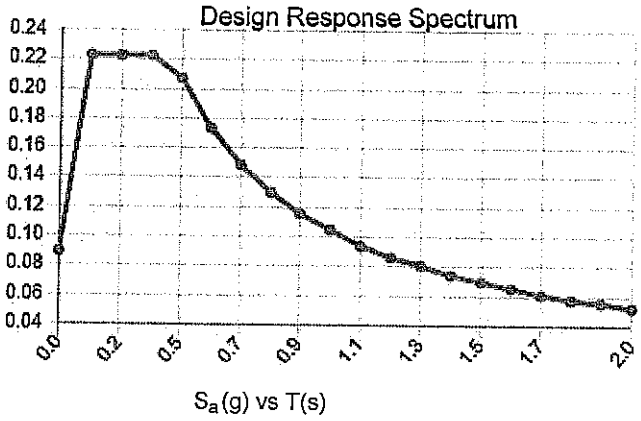
Results:

S_S :	0.209	S_{DS} :	0.223
S_1 :	0.065	S_{D1} :	0.104
F_a :	1.600	T_L :	6.000
F_v :	2.400	PGA :	0.113
S_{MS} :	0.334	PGA_M :	0.178
S_{M1} :	0.156	F_{PGA} :	1.573
		I_e :	1

Seismic Design Category B



S_a(g) vs T(s)



S_a(g) vs T(s)

Data Accessed: Thu Oct 04 2018

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

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Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Thu Oct 04 2018

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

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

Date: **October 11, 2018**

Charles McGuirt
Crown Castle
3530 Toringdon Way, Suite 300
Charlotte, NC 28277
Charles.McGuirt@crowncastle.com

Engineered Tower Solutions, PLLC
8120 Sheridan Blvd, Suite A-311
Westminster, CO 80003
(919) 782-2710
bach.tran@ets-pllc.com

Subject:	**Mount Structural Analysis**	
Contractor Designation:	**Verizon Wireless *Co-Locate***	
	Carrier Site Number:	39684
	Carrier Site Name:	TRUMBULL SW CT
Crown Castle Designation:	**Crown Castle BU Number:**	841288
	Crown Castle Site Name:	BRIDGEPORT NORTH
	Crown Castle JDE Number:	535167
	Crown Castle PO Number:	1268836
	Crown Castle Application Number:	461618 Rev. 1
Engineering Firm Designation:	**ETS Project No.:**	184557.14
Site Data:	**205 Kaechele Place, Bridgeport, Fairfield County, CT 06606** **Latitude: 41° 13' 24.04" Longitude: -73° 13' 0.38"**	
Structure Information:	**Tower Height & Type:**	150.0-ft Monopole
	Mount Elevation:	99.0-ft
	Mount Width & Type:	13.0-ft T-Arm Mount

Dear Charles McGuirt,

Engineered Tower Solutions, PLLC is pleased to submit this **"Mount Structural Analysis Report"** to determine the structural integrity of *Verizon Wireless'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.

Based upon our analysis, we have determined the adequacy of the antenna mounting system that will support the existing and proposed loading to be for the following Load Case:

T-Arm Mount (Multiple) **Sufficient Capacity**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the ***2016 Connecticut State Building Code (2012 IBC)***. Applicable Standard references and design criteria are listed in Section 2 – Analysis Criteria.

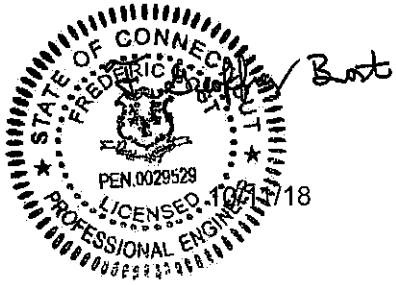
We at Engineered Tower Solutions, PLLC appreciate the opportunity of providing our continuing professional services to you and Crown Castle. If you have any questions or need further assistance on this or any other projects, please give us a call.

Mount structural analysis prepared by:

Bach S. Tran, EI
Structural Engineer I

Respectfully Submitted by:

Frederic G. Bost, PE
Owner/President



10/11/18

TABLE OF CONTENTS

1) INTRODUCTION

This mount is an existing 13.0 ft T-Arm mount installed at the 99.0 ft elevation of the 150.0 ft Monopole. Engineered Tower Solutions, PLLC, did not visit the site. A mapping and/or mount manufacturer drawings were not provided. Therefore, per direction of Crown Castle, photos of the tower were compared with other mounts within our database and a similar and comparable mount was used to perform this mount analysis.

2) ANALYSIS CRITERIA

Building Code:	2012 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1.50 in
Wind Speed with Ice:	50 mph
Seismic Ss:	0.209
Seismic S1:	0.064
Service Wind Speed:	30 mph
Man Live Load at Mid/End-Point:	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
99.0	103.0	1	GPS	GPS_A	(3) 13.0 ft T-Arm Mount
	100.0	6	RFS/Celwave	FD9R6004/2C-3L	
	99.0	3	Antel	BXA-171063/8CF	
		3	Antel	BXA-70063/4CF	
		6	CSS	X7CQAP-465-VR0	
		1	Commscope	RC2DC-3315-PF-48	
		3	Samsung Telecommunications	RFV01U-D1A	
		3	Samsung Telecommunications	RFV01U-D2A	

3) ANALYSIS PROCEDURE

Table 2 – Documents Provided

Document	Remarks	Reference	Source
Carrier Application	App # 461618 Rev. 1	09/27/2018	CCI Sites
Structural Level Drawings (Installed)	Crown Castle	10/01/2018	CCI Sites
Structural Level Drawing (Proposed)	Crown Castle	10/01/2018	CCI Sites
4-Structural Analysis Report	Paul J. Ford and Company	7900949	CCI Sites

3.1) Analysis Method

RISA-3D (version 17.0), 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 C.

3.2) Assumptions

1) Engineered Tower Solutions, PLLC, did not visit the site. A mapping and/or mount manufacturer drawings were not provided. Therefore, per direction of Crown Castle, photos of the tower were compared with other mounts within our database and a similar and comparable mount was used to perform this mount analysis
2) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specification.
3) The configuration of antennas, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
4) 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.
5) This Structural Analysis is not a condition assessment of the mount and is an evaluation of the theoretical structural capacity.
6) This analysis is based from the information supplied, and therefore, this report's results are as accurate as the supplied data.
7) Engineered Tower Solutions, PLLC makes no warranties, expressed and/or implied, in connection with this report, and disclaims any liability associated with material, fabrication, or erection of the mount. Engineered Tower Solutions, PLLC will not be held responsible from any consequential or incidental damages sustained by any person, firm, or organization as a result of the contents of this report. The maximum liability of Engineered Tower Solutions, PLLC pursuant to this report will be limited to the total fee received for compilation of this report.
8) It is the tower owner's responsibility to verify that the mount modeled and analyzed is the correct structure modeled.
9) The use of this report shall be limited to the purpose for which it was commissioned and may not be used for any other purposes without the written consent of Engineered Tower Solutions, PLLC.
10) Member connections are assumed to have been designed to meet or exceed the theoretical capacity of the connected member.
11) Steel grades have been assumed as follows:

a)	Channel, Solid Round, Angle, Plate	ASTM A36 (Gr 36)
b)	HSS (Rectangular)	ASTM 500 (Gr B-46)
c)	HSS (Round)	ASTM 500 (Gr B-42)
d)	Pipe	ASTM A53 (Gr 35)
e)	Connection Bolts	ASTM A325
f)	U-Bolts	SAE 429 Gr.2

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

4) ANALYSIS RESULTS

Table 3a – Mount Component Stresses vs. Capacity (Alpha Sector – T-Arm Mount)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass/Fail
1,2	Face Mount – Horizontal	3.0SCH40	99.0	99.3	PASS
1.2	Mount Pipe – Vertical	2.0SCH40		11.6	PASS
1,2	Sidearm – Horizontal	HSS4X4X1/4		64.0	PASS

Table 3b – Mount Component Stresses vs. Capacity (Beta Sector – T-Arm Mount)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass/Fail
1,2	Face Mount – Horizontal	3.0SCH40	99.0	97.2	PASS
1.2	Mount Pipe – Vertical	2.0SCH40		5.7	PASS
1,2	Sidearm – Horizontal	HSS4X4X1/4		59.0	PASS

Table 3c – Mount Component Stresses vs. Capacity (Gamma Sector – T-Arm Mount)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass/Fail
1,2	Face Mount – Horizontal	3.0SCH40	99.0	86.5	PASS
1.2	Mount Pipe – Vertical	2.0SCH40		5.7	PASS
1,2	Sidearm – Horizontal	HSS4X4X1/4		48.8	PASS

Notes:

1) See additional documentation in "Appendix C – Software Analysis Output" for calculations supporting the % capacity consumed.
2) Rating per TIA-222-H, Section 15.5.

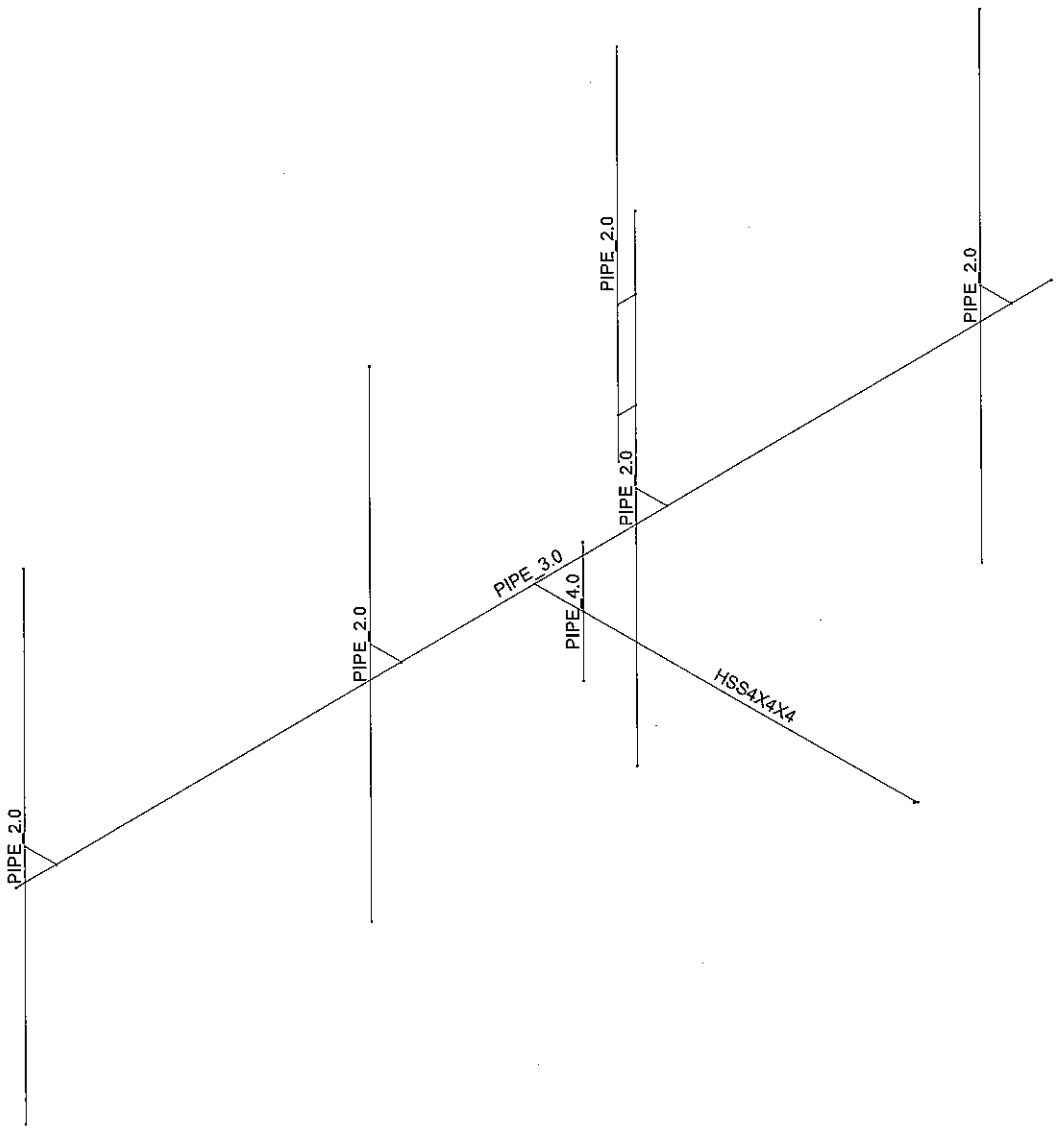
Tower Mount Rating (max from all components) =	**99.3%**

4.1) Recommendations

The tower mount has sufficient capacity to carry the existing and proposed load configuration. No modifications are required at this time.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



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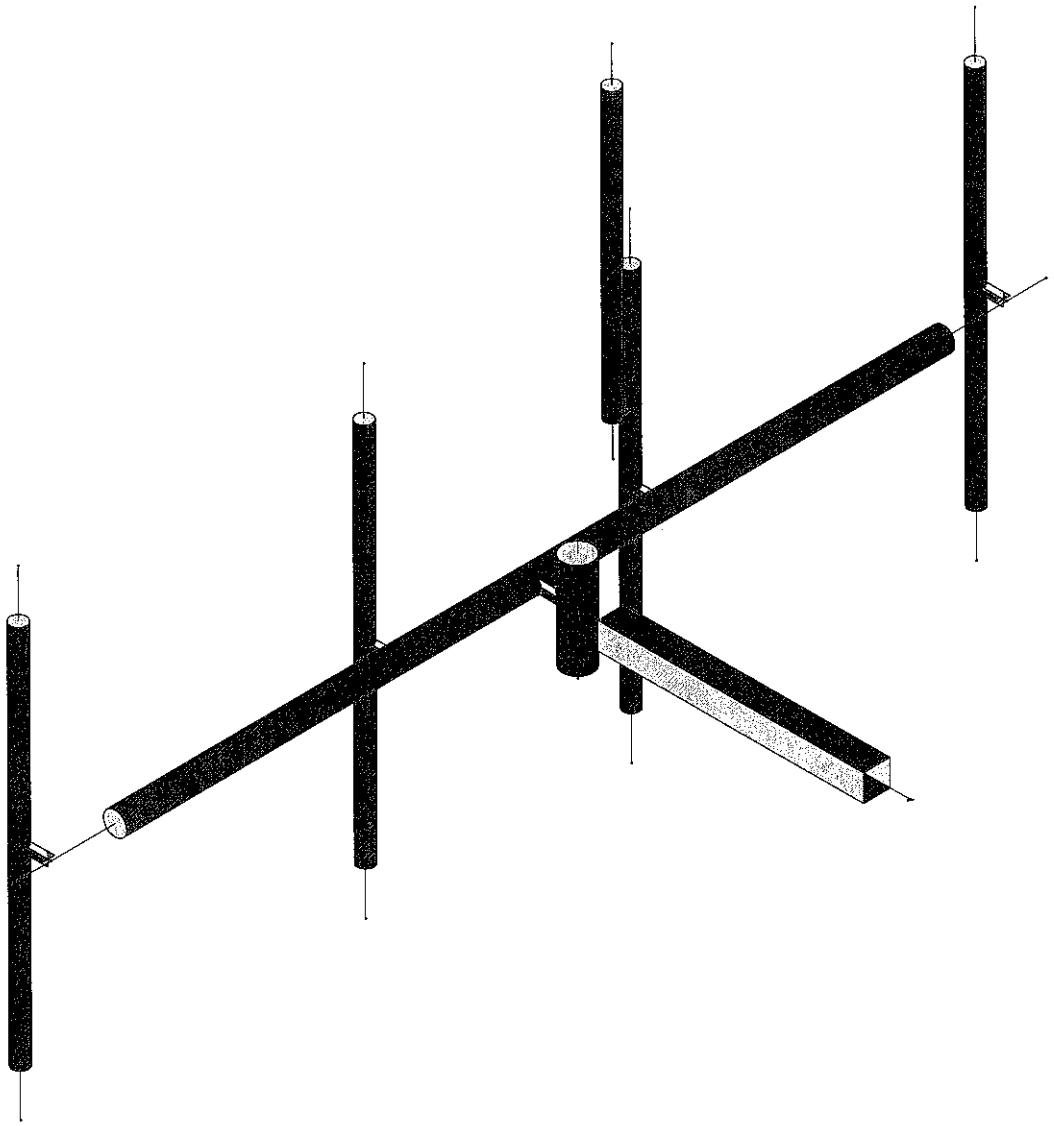

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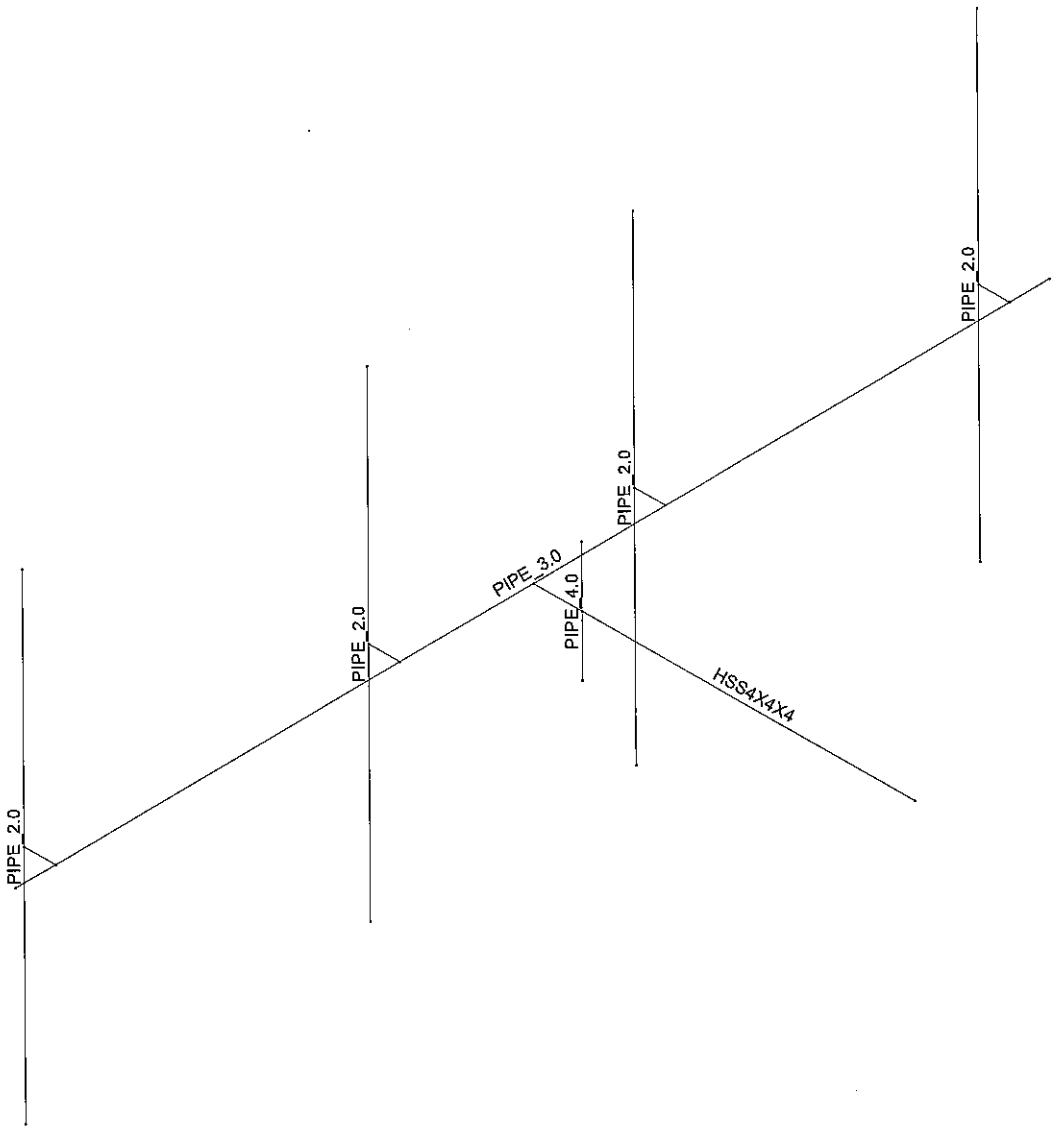

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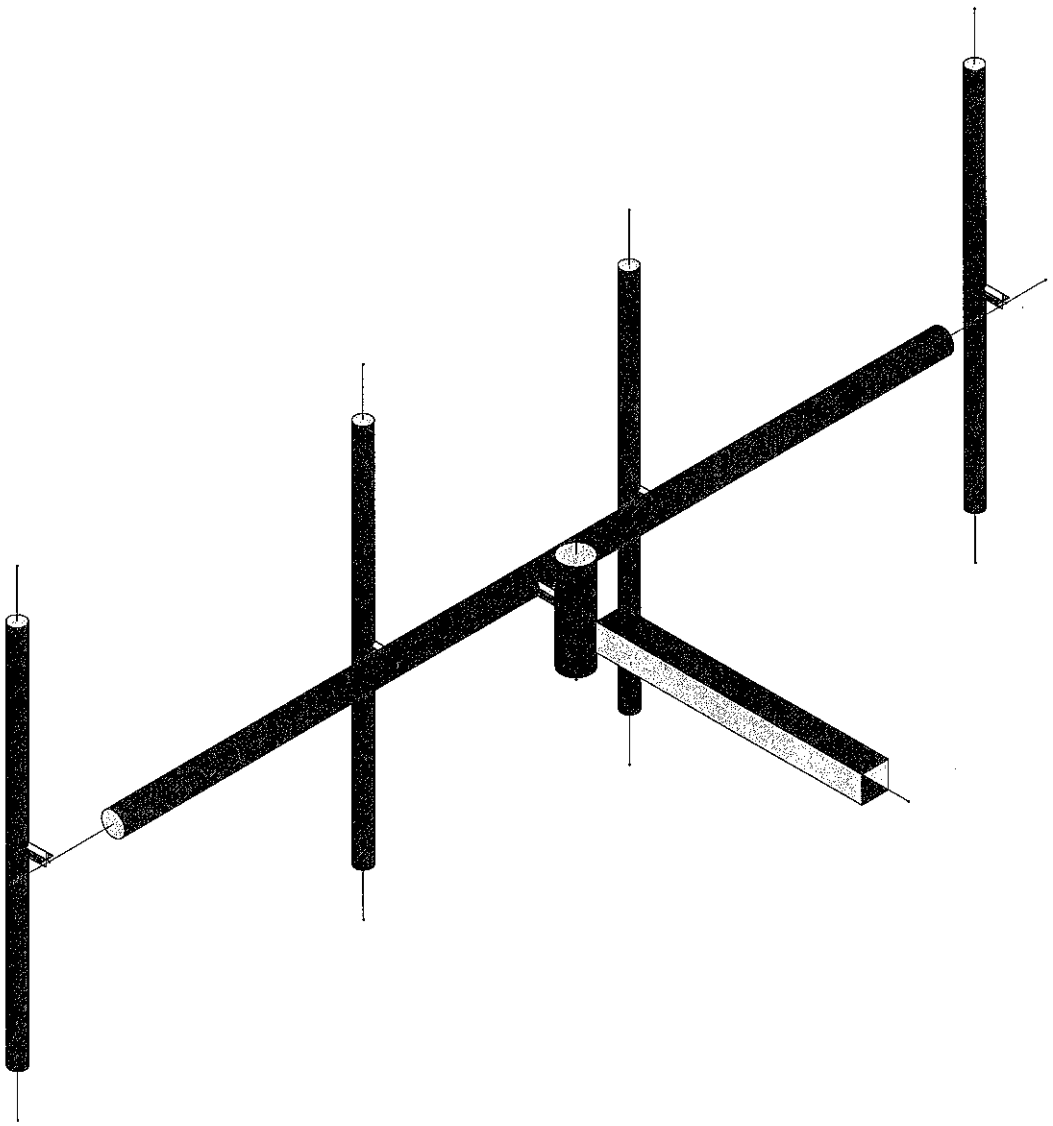
TSB		Oct 9, 2018 at 4:29 PM
ETS Job No. 184557.14		841288 - BRIDGEPORT NORTH_...



ETS	841288 - BRIDGEPORT NORTH_Beta+Gamma	SK - 2
TSB		Oct 9, 2018 at 4:30 PM
ETS Job No. 184557.14		841288 - BRIDGEPORT NORTH_...

APPENDIX B

SOFTWARE INPUT CALCULATIONS

ETS

ENGINEERED TOWER SOLUTIONS, PLLC

ETS
ENGINEERED TOWER SOLUTIONS, PLLC

ETS
ENGINEERED TOWER SOLUTIONS, PLLC

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	FM	N6	N7			PIPE 3.0	Beam	Pipe	A53 Gr.B	Typical
2	RL1	N2	N5			RIGID	None	None	RIGID	Typical
3	RL2	N13	N17			RIGID	None	None	RIGID	Typical
4	RL3	N16	N12			RIGID	None	None	RIGID	Typical
5	RL4	N11	N15			RIGID	None	None	RIGID	Typical
6	RL5	N10	N14			RIGID	None	None	RIGID	Typical
7	MP1	N22	N18			PIPE 2.0	Column	Pipe	A53 Gr.B	Typical
8	MP3	N24	N20			PIPE_2.0	Column	Pipe	A53 Gr.B	Typical
9	MP4	N25	N21			PIPE 2.0	Column	Pipe	A53 Gr.B	Typical
10	SA	N1	N2			HSS4X4X4	Beam	Tube	A500 Gr.B..	Typical
11	SA-V	N4	N3			PIPE 4.0	Column	Pipe	A53 Gr.B	Typical
12	MP2	N23	N22A			PIPE_2.0	Column	Pipe	A53 Gr.B	Typical
13	M13	N25A	N27			RIGID	None	None	RIGID	Typical
14	M14	N24A	N26			RIGID	None	None	RIGID	Typical
15	MP5	N28	N29			PIPE_2.0	Column	Pipe	A53 Gr.B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	General				
2	RIGID		7	31.4	0
3	Total General		7	31.4	0
4					
5	Hot Rolled Steel				
6	A500 Gr.B Rect	HSS4X4X4	1	49.9	0
7	A53 Gr.B	PIPE 2.0	5	342	0
8	A53 Gr.B	PIPE_3.0	1	156	0
9	A53 Gr.B	PIPE 4.0	1	18	0
10	Total HR Steel		8	565.9	.3

Member Point Loads (BLC 1 : Dead Load)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-121.7	%50
2	MP2	Y	-121.7	%50
3	MP3	Y	-96.7	%50
4	MP4	Y	-80.2	%50
5	MP5	Y	-.9	%100

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

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	74.5	%50
2	MP2	X	74.5	%50
3	MP3	X	86.3	%50
4	MP4	X	76.2	%50
5	MP5	X	27.2	%100
6	MP1	Z	0	%50
7	MP2	Z	0	%50
8	MP3	Z	0	%50
9	MP4	Z	0	%50
10	MP5	Z	0	%100

Member Point Loads (BLC 3 : Wind Load (30 deg))

Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]

Member Point Loads (BLC 3 : Wind Load (30 deg)) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	67.7	%50
2	MP2	X	67.7	%50
3	MP3	X	75.9	%50
4	MP4	X	67.1	%50
5	MP5	X	25.1	%100
6	MP1	Z	39.1	%50
7	MP2	Z	39.1	%50
8	MP3	Z	43.8	%50
9	MP4	Z	38.8	%50
10	MP5	Z	14.5	%100

Member Point Loads (BLC 4 : Wind Load (60 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	42.8	%50
2	MP2	X	42.8	%50
3	MP3	X	45.3	%50
4	MP4	X	40.1	%50
5	MP5	X	16.3	%100
6	MP1	Z	74.2	%50
7	MP2	Z	74.2	%50
8	MP3	Z	78.4	%50
9	MP4	Z	69.4	%50
10	MP5	Z	28.2	%100

Member Point Loads (BLC 5 : Wind Load (90 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	%50
2	MP2	X	0	%50
3	MP3	X	0	%50
4	MP4	X	0	%50
5	MP5	X	0	%100
6	MP1	Z	89.4	%50
7	MP2	Z	89.4	%50
8	MP3	Z	91.9	%50
9	MP4	Z	81.4	%50
10	MP5	Z	34.4	%100

Member Point Loads (BLC 6 : Wind Load (120 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-42.8	%50
2	MP2	X	-42.8	%50
3	MP3	X	-45.3	%50
4	MP4	X	-40.1	%50
5	MP5	X	-16.3	%100
6	MP1	Z	74.2	%50
7	MP2	Z	74.2	%50
8	MP3	Z	78.4	%50
9	MP4	Z	69.4	%50
10	MP5	Z	28.2	%100

Member Point Loads (BLC 7 : Wind Load (150 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-67.7	%50
2	MP2	X	-67.7	%50
3	MP3	X	-75.9	%50

Member Point Loads (BLC 7 : Wind Load (150 deg)) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP4	X	-67.1	%50
5	MP5	X	-25.1	%100
6	MP1	Z	39.1	%50
7	MP2	Z	39.1	%50
8	MP3	Z	43.8	%50
9	MP4	Z	38.8	%50
10	MP5	Z	14.5	%100

Member Point Loads (BLC 8 : Wind Load (180 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-74.5	%50
2	MP2	X	-74.5	%50
3	MP3	X	-86.3	%50
4	MP4	X	-76.2	%50
5	MP5	X	-27.2	%100
6	MP1	Z	0	%50
7	MP2	Z	0	%50
8	MP3	Z	0	%50
9	MP4	Z	0	%50
10	MP5	Z	0	%100

Member Point Loads (BLC 9 : Wind Load (210 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-67.7	%50
2	MP2	X	-67.7	%50
3	MP3	X	-75.9	%50
4	MP4	X	-67.1	%50
5	MP5	X	-25.1	%100
6	MP1	Z	-39.1	%50
7	MP2	Z	-39.1	%50
8	MP3	Z	-43.8	%50
9	MP4	Z	-38.8	%50
10	MP5	Z	-14.5	%100

Member Point Loads (BLC 10 : Wind Load (240 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-42.8	%50
2	MP2	X	-42.8	%50
3	MP3	X	-45.3	%50
4	MP4	X	-40.1	%50
5	MP5	X	-16.3	%100
6	MP1	Z	-74.2	%50
7	MP2	Z	-74.2	%50
8	MP3	Z	-78.4	%50
9	MP4	Z	-69.4	%50
10	MP5	Z	-28.2	%100

Member Point Loads (BLC 11 : Wind Load (270 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	%50
2	MP2	X	0	%50
3	MP3	X	0	%50
4	MP4	X	0	%50
5	MP5	X	0	%100
6	MP1	Z	-89.4	%50

Member Point Loads (BLC 11 : Wind Load (270 deg)) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
7	MP2	Z	-89.4	%50
8	MP3	Z	-91.9	%50
9	MP4	Z	-81.4	%50
10	MP5	Z	-34.4	%100

Member Point Loads (BLC 12 : Wind Load (300 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	42.8	%50
2	MP2	X	42.8	%50
3	MP3	X	45.3	%50
4	MP4	X	40.1	%50
5	MP5	X	16.3	%100
6	MP1	Z	-74.2	%50
7	MP2	Z	-74.2	%50
8	MP3	Z	-78.4	%50
9	MP4	Z	-69.4	%50
10	MP5	Z	-28.2	%100

Member Point Loads (BLC 13 : Wind Load (330 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	67.7	%50
2	MP2	X	67.7	%50
3	MP3	X	75.9	%50
4	MP4	X	67.1	%50
5	MP5	X	25.1	%100
6	MP1	Z	-39.1	%50
7	MP2	Z	-39.1	%50
8	MP3	Z	-43.8	%50
9	MP4	Z	-38.8	%50
10	MP5	Z	-14.5	%100

Member Point Loads (BLC 14 : Ice Load)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-254.2	%50
2	MP2	Y	-254.2	%50
3	MP3	Y	-182.5	%50
4	MP4	Y	-210.9	%50
5	MP5	Y	-44.1	%100

Member Point Loads (BLC 15 : Wind on Ice (0 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	16.9	%50
2	MP2	X	16.9	%50
3	MP3	X	20.4	%50
4	MP4	X	17.6	%50
5	MP5	X	11.2	%100
6	MP1	Z	0	%50
7	MP2	Z	0	%50
8	MP3	Z	0	%50
9	MP4	Z	0	%50
10	MP5	Z	0	%100

Member Point Loads (BLC 16 : Wind on Ice (30 deg))

Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]

Member Point Loads (BLC 16 : Wind on Ice (30 deg)) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	16.2	%50
2	MP2	X	16.2	%50
3	MP3	X	18.7	%50
4	MP4	X	16.3	%50
5	MP5	X	9.6	%100
6	MP1	Z	9.4	%50
7	MP2	Z	9.4	%50
8	MP3	Z	10.8	%50
9	MP4	Z	9.4	%50
10	MP5	Z	5.5	%100

Member Point Loads (BLC 17 : Wind on Ice (60 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	11.2	%50
2	MP2	X	11.2	%50
3	MP3	X	12.1	%50
4	MP4	X	10.7	%50
5	MP5	X	5.4	%100
6	MP1	Z	19.3	%50
7	MP2	Z	19.3	%50
8	MP3	Z	20.9	%50
9	MP4	Z	18.6	%50
10	MP5	Z	9.3	%100

Member Point Loads (BLC 18 : Wind on Ice (90 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	%50
2	MP2	X	0	%50
3	MP3	X	0	%50
4	MP4	X	0	%50
5	MP5	X	0	%100
6	MP1	Z	24.1	%50
7	MP2	Z	24.1	%50
8	MP3	Z	25.5	%50
9	MP4	Z	22.7	%50
10	MP5	Z	10.6	%100

Member Point Loads (BLC 19 : Wind on Ice (120 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-11.2	%50
2	MP2	X	-11.2	%50
3	MP3	X	-12.1	%50
4	MP4	X	-10.7	%50
5	MP5	X	-5.4	%100
6	MP1	Z	19.3	%50
7	MP2	Z	19.3	%50
8	MP3	Z	20.9	%50
9	MP4	Z	18.6	%50
10	MP5	Z	9.3	%100

Member Point Loads (BLC 20 : Wind on Ice (150 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-16.2	%50
2	MP2	X	-16.2	%50
3	MP3	X	-18.7	%50

Member Point Loads (BLC 20 : Wind on Ice (150 deg)) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP4	X	-16.3	%50
5	MP5	X	-9.6	%100
6	MP1	Z	9.4	%50
7	MP2	Z	9.4	%50
8	MP3	Z	10.8	%50
9	MP4	Z	9.4	%50
10	MP5	Z	5.5	%100

Member Point Loads (BLC 21 : Wind on Ice (180 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-16.9	%50
2	MP2	X	-16.9	%50
3	MP3	X	-20.4	%50
4	MP4	X	-17.6	%50
5	MP5	X	-11.2	%100
6	MP1	Z	0	%50
7	MP2	Z	0	%50
8	MP3	Z	0	%50
9	MP4	Z	0	%50
10	MP5	Z	0	%100

Member Point Loads (BLC 22 : Wind on Ice (210 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-16.2	%50
2	MP2	X	-16.2	%50
3	MP3	X	-18.7	%50
4	MP4	X	-16.3	%50
5	MP5	X	-9.6	%100
6	MP1	Z	-9.4	%50
7	MP2	Z	-9.4	%50
8	MP3	Z	-10.8	%50
9	MP4	Z	-9.4	%50
10	MP5	Z	-5.5	%100

Member Point Loads (BLC 23 : Wind on Ice (240 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-11.2	%50
2	MP2	X	-11.2	%50
3	MP3	X	-12.1	%50
4	MP4	X	-10.7	%50
5	MP5	X	-5.4	%100
6	MP1	Z	-19.3	%50
7	MP2	Z	-19.3	%50
8	MP3	Z	-20.9	%50
9	MP4	Z	-18.6	%50
10	MP5	Z	-9.3	%100

Member Point Loads (BLC 24 : Wind on Ice (270 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	%50
2	MP2	X	0	%50
3	MP3	X	0	%50
4	MP4	X	0	%50
5	MP5	X	0	%100
6	MP1	Z	-24.1	%50

Member Point Loads (BLC 24 : Wind on Ice (270 deg)) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
7	MP2	Z	-24.1	%50
8	MP3	Z	-25.5	%50
9	MP4	Z	-22.7	%50
10	MP5	Z	-10.6	%100

Member Point Loads (BLC 25 : Wind on Ice (300 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	11.2	%50
2	MP2	X	11.2	%50
3	MP3	X	12.1	%50
4	MP4	X	10.7	%50
5	MP5	X	5.4	%100
6	MP1	Z	-19.3	%50
7	MP2	Z	-19.3	%50
8	MP3	Z	-20.9	%50
9	MP4	Z	-18.6	%50
10	MP5	Z	-9.3	%100

Member Point Loads (BLC 26 : Wind on Ice (330 deg))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	16.2	%50
2	MP2	X	16.2	%50
3	MP3	X	18.7	%50
4	MP4	X	16.3	%50
5	MP5	X	9.6	%100
6	MP1	Z	-9.4	%50
7	MP2	Z	-9.4	%50
8	MP3	Z	-10.8	%50
9	MP4	Z	-9.4	%50
10	MP5	Z	-5.5	%100

Member Point Loads (BLC 27 : Horizontal Seismic, Eh (0))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	121.7	%50
2	MP2	X	121.7	%50
3	MP3	X	96.7	%50
4	MP4	X	80.2	%50
5	MP5	X	.9	%100
6	MP1	Z	0	%50
7	MP2	Z	0	%50
8	MP3	Z	0	%50
9	MP4	Z	0	%50
10	MP5	Z	0	%100

Member Point Loads (BLC 28 : Horizontal Seismic, Eh (30))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	105.4	%50
2	MP2	X	105.4	%50
3	MP3	X	83.7	%50
4	MP4	X	69.5	%50
5	MP5	X	.8	%100
6	MP1	Z	60.8	%50
7	MP2	Z	60.8	%50
8	MP3	Z	48.3	%50
9	MP4	Z	40.1	%50

Member Point Loads (BLC 28 : Horizontal Seismic, Eh (30)) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
10	MP5	Z	.4	%100

Member Point Loads (BLC 29 : Horizontal Seismic, Eh (60))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	60.9	%50
2	MP2	X	60.9	%50
3	MP3	X	48.4	%50
4	MP4	X	40.1	%50
5	MP5	X	.4	%100
6	MP1	Z	105.4	%50
7	MP2	Z	105.4	%50
8	MP3	Z	83.7	%50
9	MP4	Z	69.5	%50
10	MP5	Z	.8	%100

Member Point Loads (BLC 30 : Horizontal Seismic, Eh (90))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	%50
2	MP2	X	0	%50
3	MP3	X	0	%50
4	MP4	X	0	%50
5	MP5	X	0	%100
6	MP1	Z	121.7	%50
7	MP2	Z	121.7	%50
8	MP3	Z	96.7	%50
9	MP4	Z	80.2	%50
10	MP5	Z	.9	%100

Member Point Loads (BLC 31 : Horizontal Seismic, Eh (120))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-60.8	%50
2	MP2	X	-60.8	%50
3	MP3	X	-48.3	%50
4	MP4	X	-40.1	%50
5	MP5	X	-.4	%100
6	MP1	Z	105.4	%50
7	MP2	Z	105.4	%50
8	MP3	Z	83.7	%50
9	MP4	Z	69.5	%50
10	MP5	Z	.8	%100

Member Point Loads (BLC 32 : Horizontal Seismic, Eh (150))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-105.4	%50
2	MP2	X	-105.4	%50
3	MP3	X	-83.7	%50
4	MP4	X	-69.5	%50
5	MP5	X	-.8	%100
6	MP1	Z	60.8	%50
7	MP2	Z	60.8	%50
8	MP3	Z	48.3	%50
9	MP4	Z	40.1	%50
10	MP5	Z	.4	%100

Member Point Loads (BLC 33 : Horizontal Seismic, Eh (180))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-121.7	%50
2	MP2	X	-121.7	%50
3	MP3	X	-96.7	%50
4	MP4	X	-80.2	%50
5	MP5	X	-.9	%100
6	MP1	Z	0	%50
7	MP2	Z	0	%50
8	MP3	Z	0	%50
9	MP4	Z	0	%50
10	MP5	Z	0	%100

Member Point Loads (BLC 34 : Horizontal Seismic, Eh (210))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-105.4	%50
2	MP2	X	-105.4	%50
3	MP3	X	-83.7	%50
4	MP4	X	-69.5	%50
5	MP5	X	-.8	%100
6	MP1	Z	-60.9	%50
7	MP2	Z	-60.9	%50
8	MP3	Z	-48.4	%50
9	MP4	Z	-40.1	%50
10	MP5	Z	-.4	%100

Member Point Loads (BLC 35 : Horizontal Seismic, Eh (240))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	-60.9	%50
2	MP2	X	-60.9	%50
3	MP3	X	-48.4	%50
4	MP4	X	-40.1	%50
5	MP5	X	-.4	%100
6	MP1	Z	-105.4	%50
7	MP2	Z	-105.4	%50
8	MP3	Z	-83.7	%50
9	MP4	Z	-69.5	%50
10	MP5	Z	-.8	%100

Member Point Loads (BLC 36 : Horizontal Seismic, Eh (270))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	0	%50
2	MP2	X	0	%50
3	MP3	X	0	%50
4	MP4	X	0	%50
5	MP5	X	0	%100
6	MP1	Z	-121.7	%50
7	MP2	Z	-121.7	%50
8	MP3	Z	-96.7	%50
9	MP4	Z	-80.2	%50
10	MP5	Z	-.9	%100

Member Point Loads (BLC 37 : Horizontal Seismic, Eh (300))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	60.9	%50
2	MP2	X	60.9	%50
3	MP3	X	48.4	%50

Member Point Loads (BLC 37 : Horizontal Seismic, Eh (300)) (Continued)

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
4	MP4	X	40.1	%50
5	MP5	X	.4	%100
6	MP1	Z	-105.4	%50
7	MP2	Z	-105.4	%50
8	MP3	Z	-83.7	%50
9	MP4	Z	-69.5	%50
10	MP5	Z	-.8	%100

Member Point Loads (BLC 38 : Horizontal Seismic, Eh (330))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	X	105.4	%50
2	MP2	X	105.4	%50
3	MP3	X	83.7	%50
4	MP4	X	69.5	%50
5	MP5	X	.8	%100
6	MP1	Z	-60.9	%50
7	MP2	Z	-60.9	%50
8	MP3	Z	-48.4	%50
9	MP4	Z	-40.1	%50
10	MP5	Z	-.4	%100

Member Point Loads (BLC 39 : Maintenance Load, Lm (MP1))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP1	Y	-500	%50

Member Point Loads (BLC 40 : Maintenance Load, Lm (MP2))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP2	Y	-500	%50

Member Point Loads (BLC 41 : Maintenance Load, Lm (MP3))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP3	Y	-500	%50

Member Point Loads (BLC 42 : Maintenance Load, Lm (MP4))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	MP4	Y	-500	%50

Member Point Loads (BLC 57 : Maintenance Load, Lv (Pos. 1))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	SA	Y	-250	%100

Member Point Loads (BLC 58 : Maintenance Load, Lv (Pos. 2))

	Member Label	Direction	Magnitude[lb,lb-ft]	Location[in,%]
1	FM	Y	-250	%50

Member Distributed Loads (BLC 2 : Wind Load (0 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	11.7	11.7	0	0
2	SA	X	0	0	0	0
3	SA-V	X	15	15	0	0
4	FM	Z	0	0	0	0
5	SA	Z	0	0	0	0

Member Distributed Loads (BLC 2 : Wind Load (0 deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
6	SA-V	Z	0	0	0	0
7	MP1	X	50.5	50.5	%14.931	%85.069
8	MP2	X	50.5	50.5	%14.931	%85.069
9	MP3	X	24.3	24.3	%16.528	%83.472
10	MP4	X	39.8	39.8	%17.083	%82.917
11	MP5	X	9.5	9.5	%89.815	%99.074
12	MP1	Z	0	0	0	0
13	MP2	Z	0	0	0	0
14	MP3	Z	0	0	0	0
15	MP4	Z	0	0	0	0
16	MP5	Z	0	0	0	0

Member Distributed Loads (BLC 3 : Wind Load (30 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	10.1	10.1	0	0
2	SA	X	19.3	19.3	0	0
3	SA-V	X	13	13	0	0
4	FM	Z	5.8	5.8	0	0
5	SA	Z	11.1	11.1	0	0
6	SA-V	Z	7.5	7.5	0	0
7	MP1	X	38.8	38.8	%14.931	%85.069
8	MP2	X	38.8	38.8	%14.931	%85.069
9	MP3	X	19.6	19.6	%16.528	%83.472
10	MP4	X	30.5	30.5	%17.083	%82.917
11	MP5	X	8.3	8.3	%89.815	%99.074
12	MP1	Z	22.4	22.4	%14.931	%85.069
13	MP2	Z	22.4	22.4	%14.931	%85.069
14	MP3	Z	11.3	11.3	%16.528	%83.472
15	MP4	Z	17.6	17.6	%17.083	%82.917
16	MP5	Z	4.8	4.8	%89.815	%99.074

Member Distributed Loads (BLC 4 : Wind Load (60 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	5.8	5.8	0	0
2	SA	X	11.1	11.1	0	0
3	SA-V	X	7.5	7.5	0	0
4	FM	Z	10.1	10.1	0	0
5	SA	Z	19.3	19.3	0	0
6	SA-V	Z	13	13	0	0
7	MP1	X	16.7	16.7	%14.931	%85.069
8	MP2	X	16.7	16.7	%14.931	%85.069
9	MP3	X	9.7	9.7	%16.528	%83.472
10	MP4	X	13	13	%17.083	%82.917
11	MP5	X	4.8	4.8	%89.815	%99.074
12	MP1	Z	29	29	%14.931	%85.069
13	MP2	Z	29	29	%14.931	%85.069
14	MP3	Z	16.8	16.8	%16.528	%83.472
15	MP4	Z	22.4	22.4	%17.083	%82.917
16	MP5	Z	8.3	8.3	%89.815	%99.074

Member Distributed Loads (BLC 5 : Wind Load (90 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	0	0	0	0
2	SA	X	0	0	0	0
3	SA-V	X	0	0	0	0

Member Distributed Loads (BLC 5 : Wind Load (90 deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
4	FM	Z	0	0	0	0
5	SA	Z	22.3	22.3	0	0
6	SA-V	Z	15	15	0	0
7	MP1	X	0	0	0	0
8	MP2	X	0	0	0	0
9	MP3	X	0	0	0	0
10	MP4	X	0	0	0	0
11	MP5	X	0	0	0	0
12	MP1	Z	27.7	27.7	%14.931	%85.069
13	MP2	Z	27.7	27.7	%14.931	%85.069
14	MP3	Z	17.8	17.8	%16.528	%83.472
15	MP4	Z	21.3	21.3	%17.083	%82.917
16	MP5	Z	9.5	9.5	%89.815	%99.074

Member Distributed Loads (BLC 6 : Wind Load (120 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	-5.8	-5.8	0	0
2	SA	X	-11.1	-11.1	0	0
3	SA-V	X	-7.5	-7.5	0	0
4	FM	Z	10.1	10.1	0	0
5	SA	Z	19.3	19.3	0	0
6	SA-V	Z	13	13	0	0
7	MP1	X	-16.7	-16.7	%14.931	%85.069
8	MP2	X	-16.7	-16.7	%14.931	%85.069
9	MP3	X	-9.7	-9.7	%16.528	%83.472
10	MP4	X	-13	-13	%17.083	%82.917
11	MP5	X	-4.8	-4.8	%89.815	%99.074
12	MP1	Z	29	29	%14.931	%85.069
13	MP2	Z	29	29	%14.931	%85.069
14	MP3	Z	16.8	16.8	%16.528	%83.472
15	MP4	Z	22.4	22.4	%17.083	%82.917
16	MP5	Z	8.3	8.3	%89.815	%99.074

Member Distributed Loads (BLC 7 : Wind Load (150 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	-10.1	-10.1	0	0
2	SA	X	-19.3	-19.3	0	0
3	SA-V	X	-13	-13	0	0
4	FM	Z	5.8	5.8	0	0
5	SA	Z	11.1	11.1	0	0
6	SA-V	Z	7.5	7.5	0	0
7	MP1	X	-38.8	-38.8	%14.931	%85.069
8	MP2	X	-38.8	-38.8	%14.931	%85.069
9	MP3	X	-19.6	-19.6	%16.528	%83.472
10	MP4	X	-30.5	-30.5	%17.083	%82.917
11	MP5	X	-8.3	-8.3	%89.815	%99.074
12	MP1	Z	22.4	22.4	%14.931	%85.069
13	MP2	Z	22.4	22.4	%14.931	%85.069
14	MP3	Z	11.3	11.3	%16.528	%83.472
15	MP4	Z	17.6	17.6	%17.083	%82.917
16	MP5	Z	4.8	4.8	%89.815	%99.074

Member Distributed Loads (BLC 8 : Wind Load (180 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	-11.7	-11.7	0	0

Member Distributed Loads (BLC 8 : Wind Load (180 deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
2	SA	X	0	0	0	0
3	SA-V	X	-15	-15	0	0
4	FM	Z	0	0	0	0
5	SA	Z	0	0	0	0
6	SA-V	Z	0	0	0	0
7	MP1	X	-50.5	-50.5	%14.931	%85.069
8	MP2	X	-50.5	-50.5	%14.931	%85.069
9	MP3	X	-24.3	-24.3	%16.528	%83.472
10	MP4	X	-39.8	-39.8	%17.083	%82.917
11	MP5	X	-9.5	-9.5	%89.815	%99.074
12	MP1	Z	0	0	0	0
13	MP2	Z	0	0	0	0
14	MP3	Z	0	0	0	0
15	MP4	Z	0	0	0	0
16	MP5	Z	0	0	0	0

Member Distributed Loads (BLC 9 : Wind Load (210 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	-10.1	-10.1	0	0
2	SA	X	-19.3	-19.3	0	0
3	SA-V	X	-13	-13	0	0
4	FM	Z	-5.8	-5.8	0	0
5	SA	Z	-11.1	-11.1	0	0
6	SA-V	Z	-7.5	-7.5	0	0
7	MP1	X	-38.8	-38.8	%14.931	%85.069
8	MP2	X	-38.8	-38.8	%14.931	%85.069
9	MP3	X	-19.6	-19.6	%16.528	%83.472
10	MP4	X	-30.5	-30.5	%17.083	%82.917
11	MP5	X	-8.3	-8.3	%89.815	%99.074
12	MP1	Z	-22.4	-22.4	%14.931	%85.069
13	MP2	Z	-22.4	-22.4	%14.931	%85.069
14	MP3	Z	-11.3	-11.3	%16.528	%83.472
15	MP4	Z	-17.6	-17.6	%17.083	%82.917
16	MP5	Z	-4.8	-4.8	%89.815	%99.074

Member Distributed Loads (BLC 10 : Wind Load (240 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	-5.8	-5.8	0	0
2	SA	X	-11.1	-11.1	0	0
3	SA-V	X	-7.5	-7.5	0	0
4	FM	Z	-10.1	-10.1	0	0
5	SA	Z	-19.3	-19.3	0	0
6	SA-V	Z	-13	-13	0	0
7	MP1	X	-16.7	-16.7	%14.931	%85.069
8	MP2	X	-16.7	-16.7	%14.931	%85.069
9	MP3	X	-9.7	-9.7	%16.528	%83.472
10	MP4	X	-13	-13	%17.083	%82.917
11	MP5	X	-4.8	-4.8	%89.815	%99.074
12	MP1	Z	-29	-29	%14.931	%85.069
13	MP2	Z	-29	-29	%14.931	%85.069
14	MP3	Z	-16.8	-16.8	%16.528	%83.472
15	MP4	Z	-22.4	-22.4	%17.083	%82.917
16	MP5	Z	-8.3	-8.3	%89.815	%99.074

Member Distributed Loads (BLC 11 : Wind Load (270 deg))

Member Label	Direction	Start Magnitude[lb/ft	End Magnitude[lb/ft	Start Location[in,%]	End Location[in,%]

Member Distributed Loads (BLC 11 : Wind Load (270 deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	0	0	0	0
2	SA	X	0	0	0	0
3	SA-V	X	0	0	0	0
4	FM	Z	0	0	0	0
5	SA	Z	-22.3	-22.3	0	0
6	SA-V	Z	-15	-15	0	0
7	MP1	X	0	0	0	0
8	MP2	X	0	0	0	0
9	MP3	X	0	0	0	0
10	MP4	X	0	0	0	0
11	MP5	X	0	0	0	0
12	MP1	Z	-27.7	-27.7	%14.931	%85.069
13	MP2	Z	-27.7	-27.7	%14.931	%85.069
14	MP3	Z	-17.8	-17.8	%16.528	%83.472
15	MP4	Z	-21.3	-21.3	%17.083	%82.917
16	MP5	Z	-9.5	-9.5	%89.815	%99.074

Member Distributed Loads (BLC 12 : Wind Load (300 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	5.8	5.8	0	0
2	SA	X	11.1	11.1	0	0
3	SA-V	X	7.5	7.5	0	0
4	FM	Z	-10.1	-10.1	0	0
5	SA	Z	-19.3	-19.3	0	0
6	SA-V	Z	-13	-13	0	0
7	MP1	X	16.7	16.7	%14.931	%85.069
8	MP2	X	16.7	16.7	%14.931	%85.069
9	MP3	X	9.7	9.7	%16.528	%83.472
10	MP4	X	13	13	%17.083	%82.917
11	MP5	X	4.8	4.8	%89.815	%99.074
12	MP1	Z	-29	-29	%14.931	%85.069
13	MP2	Z	-29	-29	%14.931	%85.069
14	MP3	Z	-16.8	-16.8	%16.528	%83.472
15	MP4	Z	-22.4	-22.4	%17.083	%82.917
16	MP5	Z	-8.3	-8.3	%89.815	%99.074

Member Distributed Loads (BLC 13 : Wind Load (330 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	10.1	10.1	0	0
2	SA	X	19.3	19.3	0	0
3	SA-V	X	13	13	0	0
4	FM	Z	-5.8	-5.8	0	0
5	SA	Z	-11.1	-11.1	0	0
6	SA-V	Z	-7.5	-7.5	0	0
7	MP1	X	38.8	38.8	%14.931	%85.069
8	MP2	X	38.8	38.8	%14.931	%85.069
9	MP3	X	19.6	19.6	%16.528	%83.472
10	MP4	X	30.5	30.5	%17.083	%82.917
11	MP5	X	8.3	8.3	%89.815	%99.074
12	MP1	Z	-22.4	-22.4	%14.931	%85.069
13	MP2	Z	-22.4	-22.4	%14.931	%85.069
14	MP3	Z	-11.3	-11.3	%16.528	%83.472
15	MP4	Z	-17.6	-17.6	%17.083	%82.917
16	MP5	Z	-4.8	-4.8	%89.815	%99.074

Member Distributed Loads (BLC 14 : Ice Load)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	Y	-10.6	-10.6	0	0
2	SA	Y	-15	-15	0	0
3	SA-V	Y	-12.6	-12.6	0	0

Member Distributed Loads (BLC 15 : Wind on Ice (0 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	3.7	3.7	0	0
2	SA	X	0	0	0	0
3	SA-V	X	4.2	4.2	0	0
4	FM	Z	0	0	0	0
5	SA	Z	0	0	0	0
6	SA-V	Z	0	0	0	0
7	MP1	X	9.1	9.1	%14.931	%85.069
8	MP2	X	9.1	9.1	%14.931	%85.069
9	MP3	X	4.8	4.8	%16.528	%83.472
10	MP4	X	7.4	7.4	%17.083	%82.917
11	MP5	X	3.7	3.7	%89.815	%99.074
12	MP1	Z	0	0	0	0
13	MP2	Z	0	0	0	0
14	MP3	Z	0	0	0	0
15	MP4	Z	0	0	0	0
16	MP5	Z	0	0	0	0

Member Distributed Loads (BLC 16 : Wind on Ice (30 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	3.2	3.2	0	0
2	SA	X	4.6	4.6	0	0
3	SA-V	X	3.6	3.6	0	0
4	FM	Z	1.8	1.8	0	0
5	SA	Z	2.7	2.7	0	0
6	SA-V	Z	2.1	2.1	0	0
7	MP1	X	7.1	7.1	%14.931	%85.069
8	MP2	X	7.1	7.1	%14.931	%85.069
9	MP3	X	4	4	%16.528	%83.472
10	MP4	X	5.8	5.8	%17.083	%82.917
11	MP5	X	3.5	3.5	%89.815	%99.074
12	MP1	Z	4.1	4.1	%14.931	%85.069
13	MP2	Z	4.1	4.1	%14.931	%85.069
14	MP3	Z	2.3	2.3	%16.528	%83.472
15	MP4	Z	3.3	3.3	%17.083	%82.917
16	MP5	Z	2	2	%89.815	%99.074

Member Distributed Loads (BLC 17 : Wind on Ice (60 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	1.8	1.8	0	0
2	SA	X	2.7	2.7	0	0
3	SA-V	X	2.1	2.1	0	0
4	FM	Z	3.2	3.2	0	0
5	SA	Z	4.6	4.6	0	0
6	SA-V	Z	3.6	3.6	0	0
7	MP1	X	3.2	3.2	%14.931	%85.069
8	MP2	X	3.2	3.2	%14.931	%85.069
9	MP3	X	2.1	2.1	%16.528	%83.472
10	MP4	X	2.6	2.6	%17.083	%82.917
11	MP5	X	2.3	2.3	%89.815	%99.074

Member Distributed Loads (BLC 17 : Wind on Ice (60 deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
12	MP1	Z	5.6	5.6	%14.931	%85.069
13	MP2	Z	5.6	5.6	%14.931	%85.069
14	MP3	Z	3.6	3.6	%16.528	%83.472
15	MP4	Z	4.5	4.5	%17.083	%82.917
16	MP5	Z	4	4	%89.815	%99.074

Member Distributed Loads (BLC 18 : Wind on Ice (90 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	0	0	0	0
2	SA	X	0	0	0	0
3	SA-V	X	0	0	0	0
4	FM	Z	0	0	0	0
5	SA	Z	5.4	5.4	0	0
6	SA-V	Z	4.2	4.2	0	0
7	MP1	X	0	0	0	0
8	MP2	X	0	0	0	0
9	MP3	X	0	0	0	0
10	MP4	X	0	0	0	0
11	MP5	X	0	0	0	0
12	MP1	Z	5.5	5.5	%14.931	%85.069
13	MP2	Z	5.5	5.5	%14.931	%85.069
14	MP3	Z	3.9	3.9	%16.528	%83.472
15	MP4	Z	4.5	4.5	%17.083	%82.917
16	MP5	Z	5	5	%89.815	%99.074

Member Distributed Loads (BLC 19 : Wind on Ice (120 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	-1.8	-1.8	0	0
2	SA	X	-2.7	-2.7	0	0
3	SA-V	X	-2.1	-2.1	0	0
4	FM	Z	3.2	3.2	0	0
5	SA	Z	4.6	4.6	0	0
6	SA-V	Z	3.6	3.6	0	0
7	MP1	X	-3.2	-3.2	%14.931	%85.069
8	MP2	X	-3.2	-3.2	%14.931	%85.069
9	MP3	X	-2.1	-2.1	%16.528	%83.472
10	MP4	X	-2.6	-2.6	%17.083	%82.917
11	MP5	X	-2.3	-2.3	%89.815	%99.074
12	MP1	Z	5.6	5.6	%14.931	%85.069
13	MP2	Z	5.6	5.6	%14.931	%85.069
14	MP3	Z	3.6	3.6	%16.528	%83.472
15	MP4	Z	4.5	4.5	%17.083	%82.917
16	MP5	Z	4	4	%89.815	%99.074

Member Distributed Loads (BLC 20 : Wind on Ice (150 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	-3.2	-3.2	0	0
2	SA	X	-4.6	-4.6	0	0
3	SA-V	X	-3.6	-3.6	0	0
4	FM	Z	1.8	1.8	0	0
5	SA	Z	2.7	2.7	0	0
6	SA-V	Z	2.1	2.1	0	0
7	MP1	X	-7.1	-7.1	%14.931	%85.069
8	MP2	X	-7.1	-7.1	%14.931	%85.069
9	MP3	X	-4	-4	%16.528	%83.472

Member Distributed Loads (BLC 20 : Wind on Ice (150 deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
10	MP4	X	-5.8	-5.8	%17.083	%82.917
11	MP5	X	-3.5	-3.5	%89.815	%99.074
12	MP1	Z	4.1	4.1	%14.931	%85.069
13	MP2	Z	4.1	4.1	%14.931	%85.069
14	MP3	Z	2.3	2.3	%16.528	%83.472
15	MP4	Z	3.3	3.3	%17.083	%82.917
16	MP5	Z	2	2	%89.815	%99.074

Member Distributed Loads (BLC 21 : Wind on Ice (180 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	-3.7	-3.7	0	0
2	SA	X	0	0	0	0
3	SA-V	X	-4.2	-4.2	0	0
4	FM	Z	0	0	0	0
5	SA	Z	0	0	0	0
6	SA-V	Z	0	0	0	0
7	MP1	X	-9.1	-9.1	%14.931	%85.069
8	MP2	X	-9.1	-9.1	%14.931	%85.069
9	MP3	X	-4.8	-4.8	%16.528	%83.472
10	MP4	X	-7.4	-7.4	%17.083	%82.917
11	MP5	X	-3.7	-3.7	%89.815	%99.074
12	MP1	Z	0	0	0	0
13	MP2	Z	0	0	0	0
14	MP3	Z	0	0	0	0
15	MP4	Z	0	0	0	0
16	MP5	Z	0	0	0	0

Member Distributed Loads (BLC 22 : Wind on Ice (210 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	-3.2	-3.2	0	0
2	SA	X	-4.6	-4.6	0	0
3	SA-V	X	-3.6	-3.6	0	0
4	FM	Z	-1.8	-1.8	0	0
5	SA	Z	-2.7	-2.7	0	0
6	SA-V	Z	-2.1	-2.1	0	0
7	MP1	X	-7.1	-7.1	%14.931	%85.069
8	MP2	X	-7.1	-7.1	%14.931	%85.069
9	MP3	X	-4	-4	%16.528	%83.472
10	MP4	X	-5.8	-5.8	%17.083	%82.917
11	MP5	X	-3.5	-3.5	%89.815	%99.074
12	MP1	Z	-4.1	-4.1	%14.931	%85.069
13	MP2	Z	-4.1	-4.1	%14.931	%85.069
14	MP3	Z	-2.3	-2.3	%16.528	%83.472
15	MP4	Z	-3.3	-3.3	%17.083	%82.917
16	MP5	Z	-2	-2	%89.815	%99.074

Member Distributed Loads (BLC 23 : Wind on Ice (240 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	-1.8	-1.8	0	0
2	SA	X	-2.7	-2.7	0	0
3	SA-V	X	-2.1	-2.1	0	0
4	FM	Z	-3.2	-3.2	0	0
5	SA	Z	-4.6	-4.6	0	0
6	SA-V	Z	-3.6	-3.6	0	0
7	MP1	X	-3.2	-3.2	%14.931	%85.069

Member Distributed Loads (BLC 23 : Wind on Ice (240 deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
8	MP2	X	-3.2	-3.2	%14.931	%85.069
9	MP3	X	-2.1	-2.1	%16.528	%83.472
10	MP4	X	-2.6	-2.6	%17.083	%82.917
11	MP5	X	-2.3	-2.3	%89.815	%99.074
12	MP1	Z	-5.6	-5.6	%14.931	%85.069
13	MP2	Z	-5.6	-5.6	%14.931	%85.069
14	MP3	Z	-3.6	-3.6	%16.528	%83.472
15	MP4	Z	-4.5	-4.5	%17.083	%82.917
16	MP5	Z	-4	-4	%89.815	%99.074

Member Distributed Loads (BLC 24 : Wind on Ice (270 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	0	0	0	0
2	SA	X	0	0	0	0
3	SA-V	X	0	0	0	0
4	FM	Z	0	0	0	0
5	SA	Z	-5.4	-5.4	0	0
6	SA-V	Z	-4.2	-4.2	0	0
7	MP1	X	0	0	0	0
8	MP2	X	0	0	0	0
9	MP3	X	0	0	0	0
10	MP4	X	0	0	0	0
11	MP5	X	0	0	0	0
12	MP1	Z	-5.5	-5.5	%14.931	%85.069
13	MP2	Z	-5.5	-5.5	%14.931	%85.069
14	MP3	Z	-3.9	-3.9	%16.528	%83.472
15	MP4	Z	-4.5	-4.5	%17.083	%82.917
16	MP5	Z	-5	-5	%89.815	%99.074

Member Distributed Loads (BLC 25 : Wind on Ice (300 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	1.8	1.8	0	0
2	SA	X	2.7	2.7	0	0
3	SA-V	X	2.1	2.1	0	0
4	FM	Z	-3.2	-3.2	0	0
5	SA	Z	-4.6	-4.6	0	0
6	SA-V	Z	-3.6	-3.6	0	0
7	MP1	X	3.2	3.2	%14.931	%85.069
8	MP2	X	3.2	3.2	%14.931	%85.069
9	MP3	X	2.1	2.1	%16.528	%83.472
10	MP4	X	2.6	2.6	%17.083	%82.917
11	MP5	X	2.3	2.3	%89.815	%99.074
12	MP1	Z	-5.6	-5.6	%14.931	%85.069
13	MP2	Z	-5.6	-5.6	%14.931	%85.069
14	MP3	Z	-3.6	-3.6	%16.528	%83.472
15	MP4	Z	-4.5	-4.5	%17.083	%82.917
16	MP5	Z	-4	-4	%89.815	%99.074

Member Distributed Loads (BLC 26 : Wind on Ice (330 deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
1	FM	X	3.2	3.2	0	0
2	SA	X	4.6	4.6	0	0
3	SA-V	X	3.6	3.6	0	0
4	FM	Z	-1.8	-1.8	0	0
5	SA	Z	-2.7	-2.7	0	0

Member Distributed Loads (BLC 26 : Wind on Ice (330 deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,...	Start Location[in,%]	End Location[in,%]
6	SA-V	Z	-2.1	-2.1	0	0
7	MP1	X	7.1	7.1	%14.931	%85.069
8	MP2	X	7.1	7.1	%14.931	%85.069
9	MP3	X	4	4	%16.528	%83.472
10	MP4	X	5.8	5.8	%17.083	%82.917
11	MP5	X	3.5	3.5	%89.815	%99.074
12	MP1	Z	-4.1	-4.1	%14.931	%85.069
13	MP2	Z	-4.1	-4.1	%14.931	%85.069
14	MP3	Z	-2.3	-2.3	%16.528	%83.472
15	MP4	Z	-3.3	-3.3	%17.083	%82.917
16	MP5	Z	-2	-2	%89.815	%99.074

Load Combinations

	Description	Solve	PDelta	S...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...
1	1.4D	Yes	Y		1	1.4																				
2	1.2D + 1.0W (0 deg)	Yes	Y		1	1.2	2	1																		
3	1.2D + 1.0W (30 deg)	Yes	Y		1	1.2	3	1																		
4	1.2D + 1.0W (60 deg)	Yes	Y		1	1.2	4	1																		
5	1.2D + 1.0W (90 deg)	Yes	Y		1	1.2	5	1																		
6	1.2D + 1.0W (120 deg)	Yes	Y		1	1.2	6	1																		
7	1.2D + 1.0W (150 deg)	Yes	Y		1	1.2	7	1																		
8	1.2D + 1.0W (180 deg)	Yes	Y		1	1.2	8	1																		
9	1.2D + 1.0W (210 deg)	Yes	Y		1	1.2	9	1																		
10	1.2D + 1.0W (240 deg)	Yes	Y		1	1.2	10	1																		
11	1.2D + 1.0W (270 deg)	Yes	Y		1	1.2	11	1																		
12	1.2D + 1.0W (300 deg)	Yes	Y		1	1.2	12	1																		
13	1.2D + 1.0W (330 deg)	Yes	Y		1	1.2	13	1																		
14	1.2D + Di + Wi (0 deg)	Yes	Y		1	1.2	14	1	15	1																
15	1.2D + Di + Wi (30 deg)	Yes	Y		1	1.2	14	1	16	1																
16	1.2D + Di + Wi (60 deg)	Yes	Y		1	1.2	14	1	17	1																
17	1.2D + Di + Wi (90 deg)	Yes	Y		1	1.2	14	1	18	1																
18	1.2D + Di + Wi (120 deg)	Yes	Y		1	1.2	14	1	19	1																
19	1.2D + Di + Wi (150 deg)	Yes	Y		1	1.2	14	1	20	1																
20	1.2D + Di + Wi (180 deg)	Yes	Y		1	1.2	14	1	21	1																
21	1.2D + Di + Wi (210 deg)	Yes	Y		1	1.2	14	1	22	1																
22	1.2D + Di + Wi (240 deg)	Yes	Y		1	1.2	14	1	23	1																
23	1.2D + Di + Wi (270 deg)	Yes	Y		1	1.2	14	1	24	1																
24	1.2D + Di + Wi (300 deg)	Yes	Y		1	1.2	14	1	25	1																
25	1.2D + Di + Wi (330 deg)	Yes	Y		1	1.2	14	1	26	1																
26	1.2D + 1.0 Ev + 1.0Eh (0 deg)	Yes	Y		1	1.2	1	.0...	27	.1...																
27	1.2D + 1.0 Ev + 1.0Eh (30 de...	Yes	Y		1	1.2	1	.0...	28	.1...																
28	1.2D + 1.0 Ev + 1.0Eh (60 de...	Yes	Y		1	1.2	1	.0...	29	.1...																
29	1.2D + 1.0 Ev + 1.0Eh (90 de...	Yes	Y		1	1.2	1	.0...	30	.1...																
30	1.2D + 1.0 Ev + 1.0Eh (120 d...	Yes	Y		1	1.2	1	.0...	31	.1...																
31	1.2D + 1.0 Ev + 1.0Eh (150 d...	Yes	Y		1	1.2	1	.0...	32	.1...																
32	1.2D + 1.0 Ev + 1.0Eh (180 d...	Yes	Y		1	1.2	1	.0...	33	.1...																
33	1.2D + 1.0 Ev + 1.0Eh (210 d...	Yes	Y		1	1.2	1	.0...	34	.1...																
34	1.2D + 1.0 Ev + 1.0Eh (240 d...	Yes	Y		1	1.2	1	.0...	35	.1...																
35	1.2D + 1.0 Ev + 1.0Eh (270 d...	Yes	Y		1	1.2	1	.0...	36	.1...																
36	1.2D + 1.0 Ev + 1.0Eh (300 d...	Yes	Y		1	1.2	1	.0...	37	.1...																
37	1.2D + 1.0 Ev + 1.0Eh (330 d...	Yes	Y		1	1.2	1	.0...	38	.1...																
38	1.2D + 1.5Lm1 + 1.0Wm (0 d...	Yes	Y		1	1.2	39	1.5	2	.0...																
39	1.2D + 1.5Lm1 + 1.0Wm (30 ...	Yes	Y		1	1.2	39	1.5	3	.0...																
40	1.2D + 1.5Lm1 + 1.0Wm (60 ...	Yes	Y		1	1.2	39	1.5	4	.0...																
41	1.2D + 1.5Lm1 + 1.0Wm (90 ...	Yes	Y		1	1.2	39	1.5	5	.0...																

Load Combinations (Continued)

	Description	Solve	PDelta	S	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F
42	1.2D + 1.5Lm1 + 1.0Wm (12...	Yes	Y		1	1.2	39	1.5	6	.0...																		
43	1.2D + 1.5Lm1 + 1.0Wm (15...	Yes	Y		1	1.2	39	1.5	7	.0...																		
44	1.2D + 1.5Lm1 + 1.0Wm (18...	Yes	Y		1	1.2	39	1.5	8	.0...																		
45	1.2D + 1.5Lm1 + 1.0Wm (21...	Yes	Y		1	1.2	39	1.5	9	.0...																		
46	1.2D + 1.5Lm1 + 1.0Wm (24...	Yes	Y		1	1.2	39	1.5	10	.0...																		
47	1.2D + 1.5Lm1 + 1.0Wm (27...	Yes	Y		1	1.2	39	1.5	11	.0...																		
48	1.2D + 1.5Lm1 + 1.0Wm (30...	Yes	Y		1	1.2	39	1.5	12	.0...																		
49	1.2D + 1.5Lm1 + 1.0Wm (33...	Yes	Y		1	1.2	39	1.5	13	.0...																		
50	1.2D + 1.5Lm2 + 1.0Wm (0 d...	Yes	Y		1	1.2	40	1.5	2	.0...																		
51	1.2D + 1.5Lm2 + 1.0Wm (30 ...	Yes	Y		1	1.2	40	1.5	3	.0...																		
52	1.2D + 1.5Lm2 + 1.0Wm (60 ...	Yes	Y		1	1.2	40	1.5	4	.0...																		
53	1.2D + 1.5Lm2 + 1.0Wm (90 ...	Yes	Y		1	1.2	40	1.5	5	.0...																		
54	1.2D + 1.5Lm2 + 1.0Wm (12...	Yes	Y		1	1.2	40	1.5	6	.0...																		
55	1.2D + 1.5Lm2 + 1.0Wm (15...	Yes	Y		1	1.2	40	1.5	7	.0...																		
56	1.2D + 1.5Lm2 + 1.0Wm (18...	Yes	Y		1	1.2	40	1.5	8	.0...																		
57	1.2D + 1.5Lm2 + 1.0Wm (21...	Yes	Y		1	1.2	40	1.5	9	.0...																		
58	1.2D + 1.5Lm2 + 1.0Wm (24...	Yes	Y		1	1.2	40	1.5	10	.0...																		
59	1.2D + 1.5Lm2 + 1.0Wm (27...	Yes	Y		1	1.2	40	1.5	11	.0...																		
60	1.2D + 1.5Lm2 + 1.0Wm (30...	Yes	Y		1	1.2	40	1.5	12	.0...																		
61	1.2D + 1.5Lm2 + 1.0Wm (33...	Yes	Y		1	1.2	40	1.5	13	.0...																		
62	1.2D + 1.5Lm3 + 1.0Wm (0 d...	Yes	Y		1	1.2	41	1.5	2	.0...																		
63	1.2D + 1.5Lm3 + 1.0Wm (30 ...	Yes	Y		1	1.2	41	1.5	3	.0...																		
64	1.2D + 1.5Lm3 + 1.0Wm (60 ...	Yes	Y		1	1.2	41	1.5	4	.0...																		
65	1.2D + 1.5Lm3 + 1.0Wm (90 ...	Yes	Y		1	1.2	41	1.5	5	.0...																		
66	1.2D + 1.5Lm3 + 1.0Wm (12...	Yes	Y		1	1.2	41	1.5	6	.0...																		
67	1.2D + 1.5Lm3 + 1.0Wm (15...	Yes	Y		1	1.2	41	1.5	7	.0...																		
68	1.2D + 1.5Lm3 + 1.0Wm (18...	Yes	Y		1	1.2	41	1.5	8	.0...																		
69	1.2D + 1.5Lm3 + 1.0Wm (21...	Yes	Y		1	1.2	41	1.5	9	.0...																		
70	1.2D + 1.5Lm3 + 1.0Wm (24...	Yes	Y		1	1.2	41	1.5	10	.0...																		
71	1.2D + 1.5Lm3 + 1.0Wm (27...	Yes	Y		1	1.2	41	1.5	11	.0...																		
72	1.2D + 1.5Lm3 + 1.0Wm (30...	Yes	Y		1	1.2	41	1.5	12	.0...																		
73	1.2D + 1.5Lm3 + 1.0Wm (33...	Yes	Y		1	1.2	41	1.5	13	.0...																		
74	1.2D + 1.5Lm4 + 1.0Wm (0 d...	Yes	Y		1	1.2	42	1.5	2	.0...																		
75	1.2D + 1.5Lm4 + 1.0Wm (30 ...	Yes	Y		1	1.2	42	1.5	3	.0...																		
76	1.2D + 1.5Lm4 + 1.0Wm (60 ...	Yes	Y		1	1.2	42	1.5	4	.0...																		
77	1.2D + 1.5Lm4 + 1.0Wm (90 ...	Yes	Y		1	1.2	42	1.5	5	.0...																		
78	1.2D + 1.5Lm4 + 1.0Wm (12...	Yes	Y		1	1.2	42	1.5	6	.0...																		
79	1.2D + 1.5Lm4 + 1.0Wm (15...	Yes	Y		1	1.2	42	1.5	7	.0...																		
80	1.2D + 1.5Lm4 + 1.0Wm (18...	Yes	Y		1	1.2	42	1.5	8	.0...																		
81	1.2D + 1.5Lm4 + 1.0Wm (21...	Yes	Y		1	1.2	42	1.5	9	.0...																		
82	1.2D + 1.5Lm4 + 1.0Wm (24...	Yes	Y		1	1.2	42	1.5	10	.0...																		
83	1.2D + 1.5Lm4 + 1.0Wm (27...	Yes	Y		1	1.2	42	1.5	11	.0...																		
84	1.2D + 1.5Lm4 + 1.0Wm (30...	Yes	Y		1	1.2	42	1.5	12	.0...																		
85	1.2D + 1.5Lm4 + 1.0Wm (33...	Yes	Y		1	1.2	42	1.5	13	.0...																		
86	1.2D + 1.5Lm5 + 1.0Wm (0 d...	Yes	Y		1	1.2	43	1.5	2	.0...																		
87	1.2D + 1.5Lm5 + 1.0Wm (30 ...	Yes	Y		1	1.2	43	1.5	3	.0...																		
88	1.2D + 1.5Lm5 + 1.0Wm (60 ...	Yes	Y		1	1.2	43	1.5	4	.0...																		
89	1.2D + 1.5Lm5 + 1.0Wm (90 ...	Yes	Y		1	1.2	43	1.5	5	.0...																		
90	1.2D + 1.5Lm5 + 1.0Wm (12...	Yes	Y		1	1.2	43	1.5	6	.0...																		
91	1.2D + 1.5Lm5 + 1.0Wm (15...	Yes	Y		1	1.2	43	1.5	7	.0...																		
92	1.2D + 1.5Lm5 + 1.0Wm (18...	Yes	Y		1	1.2	43	1.5	8	.0...																		
93	1.2D + 1.5Lm5 + 1.0Wm (21...	Yes	Y		1	1.2	43	1.5	9	.0...																		
94	1.2D + 1.5Lm5 + 1.0Wm (24...	Yes	Y		1	1.2	43	1.5	10	.0...																		
95	1.2D + 1.5Lm5 + 1.0Wm (27...	Yes	Y		1	1.2	43	1.5	11	.0...																		
96	1.2D + 1.5Lm5 + 1.0Wm (30...	Yes	Y		1	1.2	43	1.5	12	.0...																		
97	1.2D + 1.5Lm5 + 1.0Wm (33...	Yes	Y		1	1.2	43	1.5	13	.0...																		
98	1.2D + 1.5Lm6 + 1.0Wm (0 d...	Yes	Y		1	1.2	44	1.5	2	.0...																		

Load Combinations (Continued)

	Description	Solve	PDelta	S..	B..	F...	B..	F...	B..	F...	B..	F...	B..	F...	B..	F...	B..	F...	B..	F...	B..	F...	B..	F...	B..	F...
99	1.2D + 1.5Lm6 + 1.0Wm (30 ...	Yes	Y		1	1.2	44	1.5	3	.0...																
100	1.2D + 1.5Lm6 + 1.0Wm (60 ...	Yes	Y		1	1.2	44	1.5	4	.0...																
101	1.2D + 1.5Lm6 + 1.0Wm (90 ...	Yes	Y		1	1.2	44	1.5	5	.0...																
102	1.2D + 1.5Lm6 + 1.0Wm (12...	Yes	Y		1	1.2	44	1.5	6	.0...																
103	1.2D + 1.5Lm6 + 1.0Wm (15...	Yes	Y		1	1.2	44	1.5	7	.0...																
104	1.2D + 1.5Lm6 + 1.0Wm (18...	Yes	Y		1	1.2	44	1.5	8	.0...																
105	1.2D + 1.5Lm6 + 1.0Wm (21...	Yes	Y		1	1.2	44	1.5	9	.0...																
106	1.2D + 1.5Lm6 + 1.0Wm (24...	Yes	Y		1	1.2	44	1.5	10	.0...																
107	1.2D + 1.5Lm6 + 1.0Wm (27...	Yes	Y		1	1.2	44	1.5	11	.0...																
108	1.2D + 1.5Lm6 + 1.0Wm (30...	Yes	Y		1	1.2	44	1.5	12	.0...																
109	1.2D + 1.5Lm6 + 1.0Wm (33...	Yes	Y		1	1.2	44	1.5	13	.0...																
110	1.2D + 1.5Lm7 + 1.0Wm (0 d...	Yes	Y		1	1.2	45	1.5	2	.0...																
111	1.2D + 1.5Lm7 + 1.0Wm (30 ...	Yes	Y		1	1.2	45	1.5	3	.0...																
112	1.2D + 1.5Lm7 + 1.0Wm (60 ...	Yes	Y		1	1.2	45	1.5	4	.0...																
113	1.2D + 1.5Lm7 + 1.0Wm (90 ...	Yes	Y		1	1.2	45	1.5	5	.0...																
114	1.2D + 1.5Lm7 + 1.0Wm (12...	Yes	Y		1	1.2	45	1.5	6	.0...																
115	1.2D + 1.5Lm7 + 1.0Wm (15...	Yes	Y		1	1.2	45	1.5	7	.0...																
116	1.2D + 1.5Lm7 + 1.0Wm (18...	Yes	Y		1	1.2	45	1.5	8	.0...																
117	1.2D + 1.5Lm7 + 1.0Wm (21...	Yes	Y		1	1.2	45	1.5	9	.0...																
118	1.2D + 1.5Lm7 + 1.0Wm (24...	Yes	Y		1	1.2	45	1.5	10	.0...																
119	1.2D + 1.5Lm7 + 1.0Wm (27...	Yes	Y		1	1.2	45	1.5	11	.0...																
120	1.2D + 1.5Lm7 + 1.0Wm (30...	Yes	Y		1	1.2	45	1.5	12	.0...																
121	1.2D + 1.5Lm7 + 1.0Wm (33...	Yes	Y		1	1.2	45	1.5	13	.0...																
122	1.2D + 1.5Lm8 + 1.0Wm (0 d...	Yes	Y		1	1.2	46	1.5	2	.0...																
123	1.2D + 1.5Lm8 + 1.0Wm (30 ...	Yes	Y		1	1.2	46	1.5	3	.0...																
124	1.2D + 1.5Lm8 + 1.0Wm (60 ...	Yes	Y		1	1.2	46	1.5	4	.0...																
125	1.2D + 1.5Lm8 + 1.0Wm (90 ...	Yes	Y		1	1.2	46	1.5	5	.0...																
126	1.2D + 1.5Lm8 + 1.0Wm (12...	Yes	Y		1	1.2	46	1.5	6	.0...																
127	1.2D + 1.5Lm8 + 1.0Wm (15...	Yes	Y		1	1.2	46	1.5	7	.0...																
128	1.2D + 1.5Lm8 + 1.0Wm (18...	Yes	Y		1	1.2	46	1.5	8	.0...																
129	1.2D + 1.5Lm8 + 1.0Wm (21...	Yes	Y		1	1.2	46	1.5	9	.0...																
130	1.2D + 1.5Lm8 + 1.0Wm (24...	Yes	Y		1	1.2	46	1.5	10	.0...																
131	1.2D + 1.5Lm8 + 1.0Wm (27...	Yes	Y		1	1.2	46	1.5	11	.0...																
132	1.2D + 1.5Lm8 + 1.0Wm (30...	Yes	Y		1	1.2	46	1.5	12	.0...																
133	1.2D + 1.5Lm8 + 1.0Wm (33...	Yes	Y		1	1.2	46	1.5	13	.0...																
134	1.2D + 1.5Lm9 + 1.0Wm (0 d...	Yes	Y		1	1.2	47	1.5	2	.0...																
135	1.2D + 1.5Lm9 + 1.0Wm (30 ...	Yes	Y		1	1.2	47	1.5	3	.0...																
136	1.2D + 1.5Lm9 + 1.0Wm (60 ...	Yes	Y		1	1.2	47	1.5	4	.0...																
137	1.2D + 1.5Lm9 + 1.0Wm (90 ...	Yes	Y		1	1.2	47	1.5	5	.0...																
138	1.2D + 1.5Lm9 + 1.0Wm (12...	Yes	Y		1	1.2	47	1.5	6	.0...																
139	1.2D + 1.5Lm9 + 1.0Wm (15...	Yes	Y		1	1.2	47	1.5	7	.0...																
140	1.2D + 1.5Lm9 + 1.0Wm (18...	Yes	Y		1	1.2	47	1.5	8	.0...																
141	1.2D + 1.5Lm9 + 1.0Wm (21...	Yes	Y		1	1.2	47	1.5	9	.0...																
142	1.2D + 1.5Lm9 + 1.0Wm (24...	Yes	Y		1	1.2	47	1.5	10	.0...																
143	1.2D + 1.5Lm9 + 1.0Wm (27...	Yes	Y		1	1.2	47	1.5	11	.0...																
144	1.2D + 1.5Lm9 + 1.0Wm (30...	Yes	Y		1	1.2	47	1.5	12	.0...																
145	1.2D + 1.5Lm9 + 1.0Wm (33...	Yes	Y		1	1.2	47	1.5	13	.0...																
146	1.2D + 1.5Lm10 + 1.0Wm (0 ...	Yes	Y		1	1.2	48	1.5	2	.0...																
147	1.2D + 1.5Lm10 + 1.0Wm (3...	Yes	Y		1	1.2	48	1.5	3	.0...																
148	1.2D + 1.5Lm10 + 1.0Wm (6...	Yes	Y		1	1.2	48	1.5	4	.0...																
149	1.2D + 1.5Lm10 + 1.0Wm (9...	Yes	Y		1	1.2	48	1.5	5	.0...																
150	1.2D + 1.5Lm10 + 1.0Wm (1...	Yes	Y		1	1.2	48	1.5	6	.0...																
151	1.2D + 1.5Lm10 + 1.0Wm (1...	Yes	Y		1	1.2	48	1.5	7	.0...																
152	1.2D + 1.5Lm10 + 1.0Wm (1...	Yes	Y		1	1.2	48	1.5	8	.0...																
153	1.2D + 1.5Lm10 + 1.0Wm (2...	Yes	Y		1	1.2	48	1.5	9	.0...																
154	1.2D + 1.5Lm10 + 1.0Wm (2...	Yes	Y		1	1.2	48	1.5	10	.0...																
155	1.2D + 1.5Lm10 + 1.0Wm (2...	Yes	Y		1	1.2	48	1.5	11	.0...																

Load Combinations (Continued)

	Description	Solve	PDelta	S	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F
156	1.2D + 1.5Lm10 + 1.0Wm (3...	Yes	Y		1	1.2	48	1.5	12	.0...																
157	1.2D + 1.5Lm10 + 1.0Wm (3...	Yes	Y		1	1.2	48	1.5	13	.0...																
158	1.2D + 1.5Lm11 + 1.0Wm (0 ...	Yes	Y		1	1.2	49	1.5	2	.0...																
159	1.2D + 1.5Lm11 + 1.0Wm (3...	Yes	Y		1	1.2	49	1.5	3	.0...																
160	1.2D + 1.5Lm11 + 1.0Wm (6...	Yes	Y		1	1.2	49	1.5	4	.0...																
161	1.2D + 1.5Lm11 + 1.0Wm (9...	Yes	Y		1	1.2	49	1.5	5	.0...																
162	1.2D + 1.5Lm11 + 1.0Wm (1...	Yes	Y		1	1.2	49	1.5	6	.0...																
163	1.2D + 1.5Lm11 + 1.0Wm (1...	Yes	Y		1	1.2	49	1.5	7	.0...																
164	1.2D + 1.5Lm11 + 1.0Wm (1...	Yes	Y		1	1.2	49	1.5	8	.0...																
165	1.2D + 1.5Lm11 + 1.0Wm (2...	Yes	Y		1	1.2	49	1.5	9	.0...																
166	1.2D + 1.5Lm11 + 1.0Wm (2...	Yes	Y		1	1.2	49	1.5	10	.0...																
167	1.2D + 1.5Lm11 + 1.0Wm (2...	Yes	Y		1	1.2	49	1.5	11	.0...																
168	1.2D + 1.5Lm11 + 1.0Wm (3...	Yes	Y		1	1.2	49	1.5	12	.0...																
169	1.2D + 1.5Lm11 + 1.0Wm (3...	Yes	Y		1	1.2	49	1.5	13	.0...																
170	1.2D + 1.5Lm12 + 1.0Wm (0 ...	Yes	Y		1	1.2	50	1.5	2	.0...																
171	1.2D + 1.5Lm12 + 1.0Wm (3...	Yes	Y		1	1.2	50	1.5	3	.0...																
172	1.2D + 1.5Lm12 + 1.0Wm (6...	Yes	Y		1	1.2	50	1.5	4	.0...																
173	1.2D + 1.5Lm12 + 1.0Wm (9...	Yes	Y		1	1.2	50	1.5	5	.0...																
174	1.2D + 1.5Lm12 + 1.0Wm (1...	Yes	Y		1	1.2	50	1.5	6	.0...																
175	1.2D + 1.5Lm12 + 1.0Wm (1...	Yes	Y		1	1.2	50	1.5	7	.0...																
176	1.2D + 1.5Lm12 + 1.0Wm (1...	Yes	Y		1	1.2	50	1.5	8	.0...																
177	1.2D + 1.5Lm12 + 1.0Wm (2...	Yes	Y		1	1.2	50	1.5	9	.0...																
178	1.2D + 1.5Lm12 + 1.0Wm (2...	Yes	Y		1	1.2	50	1.5	10	.0...																
179	1.2D + 1.5Lm12 + 1.0Wm (2...	Yes	Y		1	1.2	50	1.5	11	.0...																
180	1.2D + 1.5Lm12 + 1.0Wm (3...	Yes	Y		1	1.2	50	1.5	12	.0...																
181	1.2D + 1.5Lm12 + 1.0Wm (3...	Yes	Y		1	1.2	50	1.5	13	.0...																
182	1.2D + 1.5Lm13 + 1.0Wm (0 ...	Yes	Y		1	1.2	51	1.5	2	.0...																
183	1.2D + 1.5Lm13 + 1.0Wm (3...	Yes	Y		1	1.2	51	1.5	3	.0...																
184	1.2D + 1.5Lm13 + 1.0Wm (6...	Yes	Y		1	1.2	51	1.5	4	.0...																
185	1.2D + 1.5Lm13 + 1.0Wm (9...	Yes	Y		1	1.2	51	1.5	5	.0...																
186	1.2D + 1.5Lm13 + 1.0Wm (1...	Yes	Y		1	1.2	51	1.5	6	.0...																
187	1.2D + 1.5Lm13 + 1.0Wm (1...	Yes	Y		1	1.2	51	1.5	7	.0...																
188	1.2D + 1.5Lm13 + 1.0Wm (1...	Yes	Y		1	1.2	51	1.5	8	.0...																
189	1.2D + 1.5Lm13 + 1.0Wm (2...	Yes	Y		1	1.2	51	1.5	9	.0...																
190	1.2D + 1.5Lm13 + 1.0Wm (2...	Yes	Y		1	1.2	51	1.5	10	.0...																
191	1.2D + 1.5Lm13 + 1.0Wm (2...	Yes	Y		1	1.2	51	1.5	11	.0...																
192	1.2D + 1.5Lm13 + 1.0Wm (3...	Yes	Y		1	1.2	51	1.5	12	.0...																
193	1.2D + 1.5Lm13 + 1.0Wm (3...	Yes	Y		1	1.2	51	1.5	13	.0...																
194	1.2D + 1.5Lm14 + 1.0Wm (0 ...	Yes	Y		1	1.2	52	1.5	2	.0...																
195	1.2D + 1.5Lm14 + 1.0Wm (3...	Yes	Y		1	1.2	52	1.5	3	.0...																
196	1.2D + 1.5Lm14 + 1.0Wm (6...	Yes	Y		1	1.2	52	1.5	4	.0...																
197	1.2D + 1.5Lm14 + 1.0Wm (9...	Yes	Y		1	1.2	52	1.5	5	.0...																
198	1.2D + 1.5Lm14 + 1.0Wm (1...	Yes	Y		1	1.2	52	1.5	6	.0...																
199	1.2D + 1.5Lm14 + 1.0Wm (1...	Yes	Y		1	1.2	52	1.5	7	.0...																
200	1.2D + 1.5Lm14 + 1.0Wm (1...	Yes	Y		1	1.2	52	1.5	8	.0...																
201	1.2D + 1.5Lm14 + 1.0Wm (2...	Yes	Y		1	1.2	52	1.5	9	.0...																
202	1.2D + 1.5Lm14 + 1.0Wm (2...	Yes	Y		1	1.2	52	1.5	10	.0...																
203	1.2D + 1.5Lm14 + 1.0Wm (2...	Yes	Y		1	1.2	52	1.5	11	.0...																
204	1.2D + 1.5Lm14 + 1.0Wm (3...	Yes	Y		1	1.2	52	1.5	12	.0...																
205	1.2D + 1.5Lm14 + 1.0Wm (3...	Yes	Y		1	1.2	52	1.5	13	.0...																
206	1.2D + 1.5Lm15 + 1.0Wm (0 ...	Yes	Y		1	1.2	53	1.5	2	.0...																
207	1.2D + 1.5Lm15 + 1.0Wm (3...	Yes	Y		1	1.2	53	1.5	3	.0...																
208	1.2D + 1.5Lm15 + 1.0Wm (6...	Yes	Y		1	1.2	53	1.5	4	.0...																
209	1.2D + 1.5Lm15 + 1.0Wm (9...	Yes	Y		1	1.2	53	1.5	5	.0...																
210	1.2D + 1.5Lm15 + 1.0Wm (1...	Yes	Y		1	1.2	53	1.5	6	.0...																
211	1.2D + 1.5Lm15 + 1.0Wm (1...	Yes	Y		1	1.2	53	1.5	7	.0...																
212	1.2D + 1.5Lm15 + 1.0Wm (1...	Yes	Y		1	1.2	53	1.5	8	.0...																

Load Combinations (Continued)

	Description	Solve	PDelta	S	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F	B	F
213	1.2D + 1.5Lm15 + 1.0Wm (2...	Yes	Y		1	1.2	53	1.5	9	.0...																		
214	1.2D + 1.5Lm15 + 1.0Wm (2...	Yes	Y		1	1.2	53	1.5	10	.0...																		
215	1.2D + 1.5Lm15 + 1.0Wm (2...	Yes	Y		1	1.2	53	1.5	11	.0...																		
216	1.2D + 1.5Lm15 + 1.0Wm (3...	Yes	Y		1	1.2	53	1.5	12	.0...																		
217	1.2D + 1.5Lm15 + 1.0Wm (3...	Yes	Y		1	1.2	53	1.5	13	.0...																		
218	1.2D + 1.5Lm16 + 1.0Wm (0 ...	Yes	Y		1	1.2	54	1.5	2	.0...																		
219	1.2D + 1.5Lm16 + 1.0Wm (3...	Yes	Y		1	1.2	54	1.5	3	.0...																		
220	1.2D + 1.5Lm16 + 1.0Wm (6...	Yes	Y		1	1.2	54	1.5	4	.0...																		
221	1.2D + 1.5Lm16 + 1.0Wm (9...	Yes	Y		1	1.2	54	1.5	5	.0...																		
222	1.2D + 1.5Lm16 + 1.0Wm (1...	Yes	Y		1	1.2	54	1.5	6	.0...																		
223	1.2D + 1.5Lm16 + 1.0Wm (1...	Yes	Y		1	1.2	54	1.5	7	.0...																		
224	1.2D + 1.5Lm16 + 1.0Wm (1...	Yes	Y		1	1.2	54	1.5	8	.0...																		
225	1.2D + 1.5Lm16 + 1.0Wm (2...	Yes	Y		1	1.2	54	1.5	9	.0...																		
226	1.2D + 1.5Lm16 + 1.0Wm (2...	Yes	Y		1	1.2	54	1.5	10	.0...																		
227	1.2D + 1.5Lm16 + 1.0Wm (2...	Yes	Y		1	1.2	54	1.5	11	.0...																		
228	1.2D + 1.5Lm16 + 1.0Wm (3...	Yes	Y		1	1.2	54	1.5	12	.0...																		
229	1.2D + 1.5Lm16 + 1.0Wm (3...	Yes	Y		1	1.2	54	1.5	13	.0...																		
230	1.2D + 1.5Lm17 + 1.0Wm (0 ...	Yes	Y		1	1.2	55	1.5	2	.0...																		
231	1.2D + 1.5Lm17 + 1.0Wm (3...	Yes	Y		1	1.2	55	1.5	3	.0...																		
232	1.2D + 1.5Lm17 + 1.0Wm (6...	Yes	Y		1	1.2	55	1.5	4	.0...																		
233	1.2D + 1.5Lm17 + 1.0Wm (9...	Yes	Y		1	1.2	55	1.5	5	.0...																		
234	1.2D + 1.5Lm17 + 1.0Wm (1...	Yes	Y		1	1.2	55	1.5	6	.0...																		
235	1.2D + 1.5Lm17 + 1.0Wm (1...	Yes	Y		1	1.2	55	1.5	7	.0...																		
236	1.2D + 1.5Lm17 + 1.0Wm (1...	Yes	Y		1	1.2	55	1.5	8	.0...																		
237	1.2D + 1.5Lm17 + 1.0Wm (2...	Yes	Y		1	1.2	55	1.5	9	.0...																		
238	1.2D + 1.5Lm17 + 1.0Wm (2...	Yes	Y		1	1.2	55	1.5	10	.0...																		
239	1.2D + 1.5Lm17 + 1.0Wm (2...	Yes	Y		1	1.2	55	1.5	11	.0...																		
240	1.2D + 1.5Lm17 + 1.0Wm (3...	Yes	Y		1	1.2	55	1.5	12	.0...																		
241	1.2D + 1.5Lm17 + 1.0Wm (3...	Yes	Y		1	1.2	55	1.5	13	.0...																		
242	1.2D + 1.5Lm18 + 1.0Wm (0 ...	Yes	Y		1	1.2	56	1.5	2	.0...																		
243	1.2D + 1.5Lm18 + 1.0Wm (3...	Yes	Y		1	1.2	56	1.5	3	.0...																		
244	1.2D + 1.5Lm18 + 1.0Wm (6...	Yes	Y		1	1.2	56	1.5	4	.0...																		
245	1.2D + 1.5Lm18 + 1.0Wm (9...	Yes	Y		1	1.2	56	1.5	5	.0...																		
246	1.2D + 1.5Lm18 + 1.0Wm (1...	Yes	Y		1	1.2	56	1.5	6	.0...																		
247	1.2D + 1.5Lm18 + 1.0Wm (1...	Yes	Y		1	1.2	56	1.5	7	.0...																		
248	1.2D + 1.5Lm18 + 1.0Wm (1...	Yes	Y		1	1.2	56	1.5	8	.0...																		
249	1.2D + 1.5Lm18 + 1.0Wm (2...	Yes	Y		1	1.2	56	1.5	9	.0...																		
250	1.2D + 1.5Lm18 + 1.0Wm (2...	Yes	Y		1	1.2	56	1.5	10	.0...																		
251	1.2D + 1.5Lm18 + 1.0Wm (2...	Yes	Y		1	1.2	56	1.5	11	.0...																		
252	1.2D + 1.5Lm18 + 1.0Wm (3...	Yes	Y		1	1.2	56	1.5	12	.0...																		
253	1.2D + 1.5Lm18 + 1.0Wm (3...	Yes	Y		1	1.2	56	1.5	13	.0...																		
254	1.2D + 1.5Lv (Position 1)	Yes	Y		1	1.2	57	1.5																				
255	1.2D + 1.5Lv (Position 2)	Yes	Y		1	1.2	58	1.5																				
256	1.2D + 1.5Lv (Position 3)	Yes	Y		1	1.2	59	1.5																				
257	1.2D + 1.5Lv (Position 4)	Yes	Y		1	1.2	60	1.5																				
258	1.2D + 1.5Lv (Position 5)	Yes	Y		1	1.2	61	1.5																				
259	1.2D + 1.5Lv (Position 6)	Yes	Y		1	1.2	62	1.5																				
260	1.2D + 1.5Lv (Position 7)	Yes	Y		1	1.2	63	1.5																				
261	1.2D + 1.5Lv (Position 8)	Yes	Y		1	1.2	64	1.5																				
262	1.2D + 1.5Lv (Position 9)	Yes	Y		1	1.2	65	1.5																				
263	1.2D + 1.5Lv (Position 10)	Yes	Y		1	1.2	66	1.5																				
264	1.2D + 1.5Lv (Position 11)	Yes	Y		1	1.2	67	1.5																				
265	1.2D + 1.5Lv (Position 12	Yes	Y		1	1.2	68	1.5																				
266	1.2D + 1.5Lv (Position 13)	Yes	Y		1	1.2	69	1.5																				
267	1.2D + 1.5Lv (Position 14)	Yes	Y		1	1.2	70	1.5																				
268	1.2D + 1.5Lv (Position 15)	Yes	Y		1	1.2	71	1.5																				
269	1.2D + 1.5Lv (Position 16)	Yes	Y		1	1.2	72	1.5																				

Load Combinations (Continued)

	Description	Solve	PDelta	S...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...	B...	F...
270	1.2D + 1.5Lv (Position 17)	Yes	Y		1	1.2	73	1.5																		
271	1.2D + 1.5Lv (Position 18)	Yes	Y		1	1.2	74	1.5																		
272	1.2D + 1.5Lv (Position 19)	Yes	Y		1	1.2	75	1.5																		
273	1.2D + 1.5Lv (Position 20)	Yes	Y		1	1.2	76	1.5																		
274	1.2D + 1.5Lv (Position 21)	Yes	Y		1	1.2	77	1.5																		
275	1.2D + 1.5Lv (Position 22)	Yes	Y		1	1.2	78	1.5																		
276	1.2D + 1.5Lv (Position 23)	Yes	Y		1	1.2	79	1.5																		
277	1.2D + 1.5Lv (Position 24)	Yes	Y		1	1.2	80	1.5																		

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N1	max	1197.063	8	1978.816	21	958.976	12	4191.168	83	4773.464	10	-3825.166	2
2		min	-1197.054	2	813.757	4	-958.976	6	-4829.619	41	-4783.751	4	-9739.432	20
3	Totals:	max	1197.063	8	1978.816	21	958.976	12						
4		min	-1197.054	2	813.757	4	-958.976	6						

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

	Member	Shape	Code Check	Loc...	LC	Shear Check	Loc.....	...	phi*Pn...	phi*Pn...	phi*Mn...	phi*Mn.....	Eqn
1	FM	PIPE_3.0	1.043	78	46	.142	78		49 26386...	65205	5748.75	5748.75...	H1-1b
2	SA	HSS4X4...	.672	0	22	.394	0	y	41 12977...	139518	16180.5	16180.5...	H1-1b
3	MP3	PIPE_2.0	.122	36	5	.013	36		8 20866...	32130	1871.6...	1871.6.....	H1-1b
4	MP1	PIPE_2.0	.060	36	8	.011	36		8 20866...	32130	1871.6...	1871.6.....	H1-1b
5	MP2	PIPE_2.0	.060	36	8	.011	36		8 20866...	32130	1871.6...	1871.6.....	H1-1b
6	MP5	PIPE_2.0	.056	20....	11	.004	20....		11 25203...	32130	1871.6...	1871.6.....	H1-1b
7	MP4	PIPE_2.0	.042	36	8	.008	36		8 20866...	32130	1871.6...	1871.6.....	H1-1b
8	SA-V	PIPE_4.0	.000	9	7	.000	9		7 92571...	93240	10631...	10631.....	H1-1b

1. Rating per TIA-222-H, Section 15.5

APPENDIX D

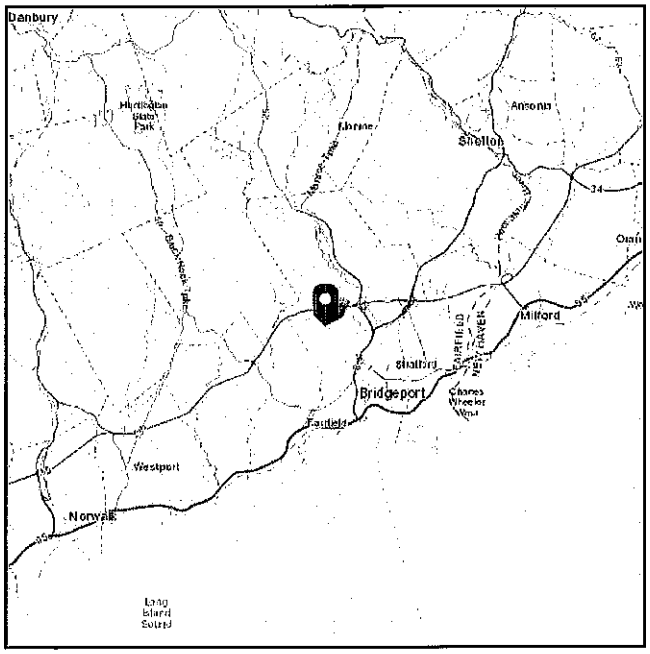
ASCE 7 HAZARDS REPORT

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 240.76 ft (NAVD 88)
Latitude: 41.223344
Longitude: -73.216772



Wind

Results:

Wind Speed:	122 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph
Data Source:	ASCE/SEI 7-10, Fig. 26.5-1A and Figs. CC-1–CC-4, incorporating errata of March 12, 2014
Date Accessed:	Tue Oct 09 2018

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

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

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

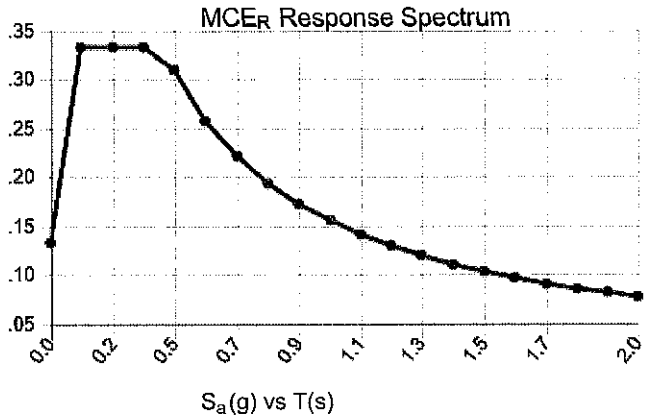
Seismic

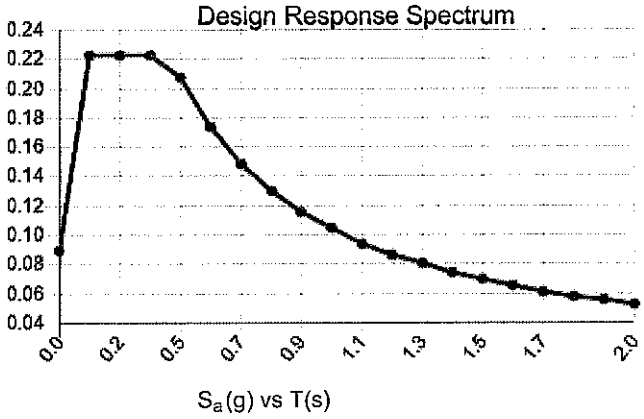
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.209	S_{DS} :	0.223
S_1 :	0.065	S_{D1} :	0.104
F_a :	1.600	T_L :	6.000
F_v :	2.400	PGA :	0.113
S_{MS} :	0.334	PGA_M :	0.178
S_{M1} :	0.156	F_{PGA} :	1.573
		I_e :	1

Seismic Design Category B





Data Accessed: Tue Oct 09 2018

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

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Oct 09 2018

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

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

verizon

CROWN CASTLE

VERIZ

CROWN

CROWN

SITE AD

SITE TY

SITE INFORMATION

APPLICANT:
VERIZON
180 WASHINGTON VALLEY ROAD
BEDMINSTER, NJ 07921

PROPERTY OWNER:
SOUTHERN NEW ENGLAND TEL

TOWER OWNER:
CROWN CASTLE

CROWN CASTLE PM:
WILLIAM GATES
(518) 373-3517

LATITUDE (NAD83):
41° 13' 24.1" N
41.223354

LONGITUDE (NAD83):
73° 13' 00.4" W
-73.216779

COUNTY:
FAIRFIELD

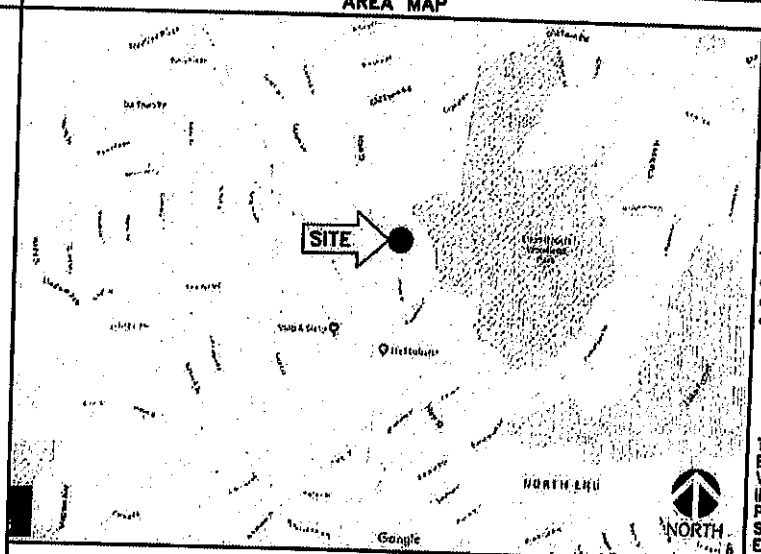
ZONING JURISDICTION:
CITY OF BRIDGEPORT

POWER COMPANY:
NATIONAL GRID
(800) 322-3223

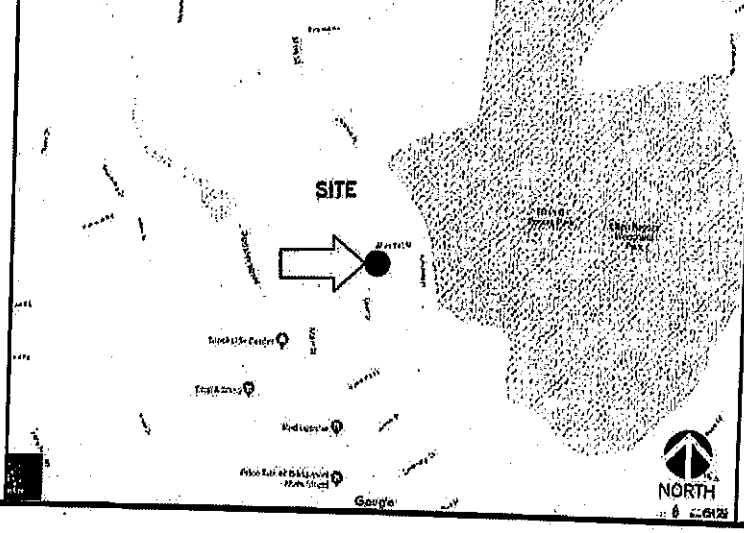
TELCO PROVIDER:
FIBER APP

VERIZON WIRELESS CM:
TBD

AREA MAP



LOCATION MAP



VERIZON PROPOSES
TELECOMMUNICATIO

VERIZON EQUIPMENT

- REMOVE (2) EXIST
- REMOVE (6) EXIST

VERIZON EQUIPMENT T

- INSTALL (2) CSS P
- INSTALL (3) SAMS
- INSTALL (3) SAMS

THESE PLANS HAVE
EXISTING UNMANNED
VERIZON IN ACCORDA
INFINIGY HAS INCORP
PLANS ARE NOT FOR
STRUCTURAL STABILIT
ENGINEER. STRUCTURA

ALL WORK SHALL BE
ACCORDANCE WITH T
CODES AS ADOPTED
NOTHING IN THESE P
NOT CONFORMING TO

1. INTERNATIONAL E
2. TIA-EIA-222-G
3. NFPA 780 – LIG
4. 2017 NATIONAL
5. ANY OTHER NATI
MOST RECENT E
6. RI BUILDING COD
7. LOCAL BUILDING
8. CITY/COUNTY OR

ELECTRICAL NOTES:

WORK INCLUDED
1. INCLUDE ALL LABOR, MATERIALS, EQUIPMENT, PLANT SERVICES AND ADMINISTRATIVE TASKS REQUIRED TO COMPLETE AND MAKE OPERABLE THE ELECTRICAL WORK SHOWN ON THE DRAWINGS AND SPECIFIED HEREIN, INCLUDING BUT NOT LIMITED TO THE FOLLOWING:
   A. PREPARE AND SUBMIT SHOP DRAWINGS, DIAGRAMS AND ILLUSTRATIONS.
   B. PROCURE ALL NECESSARY PERMITS AND APPROVALS AND PAY ALL REQUIRED FEES AND CHARGES IN CONNECTION WITH THE WORK OF THIS CONTRACT.
   C. SUBMIT AS-BUILT DRAWINGS, OPERATING AND MAINTENANCE INSTRUCTIONS AND MANUALS.
   D. EXECUTE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING OF EXISTING OR NEWLY INSTALLED CONSTRUCTION REQUIRED FOR THE WORK OF THIS CONTRACT. FOR SLAB PENETRATIONS THROUGH POST TENSION SLABS, X-RAY EXACT AREA OF PENETRATION PRIOR TO PERFORMING WORK. COORDINATE ALL X-RAY WORK WITH BUILDING ENGINEER.
   E. PROVIDE HANGERS, SUPPORTS, FOUNDATIONS, STRUCTURAL FRAMING SUPPORTS, AND BASES FOR CONDUIT AND EQUIPMENT PROVIDED OR INSTALLED UNDER THE WORK OF HIS CONTRACT. PROVIDE COUNTER FLASHING, SLEEVES AND SEALS FOR FLOOR AND WALL PENETRATIONS.
   F. MAINTAIN ALL EXISTING ELECTRICAL SERVICES IN THE BUILDING AREAS NOT AFFECTED BY THE ALTERATION DURING THE PROGRESS OF THE WORK INCLUDING PROVIDING ALL TEMPORARY JUMPERS, CONDUITS, CAPS, PROTECTIVE DEVICES, CONNECTIONS AND EQUIPMENT REQUIRED. PROVIDE TEMPORARY LIGHT AND POWER FOR CONSTRUCTION PURPOSES.
2. IT IS THE INTENT OF THESE DRAWINGS AND SPECIFICATIONS TO CALL FOR AN INSTALLATION THAT IS COMPLETE IN EVERY RESPECT. IT IS NOT THE INTENT TO GIVE EVERY DETAIL ON THE DRAWINGS AND IN THE SPECIFICATIONS. IF AN ITEM OF WORK IS INDICATED IN THE DRAWINGS, IT IS CONSIDERED SUFFICIENT FOR INCLUSION IN THE CONTRACT. FURNISH AND INSTALL ALL MATERIAL AND EQUIPMENT USUALLY FURNISHED OR NEEDED TO MAKE A COMPLETE INSTALLATION WHETHER OR NOT SPECIFICALLY MENTIONED IN THE CONTRACT DOCUMENTS.

GENERAL REQUIREMENTS
1. PROVIDE ALL WORK IN ACCORDANCE WITH THE NATIONAL ELECTRICAL CODE (NEC) AND LOCAL AND STATE ELECTRICAL CODES.
2. THE ELECTRICAL PLANS ARE DIAGRAMMATIC ONLY. REFER TO THE ARCHITECTURAL PLANS FOR THE EXACT DIMENSIONS OF THE BUILDING.
3. LOAD CALCULATIONS ARE BASED ON EXISTING BUILDING INFORMATION/DRAWINGS PROVIDED TO ENGINEERING. CONTRACTOR IS TO VERIFY ALL EXISTING RATINGS AND LOADS PRIOR TO PURCHASING OF SPECIFIED EQUIPMENT FOR COMPLIANCE TO NEC. CONTRACTOR TO NOTIFY ENGINEER OF ANY DISCREPANCIES AND REQUEST FURTHER DIRECTION BY ENGINEER.
4. EXISTING BUILDING EQUIPMENT IS NOTED ON THE DRAWINGS. NEW OR RELOCATED EQUIPMENT IS SHOWN WITH SOLID LINES. FUTURE EQUIPMENT (NOT IN THIS CONTRACT) IS DEPICTED WITH SHADED LINES. REQUEST CLARIFICATION OF DRAWINGS OR OF SPECIFICATIONS PRIOR TO PRICING OR INSTALLATION.
5. GENERAL
   A. AFTER CAREFULLY STUDYING THE DRAWINGS AND SPECIFICATIONS, AND BEFORE SUBMITTING THE PROPOSAL, MAKE A MANDATORY SITE VISIT TO ASCERTAIN CONDITIONS OF THE SITE, AND THE NATURE AND EXACT QUANTITY OF WORK TO BE PERFORMED. NO EXTRA COMPENSATION WILL BE ALLOWED FOR FAILURE TO NOTIFY THE OWNER, IN WRITING, OF ANY DISCREPANCIES THAT MAY HAVE BEEN NOTED BETWEEN THE EXISTING CONDITIONS AND THE DRAWINGS AND SPECIFICATIONS.
   B. VERIFY ALL MEASUREMENTS AT THE SITE AND BE RESPONSIBLE FOR CORRECTNESS OF SAME.
6. QUALITY, WORKMANSHIP, MATERIALS AND SAFETY
   A. PROVIDE NEW MATERIALS AND EQUIPMENT OF A DOMESTIC MANUFACTURER BY THOSE REGULARLY ENGAGED IN THE PRODUCTION AND MANUFACTURE OF SPECIFIED MATERIALS AND EQUIPMENT. WHERE UL, OR OTHER AGENCY, HAS ESTABLISHED STANDARDS FOR MATERIALS, PROVIDE MATERIALS WHICH ARE LISTED AND LABELED ACCORDINGLY. THE COMMERCIALLY STANDARD ITEMS OF EQUIPMENT AND THE SPECIFIC NAMES MENTIONED HEREIN ARE INTENDED FOR THE PROPER FUNCTIONING OF THE WORK.
   B. WORK SHALL BE PERFORMED BY WORKMEN SKILLED IN THE TRADE REQUIRED FOR THE WORK. INSTALL MATERIALS AND EQUIPMENT TO PRESENT A NEAT APPEARANCE WHEN COMPLETED AND IN ACCORDANCE WITH THE APPROVED RECOMMENDATIONS OF THE MANUFACTURER AND IN ACCORDANCE WITH CONTRACT DOCUMENTS.
   C. PROVIDE LABOR, MATERIALS, APPARATUS AND APPLIANCES ESSENTIAL TO THE FUNCTIONING OF THE SYSTEMS DESCRIBED OR INDICATED HEREIN, OR WHICH MAY BE REASONABLY IMPLIED AS ESSENTIAL WHENEVER MENTIONED IN THE CONTRACT DOCUMENT OR NOT.
   D. MAKE WRITTEN REQUESTS FOR SUPPLEMENTARY INSTRUCTIONS TO ARCHITECT/ENGINEER IN CASE OF DOUBT AS TO WORK INTENDED OR IN EVENT OF NEED FOR EXPLANATION THEREOF.
   E. PERFORMANCE AND MATERIAL REQUIREMENTS SCHEDULED OR SPECIFIED ARE MINIMUM STANDARD ACCEPTABLE. THE RIGHT TO JUDGE THE QUALITY OF EQUIPMENT THAT DEVIATES FROM THE CONTRACT DOCUMENT REMAINS SOLELY WITH ARCHITECT/ENGINEER. CONTRACT DOCUMENT OR NOT.

GUARANTEE
1. GUARANTEE MATERIALS, PARTS AND LABOR FOR WORK FOR ONE YEAR FROM THE DATE OF ISSUANCE OF OCCUPANCY PERMIT. DURING THAT PERIOD, MAKE GOOD FAULTS OR IMPERFECTIONS THAT MAY ARISE DUE TO DEFECTS OR OMISSIONS IN MATERIALS OR WORKMANSHIP WITH NO ADDITIONAL COMPENSATION AND AS DIRECTED BY ARCHITECT.

CLEANING
1. REMOVE ALL CONSTRUCTION DEBRIS RESULTING FROM THE WORK.
2. CLEAN EQUIPMENT AND SYSTEMS FOLLOWING THE COMPLETION OF THE PROJECT TO THE SATISFACTION OF THE ENGINEER.

COORDINATION AND SUPERVISION
1. CAREFULLY LAY OUT ALL WORK IN ADVANCE TO AVOID UNNECESSARY CUTTING, CHANNELING, CHASING OR DRILLING OF FLOORS, WALLS, PARTITIONS, CEILINGS OR OTHER SURFACES. WHERE SUCH WORK IS NECESSARY, HOWEVER, PATCH AND REPAIR THE WORK IN AN APPROVED MANNER BY SKILLED MECHANICS AT NO ADDITIONAL COST TO THE OWNER. RENDER FULL COOPERATION TO OTHER TRADES WHERE WORK WILL BE INSTALLED IN CLOSE PROXIMITY TO WORK OF OTHER TRADES. ASSIST IN WORKING OUT SPACE CONDITIONS. IF WORK IS INSTALLED BEFORE COORDINATION WITH OTHER TRADES, OR CAUSES INTERFERENCE, MAKE CHANGES NECESSARY TO CORRECT CONDITIONS WITHOUT EXTRA CHARGE.

SUBMITTALS
1. AS-BUILT DRAWINGS:
   A. UPON COMPLETION OF THE WORK, FURNISH TO THE OWNER "AS-BUILT" DRAWINGS.
2. SERVICE MANUALS:
   A. UPON COMPLETION OF THE WORK, FULLY INSTRUCT VERIZON AS TO THE OPERATION AND MAINTENANCE OF ALL MATERIAL, EQUIPMENT AND SYSTEMS.
   B. PROVIDE 3 COMPLETE BOUND SETS OF INSTRUCTIONS FOR OPERATING AND MAINTAINING ALL SYSTEMS AND EQUIPMENT.

CUTTING AND PATCHING
1. PROVIDE ALL CUTTING, DRILLING, ROUGH AND FINISH PATCHING REQUIRED TO COMPLETE THE WORK.
2. OBTAIN OWNER APPROVAL PRIOR TO CUTTING THROUGH FLOORS OR WALLS FOR PIPING OR CONDUIT.

TESTS, INSPECTION AND APPROVAL
1. BEFORE ENERGIZING ANY ELECTRICAL INSTALLATION, INSPECT EACH UNIT IN DETAIL. TIGHTEN ALL BOLTS AND CONNECTIONS (TORQUE-TIGHTEN WHERE REQUIRED) AND DETERMINE THAT ALL COMPONENTS ARE ALIGNED, AND THE EQUIPMENT IS IN SAFE, OPERATIONAL CONDITION.
2. PROVIDE THE COMPLETE ELECTRICAL SYSTEM FREE OF GROUND FAULTS AND SHORT CIRCUITS SUCH THAT THE SYSTEM WILL OPERATE SATISFACTORILY UNDER FULL LOAD CONDITIONS, WITHOUT EXCESSIVE HEATING AT ANY POINT IN THE SYSTEM.

SPECIAL REQUIREMENTS
1. DO NOT LEAVE ANY WORK INCOMPLETE NOR ANY HAZARDOUS SITUATIONS CREATED WHICH WILL AFFECT THE LIFE OR SAFETY OF THE PUBLIC AND/OR BUILDING OCCUPANTS. DO NOT INTERFERE WITH OR CUTOFF ANY OF THE EXISTING SERVICES WITHOUT THE OWNER'S WRITTEN PERMISSION.
2. WHEN NECESSARY TO TEMPORARILY DISCONNECT ANY EXISTING BUILDING UTILITIES AND SERVICE SYSTEMS, INCLUDING FEEDER OR BRANCH CIRCUITING SUPPLYING EXISTING FACILITIES, CONFER WITH THE OWNER AND ARRANGE THE PERIOD OF INTERRUPTION FOR A TIME MUTUALLY AGREED UPON. SHUTDOWN NOTE: SCHEDULE AND NOTIFY OWNER 48 HOURS PRIOR TO SHUTDOWN. ALL SHUTDOWN WORK TO BE SCHEDULED AT A TIME CONVENIENT TO OWNER.

GROUNDING
1. ROUTE ALL GROUNDING CONDUCTORS AS SHOWN ON CONDUIT/GROUNDING RISER.
2. ROUTE 500 KCMIL CU. THHN CONDUCTOR FROM THE MGB LOCATION TO BUILDING STEEL. VERIFY BUILDING STEEL IS EFFECTIVELY GROUNDED PER NEC TO THE MAIN SERVICE GROUNDING ELECTRODE CONDUCTOR (GEC).
3. MAKE ALL GROUND CONNECTIONS FROM MGB TO ELECTRICAL EQUIPMENT WITH 2 HOLE, CRIMP TYPE, BURNDY COMPRESSION TERMINATIONS, SIZED AS REQUIRED.
4. USE 1 HOLE, CRIMP TYPE, BURNDY COMPRESSIONS TERMINATIONS, SIZED AS REQUIRED, AT EQUIPMENT GROUND CONNECTIONS.
5. HIRE AN INDEPENDENT LAB TO PERFORM THE SPECIFIED OHMS TESTING. PROVIDE 4 SETS OF THE CERTIFIED DOCUMENTS TO THE OWNER FOR VERIFICATION PRIOR TO THE PROJECT COMPLETION.

RACEWAYS
1. ALL WIRING TO BE INSTALLED IN CONDUIT SYSTEMS IN ACCORDANCE WITH THE FOLLOWING:
   A. EXTERIOR FEEDERS AND CONTROL, WHERE UNDERGROUND, TO BE IN SCH 40 PVC.
   B. EXTERIOR, ABOVE GROUND POWER CONDUITS TO BE GALVANIZED RIGID STEEL (RGS).
   C. ALL TELECOMMUNICATION CONDUITS, INTERIOR/EXTERIOR, TO BE EMT.

   ON THIS PROJECT.
   E. ALL TELECOM CONDUITS AND PULL BOXES INSTALLED ON THIS PROJECT TO BE LABELED "VERIZON". OWNER WILL PROVIDE LABELS FOR CONTRACTOR TO INSTALL.
   F. INTERIOR FEEDERS TO BE INSTALLED IN E.M.T. WITH STEEL COMPRESSION FITTINGS.
   G. MINIMUM SIZE CONDUIT TO BE ¾" TRADE SIZE UNLESS OTHERWISE INDICATED ON THE DRAWINGS.
   H. FINAL CONNECTIONS TO MOTORS AND VIBRATING EQUIPMENT TO BE INSTALLED IN LIQUID-TIGHT FLEXIBLE METAL CONDUIT.

   AREAS OR DRYWALL PARTITIONS, UNLESS OTHERWISE NOTED.
   J. THE ROUTING OF CONDUITS INDICATED ON THE DRAWINGS IS DIAGRAMMATIC. BEFORE INSTALLING ANY WORK, EXAMINE THE WORKING LAYOUTS AND SHOP DRAWINGS OF THE OTHER TRADES TO DETERMINE THE EXACT LOCATIONS AND CLEARANCES.
   K. ALL EXTERIOR MOUNTING HARDWARE TO BE GALVANIZED STEEL. COORDINATE WITH BUILDING ENGINEER PRIOR TO ATTACHING TO BUILDING STRUCTURE.

RACEWAYS CONT'D
   L. PENETRATIONS OF WALLS, FLOORS AND R
   PASSAGE OF ELECTRICAL RACEWAYS, TO B
   SEALED AFTER INSTALLATION OF RACEWAY
   MAINTAIN THE STRUCTURAL OR WATERPRO
   THE WALL, FLOOR OR ROOF SYSTEM TO BE
   SEAL ALL CONDUIT PENETRATIONS THROUGH
   RATED WALLS, CEILINGS OR SMOKE TIGHT C
   PARTITIONS TO MAINTAIN PROPER RATING O
   CEILING.
   M. PROVIDE ALL CONDUIT ENDS WITH INSULATI
   GROUNDING BUSHINGS.
   N. CONDUIT TO BE SUPPORTED AT MAXIMUM C
   8'-0", OR AS REQUIRED BY NEC, IN HORIZO
   VERTICAL DIRECTIONS.
   O. PROVIDE STAINLESS STEEL BLANK COVER PL
   JUNCTION BOXES AND/OR OUTLET BOXES NO
   EXPOSED AREAS. PROVIDE ALL OTHER UNUSE
   STANDARD STEEL COVER PLATES.
   P. WHERE APPLICABLE, PROVIDE ROOFTOP CON
   SYSTEM, CONFORMING TO ROOFTOP WARRANT
   PER BUILDING.

WIRES AND CABLES
1. CONTRACTOR TO COORDINATE WITH EQUIPMENT VENDOR FOR EXACT EQUIPMENT OVER-CURRENT VOLTAGE, WIRE SIZE AND PLUG CONFIGURATION, PRIOR TO BID.
2. ALL EQUIPMENT/DEVICES TO BE PROVIDED WITH GROUND CONDUCTOR.
3. ALL WIRE AND CABLE TO BE 600VOLT, COPPER, THHN INSULATION, EXCEPT AS NOTED.
4. WIRE FOR POWER AND LIGHTING WILL NOT BE LI 12AWG. ALL WIRE NO. 8 AND LARGER TO BE ST
5. CONTROL WIRING IS NOT TO BE LESS THAN NO. FLEXIBLE IN SINGLE CONDUCTORS OR MULTI-CON CABLES. CONTROL WIRING WILL CONSIST OF MULT CABLES WHEREVER POSSIBLE. CABLES TO BE PR AN OVERALL FLAME-RETARDANT, EXTRUDED JACK FOR PLENUM USE. ALL CONTROL WIRE TO BE 60
6. WIRE PREVIOUSLY PULLED INTO CONDUIT IS CONS AND IS NOT TO BE RE-PULLED.
7. HOME RUNS AND BRANCH CIRCUIT WIRING FOR 2 CIRCUITS:

LENGTH (FT.)	HOME RUN WIRE SIZE
0 TO 50	NO. 12
51 TO 100	NO. 10
101 TO 150	NO. 8

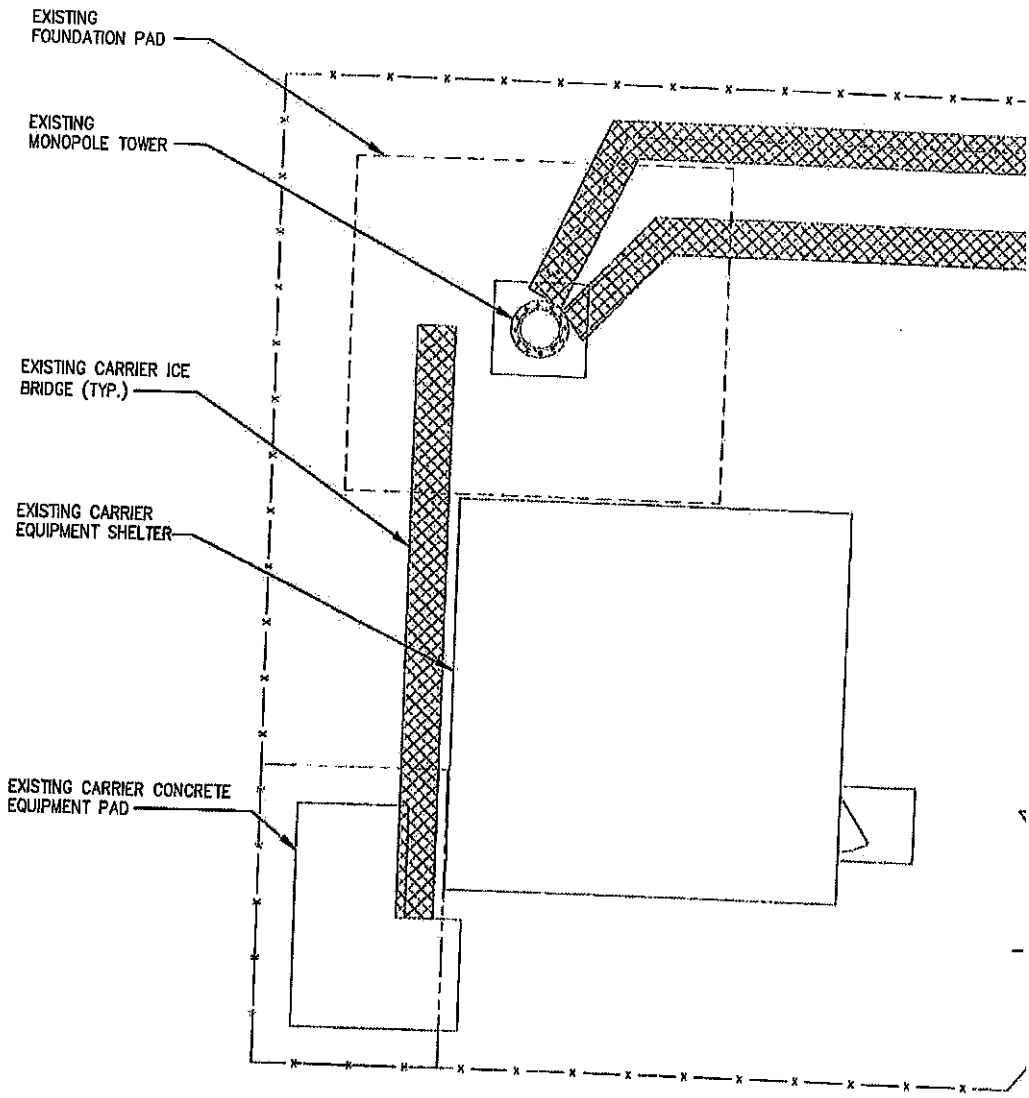
8. VOLTAGE DROP IS NOT TO EXCEED 3%.
9. MAKE ALL CONNECTIONS WITH UL APPROVED, SOL PRESSURE TYPE INSULATED CONNECTORS: SCOTCH APPROVED EQUAL.

WIRING DEVICES
1. ALL RECEPTACLES INSTALLED IN THIS PROJECT TO GROUNDING TYPE, WITH GROUNDING PIN SLOT CONI DEVICE GROUND SCREW FOR GROUND WIRE CONNE

DISCONNECT SWITCHES AND FUSES
1. DISCONNECT SWITCHES TO BE VOLTAGE-RATED TO CHARACTERISTICS OF THE SYSTEM FROM WHICH TH SUPPLIED.
2. PROVIDE HEAVY-DUTY, METAL-ENCLOSED, EXTERN DISCONNECT SWITCHES, FUSED OR UNFUSED, OF SU AND SIZE AS REQUIRED TO PROPERLY PROTECT OR THE LOAD FOR WHICH THEY ARE INTENDED.
3. PROVIDE NEMA 1 DISCONNECT SWITCHES FOR INTER INSTALLATION, NEMA 3R FOR EXTERIOR INSTALLATIO
4. DISCONNECT SWITCHES TO BE MANUFACTURED BY:
   A. GENERAL ELECTRIC COMPANY
   B. SQUARE-D
5. PROVIDE RK-1 TYPE FUSES, UNLESS NOTED OTHER

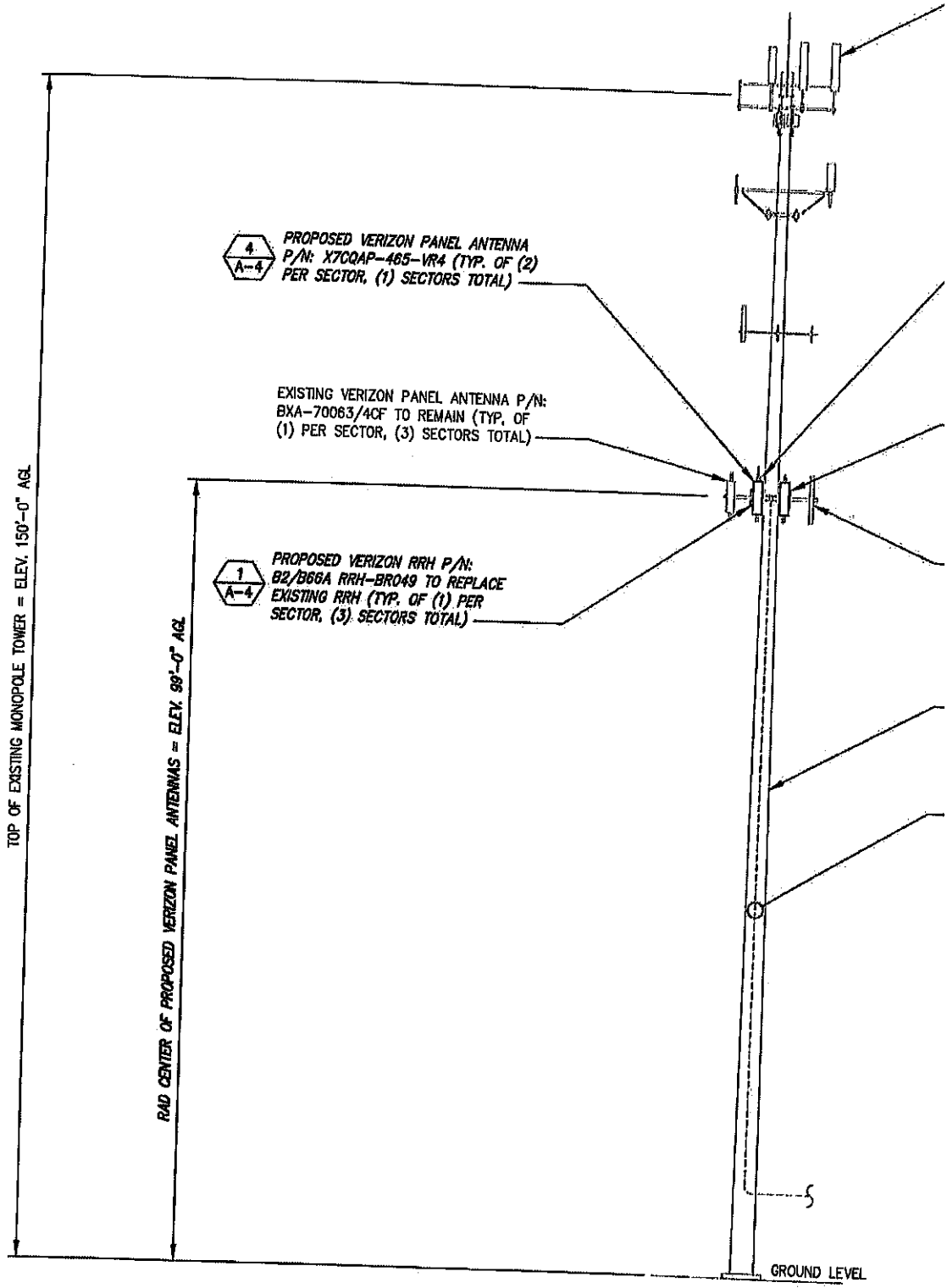
INSTALLATION
1. INSTALL DISCONNECT SWITCHES WHERE INDICATED O DRAWINGS.
2. INSTALL FUSES IN FUSIBLE DISCONNECT SWITCHES. MUST MATCH IN TYPE AND RATING.
3. FUSES TO BE MOUNTED SO THAT THE LABELS SHOW RATINGS CAN BE READ WITHOUT REQUIRING FUSE RE
4. FURNISH AND DEPOSIT SPARE FUSES AT THE JOB S FOLLOWS:
   A. THREE SPARES FOR EACH TYPE AND SIZE, IN EX 60A, USED FOR INITIAL FUSING.
   B. TEN PERCENT SPARES FOR EACH TYPE AND SIZE, AND INCLUDING 60A, USED FOR INITIAL FUSING, IN WILL LESS THAN THREE FUSES OF ONE PARTICULA SIZE BE FURNISHED.

CONFLICTS
1. THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERI OF ALL MEASUREMENTS AT THE SITE BEFORE ORDER MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE COMPENSATION SHALL BE ALLOWED DUE TO DIFFERE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDIC THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPA DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITT OWNER FOR CONSIDERATION BEFORE THE CONTRACTO PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
2. THE BIDDER, IF AWARDED THE CONTRACT, WILL NOT ALLOWED ANY EXTRA COMPENSATION BY REASON OF MATTER OR THING CONCERNING SUCH BIDDER MIGHT FULLY INFORMED THEMSELVES PRIOR TO THE BIDDING
3. NO PLEA OF IGNORANCE OF CONDITIONS THAT EXIST, DIFFICULTIES OR CONDITIONS THAT MAY BE ENCOUNTE OF ANY OTHER RELEVANT MATTER CONCERNING THE BE PERFORMED IN THE EXECUTION OF THE WORK WILL ACCEPTED AS AN EXCUSE FOR ANY FAILURE OR OMIS THE PART OF THE CONTRACTOR TO FULFILL EVERY DE ALL THE REQUIREMENTS OF THE CONTRACT DOCUMEN GOVERNING THE WORK.

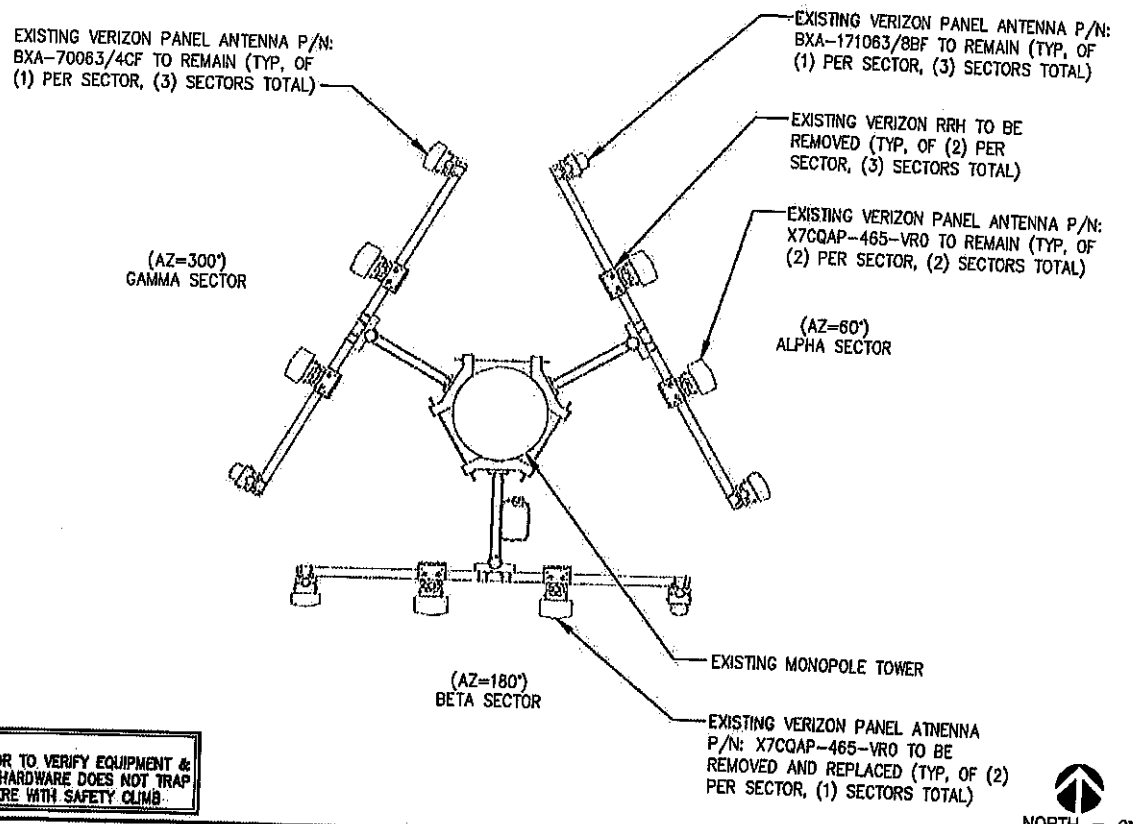


INFORMATION CONTAINED WITHIN DRAWINGS IS BASED ON PROVIDED INFORMATION AND IS NOT THE RESULT OF A FIELD SURVEY, CONTRACTOR TO VERIFY EXISTING FIELD CONDITIONS PRIOR TO ANY CONSTRUCTION

OVERALL SITE PLAN



PROPOSED TOWER ELEVATION



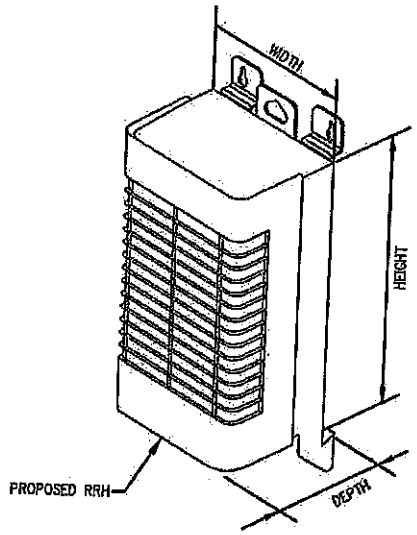
NOTE:
CONTRACTOR TO VERIFY EQUIPMENT & MOUNTING HARDWARE DOES NOT TRAP OR INTERFERE WITH SAFETY CLIMB.

EXISTING ANTENNA LAYOUT | NO SCALE | 2

SITE LOADING CHART

SECTOR	POSITION	SECTOR COLOR	TECHNOLOGY	ANTENNA MODEL #	VENDOR	QTY. (REMOVED)	QTY. (NEW)	RRH/DIPLEXER (QTY/MODEL)
ALPHA	A1	RED	CDMA	BXA-171063/8BF	ANTEL	---	---	---
ALPHA	A2	RED	700/2100	X7CQAP-465-VR0	CSS	---	---	*(1) B2/B66A RRHBR049*
ALPHA	A3	RED	700/2100	X7CQAP-465-VR0	CSS	---	---	*(1) B5/B13 RRHBR04C W/ DIPLEXER*
ALPHA	A4	RED	CDMA	BXA-70063/4CF	ANTEL	---	---	---
BETA	B1	BLUE	CDMA	BXA-171063/8BF	ANTEL	---	---	---
BETA	B2	BLUE	850	*X7CQAP-465-VR4*	*CSS*	1	1	*(1) B2/B66A RRHBR049*
BETA	B3	BLUE	850	*X7CQAP-465-VR4*	*CSS*	1	1	*(1) B5/B13 RRHBR04C W/ DIPLEXER*
BETA	B4	BLUE	CDMA	BXA-70063/4CF	ANTEL	---	---	---
GAMMA	G1	WHITE	CDMA	BXA-171063/8BF	ANTEL	---	---	---
GAMMA	G2	WHITE	700/2100	X7CQAP-465-VR0	CSS	---	---	*(1) B2/B66A RRHBR049*
GAMMA	G3	WHITE	700/2100	X7CQAP-465-VR0	CSS	---	---	*(1) B5/B13 RRHBR04C W/ DIPLEXER*
GAMMA	G4	WHITE	CDMA	BXA-70063/4CF	ANTEL	---	---	---

SITE LOADING CHART

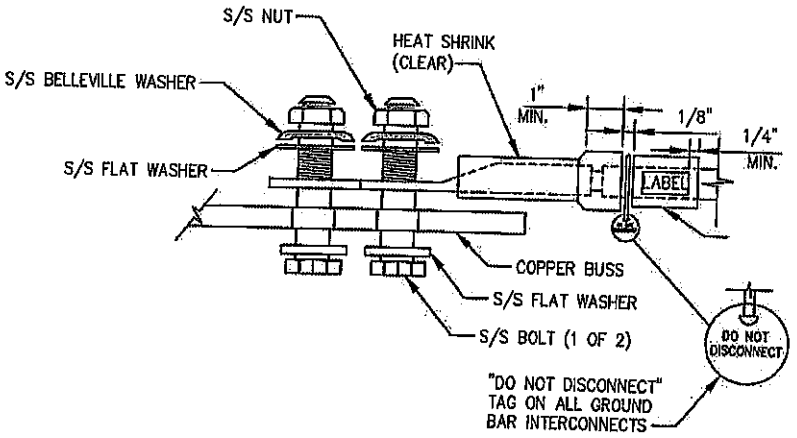


SIZE AND WEIGHT TABLE				
RRH	WIDTH	DEPTH	HEIGHT	WEIGHT WO BRACKET
B66A-RRH4X45	11.9"	7.2"	25.8"	52.9 LBS

REMOTE RADIO HEAD SPECIFICATIONS | NO SCALE | 1

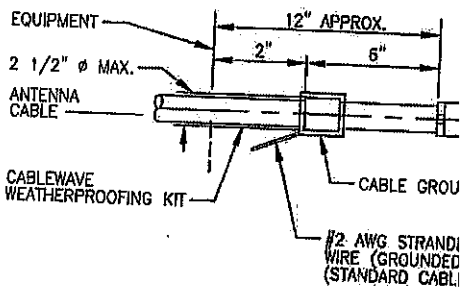
NOT USED | NO SCALE | 3

NOT USED	NO SCALE	1
NOT USED	NO SCALE	3



NOTE:
ALL MECHANICAL EXTERNAL TERMINATION SURFACES SHALL BE TREATED WITH T&B KOPR-SHIELD CP8 ANTI-OXIDATION COMPOUND.

TYPICAL EQUIPMENT GROUND CONNECTION | NO SCALE | 1



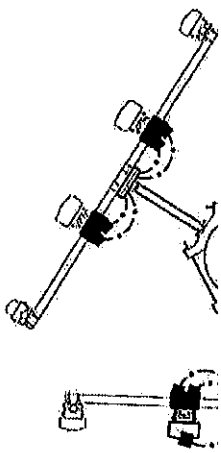
TO ANTENNA CABLE

NOTE:
DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR

TYPICAL CABLE GROUND KIT CONNECTION

GENERAL GROUNDING NOTES:

1. TO ENSURE PROPER BONDING, ALL CONNECTIONS SHALL BE AS FOLLOWS:
   - #2 BARE TINNED SOLID COPPER CONDUCTOR: EXOTHERMIC WELD TO RODS OR GROUND RING
   - LUGS AND BUS BAR (UNLESS NOTED OTHERWISE): SANDED CLEAN, COATED WITH OXIDE INHIBITOR AND BOLTED FOR MAXIMUM SURFACE CONTACT. ALL LUGS SHALL BE COPPER (NO ALUMINUM SHALL BE PERMITTED). PROVIDE LOCK WASHERS FOR ALL MECHANICAL CONNECTIONS FOR GROUND CONDUCTORS. USE STAINLESS STEEL HARDWARE THROUGHOUT.
2. ALL GROUNDING CABLE IN CONCRETE OR THROUGH WALLS SHALL BE IN 3/4" PVC CONDUIT. SEAL AROUND CONDUIT THROUGH WALLS. NO METALLIC CONDUIT SHALL BE USED FOR GROUNDING CONDUCTORS.
3. OWNER'S REPRESENTATIVE WILL INSPECT EXOTHERMIC WELD AND CONDUCT MEGGER TEST PRIOR TO BURIAL. MAXIMUM 5 OHMS RESISTANCE IS REQUIRED.
4. CONTRACTOR TO INSTALL GROUNDING IN CLOSE PROXIMITY TO EQUIPMENT PLATFORM OR PAD.
5. MAKE ALL GROUND CONNECTIONS AS SHORT AND DIRECT AS POSSIBLE. AVOID SHARP BENDS. ALL BENDS SHALL BE A MINIMUM 8" RADIUS AND NO GREATER THAN 90 DEGREES.
6. ALL CADWELDS TO BURIED GROUND RING SHALL BE THE PARALLEL TYPE, EXCEPT FOR THE GROUND RODS WHICH SHALL BE THE TEE TYPE.
7. BOND SERVICE CONDUITS TO GROUND RING AS THEY CROSS. DO NOT EXOTHERMICALLY WELD TO CONDUITS.
8. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER WHEN THE GROUNDING SYSTEM IS COMPLETE. THE CONSTRUCTION MANAGER SHALL INSPECT THE GROUNDING SYSTEM PRIOR TO BACKFILLING.
9. THE MINIMUM SPACING BETWEEN GROUND RODS SHALL BE 10'-0" (MAX. 15'-0").
10. BOND CIGBE TO EXTERNAL GROUND RING WITH 2 RUNS OF #2 BARE, TINNED, SOLID COPPER CONDUCTOR IN PVC. CONNECT BAR END WITH 2 HOLE LUG, AND "CADWELD" THE OTHER END TO THE EXTERNAL GROUND ROD.
11. THE PREFERRED LOCATION FOR COAX GROUNDING IS AT THE BASE OF THE TOWER PRIOR TO THE COAX BEND.
12. BONDING OF THE GROUNDED CONDUCTOR (NEUTRAL) AND THE GROUNDING CONDUCTOR SHALL BE AT THE SERVICE DISCONNECTING MEANS. BONDING JUMPER SHALL BE INSTALLED PER N.E.C. ARTICLE 250-30.



NORTH = 0°

TYPICAL ANTENNA GROUNDING PLAN