4545 East River Road
Suite 320
West Henrietta, NY 14586

January 22, 2020

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

RE: **Notice of Exempt Modification for Verizon**
Crown Castle Site ID: 876355
3 A Birdseye Rd, Farmington, CT 06030
Lat: 41° -42' 56.94"/ Long: -72° -48' 37.42"

Dear Ms. Bachman:

Verizon currently maintains twelve (12) total antennas at the 109-foot mount on the existing 140-foot monopole tower, located at 3 A Birdseye Road in Farmington. The tower is owned by Crown Castle and the property is owned by GOIS Holdings of Connecticut, LLC. Verizon now intends to replace three (3) existing antennas at the 109-foot mount.

Tower modifications:

- Remove three (3) BXA-70063-4CF antennas
- Add three (3) XXDWMM-12.5-65-8T antennas
- Add three (3) RT4401-48A remote radio heads

Ground modifications:

- None

Melanie A. Bachman

This facility was approved by a Federal Judge on 11/4/1997 per the attached email provided by the Town of Farmington.

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 the Town Manager, Ms. Kathleen Blonski and Director of Public Works/Town Engineer, Mr. Russell Arnold. A copy will also be sent to the property owner.

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

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

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

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

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

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

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

Sincerely,

Richard Zajac
Network Real Estate Specialist
4545 East River Road, Suite 320
West Henrietta, NY 14586
585-445-5896
richard.zajac@crowncastle.com

Melanie A. Bachman

cc:

Ms. Kathleen Blonski – Town Manager
Town of Farmington
1 Monteith Drive
Farmington, CT 06032
860-675-2350

Mr. Russell Arnold - Director of Public Works/Town Engineer
Town of Farmington
1 Monteith Drive
Farmington, CT 06032
860-675-2325

GOIS Holdings of Connecticut, LLC
125 Brookside Drive
Uxbridge, MA 01569

After printing this label:
1. Use the 'Print' button on this page to print your label to your laser or inkjet printer.
2. Fold the printed page along the horizontal line.
3. Place label in shipping pouch and affix it to your shipment so that the barcode portion of the label can be read and scanned.

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Exhibit A

Original Facility Approval

Mark Roberts

From: Sandra Michaud <michauds@farmington-ct.org>
Sent: Monday, February 27, 2017 4:16 PM
To: Mark Roberts
Subject: 130 Birdseye Road

Hi Mark

I was able to go through documents for this address and it appears on November 4, 1997 a federal judge ordered the Town (within 20 days) to issue a zoning permit so that Sprint Spectrum could install a 140 foot high communications tower. I do not have an approval letter from the Plan & Zoning Commission as it appears they did not formally make a decision in support of the Court's Order but a zoning permit was issued on November 26, 1997.

The Town did appeal this Order but did later withdraw in March 1998.

Sandy

Sandra Michaud
Land Use Coordinator
Town of Farmington
Planning Division
Department of Public Works
1 Monteith Drive
Farmington, CT 06032
860.675.2325 Office
860.675.2319 Fax

Exhibit B

Property Card

Town of Farmington, CT

Property Listing Report

Map Block Lot	119 3A	Building #		Unique Identifier	01358040

Property Information

Property Location	8040 BIRDSEYE RD
Mailing Address	125 BROOKSIDE DR UXBRIDGE MA 01569
Land Use	Commercial Vacant Land
Zoning Code	R80
Neighborhood	99

Owner	GOIS HOLDINGS OF CONNECTICUT
Co-Owner	LLC
Book / Page	0928/0470
Land Class	Commercial
Census Tract	4602
Acreage	13.53

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	0	0
Outbuildings	0	0
Land	375540	262880
Total	375540	262880

Utility Information

Electric	No
Gas	No
Sewer	No
Public Water	No
Well	No

Primary Construction Details

Year Built	
Building Desc.	
Building Style	
Stories	
Exterior Walls	
Exterior Walls 2	
Interior Walls	
Interior Walls 2	
Interior Floors 1	
Interior Floors 2	

Heating Fuel	
Heating Type	
AC Type	
Bedrooms	
Full Bathrooms	
Half Bathrooms	
Extra Fixtures	
Total Rooms	
Bath Style	
Kitchen Style	
Occupancy	

Building Use	
Building Condition	
Frame Type	
Fireplaces	
Bsmt Gar	
Fin Bsmt Area	
Fin Bsmt Quality	
Building Grade	
Roof Style	
Roof Cover	

Report Created On 1/22/2020

Town of Farmington, CT

Property Listing Report | Map Block Lot: 119 3A | Building #: | Unique Identifier: 01358040

Detached Outbuildings

Type	Description	Area (sq ft)	Condition	Year Built

Attached Extra Features

Type	Description	Area (sq ft)	Condition	Year Built

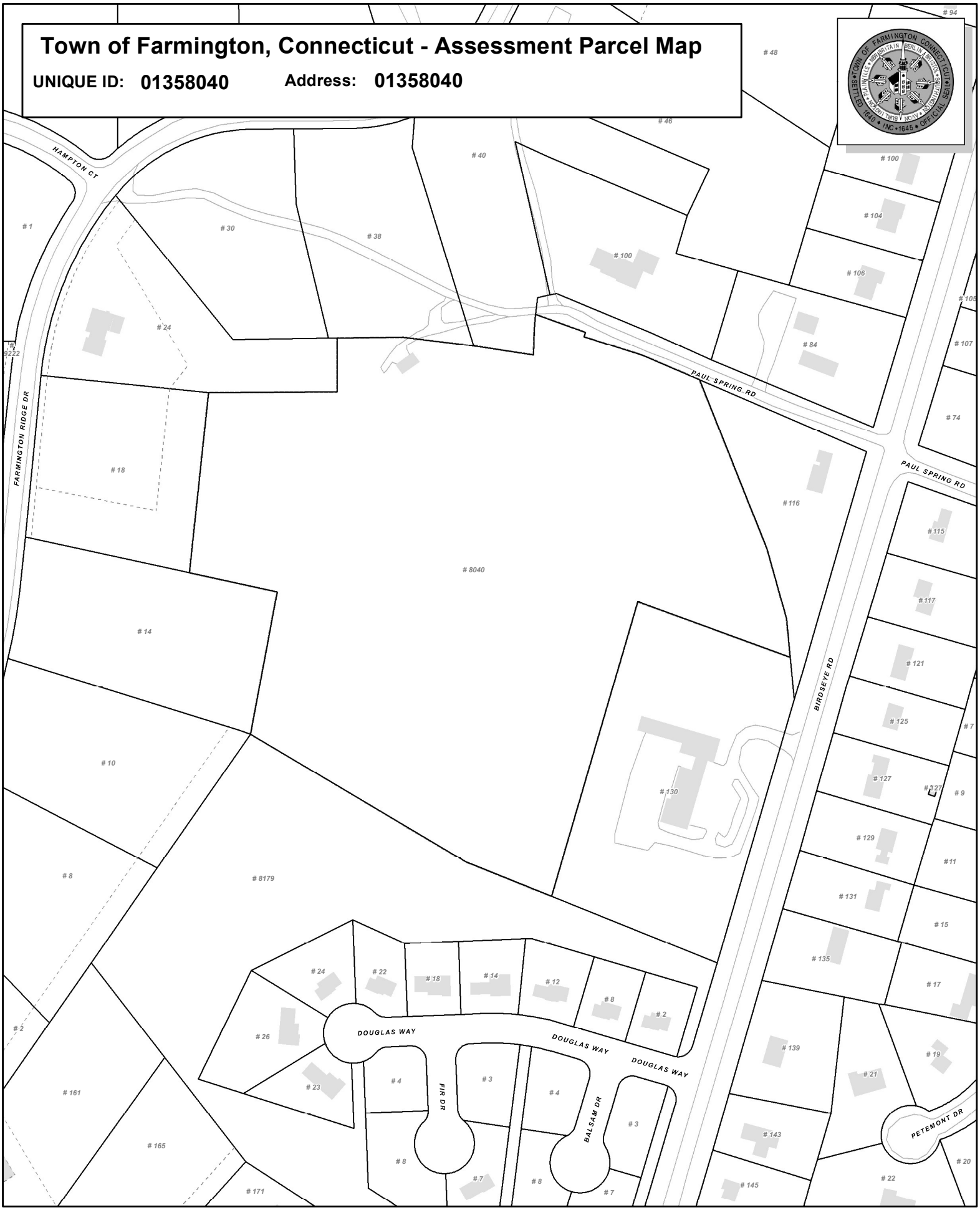
Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
GOIS HOLDINGS OF CONNECTICUT	0928_0470	4/9/2008	518000
UNISON SITE MANAGEMENT LLC	0862_0062	12/7/2005	385000
CELL TOWER LEASE	0862_0083	12/7/2005	0
FREEDON COMMUNICATIONS OF	0809_0324	6/15/2004	280000
MEGA BROADCASTING	0530_0225	12/17/1996	75000
AMERICAN RADIO SYSTEMS INC	0484_0674	1/1/1900	0
MEGA COMMUNICATIONS OC NB LL	0585_0272	1/1/1900	0

Report Created On 1/22/2020

Town of Farmington, Connecticut - Assessment Parcel Map

UNIQUE ID: 01358040 **Address:** 01358040



Map Produced Oct. 2019

Approximate Scale: 1 inch = 200 feet

Exhibit C

Construction Drawings

verizon

NEW BRITAIN 5 CT
130 BIRDSEYE ROAD
FARMINGTON, CT 06032
LOCATION CODE: 467249

PROJECT SUMMARY

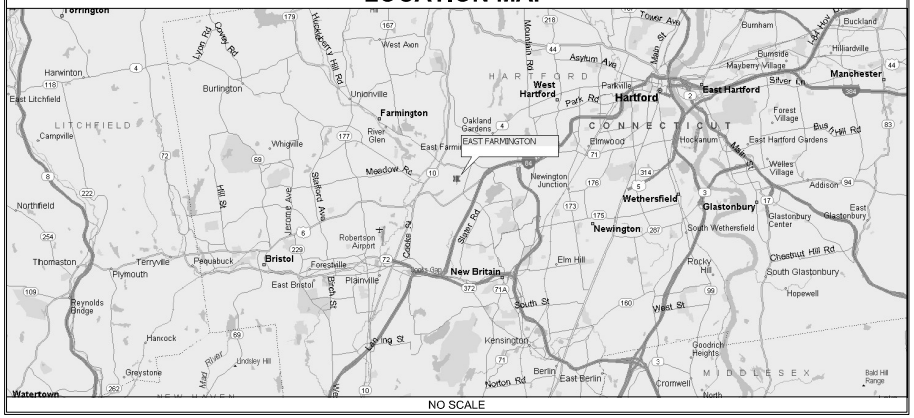
SITE NAME:	NEW BRITAIN 5 CT
SITE ADDRESS:	130 BIRDSEYE ROAD FARMINGTON, CT 06032 HARTFORD COUNTY
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DR CANONSBURG, PA 15317
BU NUMBER:	876335
MAP NUMBER:	119
LOT NUMBER:	3
CUSTOMER/APPLICANT:	VERIZON WIRELESS 20 ALEXANDER DRIVE WALLINGFORD, CT 06492
CONTACT:	ANDREW LEONE
NAD83	(617) 620-4175
LATITUDE:	41° 42' 56.94" N
LONGITUDE:	72° 48' 37.42" W
ELEVATION:	462'
CURRENT ZONING:	PR
A&E FIRM:	B+T GROUP 1717 S. BOULDER, SUITE 300 TULSA, OK 74119 MIKE OAKES (918) 587-4630
OCCUPANCY TYPE:	UNMANNED
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.

CODE COMPLIANCE

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES:

CODE TYPE	CODE
BUILDING	2018 CT STATE BUILDING CODE
STRUCTURAL	2018 CT STATE BUILDING CODE
MECHANICAL	2018 CT STATE BUILDING CODE
ELECTRICAL	NEC 2017

LOCATION MAP



NO SCALE

DRIVING DIRECTIONS

DEPART HARTFORD-BRAINARD AIRPORT ON MAXIM RD. ROAD NAME CHANGES TO BRAINARD RD. TAKE RAMP ONTO US-5 [CT-15]. TAKE RAMP ONTO I-91. AT EXIT 32A-32B, TURN LEFT ONTO RAMP. TAKE RAMP ONTO I-84 [US-6]. AT EXIT 38, TURN RIGHT ONTO RAMP. ROAD NAME CHANGES TO US-6 [COLT HWY]. TURN RIGHT ONTO BIRD'S EYE RD [BIRDSEYE RD]. TURN LEFT ONTO MOUNTAIN RD. TURN RIGHT ONTO ACCESS ROAD AND ARRIVE AT EAST FARMINGTON.

DRAWING INDEX

SHEET #	SHEET DESCRIPTION	REV. #
T-1	TITLE SHEET	1
A-1	COMPOUND PLAN AND TOWER ELEVATION	1
A-2	EQUIPMENT DETAILS	1
A-3	ANTENNA AZIMUTH CHARTS & PLUMBING DIAGRAM	1
PRK-1245	PLATFORM REINFORCEMENT DETAILS (SHT. 1 OF 2)	0
PRK-1245	PLATFORM REINFORCEMENT DETAILS (SHT. 2 OF 2)	0

A/E DOCUMENT REVIEW STATUS

TITLE	SIGNATURE	DATE
OWNER:		
R.F. ENGINEER:		
CONSTRUCTION MGR.:		
LEASING & ZONING:		
VERIZON WIRELESS:		

THE FOLLOWING PARTIES HEREBY APPROVE AND ACCEPT THESE DOCUMENTS AND AUTHORIZE THE CONTRACTOR TO PROCEED WITH THE CONSTRUCTION DESCRIBED HEREIN. ALL DOCUMENTS ARE SUBJECT TO REVIEW BY THE LOCAL BUILDING DEPARTMENT AND MAY IMPOSE CHANGES OR MODIFICATIONS.

DO NOT SCALE DRAWINGS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 11x17. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

CALL CONNECTICUT ONE CALL
(800) 922-4455
CALL 3 WORKING DAYS
BEFORE YOU DIG!

811

B+T GRP

verizon
400 FRIBERG PARKWAY
WESTBOROUGH, MA 01581
PH: (508) 330-3300

NEW BRITAIN 5 CT
130 BIRDSEYE ROAD
FARMINGTON, CT 06032
EXISTING MONOPOLE

PROJECT NO:	77969.018.01
CHECKED BY:	RMC

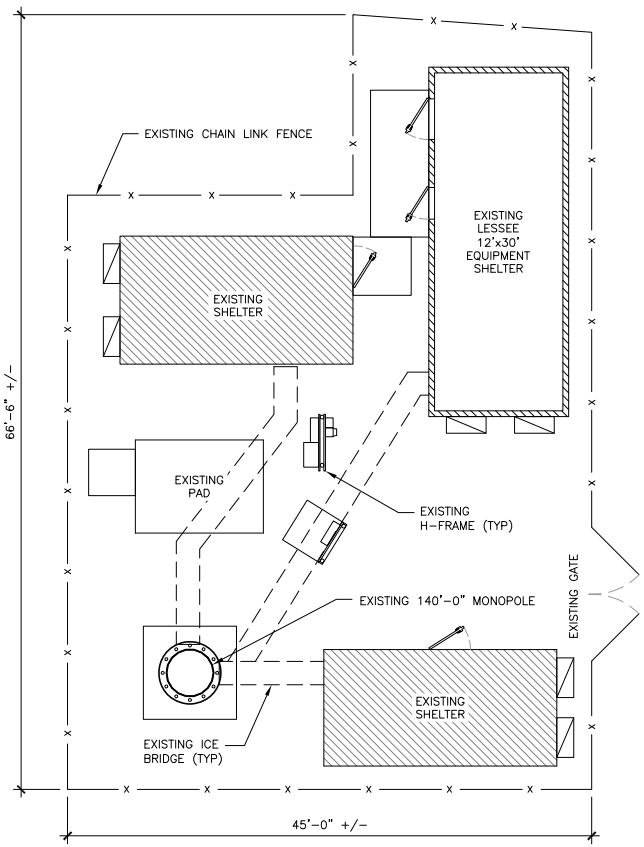
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	11/4/19	STH	CONSTRUCTION
1	1/10/20	STH	CONSTRUCTION

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

STATE OF CONNECTICUT
31627
LICENSED
PROFESSIONAL ENGINEER
1/10/20

SHEET NUMBER:	REVISION:
T-1	1

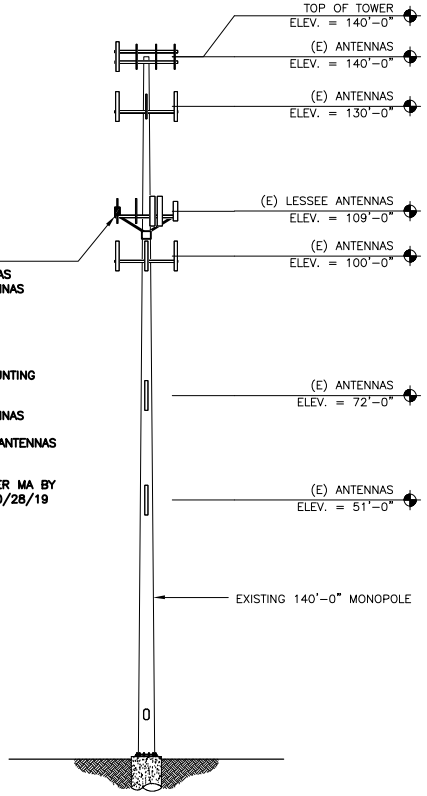


1 COMPOUND PLAN
SCALE: 0' 4' 8' 16' 32'

N

NOTES:
1. CONTRACTOR TO VERIFY EXACT COAX AND ANTENNA INSTALLATION AND ANTENNA HEIGHT WITH LATEST RF DATA SHEETS PRIOR TO INSTALLATION.
2. STRUCTURAL ANALYSIS DONE BY OTHERS.
3. VERIZON SHALL PROVIDE A STRUCTURAL ANALYSIS OF THE TOWER PREPARED BY A LICENSED STATE STRUCTURAL ENGINEER CERTIFYING THAT THE EXISTING TOWER AND PROPOSED IMPROVEMENTS HAVE SUFFICIENT CAPACITY TO SUPPORT ALL NEW WORK THAT WILL BE DONE IN COMPLIANCE WITH THE CURRENT EDITION OF BUILDING CODES AND EIA/TIA CRITERIA. THE CONTRACTOR IS RESPONSIBLE TO CONFIRM THAT ANY AND ALL IMPROVEMENTS REQUIRED BY THE STRUCTURAL ANALYSIS CERTIFICATION ARE PROPERLY INSTALLED PRIOR TO THE ADDITION OF ANTENNAS, SUPPORTS AND APPURTENANCES PROPOSED ON THESE DRAWING OTHERWISE NOTED IN THE STRUCTURAL ANALYSIS.CAP AND WEATHERPROFF UNUSED ANTENNA PORTS.
4. ESTIMATED HYBRIFLEX CABLE LENGTH: 159' (EACH RUN)

EXISTING TO REMAIN:
(6) SBNHH-1D65B ANTENNAS
(3) BXA-70063-4CF ANTENNAS
(3) B2/B66A RRHS
(3) B5/B13 RRHS
(1) JUNCTION BOX
(1) HYBRID CABLE
(6) COAX CABLES
(3) BSAMNT-SBS-1-2 MOUNTING BRACKETS
EXISTING TO BE REMOVED:
(3) BXA-70063-4CF ANTENNAS
PROPOSED:
(3) XXDWMM-12.5-65-8T ANTENNAS
(3) RT4401-48A RRHS
(1) SITEPRO1 PRK-1245
MODIFY ANTENNA MOUNT PER MA BY CLS ENGINEERING DATED 10/28/19



2 FINAL TOWER ELEVATION
SCALE: 0' 4' 8' 16' 32'

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verizon

400 FRIBERG PARKWAY
WESTBOROUGH, MA 01581
PH: (508) 330-3300

NEW BRITAIN 5 CT

130 BIRDSEYE ROAD
FARMINGTON, CT 06032
EXISTING MONOPOLE

PROJECT NO:	77969.018.01
CHECKED BY:	RMC

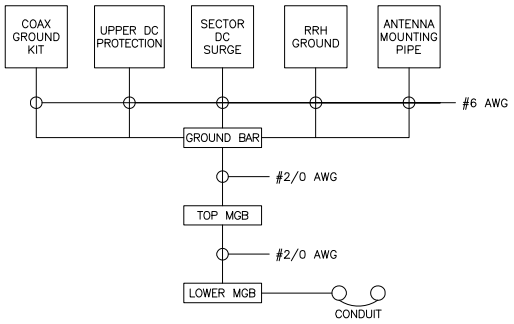
ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	11/4/19	STH	CONSTRUCTION
1	1/10/20	STH	CONSTRUCTION

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

SHEET NUMBER:	REVISION:
A-1	1

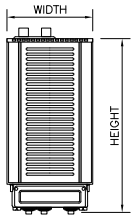
NOTE:
1. INSTALL ALL EQUIPMENT, MOUNTING BRACKETS AND HARDWARE ACCORDING WITH MANUFACTURE'S RECOMMENDATIONS.
2. GROUND DISTRIBUTION BOXES, MOUNTING PIPES AND RRHs IN ACCORDANCE WITH MANUFACTURE'S RECOMMENDATIONS.
3. INSTALLED EQUIPMENT AND MOUNTING BRACKETS SHALL NOT INTERFERE WITH CLIMBING ACCESS NOR ANT INSTALLED SAFETY DEVICES.
4. EQUIPMENT TO BE INSTALLED AT VERIZON'S RAD. CENTER IN ACCORDANCE WITH TOWER STRUCTURAL ANALYSIS (ANALYSIS BY OTHERS).



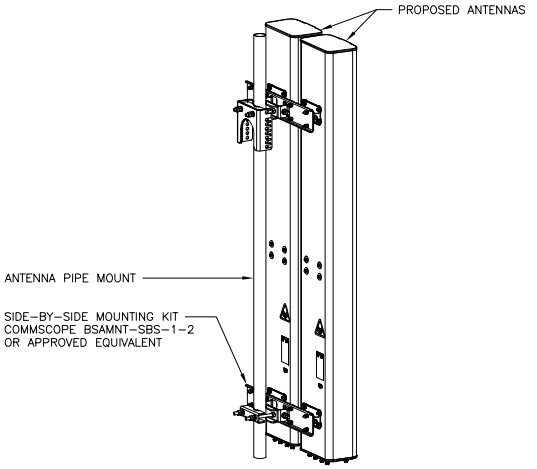
NOTE:
1. BOND ANTENNA GROUNDING KIT CABLES TO TOP CIBE.
2. BOND ANTENNA GROUNDING KIT CABLE TO BOTTOM CIBE.
3. TYPICAL FOR ALL SECTORS.

1 GROUNDING SCHEMATIC DIAGRAM
SCALE: N.T.S.

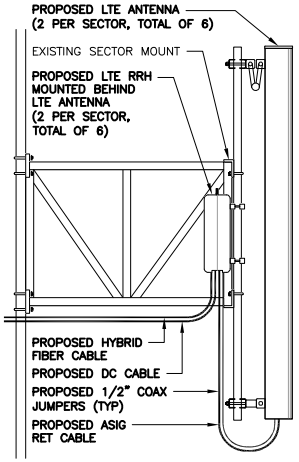
REMOTE RADIO HEAD DIMENSIONS (INCHES)				
MODEL	HEIGHT	WIDTH	DEPTH	WEIGHT
CBRS RRH-RT4401-48A	12.1"	8.5"	4.1"	18.64 LBS



2 RRH SPECIFICATIONS
SCALE: N.T.S.



3 ANTENNA MOUNTING DETAIL
SCALE: N.T.S.



4 ANTENNA MOUNTING DETAIL
SCALE: N.T.S.

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400 FRIBERG PARKWAY
WESTBOROUGH, MA 01581
PH: (508) 330-3300

NEW BRITAIN 5 CT

130 BIRDSEYE ROAD
FARMINGTON, CT 06032
EXISTING MONOPOLE

PROJECT NO: 77969.018.01
CHECKED BY: RMC

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION
0	11/4/19	STH	CONSTRUCTION
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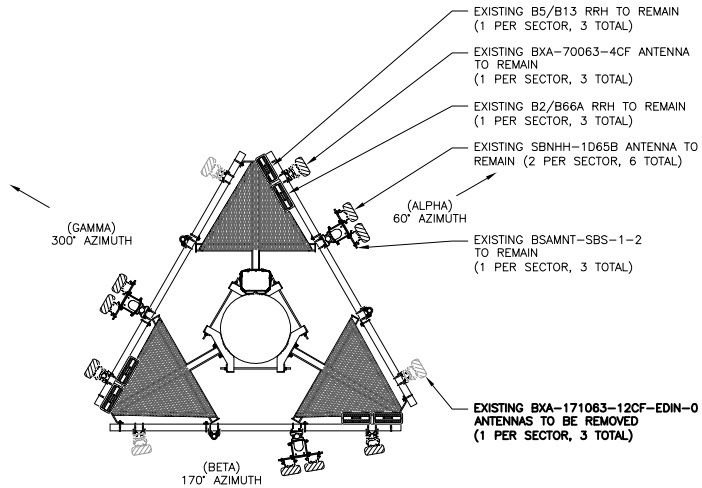
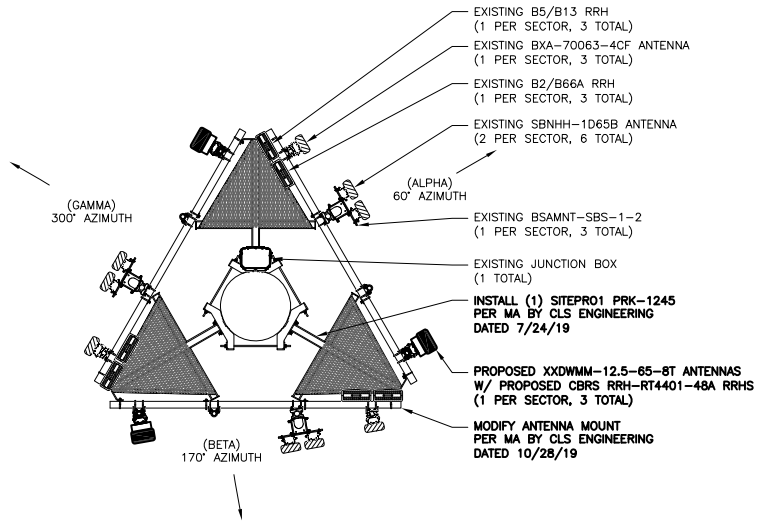
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/20

STATE OF CONNECTICUT
31627
LICENSED PROFESSIONAL ENGINEER
1/10/20

SHEET NUMBER: A-2
REVISION: 1



1 EXISTING ANTENNA ORIENTATION
SCALE: N.T.S.



3 PROPOSED ANTENNA ORIENTATION
SCALE: N.T.S.

NOT AVAILABLE AT
TIME OF ISSUE

3 ANTENNA SYSTEM LAYOUT
SCALE: N.T.S.

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400 FRIBERG PARKWAY
WESTBOROUGH, MA 01581
PH: (508) 330-3300

NEW BRITAIN 5 CT

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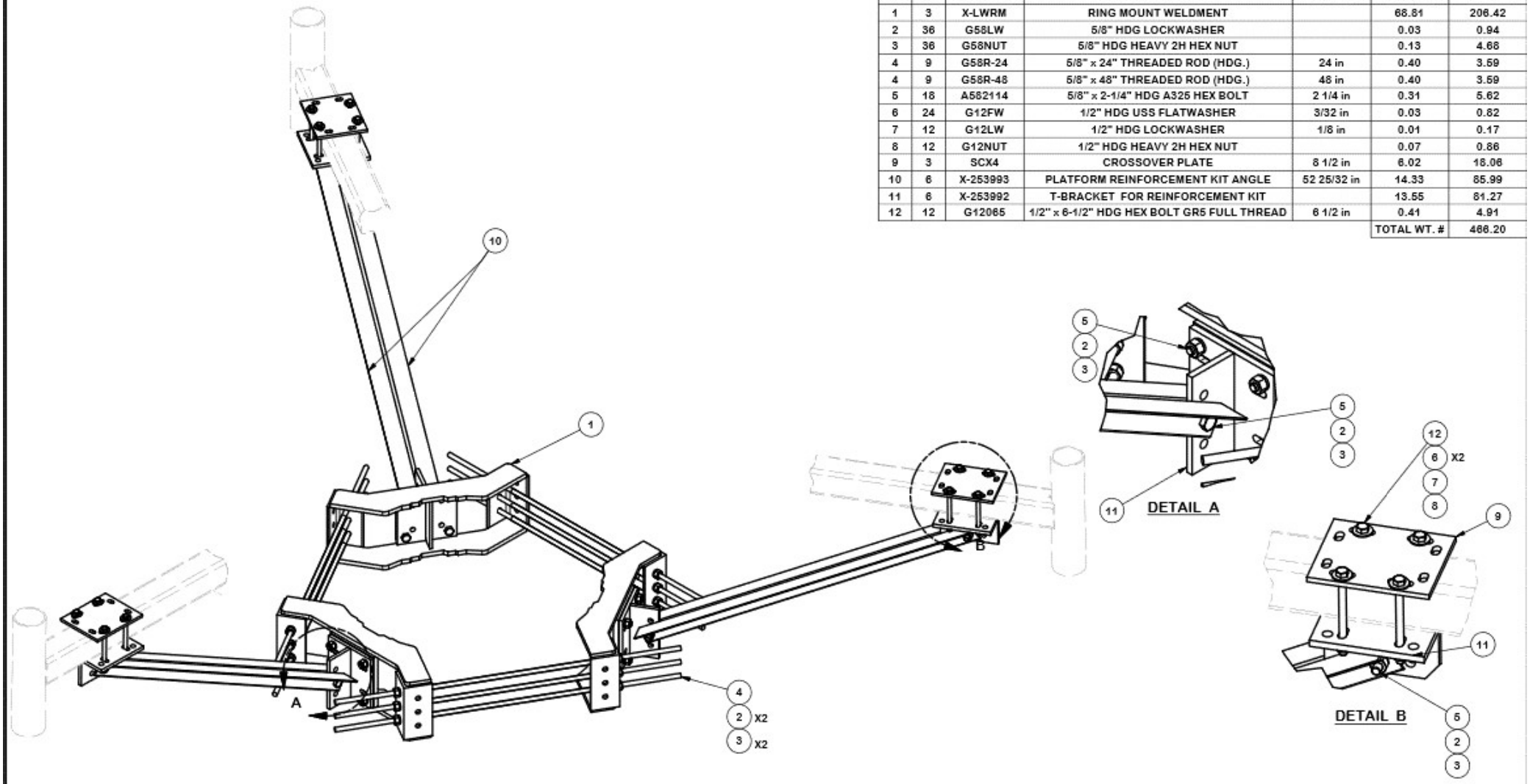
SHEET NUMBER:	REVISION:
A-3	1



PARTS LIST

ITEM	QTY	PART NO.	PART DESCRIPTION	LENGTH	UNIT WT.	NET WT.
1	3	X-LWRM	RING MOUNT WELDMENT		68.81	206.42
2	36	G58LW	5/8" HDG LOCKWASHER		0.03	0.94
3	36	G58NUT	5/8" HDG HEAVY 2H HEX NUT		0.13	4.66
4	9	G58R-24	5/8" x 24" THREADED ROD (HDG.)	24 in	0.40	3.59
4	9	G58R-48	5/8" x 48" THREADED ROD (HDG.)	48 in	0.40	3.59
5	18	A582114	5/8" x 2-1/4" HDG A325 HEX BOLT	2 1/4 in	0.31	5.62
6	24	G12FW	1/2" HDG USS FLATWASHER	3/32 in	0.03	0.82
7	12	G12LW	1/2" HDG LOCKWASHER	1/8 in	0.01	0.17
8	12	G12NUT	1/2" HDG HEAVY 2H HEX NUT		0.07	0.86
9	3	SCX4	CROSSOVER PLATE	8 1/2 in	6.02	18.06
10	6	X-253993	PLATFORM REINFORCEMENT KIT ANGLE	52 25/32 in	14.33	85.99
11	6	X-253992	T-BRACKET FOR REINFORCEMENT KIT		13.55	81.27
12	12	G12065	1/2" x 6-1/2" HDG HEX BOLT GR5 FULL THREAD	6 1/2 in	0.41	4.91
					TOTAL WT. #	466.20

TOLERANCE NOTES

TOLERANCES ON DIMENSIONS, UNLESS OTHERWISE NOTED ARE:
SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

DESCRIPTION
PLATFORM REINFORCEMENT
ON A 12" TO 45" POLE
4' 6" ANGLE

SITE PRO 1
A valmont COMPANY

Engineering Support Team:
1-888-753-7448

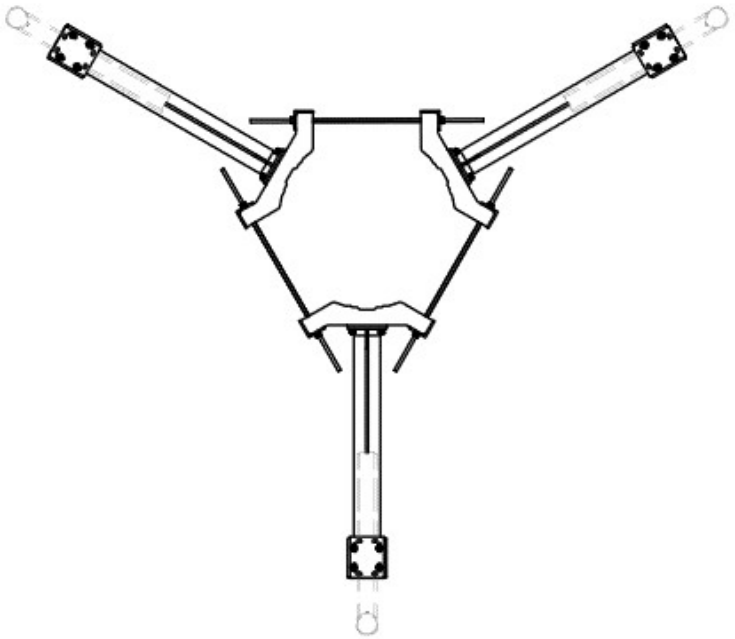
Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

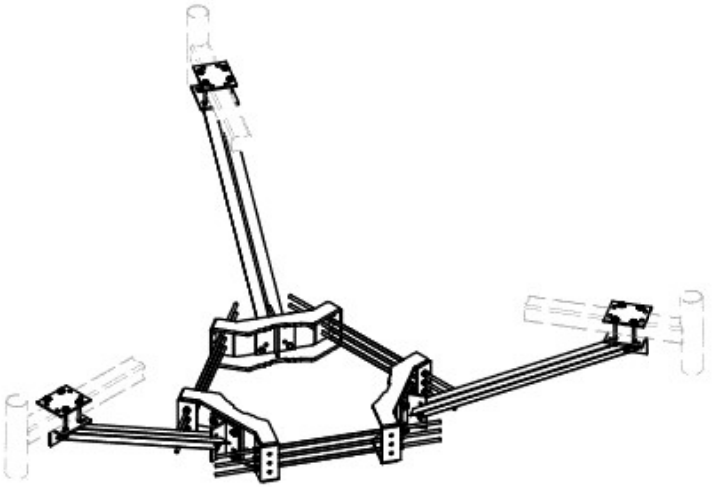
OPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
4488	CEK 4/11/2014		PRK-1245

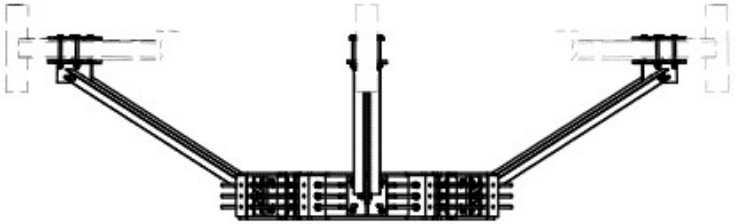
CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 1/18/2016	PRK-1245

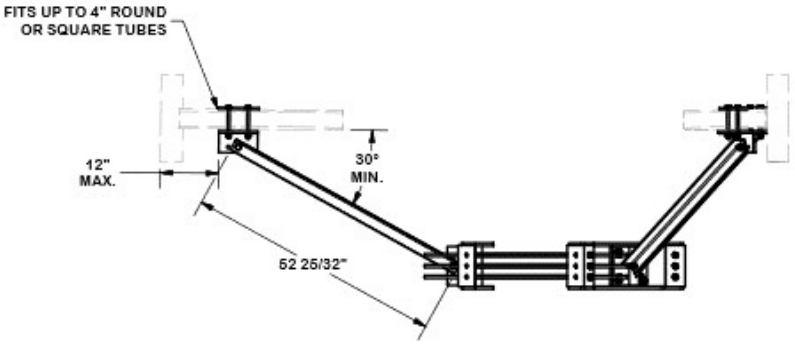
REVISION HISTORY

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	CHANGED ALL 5/8" BOLTS TO A582114	4488	CEK	10/1/2015









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SAWED, SHEARED AND GAS CUT EDGES *(± 0.030")*
DRILLED AND GAS CUT HOLES *(± 0.030")* - NO CONING OF HOLES
LASER CUT EDGES AND HOLES *(± 0.010")* - NO CONING OF HOLES
BENDS ARE ± 1/2 DEGREE
ALL OTHER MACHINING *(± 0.030")*
ALL OTHER ASSEMBLY *(± 0.060")*

REV	DESCRIPTION OF REVISIONS	CPD	BY	DATE
A	CHANGED ALL 5/8" BOLTS TO A562114	4488	CEK	10/1/2015

REVISION HISTORY

DESCRIPTION
PLATFORM RENIFORCEMENT
ON A 12" TO 45" POLE
4' 6" ANGLE

CPD NO.	DRAWN BY	ENG. APPROVAL	PART NO.
4488	CEK 4/11/2014		PRK-1245

CLASS	SUB	DRAWING USAGE	CHECKED BY	DWG. NO.
81	01	CUSTOMER	BMC 1/18/2016	PRK-1245

SITE PRO 1
A valmont COMPANY
Engineering Support Team: 1-888-753-7448
Locations:
New York, NY
Atlanta, GA
Los Angeles, CA
Plymouth, IN
Salem, OR
Dallas, TX

Exhibit D

Structural Analysis Report

Date: **November 8, 2019**

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

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

Subject: Structural Analysis Report

Carrier Designation:	***Verizon Wireless* Co-Locate**	
	Carrier Site Number:	NG64052
	Carrier Site Name:	New Britain 5 CT
Crown Castle Designation:	**Crown Castle BU Number:**	876335
	Crown Castle Site Name:	East Farmington
	Crown Castle JDE Job Number:	592670
	Crown Castle Work Order Number:	1802921
	Crown Castle Order Number:	506768 Rev. 0
Engineering Firm Designation:	**TEP Project Number:**	25671.318987
Site Data:	**3 A Birdseye Road, Farmington, Hartford County, CT 06030** **Latitude *41° 42' 56.94"*, Longitude *-72° 48' 37.42"*** **140 Foot - Monopole Tower**	

Dear Amanda Brown,

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

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

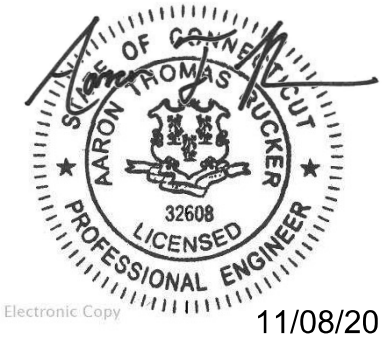
LC7: Proposed Equipment Configuration **Sufficient Capacity – 77.5%**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Gautam Sopal, E.I. / DTS

Respectfully submitted by:

Aaron T. Rucker, P.E.



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11/08/2019

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1) INTRODUCTION

This tower is a 140-ft monopole tower designed by Summit Manufacturing Inc. The tower has been modified multiple times in the past to accommodate additional loading. All information provided to TEP was assumed to be accurate and complete.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1.0
Ice Thickness:	2.0 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)
110.0	110.0	1	Raycap	TME-DB-T16Z-8AB-0Z	-	-
108.0	109.0	4	Andrew	SBNHH-1D65B w/ Mount Pipe	7	1-5/8
		3	Antel	BXA-70063-4CF-EDIN-X w/ Mount Pipe		
		3	Samsung Telecommunications	CBRS w/ Mount Pipe		
		3	Samsung Telecommunications	20W CBRS		
		3	Samsung Telecommunications	RFV01U-D1A		
		3	Samsung Telecommunications	RFV01U-D2A		
	108.0	1	Site Pro 1	PRK-1245 Kicker		
		1	Tower Mounts	Platform Mount [LP 304-1]		

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)
139.0	140.0	3	RFS Celwave	APXV9ERR18-C-A20	3	1-1/4
		3	RFS Celwave	APXVTM14-C-120		
		3	Alcatel Lucent	TD-RRH8x20-25		
	139.0	1	Tower Mounts	Platform Mount [LP 1201-1_HR-3]		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
137.0	140.0	3	Alcatel Lucent	TME-800MHz 2X50W RRH w/Filter	-	-
	137.0	3	Alcatel Lucent	TME-PCS 1900MHz 4x45W-65MHz		
		1	Tower Mounts	Pipe Mount [PM 601-3]		
130.0	130.0	3	Ericsson	RRUS 11	-	-
		3	Ericsson	RRUS 32 B2		
		1	Tower Mounts	Pipe Mount [PM 601-3]		
128.0	130.0	2	CCI Antennas	HPA-65R-BUU-H6 w/ Mount Pipe	9 6 3	7/8 3/4 3/8
		1	CCI Antennas	HPA-65R-BUU-H8 w/ Mount Pipe		
		3	KMW Communications	EPBQ-654L8H8-L2 w/ Mount Pipe		
		3	Powerwave Technologies	7770.00 w/ Mount Pipe		
		3	Ericsson	RRUS 32 B30		
		3	Ericsson	RRUS 4426 B66		
		3	Ericsson	RRUS 4478 B5		
		6	Powerwave Technologies	LGP21401		
		1	Raycap	DC6-48-60-18-8F		
		2	Raycap	DC6-48-60-18-8C		
	128.0	1	Tower Mounts	T-Arm Mount [TA 602-3]		
100.0	100.0	3	Ericsson	AIR 21 B2A B4P w/ Mount Pipe	1 11 1	1-5/8 7/8 1-3/8
		3	RFS Celwave	APXVAARR24_43-U-NA20 w/ Mount Pipe		
		3	Ericsson	AIR 32 B2A/B66AA w/ Mount Pipe		
		3	Ericsson	KRY 112 144/1		
		3	Ericsson	RADIO 4449 B12/B71		
		1	Tower Mounts	T-Arm Mount [TA 602-3]		
70.0	72.0	2	Lucent	KS24019-L112A	2	5/16
	70.0	2	Tower Mounts	Side Arm Mount [SO 701-1]		
49.0	51.0	1	Lucent	KS24019-L112A	1	1/2
	49.0	1	Tower Mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Geotechnical Report	FDH Engineering, Inc.	1531892	CCISites
Foundation Drawings	Paul J. Ford & Company	1440555	CCISites
Concrete Mix Design	Tilcon Connecticut, Inc.	1532173	CCISites
Manufacturer Drawings	Summit Manufacturing, Inc.	1615361	CCISites
Tower Reinforcement Drawings	B&T Engineering, Inc.	2397525	CCISites
Post-Modification Inspection	B&T Engineering, Inc.	2397526	CCISites
Tower Reinforcement Drawings	B+T Group	3262310	CCISites
Post-Modification Inspection	Tower Engineering Professionals	3413367	CCISites
Tower Reinforcement Drawings	B+T Group	3672042	CCISites
Post-Modification Inspection	Tower Engineering Professionals	4836434	CCISites
Tower Reinforcement Drawings	B+T Group	4456376	CCISites
Post-Modification Inspection	Tower Engineering Professionals	5400317	CCISites
Structural Analysis Report	Semaan Engineering Solutions	1792765	CCISites

3.1) Analysis Method

tnxTower (version 8.0.5.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A.

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

3.2) Assumptions

1) The tower and foundation were built and maintained in accordance with the manufacturer's specification.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2, and the referenced drawings.
3) All tower components are in sufficient condition to carry their full design capacity.
4) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked and is left to the carrier or tower owner to ensure conformance.
5) All antenna mounts and mounting hardware are structurally sufficient to carry the full design capacity requirements of appurtenance wind area and weight as provided by the original manufacturer specifications. It is the carrier's responsibility to ensure compliance to the structural limitations of the existing and/or proposed antenna mounts. TEP did not perform a site visit to verify the size, condition or capacity of the antenna mounts and did not analyze antennas supporting mounts as part of this structural analysis report.
6) When applicable, the effective projected area (EPA) of appurtenances was determined by computation fluid dynamics (CFD) testing performed by Crown Castle. TEP assumes the means and methods used to determine the EPA's yields results that follow the intent of TIA-222-H and are accurate and complete.
7) The tower geometry was assumed per the previous structural analysis by Semaan Engineering Solutions dated February 23, 2005 (CCI Doc ID# 1792765).

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

4) ANALYSIS RESULTS

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

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
140 - 135	Pole	TP17.025x16x0.25	Pole	5.3%	Pass
135 - 130	Pole	TP18.05x17.025x0.25	Pole	10.4%	Pass
130 - 125	Pole	TP19.075x18.05x0.25	Pole	20.7%	Pass
125 - 120	Pole	TP20.099x19.075x0.25	Pole	29.6%	Pass
120 - 115	Pole	TP21.124x20.099x0.25	Pole	37.0%	Pass
115 - 110	Pole	TP22.149x21.124x0.25	Pole	43.6%	Pass
110 - 105	Pole	TP23.174x22.149x0.25	Pole	51.8%	Pass
105 - 102	Pole	TP23.789x23.174x0.25	Pole	56.4%	Pass
102 - 101.75	Pole + Reinf.	TP23.84x23.789x0.3875	Reinf. 12 Tension Rupture	50.5%	Pass
101.75 - 96.75	Pole + Reinf.	TP24.865x23.84x0.375	Reinf. 12 Tension Rupture	58.2%	Pass
96.75 - 95	Pole + Reinf.	TP25.89x24.865x0.375	Reinf. 12 Tension Rupture	60.9%	Pass
95 - 90.75	Pole + Reinf.	TP25.595x24.724x0.3563	Pole	52.6%	Pass
90.75 - 85.75	Pole + Reinf.	TP26.62x25.595x0.3563	Pole	57.5%	Pass
85.75 - 85.33	Pole + Reinf.	TP26.706x26.62x0.3563	Pole	57.9%	Pass
85.33 - 85.08	Pole + Reinf.	TP26.757x26.706x0.55	Reinf. 11 Tension Rupture	52.2%	Pass
85.08 - 82.5	Pole + Reinf.	TP27.287x26.757x0.5438	Reinf. 11 Tension Rupture	54.4%	Pass
82.5 - 82.25	Pole + Reinf.	TP27.338x27.287x0.55	Reinf. 11 Tension Rupture	54.8%	Pass
82.25 - 82	Pole + Reinf.	TP27.389x27.338x0.55	Reinf. 11 Tension Rupture	55.0%	Pass
82 - 81.75	Pole + Reinf.	TP27.44x27.389x0.4875	Reinf. 11 Tension Rupture	63.9%	Pass
81.75 - 78.83	Pole + Reinf.	TP28.038x27.44x0.4875	Reinf. 11 Tension Rupture	66.5%	Pass
78.83 - 78.58	Pole + Reinf.	TP28.09x28.038x0.6125	Reinf. 11 Tension Rupture	53.7%	Pass
78.58 - 77.67	Pole + Reinf.	TP28.277x28.09x0.6125	Reinf. 11 Tension Rupture	54.4%	Pass
77.67 - 77.42	Pole + Reinf.	TP28.329x28.277x0.55	Reinf. 8 Tension Rupture	58.3%	Pass
77.42 - 77.17	Pole + Reinf.	TP28.38x28.329x0.55	Reinf. 8 Tension Rupture	58.5%	Pass
77.17 - 72.17	Pole + Reinf.	TP29.406x28.38x0.5375	Reinf. 8 Tension Rupture	62.1%	Pass
72.17 - 67.17	Pole + Reinf.	TP30.431x29.406x0.525	Reinf. 8 Tension Rupture	65.4%	Pass
67.17 - 66.58	Pole + Reinf.	TP30.551x30.431x0.525	Reinf. 8 Tension Rupture	65.8%	Pass
66.58 - 66.33	Pole + Reinf.	TP30.602x30.551x0.625	Reinf. 8 Tension Rupture	55.6%	Pass
66.33 - 66.17	Pole + Reinf.	TP30.636x30.602x0.625	Reinf. 8 Tension Rupture	55.7%	Pass
66.17 - 65.92	Pole + Reinf.	TP30.687x30.636x0.5125	Reinf. 3 Tension Rupture	64.7%	Pass
65.92 - 62.67	Pole + Reinf.	TP31.354x30.687x0.5125	Reinf. 3 Tension Rupture	66.6%	Pass
62.67 - 62.42	Pole + Reinf.	TP31.405x31.354x0.5125	Reinf. 3 Tension Rupture	66.8%	Pass
62.42 - 60	Pole + Reinf.	TP31.901x31.405x0.5063	Reinf. 3 Tension Rupture	68.2%	Pass
60 - 59.75	Pole + Reinf.	TP31.952x31.901x0.5125	Reinf. 3 Tension Rupture	68.3%	Pass
59.75 - 58.33	Pole + Reinf.	TP32.243x31.952x0.5063	Reinf. 3 Tension Rupture	69.1%	Pass
58.33 - 58.08	Pole + Reinf.	TP32.294x32.243x0.5	Reinf. 3 Tension Rupture	69.3%	Pass
58.08 - 53.08	Pole + Reinf.	TP33.32x32.294x0.5	Reinf. 3 Tension Rupture	71.9%	Pass
53.08 - 52.83	Pole + Reinf.	TP33.371x33.32x0.5	Reinf. 3 Tension Rupture	72.0%	Pass
52.83 - 52.58	Pole + Reinf.	TP33.422x33.371x0.6875	Reinf. 3 Tension Rupture	53.1%	Pass
52.58 - 51.42	Pole + Reinf.	TP33.661x33.422x0.6875	Reinf. 3 Tension Rupture	53.6%	Pass
51.42 - 51.17	Pole + Reinf.	TP33.713x33.661x0.5063	Reinf. 7 Tension Rupture	67.3%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
51.17 - 51	Pole + Reinf.	TP34.67x33.713x0.5063	Reinf. 7 Tension Rupture	67.3%	Pass
51 - 45.5	Pole + Reinf.	TP34.25x33.122x0.55	Reinf. 7 Tension Rupture	69.1%	Pass
45.5 - 44.25	Pole + Reinf.	TP34.506x34.25x0.55	Reinf. 7 Tension Rupture	69.6%	Pass
44.25 - 44	Pole + Reinf.	TP34.557x34.506x0.625	Reinf. 7 Tension Rupture	57.1%	Pass
44 - 43.08	Pole + Reinf.	TP34.745x34.557x0.625	Reinf. 7 Tension Rupture	57.4%	Pass
43.08 - 42.83	Pole + Reinf.	TP34.797x34.745x0.6625	Reinf. 6 Tension Rupture	59.7%	Pass
42.83 - 37.83	Pole + Reinf.	TP35.822x34.797x0.6625	Reinf. 6 Tension Rupture	61.4%	Pass
37.83 - 32.83	Pole + Reinf.	TP36.847x35.822x0.65	Reinf. 6 Tension Rupture	62.9%	Pass
32.83 - 29.25	Pole + Reinf.	TP37.582x36.847x0.6375	Reinf. 6 Tension Rupture	63.9%	Pass
29.25 - 29	Pole + Reinf.	TP37.633x37.582x0.6375	Reinf. 5 Tension Rupture	64.0%	Pass
29 - 27.75	Pole + Reinf.	TP37.89x37.633x0.6375	Reinf. 5 Tension Rupture	64.3%	Pass
27.75 - 27.5	Pole + Reinf.	TP37.941x37.89x0.65	Reinf. 5 Tension Rupture	64.9%	Pass
27.5 - 24.08	Pole + Reinf.	TP38.642x37.941x0.6375	Reinf. 5 Tension Rupture	65.8%	Pass
24.08 - 23.83	Pole + Reinf.	TP38.693x38.642x0.7	Reinf. 14 Tension Rupture	63.1%	Pass
23.83 - 23.5	Pole + Reinf.	TP38.761x38.693x0.7	Reinf. 14 Tension Rupture	63.2%	Pass
23.5 - 23.25	Pole + Reinf.	TP38.812x38.761x0.55	Reinf. 5 Tension Rupture	70.4%	Pass
23.25 - 18.92	Pole + Reinf.	TP39.701x38.812x0.5375	Reinf. 5 Tension Rupture	71.4%	Pass
18.92 - 18.67	Pole + Reinf.	TP39.752x39.701x0.525	Reinf. 5 Tension Rupture	77.4%	Pass
18.67 - 18.08	Pole + Reinf.	TP39.872x39.752x0.525	Reinf. 5 Tension Rupture	77.5%	Pass
18.08 - 17.83	Pole + Reinf.	TP39.923x39.872x0.6625	Reinf. 1 Tension Rupture	67.5%	Pass
17.83 - 14.08	Pole + Reinf.	TP40.692x39.923x0.65	Reinf. 1 Tension Rupture	68.4%	Pass
14.08 - 13.83	Pole + Reinf.	TP40.743x40.692x0.625	Reinf. 1 Tension Rupture	68.9%	Pass
13.83 - 8.83	Pole + Reinf.	TP41.769x40.743x0.625	Reinf. 1 Tension Rupture	70.0%	Pass
8.83 - 3.83	Pole + Reinf.	TP42.794x41.769x0.6125	Reinf. 1 Tension Rupture	70.9%	Pass
3.83 - 0	Pole + Reinf.	TP43.58x42.794x0.6125	Reinf. 1 Tension Rupture	71.6%	Pass
				Summary	
			Pole	59.5%	Pass
			Reinforcement	77.5%	Pass
			Overall	**77.5%**	**Pass**

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	-	67.4	Pass
1,2	Base Plate	-	64.4	Pass
1,2	Base Foundation Soil Interaction	-	55.0	Pass
1,2	Base Foundation Structural	-	37.9	Pass

Structure Rating (max from all components) =	**77.5%**

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

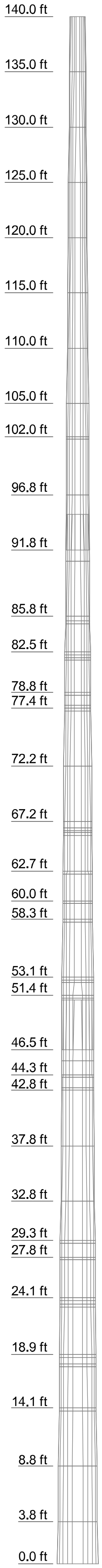
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

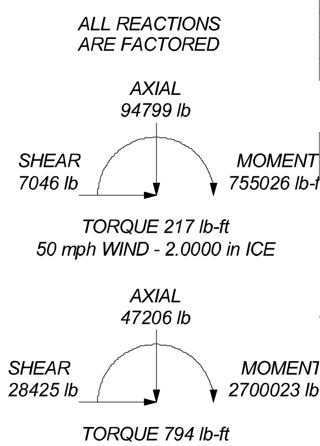
Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (lb)
1	5.00	12	0.2500		16.0000	17.0249	A607-60	222.7
2	5.00	12	0.2500		17.0249	18.0497		236.8
3	5.00	12	0.2500		18.0497	19.0746		250.8
4	5.00	12	0.2500		19.0746	20.0995		264.8
5	5.00	12	0.2500		20.0995	21.1244		278.9
6	5.00	12	0.2500		21.1244	22.1492		292.9
7	5.00	12	0.2500		22.1492	23.1741		307.0
8–9	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
10	5.00	12	0.3750		[illegible]	[illegible]		476.2
11	[illegible]	12	0.3750	3.25	[illegible]	25.8900		[illegible]
12–47	[illegible]	[illegible]	[illegible]	4.50	[illegible]	[illegible]	A607-65	[illegible]
48	5.00	12	[illegible]		[illegible]	[illegible]		[illegible]
49	5.00	12	0.6500		35.8220	36.8473		1225.0
50–64	[illegible]	[illegible]	[illegible]		[illegible]	[illegible]		[illegible]
65	5.00	12	0.6125		41.7687	42.7940		1378.0
66	3.83	12	0.6125		42.7940	43.5800		1071.9
								24133.1



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION
APXV9ERR18-C-A20	139
APXV9ERR18-C-A20	139
APXV9ERR18-C-A20	139
APXVTM14-C-120	139
APXVTM14-C-120	139
APXVTM14-C-120	139
TD-RRH8x20-25	139
TD-RRH8x20-25	139
TD-RRH8x20-25	139
Platform Mount [LP 1201-1_HR-3]	139
800MHz 2X50W RRH W/FILTER	137
800MHz 2X50W RRH W/FILTER	137
800MHz 2X50W RRH W/FILTER	137
PCS 1900MHz 4x45W-65MHz	137
PCS 1900MHz 4x45W-65MHz	137
PCS 1900MHz 4x45W-65MHz	137
Pipe Mount [PM 601-3]	137
L 2-1/2x2-1/2x3/16 (36" Long)	135
L 2-1/2x2-1/2x3/16 (36" Long)	135
L 2-1/2x2-1/2x3/16 (36" Long)	135
RRUS 32 B2	130
RRUS 32 B2	130
RRUS 32 B2	130
Pipe Mount [PM 601-3]	130
RRUS 11	130
RRUS 11	130
RRUS 11	130
EPBQ-654L8H8-L2 w/ Mount Pipe	128
EPBQ-654L8H8-L2 w/ Mount Pipe	128
EPBQ-654L8H8-L2 w/ Mount Pipe	128
HPA-65R-BUU-H6 w/ Mount Pipe	128
HPA-65R-BUU-H8 w/ Mount Pipe	128
HPA-65R-BUU-H6 w/ Mount Pipe	128
(2) LGP21401	128
(2) LGP21401	128
(2) LGP21401	128
RRUS 4478 B5	128
RRUS 4478 B5	128
RRUS 4478 B5	128
RRUS 4426 B66	128
RRUS 4426 B66	128
RRUS 4426 B66	128
RRUS 32 B30	128
RRUS 32 B30	128
RRUS 32 B30	128
DC6-48-60-18-8C	128
DC6-48-60-18-8F	128
DC6-48-60-18-8C	128
T-Arm Mount [TA 602-3]	128
(2) 2.4" x 12' Stabilizer	128
(2) 2.4" x 12' Stabilizer	128
(2) 2.4" x 12' Stabilizer	128
7770.00 w/ Mount Pipe	128
7770.00 w/ Mount Pipe	128
7770.00 w/ Mount Pipe	128

TYPE	ELEVATION
DB-T1-6Z-8AB-0Z	110
(2) SBNHH-1D65B w/ Mount Pipe	108
SBNHH-1D65B w/ Mount Pipe	108
SBNHH-1D65B w/ Mount Pipe	108
BXA-70063-4CF-EDIN-X w/ Mount Pipe	108
BXA-70063-4CF-EDIN-X w/ Mount Pipe	108
BXA-70063-4CF-EDIN-X w/ Mount Pipe	108
(2) RFV01U-D1A	108
RFV01U-D1A	108
20W CBRS	108
20W CBRS	108
20W CBRS	108
(2) RFV01U-D2A	108
RFV01U-D2A	108
Platform Mount [LP 304-1_KCKR]	108
CBRS w/ Mount Pipe	108
CBRS w/ Mount Pipe	108
CBRS w/ Mount Pipe	108
APXVAARR24_43-U-NA20 w/ Mount Pipe	100
APXVAARR24_43-U-NA20 w/ Mount Pipe	100
APXVAARR24_43-U-NA20 w/ Mount Pipe	100
AIR 32 B2A/B66AA w/ Mount Pipe	100
AIR 32 B2A/B66AA w/ Mount Pipe	100
AIR 32 B2A/B66AA w/ Mount Pipe	100
KRY 112 144/1	100
KRY 112 144/1	100
KRY 112 144/1	100
RADIO 4449 B12/B71	100
RADIO 4449 B12/B71	100
RADIO 4449 B12/B71	100
T-Arm Mount [TA 602-3]	100
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	100
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	100
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	100
L 2-1/2x2-1/2x3/16 (36" Long)	85
L 2-1/2x2-1/2x3/16 (36" Long)	85
L 2-1/2x2-1/2x3/16 (36" Long)	85
Side Arm Mount [SO 701-1]	70
KS24019-L112A	70
KS24019-L112A	70
Side Arm Mount [SO 701-1]	70
KS24019-L112A	49
Side Arm Mount [SO 701-1]	49
L 2-1/2x2-1/2x3/16 (36" Long)	6
L 2-1/2x2-1/2x3/16 (36" Long)	6
L 2-1/2x2-1/2x3/16 (36" Long)	6



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A607-60	60 ksi	75 ksi	A607-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in Hartford County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 2.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft

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

Job: East Farmington (BU 876335)		
Project: TEP No. 25671.318987		
Client: Crown Castle	Drawn by: Dustin T. Smith, P.E.	App'd:
Code: TIA-222-H	Date: 11/08/19	Scale: NTS
Path:		Dwg No. E-1

Tower Input Data

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

Tower is located in Hartford County, Connecticut.
Tower base elevation above sea level: 414.00 ft.
Basic wind speed of 125 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 2.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.05.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
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	140.00-135.00	5.00	0.00	12	16.0000	17.0249	0.2500	1.0000	A607-60 (60 ksi)
L2	135.00-130.00	5.00	0.00	12	17.0249	18.0497	0.2500	1.0000	A607-60 (60 ksi)
L3	130.00-125.00	5.00	0.00	12	18.0497	19.0746	0.2500	1.0000	A607-60 (60 ksi)
L4	125.00-120.00	5.00	0.00	12	19.0746	20.0995	0.2500	1.0000	A607-60 (60 ksi)
L5	120.00-115.00	5.00	0.00	12	20.0995	21.1244	0.2500	1.0000	A607-60 (60 ksi)
L6	115.00-110.00	5.00	0.00	12	21.1244	22.1492	0.2500	1.0000	A607-60 (60 ksi)
L7	110.00-105.00	5.00	0.00	12	22.1492	23.1741	0.2500	1.0000	A607-60 (60 ksi)
L8	105.00-102.00	3.00	0.00	12	23.1741	23.7890	0.2500	1.0000	A607-60 (60 ksi)
L9	102.00-101.75	0.25	0.00	12	23.7890	23.8403	0.3875	1.5500	A607-60 (60 ksi)
L10	101.75-96.75	5.00	0.00	12	23.8403	24.8651	0.3750	1.5000	A607-60 (60 ksi)
L11	96.75-91.75	5.00	3.25	12	24.8651	25.8900	0.3750	1.5000	A607-60 (60 ksi)
L12	91.75-90.75	4.25	0.00	12	24.7238	25.5952	0.3563	1.4250	A607-65 (65 ksi)
L13	90.75-85.75	5.00	0.00	12	25.5952	26.6203	0.3563	1.4250	A607-65 (65 ksi)
L14	85.75-85.33	0.42	0.00	12	26.6203	26.7058	0.3563	1.4250	A607-65 (65 ksi)
L15	85.33-85.08	0.25	0.00	12	26.7058	26.7570	0.5500	2.2000	A607-65 (65 ksi)
L16	85.08-82.50	2.58	0.00	12	26.7570	27.2866	0.5437	2.1750	A607-65 (65 ksi)
L17	82.50-82.25	0.25	0.00	12	27.2866	27.3379	0.5500	2.2000	A607-65 (65 ksi)
L18	82.25-82.00	0.25	0.00	12	27.3379	27.3891	0.5500	2.2000	A607-65 (65 ksi)
L19	82.00-81.75	0.25	0.00	12	27.3891	27.4404	0.4875	1.9500	A607-65 (65 ksi)
L20	81.75-78.83	2.92	0.00	12	27.4404	28.0384	0.4875	1.9500	A607-65 (65 ksi)
L21	78.83-78.58	0.25	0.00	12	28.0384	28.0897	0.6125	2.4500	A607-65 (65 ksi)
L22	78.58-77.67	0.92	0.00	12	28.0897	28.2775	0.6125	2.4500	A607-65 (65 ksi)
L23	77.67-77.42	0.25	0.00	12	28.2775	28.3287	0.5500	2.2000	A607-65 (65 ksi)
L24	77.42-77.17	0.25	0.00	12	28.3287	28.3800	0.5500	2.2000	A607-65 (65 ksi)
L25	77.17-72.17	5.00	0.00	12	28.3800	29.4055	0.5375	2.1500	A607-65 (65 ksi)
L26	72.17-67.17	5.00	0.00	12	29.4055	30.4311	0.5250	2.1000	A607-65 (65 ksi)
L27	67.17-66.58	0.58	0.00	12	30.4311	30.5508	0.5250	2.1000	A607-65 (65 ksi)
L28	66.58-66.33	0.25	0.00	12	30.5508	30.6021	0.6250	2.5000	A607-65 (65 ksi)
L29	66.33-66.17	0.17	0.00	12	30.6021	30.6362	0.6250	2.5000	A607-65 (65 ksi)
L30	66.17-65.92	0.25	0.00	12	30.6362	30.6874	0.5125	2.0500	A607-65 (65 ksi)

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L31	65.92-62.67	3.25	0.00	12	30.6874	31.3540	0.5125	2.0500	A607-65 (65 ksi)
L32	62.67-62.42	0.25	0.00	12	31.3540	31.4053	0.5125	2.0500	A607-65 (65 ksi)
L33	62.42-60.00	2.42	0.00	12	31.4053	31.9011	0.5062	2.0250	A607-65 (65 ksi)
L34	60.00-59.75	0.25	0.00	12	31.9011	31.9523	0.5125	2.0500	A607-65 (65 ksi)
L35	59.75-58.33	1.42	0.00	12	31.9523	32.2430	0.5062	2.0250	A607-65 (65 ksi)
L36	58.33-58.08	0.25	0.00	12	32.2430	32.2943	0.5000	2.0000	A607-65 (65 ksi)
L37	58.08-53.08	5.00	0.00	12	32.2943	33.3198	0.5000	2.0000	A607-65 (65 ksi)
L38	53.08-52.83	0.25	0.00	12	33.3198	33.3711	0.5000	2.0000	A607-65 (65 ksi)
L39	52.83-52.58	0.25	0.00	12	33.3711	33.4223	0.6875	2.7500	A607-65 (65 ksi)
L40	52.58-51.42	1.17	0.00	12	33.4223	33.6615	0.6875	2.7500	A607-65 (65 ksi)
L41	51.42-51.17	0.25	0.00	12	33.6615	33.7128	0.5062	2.0250	A607-65 (65 ksi)
L42	51.17-46.50	4.67	4.50	12	33.7128	34.6700	0.5062	2.0250	A607-65 (65 ksi)
L43	46.50-45.50	5.50	0.00	12	33.1220	34.2498	0.5500	2.2000	A607-65 (65 ksi)
L44	45.50-44.25	1.25	0.00	12	34.2498	34.5062	0.5500	2.2000	A607-65 (65 ksi)
L45	44.25-44.00	0.25	0.00	12	34.5062	34.5574	0.6250	2.5000	A607-65 (65 ksi)
L46	44.00-43.08	0.92	0.00	12	34.5574	34.7455	0.6250	2.5000	A607-65 (65 ksi)
L47	43.08-42.83	0.25	0.00	12	34.7455	34.7967	0.6625	2.6500	A607-65 (65 ksi)
L48	42.83-37.83	5.00	0.00	12	34.7967	35.8220	0.6625	2.6500	A607-65 (65 ksi)
L49	37.83-32.83	5.00	0.00	12	35.8220	36.8473	0.6500	2.6000	A607-65 (65 ksi)
L50	32.83-29.25	3.58	0.00	12	36.8473	37.5820	0.6375	2.5500	A607-65 (65 ksi)
L51	29.25-29.00	0.25	0.00	12	37.5820	37.6333	0.6375	2.5500	A607-65 (65 ksi)
L52	29.00-27.75	1.25	0.00	12	37.6333	37.8896	0.6375	2.5500	A607-65 (65 ksi)
L53	27.75-27.50	0.25	0.00	12	37.8896	37.9409	0.6500	2.6000	A607-65 (65 ksi)
L54	27.50-24.08	3.42	0.00	12	37.9409	38.6416	0.6375	2.5500	A607-65 (65 ksi)
L55	24.08-23.83	0.25	0.00	12	38.6416	38.6928	0.7000	2.8000	A607-65 (65 ksi)
L56	23.83-23.50	0.33	0.00	12	38.6928	38.7611	0.7000	2.8000	A607-65 (65 ksi)
L57	23.50-23.25	0.25	0.00	12	38.7611	38.8124	0.5500	2.2000	A607-65 (65 ksi)
L58	23.25-18.92	4.33	0.00	12	38.8124	39.7009	0.5375	2.1500	A607-65 (65 ksi)
L59	18.92-18.67	0.25	0.00	12	39.7009	39.7522	0.5250	2.1000	A607-65 (65 ksi)
L60	18.67-18.08	0.58	0.00	12	39.7522	39.8719	0.5250	2.1000	A607-65 (65 ksi)
L61	18.08-17.83	0.25	0.00	12	39.8719	39.9232	0.6625	2.6500	A607-65

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L62	17.83-14.08	3.75	0.00	12	39.9232	40.6922	0.6500	2.6000	(65 ksi) A607-65 (65 ksi)
L63	14.08-13.83	0.25	0.00	12	40.6922	40.7434	0.6250	2.5000	A607-65 (65 ksi)
L64	13.83-8.83	5.00	0.00	12	40.7434	41.7687	0.6250	2.5000	A607-65 (65 ksi)
L65	8.83-3.83	5.00	0.00	12	41.7687	42.7940	0.6125	2.4500	A607-65 (65 ksi)
L66	3.83-0.00	3.83		12	42.7940	43.5800	0.6125	2.4500	A607-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	16.4762	12.6788	401.4426	5.6385	8.2880	48.4366	813.4316	6.2401	3.6180	14.472
	17.5373	13.5038	485.0197	6.0054	8.8189	54.9979	982.7814	6.6461	3.8927	15.571
L2	17.5373	13.5038	485.0197	6.0054	8.8189	54.9979	982.7814	6.6461	3.8927	15.571
	18.5983	14.3288	579.4592	6.3723	9.3498	61.9758	1174.1415	7.0522	4.1673	16.669
L3	18.5983	14.3288	579.4592	6.3723	9.3498	61.9758	1174.1415	7.0522	4.1673	16.669
	19.6593	15.1538	685.4249	6.7392	9.8806	69.3704	1388.8567	7.4582	4.4420	17.768
L4	19.6593	15.1538	685.4249	6.7392	9.8806	69.3704	1388.8567	7.4582	4.4420	17.768
	20.7203	15.9788	803.5804	7.1061	10.4115	77.1818	1628.2718	7.8643	4.7167	18.867
L5	20.7203	15.9788	803.5804	7.1061	10.4115	77.1818	1628.2718	7.8643	4.7167	18.867
	21.7813	16.8039	934.5894	7.4730	10.9424	85.4098	1893.7315	8.2703	4.9913	19.965
L6	21.7813	16.8039	934.5894	7.4730	10.9424	85.4098	1893.7315	8.2703	4.9913	19.965
	22.8424	17.6289	1079.1155	7.8399	11.4733	94.0545	2186.5806	8.6764	5.2660	21.064
L7	22.8424	17.6289	1079.1155	7.8399	11.4733	94.0545	2186.5806	8.6764	5.2660	21.064
	23.9034	18.4539	1237.8224	8.2068	12.0042	103.1159	2508.1637	9.0824	5.5407	22.163
L8	23.9034	18.4539	1237.8224	8.2068	12.0042	103.1159	2508.1637	9.0824	5.5407	22.163
	24.5400	18.9489	1340.1293	8.4270	12.3227	108.7528	2715.4654	9.3261	5.7055	22.822
L9	24.4915	29.1992	2041.0116	8.3777	12.3227	165.6301	4135.6429	14.3710	5.3370	13.773
	24.5446	29.2632	2054.4490	8.3961	12.3493	166.3622	4162.8706	14.4024	5.3507	13.808
L10	24.5490	28.3343	1991.3571	8.4006	12.3493	161.2532	4035.0294	13.9453	5.3842	14.358
	25.6100	29.5718	2263.8432	8.7675	12.8801	175.7623	4587.1600	14.5544	5.6589	15.09
L11	25.6100	29.5718	2263.8432	8.7675	12.8801	175.7623	4587.1600	14.5544	5.6589	15.09
	26.6710	30.8094	2560.1170	9.1344	13.4110	190.8965	5187.4911	15.1634	5.9335	15.823
L12	26.1602	27.9527	2118.5276	8.7236	12.8069	165.4202	4292.7112	13.7575	5.6712	15.919
	26.3724	28.9522	2354.0165	9.0355	13.2583	177.5504	4769.8756	14.2494	5.9048	16.575
L13	26.3724	28.9522	2354.0165	9.0355	13.2583	177.5504	4769.8756	14.2494	5.9048	16.575
	27.4337	30.1281	2652.6588	9.4025	13.7893	192.3707	5375.0059	14.8282	6.1795	17.346
L14	27.4337	30.1281	2652.6588	9.4025	13.7893	192.3707	5375.0059	14.8282	6.1795	17.346
	27.5222	30.2262	2678.6479	9.4331	13.8336	193.6335	5427.6669	14.8764	6.2024	17.41
L15	27.4538	46.3219	4044.9007	9.3638	13.8336	292.3969	8196.0654	22.7982	5.6832	10.333
	27.5069	46.4127	4068.7268	9.3821	13.8601	293.5558	8244.3436	22.8429	5.6969	10.358
L16	27.5091	45.8962	4025.3699	9.3844	13.8601	290.4276	8156.4907	22.5887	5.7136	10.508
	28.0574	46.8234	4274.2990	9.5739	14.1345	302.4026	8660.8885	23.0451	5.8556	10.769
L17	28.0552	47.3505	4320.3983	9.5717	14.1345	305.6640	8754.2982	23.3045	5.8388	10.616
	28.1082	47.4413	4345.2933	9.5901	14.1610	306.8490	8804.7423	23.3492	5.8525	10.641
L18	28.1082	47.4413	4345.2933	9.5901	14.1610	306.8490	8804.7423	23.3492	5.8525	10.641
	28.1613	47.5321	4370.2838	9.6084	14.1876	308.0362	8855.3798	23.3939	5.8663	10.666
L19	28.1833	42.2288	3900.7853	9.6308	14.1876	274.9439	7904.0487	20.7837	6.0338	12.377
	28.2364	42.3093	3923.1243	9.6491	14.2141	276.0020	7949.3135	20.8233	6.0475	12.405
L20	28.2364	42.3093	3923.1243	9.6491	14.2141	276.0020	7949.3135	20.8233	6.0475	12.405
	28.8555	43.2481	4190.1093	9.8632	14.5239	288.4974	8490.2975	21.2854	6.2078	12.734

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
L21	28.8115	54.0908	5193.1651	9.8185	14.5239	357.5598	10522.7603	26.6218	5.8728	9.588
	28.8645	54.1919	5222.3356	9.8368	14.5505	358.9121	10581.8678	26.6716	5.8865	9.611
L22	28.8645	54.1919	5222.3356	9.8368	14.5505	358.9121	10581.8678	26.6716	5.8865	9.611
	29.0589	54.5623	5330.1497	9.9041	14.6477	363.8889	10800.3284	26.8539	5.9369	9.693
L23	29.0810	49.1054	4818.7692	9.9264	14.6477	328.9770	9764.1328	24.1682	6.1044	11.099
	29.1341	49.1962	4845.5418	9.9448	14.6743	330.2062	9818.3814	24.2129	6.1181	11.124
L24	29.1341	49.1962	4845.5418	9.9448	14.6743	330.2062	9818.3814	24.2129	6.1181	11.124
	29.1871	49.2869	4872.4134	9.9631	14.7008	331.4378	9872.8306	24.2575	6.1318	11.149
L25	29.1915	48.1884	4768.0958	9.9676	14.7008	324.3417	9661.4548	23.7169	6.1653	11.47
	30.2532	49.9633	5314.6154	10.3348	15.2321	348.9097	10768.8516	24.5904	6.4402	11.982
L26	30.2576	48.8225	5197.7658	10.3392	15.2321	341.2384	10532.0827	24.0290	6.4737	12.331
	31.3194	50.5562	5771.3702	10.7064	15.7633	366.1272	11694.3606	24.8822	6.7485	12.854
L27	31.3194	50.5562	5771.3702	10.7064	15.7633	366.1272	11694.3606	24.8822	6.7485	12.854
	31.4434	50.7587	5840.9962	10.7493	15.8253	369.0914	11835.4418	24.9819	6.7806	12.915
L28	31.4081	60.2258	6884.3222	10.7135	15.8253	435.0189	13949.5031	29.6413	6.5126	10.42
	31.4612	60.3290	6919.7708	10.7318	15.8519	436.5263	14021.3316	29.6921	6.5264	10.442
L29	31.4612	60.3290	6919.7708	10.7318	15.8519	436.5263	14021.3316	29.6921	6.5264	10.442
	31.4964	60.3975	6943.3758	10.7440	15.8695	437.5286	14069.1617	29.7258	6.5355	10.457
L30	31.5361	49.7116	5757.8372	10.7843	15.8695	362.8233	11666.9393	24.4665	6.8370	13.34
	31.5892	49.7962	5787.2904	10.8026	15.8961	364.0699	11726.6193	24.5082	6.8507	13.367
L31	31.5892	49.7962	5787.2904	10.8026	15.8961	364.0699	11726.6193	24.5082	6.8507	13.367
	32.2793	50.8963	6179.3674	11.0413	16.2414	380.4702	12521.0736	25.0496	7.0294	13.716
L32	32.2793	50.8963	6179.3674	11.0413	16.2414	380.4702	12521.0736	25.0496	7.0294	13.716
	32.3324	50.9809	6210.2398	11.0596	16.2680	381.7468	12583.6295	25.0912	7.0431	13.743
L33	32.3346	50.3693	6138.2292	11.0619	16.2680	377.3202	12437.7165	24.7903	7.0599	13.945
	32.8478	51.1775	6438.4384	11.2393	16.5248	389.6239	13046.0218	25.1880	7.1927	14.208
L34	32.8456	51.7990	6514.0334	11.2371	16.5248	394.1986	13199.1977	25.4939	7.1760	14.002
	32.8987	51.8836	6546.0097	11.2555	16.5513	395.4979	13263.9904	25.5355	7.1897	14.029
L35	32.9009	51.2611	6470.0374	11.2577	16.5513	390.9078	13110.0498	25.2291	7.2065	14.235
	33.2018	51.7348	6651.0956	11.3617	16.7019	398.2248	13476.9229	25.4623	7.2844	14.389
L36	33.2040	51.1062	6572.8650	11.3640	16.7019	393.5409	13318.4066	25.1529	7.3011	14.602
	33.2571	51.1887	6604.7693	11.3823	16.7284	394.8232	13383.0533	25.1935	7.3149	14.63
L37	33.2571	51.1887	6604.7693	11.3823	16.7284	394.8232	13383.0533	25.1935	7.3149	14.63
	34.3188	52.8399	7264.7218	11.7495	17.2596	420.9079	14720.2959	26.0062	7.5897	15.179
L38	34.3188	52.8399	7264.7218	11.7495	17.2596	420.9079	14720.2959	26.0062	7.5897	15.179
	34.3719	52.9224	7298.8255	11.7678	17.2862	422.2340	14789.3994	26.0468	7.6034	15.207
L39	34.3057	72.3532	9865.1256	11.7007	17.2862	570.6934	19989.4191	35.6101	7.1009	10.329
	34.3588	72.4667	9911.6301	11.7191	17.3128	572.5040	20083.6498	35.6659	7.1147	10.349
L40	34.3588	72.4667	9911.6301	11.7191	17.3128	572.5040	20083.6498	35.6659	7.1147	10.349
	34.6064	72.9962	10130.4582	11.8047	17.4367	580.9864	20527.0548	35.9265	7.1788	10.442
L41	34.6704	54.0472	7583.3909	11.8696	17.4367	434.9109	15366.0060	26.6004	7.6645	15.14
	34.7234	54.1308	7618.6299	11.8879	17.4632	436.2673	15437.4097	26.6415	7.6783	15.167
L42	34.7234	54.1308	7618.6299	11.8879	17.4632	436.2673	15437.4097	26.6415	7.6783	15.167
	35.7144	55.6912	8296.6633	12.2306	17.9591	461.9765	16811.2891	27.4095	7.9348	15.674
L43	35.0517	57.6850	7811.5753	11.6608	17.1572	455.2941	15828.3695	28.3908	7.4027	13.459
	35.2640	59.6824	8651.4343	12.0645	17.7414	487.6405	17530.1513	29.3739	7.7050	14.009
L44	35.2640	59.6824	8651.4343	12.0645	17.7414	487.6405	17530.1513	29.3739	7.7050	14.009
	35.5294	60.1364	8850.3496	12.1563	17.8742	495.1468	17933.2077	29.5973	7.7737	14.134
L45	35.5029	68.1858	9990.7215	12.1295	17.8742	558.9467	20243.9103	33.5590	7.5727	12.116
	35.5560	68.2890	10036.1401	12.1478	17.9007	560.6548	20335.9409	33.6098	7.5864	12.138
L46	35.5560	68.2890	10036.1401	12.1478	17.9007	560.6548	20335.9409	33.6098	7.5864	12.138
	35.7507	68.6674	10203.9140	12.2151	17.9982	566.9423	20675.8963	33.7960	7.6368	12.219
L47	35.7375	72.7075	10780.5257	12.2017	17.9982	598.9796	21844.2678	35.7844	7.5363	11.376
	35.7905	72.8169	10829.2442	12.2201	18.0247	600.8000	21942.9848	35.8382	7.5500	11.396
L48	35.7905	72.8169	10829.2442	12.2201	18.0247	600.8000	21942.9848	35.8382	7.5500	11.396
	36.8520	75.0041	11834.6850	12.5871	18.5558	637.7887	23980.2804	36.9147	7.8248	11.811
L49	36.8564	73.6150	11623.7778	12.5916	18.5558	626.4226	23552.9252	36.2311	7.8583	12.09
	37.9179	75.7610	12670.2250	12.9586	19.0869	663.8175	25673.3108	37.2873	8.1331	12.512
L50	37.9223	74.3297	12439.4450	12.9631	19.0869	651.7265	25205.6881	36.5828	8.1666	12.81
	38.6829	75.8379	13212.1304	13.2261	19.4675	678.6764	26771.3581	37.3251	8.3635	13.119
L51	38.6829	75.8379	13212.1304	13.2261	19.4675	678.6764	26771.3581	37.3251	8.3635	13.119
	38.7360	75.9431	13267.2066	13.2445	19.4941	680.5771	26882.9574	37.3769	8.3772	13.141

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
L52	38.7360	75.9431	13267.2066	13.2445	19.4941	680.5771	26882.9574	37.3769	8.3772	13.141
	39.0013	76.4693	13544.8845	13.3363	19.6268	690.1209	27445.6082	37.6359	8.4459	13.249
L53	38.9969	77.9425	13796.5728	13.3318	19.6268	702.9446	27955.5969	38.3609	8.4124	12.942
	39.0500	78.0498	13853.6289	13.3501	19.6534	704.8979	28071.2081	38.4138	8.4262	12.963
L54	39.0544	76.5745	13600.8810	13.3546	19.6534	692.0377	27559.0722	37.6877	8.4597	13.27
	39.7798	78.0129	14381.7793	13.6055	20.0163	718.5020	29141.3840	38.3956	8.6474	13.565
L55	39.7578	85.5203	15713.9743	13.5831	20.0163	785.0574	31840.7721	42.0905	8.4799	12.114
	39.8108	85.6359	15777.7560	13.6014	20.0429	787.1995	31970.0112	42.1474	8.4937	12.134
L56	39.8108	85.6359	15777.7560	13.6014	20.0429	787.1995	31970.0112	42.1474	8.4937	12.134
	39.8815	85.7898	15862.9809	13.6259	20.0783	790.0574	32142.7001	42.2231	8.5120	12.16
L57	39.9345	67.6719	12611.7125	13.6796	20.0783	628.1276	25554.7487	33.3061	8.9140	16.207
	39.9875	67.7627	12662.5408	13.6979	20.1048	629.8262	25657.7406	33.3507	8.9277	16.232
L58	39.9919	66.2443	12386.8879	13.7024	20.1048	616.1154	25099.1932	32.6034	8.9612	16.672
	40.9118	67.7821	13269.7209	14.0205	20.5651	645.2553	26888.0521	33.3603	9.1993	17.115
L59	40.9162	66.2269	12973.5373	14.0250	20.5651	630.8530	26287.9039	32.5949	9.2328	17.586
	40.9693	66.3135	13024.5345	14.0433	20.5916	632.5161	26391.2380	32.6375	9.2466	17.613
L60	40.9693	66.3135	13024.5345	14.0433	20.5916	632.5161	26391.2380	32.6375	9.2466	17.613
	41.0933	66.5160	13144.1843	14.0862	20.6537	636.4095	26633.6810	32.7371	9.2787	17.674
L61	41.0448	83.6435	16413.4262	14.0370	20.6537	794.6982	33258.0515	41.1668	8.9102	13.449
	41.0978	83.7529	16477.8900	14.0553	20.6802	796.7949	33388.6724	41.2206	8.9239	13.47
L62	41.1022	82.1988	16182.4332	14.0598	20.6802	782.5080	32789.9970	40.4557	8.9574	13.781
	41.8983	83.8082	17151.7226	14.3351	21.0785	813.7054	34754.0401	41.2479	9.1635	14.098
L63	41.9072	80.6352	16522.9503	14.3440	21.0785	783.8755	33479.9769	39.6862	9.2305	14.769
	41.9602	80.7383	16586.4532	14.3624	21.1051	785.8981	33608.6510	39.7370	9.2442	14.791
L64	41.9602	80.7383	16586.4532	14.3624	21.1051	785.8981	33608.6510	39.7370	9.2442	14.791
	43.0217	82.8017	17890.9118	14.7295	21.6362	826.8973	36251.8379	40.7525	9.5190	15.23
L65	43.0261	81.1704	17549.0788	14.7339	21.6362	811.0981	35559.1915	39.9496	9.5525	15.596
	44.0876	83.1925	18893.5826	15.1010	22.1673	852.3178	38283.5206	40.9448	9.8273	16.045
L66	44.0876	83.1925	18893.5826	15.1010	22.1673	852.3178	38283.5206	40.9448	9.8273	16.045
	44.9013	84.7427	19969.5451	15.3824	22.5744	884.6087	40463.7124	41.7078	10.0379	16.388

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 140.00-135.00				1	1	1			
L2 135.00-130.00				1	1	1			
L3 130.00-125.00				1	1	1			
L4 125.00-120.00				1	1	1			
L5 120.00-115.00				1	1	1			
L6 115.00-110.00				1	1	1			
L7 110.00-105.00				1	1	1			
L8 105.00-102.00				1	1	1			
L9 102.00-101.75				1	1	0.948725			
L10 101.75-96.75				1	1	0.966722			
L11 96.75-91.75				1	1	0.96239			
L12 91.75-90.75				1	1	1.29378			
L13				1	1	1.27752			

Tower Elevation ft	Gusset Area (per face) ft²	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
90.75-85.75									
L14				1	1	1.27623			
85.75-85.33									
L15				1	1	0.95826			
85.33-85.08									
L16				1	1	0.961234			
85.08-82.50									
L17				1	1	1.20311			
82.50-82.25									
L18				1	1	1.2019			
82.25-82.00									
L19				1	1	1.06745			
82.00-81.75									
L20				1	1	1.05819			
81.75-78.83									
L21				1	1	1.00733			
78.83-78.58									
L22				1	1	1.00395			
78.58-77.67									
L23				1	1	0.995629			
77.67-77.42									
L24				1	1	0.994842			
77.42-77.17									
L25				1	1	1.00203			
77.17-72.17									
L26				1	1	1.01069			
72.17-67.17									
L27				1	1	1.00903			
67.17-66.58									
L28				1	1	0.931987			
66.58-66.33									
L29				1	1	0.931497			
66.33-66.17									
L30				1	1	0.954673			
66.17-65.92									
L31				1	1	0.947218			
65.92-62.67									
L32				1	1	0.946658			
62.67-62.42									
L33				1	1	0.952769			
62.42-60.00									
L34				1	1	1.05661			
60.00-59.75									
L35				1	1	1.0653			
59.75-58.33									
L36				1	1	1.07767			
58.33-58.08									
L37				1	1	1.06352			
58.08-53.08									
L38				1	1	1.06284			
53.08-52.83									
L39				1	1	1.01114			
52.83-52.58									
L40				1	1	1.0071			
52.58-51.42									
L41				1	1	1.04547			
51.42-51.17									
L42				1	1	1.04503			
51.17-46.50									

Tower Elevation ft	Gusset Area (per face) ft²	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
L43 46.50-45.50				1	1	0.969769			
L44 45.50-44.25				1	1	0.967596			
L45 44.25-44.00				1	1	1.11182			
L46 44.00-43.08				1	1	1.109			
L47 43.08-42.83				1	1	0.968948			
L48 42.83-37.83				1	1	0.957199			
L49 37.83-32.83				1	1	0.963977			
L50 32.83-29.25				1	1	0.974697			
L51 29.25-29.00				1	1	0.974162			
L52 29.00-27.75				1	1	0.971506			
L53 27.75-27.50				1	1	1.05688			
L54 27.50-24.08				1	1	1.06822			
L55 24.08-23.83				1	1	1.03993			
L56 23.83-23.50				1	1	1.03902			
L57 23.50-23.25				1	1	1.13901			
L58 23.25-18.92				1	1	1.15451			
L59 18.92-18.67				1	1	1.09569			
L60 18.67-18.08				1	1	1.09453			
L61 18.08-17.83				1	1	1.00512			
L62 17.83-14.08				1	1	1.01553			
L63 14.08-13.83				1	1	0.984835			
L64 13.83-8.83				1	1	0.975245			
L65 8.83-3.83				1	1	0.985546			
L66 3.83-0.00				1	1	0.978717			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
100 LDF5-50A(7/8")	A	No	Surface Ar (CaAa)	100.00 - 0.00	11	6	0.500 0.500	1.0900		0.33

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
***										
**										
***										
RF 4456376										
(Area) CCI-65FP-065125 (H)	C	No	Surface Af (CaAa)	30.50 - 0.50	1	1	0.500 0.500	6.5000	15.5000	0.00
(Area) CCI-65FP-060100 (H)	A	No	Surface Af (CaAa)	46.50 - 21.50	1	1	0.250 0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	C	No	Surface Af (CaAa)	46.50 - 21.50	1	1	0.250 0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	A	No	Surface Af (CaAa)	62.00 - 47.00	1	1	0.000 0.000	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	A	No	Surface Af (CaAa)	84.50 - 64.50	1	1	0.000 0.000	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	C	No	Surface Af (CaAa)	84.50 - 64.50	1	1	0.000 0.000	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	A	No	Surface Af (CaAa)	95.00 - 80.00	1	1	-0.250 -0.250	6.0000	14.0000	0.00
(Area) CCI-65FP-060100 (H)	C	No	Surface Af (CaAa)	95.00 - 80.00	1	1	-0.250 -0.250	6.0000	14.0000	0.00
***										
**										
RF 3672042										
(Area) Aero MP3-05 (H)	B	No	Surface Af (CaAa)	26.50 - 16.50	1	1	0.250 0.250	5.3300	14.8400	0.00
(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	86.50 - 61.50	1	1	0.250 0.250	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	C	No	Surface Af (CaAa)	86.50 - 76.50	1	1	0.250 0.250	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	B	No	Surface Af (CaAa)	86.50 - 76.50	1	1	0.250 0.250	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	103.17 - 93.17	1	1	0.000 0.000	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	B	No	Surface Af (CaAa)	103.17 - 93.17	1	1	0.000 0.000	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	C	No	Surface Af (CaAa)	103.17 - 93.17	1	1	0.000 0.000	4.0600	11.2600	0.00
**										
RF 3262310										
(Area) Aero MP3-05 (H)	A	No	Surface Af (CaAa)	52.25 - 40.25	1	1	0.500 0.500	5.3300	14.8400	0.00
(Area) Aero MP3-05 (H)	B	No	Surface Af (CaAa)	52.25 - 40.25	1	1	0.500 0.500	5.3300	14.8400	0.00
(Area) Aero MP3-05 (H)	C	No	Surface Af (CaAa)	52.25 - 40.25	1	1	0.500 0.500	5.3300	14.8400	0.00
(Area) Aero MP3-03 (H)	A	No	Surface Af (CaAa)	80.00 - 65.00	1	1	0.500 0.500	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	B	No	Surface Af (CaAa)	80.00 - 65.00	1	1	0.500 0.500	4.0600	11.2600	0.00
(Area) Aero MP3-03 (H)	C	No	Surface Af (CaAa)	80.00 - 65.00	1	1	0.500 0.500	4.0600	11.2600	0.00
**										
RF 2397525										
(Area) Aero MP3-05 (H)	B	No	Surface Af (CaAa)	20.50 - 0.50	1	1	0.500 0.500	5.3300	14.8400	0.00
(Area) Aero MP3-05 (H)	C	No	Surface Af (CaAa)	20.50 - 0.50	1	1	0.000 0.000	5.3300	14.8400	0.00
(Area) Aero MP3-05 (H)	A	No	Surface Af (CaAa)	45.50 - 0.50	1	1	-0.250 -0.250	5.3300	14.8400	0.00
(Area) Aero MP3-05 (H)	B	No	Surface Af	45.50 - 0.50	1	1	-0.250	5.3300	14.8400	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
			(CaAa)				-0.250			
(Area) Aero MP3-05 (H)	C	No	Surface Af	46.67 -	1	1	-0.250	5.3300	14.8400	0.00
			(CaAa)	11.67			-0.250			
(Area) Aero MP3-05 (H)	A	No	Surface Af	69.00 -	1	1	-0.250	5.3300	14.8400	0.00
			(CaAa)	49.00			-0.250			
(Area) Aero MP3-05 (H)	B	No	Surface Af	69.00 -	1	1	-0.250	5.3300	14.8400	0.00
			(CaAa)	49.00			-0.250			
(Area) Aero MP3-05 (H)	C	No	Surface Af	69.00 -	1	1	-0.250	5.3300	14.8400	0.00
			(CaAa)	49.00			-0.250			
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Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
139									
HB114-1-08U4-M5J (1 1/4")	B	No	No	Inside Pole	139.00 - 0.00	3	No Ice	0.00	1.08
							1/2" Ice	0.00	1.08
							1" Ice	0.00	1.08
							2" Ice	0.00	1.08
128									
LDF5-50A(7/8")	B	No	No	Inside Pole	128.00 - 0.00	9	No Ice	0.00	0.33
							1/2" Ice	0.00	0.33
							1" Ice	0.00	0.33
							2" Ice	0.00	0.33
WR-VG86ST-BRD(3/4)	B	No	No	Inside Pole	128.00 - 0.00	6	No Ice	0.00	0.59
							1/2" Ice	0.00	0.59
							1" Ice	0.00	0.59
							2" Ice	0.00	0.59
2" Flexible Conduit	B	No	No	Inside Pole	128.00 - 0.00	1	No Ice	0.00	0.34
							1/2" Ice	0.00	0.34
							1" Ice	0.00	0.34
							2" Ice	0.00	0.34
FB-L98B-034-XXX(3/8)	B	No	No	Inside Pole	128.00 - 0.00	3	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
108									
LDF7-50A(1-5/8")	C	No	No	Inside Pole	108.00 - 0.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
HB158-1-08U8-S8J 18(1-5/8)	C	No	No	Inside Pole	108.00 - 0.00	1	No Ice	0.00	1.30
							1/2" Ice	0.00	1.30
							1" Ice	0.00	1.30
							2" Ice	0.00	1.30
MLE Hybrid 9Power/18Fiber RL 2(1 5/8)	A	No	No	CaAa (Out Of Face)	100.00 - 0.00	1	No Ice	0.00	1.07
							1/2" Ice	0.00	2.37
							1" Ice	0.00	4.28
							2" Ice	0.00	9.93
HCS 6X12 6AWG(1-3/8)	A	No	No	CaAa (Out Of Face)	100.00 - 0.00	1	No Ice	0.00	1.70
							1/2" Ice	0.00	2.85
							1" Ice	0.00	4.61
							2" Ice	0.00	9.96
70									

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
9207(5/16")	A	No	No	CaAa (Out Of Face)	70.00 - 0.00	2	No Ice	0.00	0.60
							1/2" Ice	0.00	1.11
							1" Ice	0.00	2.22
							2" Ice	0.00	6.29
49									
LDF4-50A(1/2")	B	No	No	Inside Pole	49.00 - 0.00	1	No Ice	0.00	0.15
							1/2" Ice	0.00	0.15
							1" Ice	0.00	0.15
							2" Ice	0.00	0.15
5/16"	B	No	No	Inside Pole	49.00 - 0.00	1	No Ice	0.00	0.20
							1/2" Ice	0.00	0.20
							1" Ice	0.00	0.20
							2" Ice	0.00	0.20
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AM Detuner	A	No	No	CaAa (Out Of Face)	135.00 - 0.00	1	No Ice	0.03	1.00
							1/2" Ice	0.13	1.48
							1" Ice	0.23	2.56
							2" Ice	0.43	6.57
AM Detuner	B	No	No	CaAa (Out Of Face)	135.00 - 0.00	1	No Ice	0.03	1.00
							1/2" Ice	0.13	1.48
							1" Ice	0.23	2.56
							2" Ice	0.43	6.57
AM Detuner	C	No	No	CaAa (Out Of Face)	135.00 - 0.00	1	No Ice	0.03	1.00
							1/2" Ice	0.13	1.48
							1" Ice	0.23	2.56
							2" Ice	0.43	6.57
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Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight lb
L1	140.00-135.00	A	0.000	0.000	0.000	0.000	0
		B	0.000	0.000	0.000	0.000	13
		C	0.000	0.000	0.000	0.000	0
L2	135.00-130.00	A	0.000	0.000	0.000	0.140	5
		B	0.000	0.000	0.000	0.140	21
		C	0.000	0.000	0.000	0.140	5
L3	130.00-125.00	A	0.000	0.000	0.000	0.140	5
		B	0.000	0.000	0.000	0.140	42
		C	0.000	0.000	0.000	0.140	5
L4	125.00-120.00	A	0.000	0.000	0.000	0.140	5
		B	0.000	0.000	0.000	0.140	56
		C	0.000	0.000	0.000	0.140	5
L5	120.00-115.00	A	0.000	0.000	0.000	0.140	5
		B	0.000	0.000	0.000	0.140	56

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 lb
		C	0.000	0.000	0.000	0.140	5
L6	115.00-110.00	A	0.000	0.000	0.000	0.140	5
		B	0.000	0.000	0.000	0.140	56
		C	0.000	0.000	0.000	0.140	5
L7	110.00-105.00	A	0.000	0.000	0.000	0.140	5
		B	0.000	0.000	0.000	0.140	56
		C	0.000	0.000	0.000	0.140	24
L8	105.00-102.00	A	0.000	0.000	0.790	0.084	3
		B	0.000	0.000	0.790	0.084	34
		C	0.000	0.000	0.790	0.084	22
L9	102.00-101.75	A	0.000	0.000	0.169	0.007	0
		B	0.000	0.000	0.169	0.007	3
		C	0.000	0.000	0.169	0.007	2
L10	101.75-96.75	A	0.000	0.000	5.509	0.140	26
		B	0.000	0.000	3.383	0.140	56
		C	0.000	0.000	3.383	0.140	36
L11	96.75-91.75	A	0.000	0.000	8.944	0.140	37
		B	0.000	0.000	2.424	0.140	56
		C	0.000	0.000	5.674	0.140	36
L12	91.75-90.75	A	0.000	0.000	1.654	0.028	7
		B	0.000	0.000	0.000	0.028	11
		C	0.000	0.000	1.000	0.028	7
L13	90.75-85.75	A	0.000	0.000	8.777	0.140	37
		B	0.000	0.000	0.507	0.140	56
		C	0.000	0.000	5.508	0.140	36
L14	85.75-85.33	A	0.000	0.000	0.972	0.012	3
		B	0.000	0.000	0.282	0.012	5
		C	0.000	0.000	0.699	0.012	3
L15	85.33-85.08	A	0.000	0.000	0.583	0.007	2
		B	0.000	0.000	0.169	0.007	3
		C	0.000	0.000	0.419	0.007	2
L16	85.08-82.50	A	0.000	0.000	8.020	0.072	19
		B	0.000	0.000	1.748	0.072	29
		C	0.000	0.000	6.331	0.072	19
L17	82.50-82.25	A	0.000	0.000	0.833	0.007	2
		B	0.000	0.000	0.169	0.007	3
		C	0.000	0.000	0.669	0.007	2
L18	82.25-82.00	A	0.000	0.000	0.833	0.007	2
		B	0.000	0.000	0.169	0.007	3
		C	0.000	0.000	0.669	0.007	2
L19	82.00-81.75	A	0.000	0.000	0.833	0.007	2
		B	0.000	0.000	0.169	0.007	3
		C	0.000	0.000	0.669	0.007	2
L20	81.75-78.83	A	0.000	0.000	9.338	0.082	22
		B	0.000	0.000	2.764	0.082	33
		C	0.000	0.000	7.431	0.082	21
L21	78.83-78.58	A	0.000	0.000	0.752	0.007	2
		B	0.000	0.000	0.338	0.007	3
		C	0.000	0.000	0.588	0.007	2
L22	78.58-77.67	A	0.000	0.000	2.755	0.026	7
		B	0.000	0.000	1.240	0.026	10
		C	0.000	0.000	2.156	0.026	7
L23	77.67-77.42	A	0.000	0.000	0.752	0.007	2
		B	0.000	0.000	0.338	0.007	3
		C	0.000	0.000	0.588	0.007	2
L24	77.42-77.17	A	0.000	0.000	0.752	0.007	2
		B	0.000	0.000	0.338	0.007	3
		C	0.000	0.000	0.588	0.007	2
L25	77.17-72.17	A	0.000	0.000	15.037	0.140	37
		B	0.000	0.000	3.835	0.140	56
		C	0.000	0.000	8.835	0.140	36

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 lb
L26	72.17-67.17	A	0.000	0.000	16.665	0.140	40
		B	0.000	0.000	5.012	0.140	56
		C	0.000	0.000	10.012	0.140	36
L27	67.17-66.58	A	0.000	0.000	2.275	0.016	5
		B	0.000	0.000	0.914	0.016	7
		C	0.000	0.000	1.498	0.016	4
L28	66.58-66.33	A	0.000	0.000	0.974	0.007	2
		B	0.000	0.000	0.391	0.007	3
		C	0.000	0.000	0.641	0.007	2
L29	66.33-66.17	A	0.000	0.000	0.647	0.005	1
		B	0.000	0.000	0.260	0.005	2
		C	0.000	0.000	0.426	0.005	1
L30	66.17-65.92	A	0.000	0.000	0.974	0.007	2
		B	0.000	0.000	0.391	0.007	3
		C	0.000	0.000	0.641	0.007	2
L31	65.92-62.67	A	0.000	0.000	9.249	0.091	28
		B	0.000	0.000	3.508	0.091	37
		C	0.000	0.000	4.925	0.091	23
L32	62.67-62.42	A	0.000	0.000	0.555	0.007	2
		B	0.000	0.000	0.222	0.007	3
		C	0.000	0.000	0.222	0.007	2
L33	62.42-60.00	A	0.000	0.000	6.348	0.068	21
		B	0.000	0.000	2.147	0.068	27
		C	0.000	0.000	2.147	0.068	17
L34	60.00-59.75	A	0.000	0.000	0.636	0.007	2
		B	0.000	0.000	0.222	0.007	3
		C	0.000	0.000	0.222	0.007	2
L35	59.75-58.33	A	0.000	0.000	3.602	0.040	12
		B	0.000	0.000	1.259	0.040	16
		C	0.000	0.000	1.259	0.040	10
L36	58.33-58.08	A	0.000	0.000	0.636	0.007	2
		B	0.000	0.000	0.222	0.007	3
		C	0.000	0.000	0.222	0.007	2
L37	58.08-53.08	A	0.000	0.000	12.712	0.140	43
		B	0.000	0.000	4.442	0.140	56
		C	0.000	0.000	4.442	0.140	36
L38	53.08-52.83	A	0.000	0.000	0.636	0.007	2
		B	0.000	0.000	0.222	0.007	3
		C	0.000	0.000	0.222	0.007	2
L39	52.83-52.58	A	0.000	0.000	0.636	0.007	2
		B	0.000	0.000	0.222	0.007	3
		C	0.000	0.000	0.222	0.007	2
L40	52.58-51.42	A	0.000	0.000	3.704	0.033	10
		B	0.000	0.000	1.776	0.033	13
		C	0.000	0.000	1.776	0.033	8
L41	51.42-51.17	A	0.000	0.000	0.858	0.007	2
		B	0.000	0.000	0.444	0.007	3
		C	0.000	0.000	0.444	0.007	2
L42	51.17-46.50	A	0.000	0.000	13.290	0.131	40
		B	0.000	0.000	6.071	0.131	53
		C	0.000	0.000	6.219	0.131	34
L43	46.50-45.50	A	0.000	0.000	2.542	0.028	9
		B	0.000	0.000	0.888	0.028	12
		C	0.000	0.000	2.777	0.028	7
L44	45.50-44.25	A	0.000	0.000	4.288	0.035	11
		B	0.000	0.000	2.221	0.035	15
		C	0.000	0.000	3.471	0.035	9
L45	44.25-44.00	A	0.000	0.000	0.858	0.007	2
		B	0.000	0.000	0.444	0.007	3
		C	0.000	0.000	0.694	0.007	2
L46	44.00-43.08	A	0.000	0.000	3.146	0.026	8

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 lb
		B	0.000	0.000	1.629	0.026	11
		C	0.000	0.000	2.546	0.026	7
L47	43.08-42.83	A	0.000	0.000	0.858	0.007	2
		B	0.000	0.000	0.444	0.007	3
		C	0.000	0.000	0.694	0.007	2
L48	42.83-37.83	A	0.000	0.000	15.006	0.140	43
		B	0.000	0.000	6.736	0.140	58
		C	0.000	0.000	11.736	0.140	36
L49	37.83-32.83	A	0.000	0.000	12.712	0.140	43
		B	0.000	0.000	4.442	0.140	58
		C	0.000	0.000	9.442	0.140	36
L50	32.83-29.25	A	0.000	0.000	9.109	0.100	31
		B	0.000	0.000	3.183	0.100	42
		C	0.000	0.000	8.120	0.100	26
L51	29.25-29.00	A	0.000	0.000	0.636	0.007	2
		B	0.000	0.000	0.222	0.007	3
		C	0.000	0.000	0.743	0.007	2
L52	29.00-27.75	A	0.000	0.000	3.178	0.035	11
		B	0.000	0.000	1.110	0.035	15
		C	0.000	0.000	3.715	0.035	9
L53	27.75-27.50	A	0.000	0.000	0.636	0.007	2
		B	0.000	0.000	0.222	0.007	3
		C	0.000	0.000	0.743	0.007	2
L54	27.50-24.08	A	0.000	0.000	8.687	0.096	29
		B	0.000	0.000	5.038	0.096	40
		C	0.000	0.000	10.154	0.096	25
L55	24.08-23.83	A	0.000	0.000	0.636	0.007	2
		B	0.000	0.000	0.429	0.007	3
		C	0.000	0.000	0.743	0.007	2
L56	23.83-23.50	A	0.000	0.000	0.847	0.009	3
		B	0.000	0.000	0.572	0.009	4
		C	0.000	0.000	0.990	0.009	2
L57	23.50-23.25	A	0.000	0.000	0.636	0.007	2
		B	0.000	0.000	0.429	0.007	3
		C	0.000	0.000	0.743	0.007	2
L58	23.25-18.92	A	0.000	0.000	8.433	0.121	37
		B	0.000	0.000	8.845	0.121	50
		C	0.000	0.000	11.699	0.121	31
L59	18.92-18.67	A	0.000	0.000	0.386	0.007	2
		B	0.000	0.000	0.651	0.007	3
		C	0.000	0.000	0.715	0.007	2
L60	18.67-18.08	A	0.000	0.000	0.901	0.016	5
		B	0.000	0.000	1.521	0.016	7
		C	0.000	0.000	1.670	0.016	4
L61	18.08-17.83	A	0.000	0.000	0.386	0.007	2
		B	0.000	0.000	0.651	0.007	3
		C	0.000	0.000	0.715	0.007	2
L62	17.83-14.08	A	0.000	0.000	5.784	0.105	32
		B	0.000	0.000	7.767	0.105	44
		C	0.000	0.000	10.725	0.105	27
L63	14.08-13.83	A	0.000	0.000	0.386	0.007	2
		B	0.000	0.000	0.444	0.007	3
		C	0.000	0.000	0.715	0.007	2
L64	13.83-8.83	A	0.000	0.000	7.712	0.140	43
		B	0.000	0.000	8.883	0.140	58
		C	0.000	0.000	11.782	0.140	36
L65	8.83-3.83	A	0.000	0.000	7.712	0.140	43
		B	0.000	0.000	8.883	0.140	58
		C	0.000	0.000	9.858	0.140	36
L66	3.83-0.00	A	0.000	0.000	5.468	0.107	33
		B	0.000	0.000	5.922	0.107	45

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 lb
		C	0.000	0.000	6.572	0.107	28

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 lb
L1	140.00-135.00	A	1.961	0.000	0.000	0.000	0.000	0
		B		0.000	0.000	0.000	0.000	13
		C		0.000	0.000	0.000	0.000	0
L2	135.00-130.00	A	1.953	0.000	0.000	0.000	2.094	32
		B		0.000	0.000	0.000	2.094	48
		C		0.000	0.000	0.000	2.094	32
L3	130.00-125.00	A	1.946	0.000	0.000	0.000	2.086	32
		B		0.000	0.000	0.000	2.086	69
		C		0.000	0.000	0.000	2.086	32
L4	125.00-120.00	A	1.938	0.000	0.000	0.000	2.078	32
		B		0.000	0.000	0.000	2.078	83
		C		0.000	0.000	0.000	2.078	32
L5	120.00-115.00	A	1.930	0.000	0.000	0.000	2.070	31
		B		0.000	0.000	0.000	2.070	83
		C		0.000	0.000	0.000	2.070	31
L6	115.00-110.00	A	1.922	0.000	0.000	0.000	2.062	31
		B		0.000	0.000	0.000	2.062	83
		C		0.000	0.000	0.000	2.062	31
L7	110.00-105.00	A	1.913	0.000	0.000	0.000	2.053	31
		B		0.000	0.000	0.000	2.053	82
		C		0.000	0.000	0.000	2.053	50
L8	105.00-102.00	A	1.906	0.000	0.000	1.058	1.228	35
		B		0.000	0.000	1.058	1.228	65
		C		0.000	0.000	1.058	1.228	53
L9	102.00-101.75	A	1.903	0.000	0.000	0.227	0.102	5
		B		0.000	0.000	0.227	0.102	8
		C		0.000	0.000	0.227	0.102	7
L10	101.75-96.75	A	1.898	0.000	0.000	8.729	2.038	227
		B		0.000	0.000	4.531	2.038	150
		C		0.000	0.000	4.531	2.038	130
L11	96.75-91.75	A	1.888	0.000	0.000	13.819	2.028	326
		B		0.000	0.000	3.243	2.028	130
		C		0.000	0.000	7.371	2.028	161
L12	91.75-90.75	A	1.882	0.000	0.000	2.560	0.406	61
		B		0.000	0.000	0.000	0.406	16
		C		0.000	0.000	1.271	0.406	28
L13	90.75-85.75	A	1.876	0.000	0.000	13.566	2.016	313
		B		0.000	0.000	0.678	2.016	92
		C		0.000	0.000	7.023	2.016	148
L14	85.75-85.33	A	1.870	0.000	0.000	1.503	0.168	31
		B		0.000	0.000	0.377	0.168	12
		C		0.000	0.000	0.906	0.168	17
L15	85.33-85.08	A	1.869	0.000	0.000	0.901	0.100	18
		B		0.000	0.000	0.226	0.100	7
		C		0.000	0.000	0.543	0.100	10
L16	85.08-82.50	A	1.866	0.000	0.000	12.048	1.036	220
		B		0.000	0.000	2.332	1.036	76
		C		0.000	0.000	8.351	1.036	136
L17	82.50-82.25	A	1.863	0.000	0.000	1.243	0.100	22
		B		0.000	0.000	0.226	0.100	7
		C		0.000	0.000	0.885	0.100	14

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 lb
L18	82.25-82.00	A	1.862	0.000	0.000	1.243	0.100	22
		B		0.000	0.000	0.226	0.100	7
		C		0.000	0.000	0.885	0.100	14
L19	82.00-81.75	A	1.862	0.000	0.000	1.243	0.100	22
		B		0.000	0.000	0.226	0.100	7
		C		0.000	0.000	0.885	0.100	14
L20	81.75-78.83	A	1.858	0.000	0.000	14.219	1.166	255
		B		0.000	0.000	3.837	1.166	101
		C		0.000	0.000	10.053	1.166	161
L21	78.83-78.58	A	1.854	0.000	0.000	1.183	0.100	22
		B		0.000	0.000	0.483	0.100	11
		C		0.000	0.000	0.826	0.100	13
L22	78.58-77.67	A	1.853	0.000	0.000	4.333	0.365	79
		B		0.000	0.000	1.771	0.365	39
		C		0.000	0.000	3.026	0.365	49
L23	77.67-77.42	A	1.852	0.000	0.000	1.182	0.100	21
		B		0.000	0.000	0.483	0.100	11
		C		0.000	0.000	0.826	0.100	13
L24	77.42-77.17	A	1.851	0.000	0.000	1.182	0.100	21
		B		0.000	0.000	0.483	0.100	11
		C		0.000	0.000	0.826	0.100	13
L25	77.17-72.17	A	1.845	0.000	0.000	23.618	1.985	428
		B		0.000	0.000	5.755	1.985	155
		C		0.000	0.000	12.597	1.985	210
L26	72.17-67.17	A	1.832	0.000	0.000	25.869	1.972	484
		B		0.000	0.000	7.444	1.972	174
		C		0.000	0.000	14.276	1.972	228
L27	67.17-66.58	A	1.824	0.000	0.000	3.481	0.229	65
		B		0.000	0.000	1.332	0.229	26
		C		0.000	0.000	2.129	0.229	32
L28	66.58-66.33	A	1.823	0.000	0.000	1.490	0.098	28
		B		0.000	0.000	0.570	0.098	11
		C		0.000	0.000	0.911	0.098	14
L29	66.33-66.17	A	1.823	0.000	0.000	0.989	0.065	18
		B		0.000	0.000	0.379	0.065	7
		C		0.000	0.000	0.605	0.065	9
L30	66.17-65.92	A	1.822	0.000	0.000	1.490	0.098	28
		B		0.000	0.000	0.570	0.098	11
		C		0.000	0.000	0.911	0.098	14
L31	65.92-62.67	A	1.817	0.000	0.000	14.455	1.272	302
		B		0.000	0.000	5.010	1.272	114
		C		0.000	0.000	6.942	1.272	122
L32	62.67-62.42	A	1.812	0.000	0.000	0.890	0.098	21
		B		0.000	0.000	0.313	0.098	8
		C		0.000	0.000	0.313	0.098	7
L33	62.42-60.00	A	1.808	0.000	0.000	9.567	0.942	209
		B		0.000	0.000	3.021	0.942	76
		C		0.000	0.000	3.021	0.942	66
L34	60.00-59.75	A	1.804	0.000	0.000	0.945	0.097	21
		B		0.000	0.000	0.312	0.097	8
		C		0.000	0.000	0.312	0.097	7
L35	59.75-58.33	A	1.802	0.000	0.000	5.354	0.550	119
		B		0.000	0.000	1.769	0.550	44
		C		0.000	0.000	1.769	0.550	39
L36	58.33-58.08	A	1.799	0.000	0.000	0.944	0.097	21
		B		0.000	0.000	0.312	0.097	8
		C		0.000	0.000	0.312	0.097	7
L37	58.08-53.08	A	1.791	0.000	0.000	18.862	1.931	417
		B		0.000	0.000	6.233	1.931	155
		C		0.000	0.000	6.233	1.931	135
L38	53.08-52.83	A	1.782	0.000	0.000	0.942	0.096	21

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 lb
		B		0.000	0.000	0.311	0.096	8
		C		0.000	0.000	0.311	0.096	7
L39	52.83-52.58	A	1.781	0.000	0.000	0.942	0.096	21
		B		0.000	0.000	0.311	0.096	8
		C		0.000	0.000	0.311	0.096	7
L40	52.58-51.42	A	1.779	0.000	0.000	5.292	0.448	109
		B		0.000	0.000	2.352	0.448	48
		C		0.000	0.000	2.352	0.448	44
L41	51.42-51.17	A	1.777	0.000	0.000	1.211	0.096	24
		B		0.000	0.000	0.581	0.096	11
		C		0.000	0.000	0.581	0.096	10
L42	51.17-46.50	A	1.768	0.000	0.000	18.855	1.781	408
		B		0.000	0.000	7.734	1.781	176
		C		0.000	0.000	7.941	1.781	159
L43	46.50-45.50	A	1.757	0.000	0.000	3.694	0.382	82
		B		0.000	0.000	1.081	0.382	31
		C		0.000	0.000	3.677	0.382	56
L44	45.50-44.25	A	1.753	0.000	0.000	6.155	0.473	120
		B		0.000	0.000	2.897	0.473	57
		C		0.000	0.000	4.586	0.473	69
L45	44.25-44.00	A	1.750	0.000	0.000	1.231	0.095	24
		B		0.000	0.000	0.579	0.095	11
		C		0.000	0.000	0.917	0.095	14
L46	44.00-43.08	A	1.748	0.000	0.000	4.512	0.346	88
		B		0.000	0.000	2.124	0.346	42
		C		0.000	0.000	3.362	0.346	50
L47	43.08-42.83	A	1.745	0.000	0.000	1.230	0.094	24
		B		0.000	0.000	0.579	0.094	11
		C		0.000	0.000	0.916	0.094	14
L48	42.83-37.83	A	1.734	0.000	0.000	21.948	1.874	439
		B		0.000	0.000	8.958	1.874	190
		C		0.000	0.000	15.692	1.874	237
L49	37.83-32.83	A	1.712	0.000	0.000	19.092	1.852	395
		B		0.000	0.000	6.153	1.852	151
		C		0.000	0.000	12.865	1.852	197
L50	32.83-29.25	A	1.690	0.000	0.000	13.630	1.311	279
		B		0.000	0.000	4.394	1.311	107
		C		0.000	0.000	10.964	1.311	157
L51	29.25-29.00	A	1.679	0.000	0.000	0.949	0.091	19
		B		0.000	0.000	0.306	0.091	7
		C		0.000	0.000	0.995	0.091	13
L52	29.00-27.75	A	1.675	0.000	0.000	4.743	0.454	96
		B		0.000	0.000	1.529	0.454	37
		C		0.000	0.000	4.970	0.454	66
L53	27.75-27.50	A	1.670	0.000	0.000	0.948	0.091	19
		B		0.000	0.000	0.306	0.091	7
		C		0.000	0.000	0.993	0.091	13
L54	27.50-24.08	A	1.659	0.000	0.000	12.930	1.229	260
		B		0.000	0.000	6.605	1.229	134
		C		0.000	0.000	13.555	1.229	178
L55	24.08-23.83	A	1.646	0.000	0.000	0.944	0.089	19
		B		0.000	0.000	0.556	0.089	11
		C		0.000	0.000	0.990	0.089	13
L56	23.83-23.50	A	1.644	0.000	0.000	1.257	0.119	25
		B		0.000	0.000	0.741	0.119	14
		C		0.000	0.000	1.318	0.119	17
L57	23.50-23.25	A	1.642	0.000	0.000	0.943	0.089	19
		B		0.000	0.000	0.556	0.089	11
		C		0.000	0.000	0.989	0.089	13
L58	23.25-18.92	A	1.625	0.000	0.000	12.880	1.530	289
		B		0.000	0.000	11.532	1.530	204

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 lb
		C		0.000	0.000	15.600	1.530	209
L59	18.92-18.67	A	1.607	0.000	0.000	0.607	0.087	15
		B		0.000	0.000	0.856	0.087	14
		C		0.000	0.000	0.956	0.087	13
L60	18.67-18.08	A	1.603	0.000	0.000	1.418	0.204	35
		B		0.000	0.000	1.997	0.204	32
		C		0.000	0.000	2.232	0.204	30
L61	18.08-17.83	A	1.600	0.000	0.000	0.606	0.087	15
		B		0.000	0.000	0.855	0.087	14
		C		0.000	0.000	0.955	0.087	13
L62	17.83-14.08	A	1.581	0.000	0.000	9.064	1.291	224
		B		0.000	0.000	10.367	1.291	171
		C		0.000	0.000	14.282	1.291	187
L63	14.08-13.83	A	1.560	0.000	0.000	0.602	0.085	15
		B		0.000	0.000	0.600	0.085	10
		C		0.000	0.000	0.949	0.085	12
L64	13.83-8.83	A	1.528	0.000	0.000	11.966	1.668	287
		B		0.000	0.000	11.938	1.668	199
		C		0.000	0.000	15.499	1.668	205
L65	8.83-3.83	A	1.441	0.000	0.000	11.772	1.581	268
		B		0.000	0.000	11.766	1.581	188
		C		0.000	0.000	12.741	1.581	168
L66	3.83-0.00	A	1.279	0.000	0.000	8.172	1.087	174
		B		0.000	0.000	7.626	1.087	120
		C		0.000	0.000	8.276	1.087	104

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	140.00-135.00	0.0000	0.0000	0.0000	0.0000
L2	135.00-130.00	0.0000	0.0000	0.0000	0.0000
L3	130.00-125.00	0.0000	0.0000	0.0000	0.0000
L4	125.00-120.00	0.0000	0.0000	0.0000	0.0000
L5	120.00-115.00	0.0000	0.0000	0.0000	0.0000
L6	115.00-110.00	0.0000	0.0000	0.0000	0.0000
L7	110.00-105.00	0.0000	0.0000	0.0000	0.0000
L8	105.00-102.00	0.0000	0.0000	0.0000	0.0000
L9	102.00-101.75	0.0000	0.0000	0.0000	0.0000
L10	101.75-96.75	0.0000	-1.2549	0.0000	-1.3907
L11	96.75-91.75	-0.1168	0.0877	-0.0936	-0.5775
L12	91.75-90.75	-0.2049	1.0411	-0.1615	0.0902
L13	90.75-85.75	-0.1948	0.9966	-0.1586	0.0542
L14	85.75-85.33	-0.1493	0.7677	-0.1393	-0.1193
L15	85.33-85.08	-0.1495	0.7698	-0.1395	-0.1191
L16	85.08-82.50	-1.1268	1.2151	-1.0349	0.4305
L17	82.50-82.25	-1.3556	1.3237	-1.2514	0.5632
L18	82.25-82.00	-1.3574	1.3255	-1.2532	0.5643
L19	82.00-81.75	-1.3588	1.3270	-1.2549	0.5653
L20	81.75-78.83	-1.3170	0.6918	-1.2050	0.0234
L21	78.83-78.58	-1.2498	-0.2606	-1.1280	-0.7634
L22	78.58-77.67	-1.2535	-0.2612	-1.1319	-0.7656
L23	77.67-77.42	-1.2569	-0.2617	-1.1356	-0.7677
L24	77.42-77.17	-1.2585	-0.2620	-1.1373	-0.7686
L25	77.17-72.17	-1.5494	-1.4164	-1.3720	-1.8235
L26	72.17-67.17	-1.4609	-1.4804	-1.3089	-1.8580

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L27	67.17-66.58	-1.2516	-1.2680	-1.1398	-1.6167
L28	66.58-66.33	-1.2544	-1.2707	-1.1425	-1.6205
L29	66.33-66.17	-1.2556	-1.2720	-1.1438	-1.6222
L30	66.17-65.92	-1.2564	-1.2728	-1.1448	-1.6235
L31	65.92-62.67	-0.7896	-2.2131	-0.7130	-2.5840
L32	62.67-62.42	-0.1472	-3.5079	-0.1314	-3.5233
L33	62.42-60.00	-1.7102	-3.1857	-1.2976	-3.1435
L34	60.00-59.75	-2.0352	-2.7671	-1.5404	-2.7415
L35	59.75-58.33	-2.0417	-2.7756	-1.5463	-2.7513
L36	58.33-58.08	-2.0481	-2.7840	-1.5523	-2.7610
L37	58.08-53.08	-2.0683	-2.8105	-1.5712	-2.7916
L38	53.08-52.83	-2.0882	-2.8367	-1.5899	-2.8219
L39	52.83-52.58	-2.0916	-2.8413	-1.5926	-2.8264
L40	52.58-51.42	-1.5041	-2.0431	-1.3156	-2.3343
L41	51.42-51.17	-1.3881	-1.8853	-1.2310	-2.1835
L42	51.17-46.50	-1.4063	-2.0865	-1.2376	-2.4414
L43	46.50-45.50	-0.2879	-0.9994	-0.2304	-1.3906
L44	45.50-44.25	-1.4651	-1.7020	-1.4034	-2.0303
L45	44.25-44.00	-1.4699	-1.7076	-1.4085	-2.0374
L46	44.00-43.08	-1.4735	-1.7116	-1.4124	-2.0426
L47	43.08-42.83	-1.4772	-1.7159	-1.4163	-2.0481
L48	42.83-37.83	-1.6950	-1.9687	-1.5960	-2.3067
L49	37.83-32.83	-2.0155	-2.3405	-1.8548	-2.6778
L50	32.83-29.25	-2.9582	-2.5170	-2.7284	-2.8416
L51	29.25-29.00	-4.4710	-2.7669	-4.1460	-3.0596
L52	29.00-27.75	-4.4826	-2.7742	-4.1589	-3.0687
L53	27.75-27.50	-4.4944	-2.7816	-4.1719	-3.0779
L54	27.50-24.08	-3.2408	-2.1576	-3.1086	-2.5314
L55	24.08-23.83	-2.7708	-1.9258	-2.7075	-2.3287
L56	23.83-23.50	-2.7737	-1.9277	-2.7106	-2.3312
L57	23.50-23.25	-2.7754	-1.9289	-2.7130	-2.3331
L58	23.25-18.92	-1.6116	-0.0998	-1.5985	-0.5765
L59	18.92-18.67	-0.4638	2.5900	-0.4964	2.0661
L60	18.67-18.08	-0.4647	2.5935	-0.4973	2.0697
L61	18.08-17.83	-0.4658	2.5981	-0.4984	2.0738
L62	17.83-14.08	-1.5108	2.2559	-1.4080	1.7574
L63	14.08-13.83	-2.1374	2.0575	-1.9518	1.5757
L64	13.83-8.83	-3.2467	1.5279	-3.0192	1.0321
L65	8.83-3.83	-4.2204	1.0876	-3.9633	0.5827
L66	3.83-0.00	-3.9771	0.8174	-3.7400	0.2869

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
L8	47	(Area) Aero MP3-03 (H)	102.00 - 103.17	1.0000	1.0000
L8	48	(Area) Aero MP3-03 (H)	102.00 - 103.17	1.0000	1.0000
L8	49	(Area) Aero MP3-03 (H)	102.00 - 103.17	1.0000	1.0000
L9	47	(Area) Aero MP3-03 (H)	101.75 -	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			102.00		
L9	48	(Area) Aero MP3-03 (H)	101.75 - 102.00	1.0000	1.0000
L9	49	(Area) Aero MP3-03 (H)	101.75 - 102.00	1.0000	1.0000
L10	13	LDF5-50A(7/8")	96.75 - 100.00	1.0000	1.0000
L10	47	(Area) Aero MP3-03 (H)	96.75 - 101.75	1.0000	1.0000
L10	48	(Area) Aero MP3-03 (H)	96.75 - 101.75	1.0000	1.0000
L10	49	(Area) Aero MP3-03 (H)	96.75 - 101.75	1.0000	1.0000
L11	13	LDF5-50A(7/8")	91.75 - 96.75	1.0000	1.0000
L11	35	(Area) CCI-65FP-060100 (H)	91.75 - 95.00	1.0000	1.0000
L11	36	(Area) CCI-65FP-060100 (H)	91.75 - 95.00	1.0000	1.0000
L11	47	(Area) Aero MP3-03 (H)	93.17 - 96.75	1.0000	1.0000
L11	48	(Area) Aero MP3-03 (H)	93.17 - 96.75	1.0000	1.0000
L11	49	(Area) Aero MP3-03 (H)	93.17 - 96.75	1.0000	1.0000
L13	13	LDF5-50A(7/8")	85.75 - 90.75	1.0000	1.0000
L13	35	(Area) CCI-65FP-060100 (H)	85.75 - 90.75	1.0000	1.0000
L13	36	(Area) CCI-65FP-060100 (H)	85.75 - 90.75	1.0000	1.0000
L13	44	(Area) Aero MP3-03 (H)	85.75 - 86.50	1.0000	1.0000
L13	45	(Area) Aero MP3-03 (H)	85.75 - 86.50	1.0000	1.0000
L13	46	(Area) Aero MP3-03 (H)	85.75 - 86.50	1.0000	1.0000
L14	13	LDF5-50A(7/8")	85.33 - 85.75	1.0000	1.0000
L14	35	(Area) CCI-65FP-060100 (H)	85.33 - 85.75	1.0000	1.0000
L14	36	(Area) CCI-65FP-060100 (H)	85.33 - 85.75	1.0000	1.0000
L14	44	(Area) Aero MP3-03 (H)	85.33 - 85.75	1.0000	1.0000
L14	45	(Area) Aero MP3-03 (H)	85.33 - 85.75	1.0000	1.0000
L14	46	(Area) Aero MP3-03 (H)	85.33 - 85.75	1.0000	1.0000
L15	13	LDF5-50A(7/8")	85.08 - 85.33	1.0000	1.0000
L15	35	(Area) CCI-65FP-060100 (H)	85.08 - 85.33	1.0000	1.0000
L15	36	(Area) CCI-65FP-060100 (H)	85.08 - 85.33	1.0000	1.0000
L15	44	(Area) Aero MP3-03 (H)	85.08 - 85.33	1.0000	1.0000
L15	45	(Area) Aero MP3-03 (H)	85.08 - 85.33	1.0000	1.0000
L15	46	(Area) Aero MP3-03 (H)	85.08 - 85.33	1.0000	1.0000
L16	13	LDF5-50A(7/8")	82.50 - 85.08	1.0000	1.0000
L16	33	(Area) CCI-65FP-060100 (H)	82.50 - 84.50	1.0000	1.0000
L16	34	(Area) CCI-65FP-060100 (H)	82.50 - 84.50	1.0000	1.0000
L16	35	(Area) CCI-65FP-060100 (H)	82.50 - 85.08	1.0000	1.0000
L16	36	(Area) CCI-65FP-060100 (H)	82.50 - 85.08	1.0000	1.0000
L16	44	(Area) Aero MP3-03 (H)	82.50 - 85.08	1.0000	1.0000
L16	45	(Area) Aero MP3-03 (H)	82.50 - 85.08	1.0000	1.0000
L16	46	(Area) Aero MP3-03 (H)	82.50 - 85.08	1.0000	1.0000
L17	13	LDF5-50A(7/8")	82.25 - 82.50	1.0000	1.0000
L17	33	(Area) CCI-65FP-060100 (H)	82.25 - 82.50	1.0000	1.0000
L17	34	(Area) CCI-65FP-060100 (H)	82.25 - 82.50	1.0000	1.0000
L17	35	(Area) CCI-65FP-060100 (H)	82.25 - 82.50	1.0000	1.0000
L17	36	(Area) CCI-65FP-060100 (H)	82.25 - 82.50	1.0000	1.0000
L17	44	(Area) Aero MP3-03 (H)	82.25 - 82.50	1.0000	1.0000
L17	45	(Area) Aero MP3-03 (H)	82.25 - 82.50	1.0000	1.0000
L17	46	(Area) Aero MP3-03 (H)	82.25 - 82.50	1.0000	1.0000
L18	13	LDF5-50A(7/8")	82.00 - 82.25	1.0000	1.0000
L18	33	(Area) CCI-65FP-060100 (H)	82.00 - 82.25	1.0000	1.0000
L18	34	(Area) CCI-65FP-060100 (H)	82.00 - 82.25	1.0000	1.0000
L18	35	(Area) CCI-65FP-060100 (H)	82.00 - 82.25	1.0000	1.0000
L18	36	(Area) CCI-65FP-060100 (H)	82.00 - 82.25	1.0000	1.0000
L18	44	(Area) Aero MP3-03 (H)	82.00 - 82.25	1.0000	1.0000
L18	45	(Area) Aero MP3-03 (H)	82.00 - 82.25	1.0000	1.0000
L18	46	(Area) Aero MP3-03 (H)	82.00 - 82.25	1.0000	1.0000
L19	13	LDF5-50A(7/8")	81.75 - 82.00	1.0000	1.0000
L19	33	(Area) CCI-65FP-060100 (H)	81.75 - 82.00	1.0000	1.0000
L19	34	(Area) CCI-65FP-060100 (H)	81.75 - 82.00	1.0000	1.0000
L19	35	(Area) CCI-65FP-060100 (H)	81.75 - 82.00	1.0000	1.0000
L19	36	(Area) CCI-65FP-060100 (H)	81.75 - 82.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L19	44	(Area) Aero MP3-03 (H)	81.75 - 82.00	1.0000	1.0000
L19	45	(Area) Aero MP3-03 (H)	81.75 - 82.00	1.0000	1.0000
L19	46	(Area) Aero MP3-03 (H)	81.75 - 82.00	1.0000	1.0000
L20	13	LDF5-50A(7/8")	78.83 - 81.75	1.0000	1.0000
L20	33	(Area) CCI-65FP-060100 (H)	78.83 - 81.75	1.0000	1.0000
L20	34	(Area) CCI-65FP-060100 (H)	78.83 - 81.75	1.0000	1.0000
L20	35	(Area) CCI-65FP-060100 (H)	80.00 - 81.75	1.0000	1.0000
L20	36	(Area) CCI-65FP-060100 (H)	80.00 - 81.75	1.0000	1.0000
L20	44	(Area) Aero MP3-03 (H)	78.83 - 81.75	1.0000	1.0000
L20	45	(Area) Aero MP3-03 (H)	78.83 - 81.75	1.0000	1.0000
L20	46	(Area) Aero MP3-03 (H)	78.83 - 81.75	1.0000	1.0000
L20	55	(Area) Aero MP3-03 (H)	78.83 - 80.00	1.0000	1.0000
L20	56	(Area) Aero MP3-03 (H)	78.83 - 80.00	1.0000	1.0000
L20	57	(Area) Aero MP3-03 (H)	78.83 - 80.00	1.0000	1.0000
L21	13	LDF5-50A(7/8")	78.58 - 78.83	1.0000	1.0000
L21	33	(Area) CCI-65FP-060100 (H)	78.58 - 78.83	1.0000	1.0000
L21	34	(Area) CCI-65FP-060100 (H)	78.58 - 78.83	1.0000	1.0000
L21	44	(Area) Aero MP3-03 (H)	78.58 - 78.83	1.0000	1.0000
L21	45	(Area) Aero MP3-03 (H)	78.58 - 78.83	1.0000	1.0000
L21	46	(Area) Aero MP3-03 (H)	78.58 - 78.83	1.0000	1.0000
L21	55	(Area) Aero MP3-03 (H)	78.58 - 78.83	1.0000	1.0000
L21	56	(Area) Aero MP3-03 (H)	78.58 - 78.83	1.0000	1.0000
L21	57	(Area) Aero MP3-03 (H)	78.58 - 78.83	1.0000	1.0000
L22	13	LDF5-50A(7/8")	77.67 - 78.58	1.0000	1.0000
L22	33	(Area) CCI-65FP-060100 (H)	77.67 - 78.58	1.0000	1.0000
L22	34	(Area) CCI-65FP-060100 (H)	77.67 - 78.58	1.0000	1.0000
L22	44	(Area) Aero MP3-03 (H)	77.67 - 78.58	1.0000	1.0000
L22	45	(Area) Aero MP3-03 (H)	77.67 - 78.58	1.0000	1.0000
L22	46	(Area) Aero MP3-03 (H)	77.67 - 78.58	1.0000	1.0000
L22	55	(Area) Aero MP3-03 (H)	77.67 - 78.58	1.0000	1.0000
L22	56	(Area) Aero MP3-03 (H)	77.67 - 78.58	1.0000	1.0000
L22	57	(Area) Aero MP3-03 (H)	77.67 - 78.58	1.0000	1.0000
L23	13	LDF5-50A(7/8")	77.42 - 77.67	1.0000	1.0000
L23	33	(Area) CCI-65FP-060100 (H)	77.42 - 77.67	1.0000	1.0000
L23	34	(Area) CCI-65FP-060100 (H)	77.42 - 77.67	1.0000	1.0000
L23	44	(Area) Aero MP3-03 (H)	77.42 - 77.67	1.0000	1.0000
L23	45	(Area) Aero MP3-03 (H)	77.42 - 77.67	1.0000	1.0000
L23	46	(Area) Aero MP3-03 (H)	77.42 - 77.67	1.0000	1.0000
L23	55	(Area) Aero MP3-03 (H)	77.42 - 77.67	1.0000	1.0000
L23	56	(Area) Aero MP3-03 (H)	77.42 - 77.67	1.0000	1.0000
L23	57	(Area) Aero MP3-03 (H)	77.42 - 77.67	1.0000	1.0000
L24	13	LDF5-50A(7/8")	77.17 - 77.42	1.0000	1.0000
L24	33	(Area) CCI-65FP-060100 (H)	77.17 - 77.42	1.0000	1.0000
L24	34	(Area) CCI-65FP-060100 (H)	77.17 - 77.42	1.0000	1.0000
L24	44	(Area) Aero MP3-03 (H)	77.17 - 77.42	1.0000	1.0000
L24	45	(Area) Aero MP3-03 (H)	77.17 - 77.42	1.0000	1.0000
L24	46	(Area) Aero MP3-03 (H)	77.17 - 77.42	1.0000	1.0000
L24	55	(Area) Aero MP3-03 (H)	77.17 - 77.42	1.0000	1.0000
L24	56	(Area) Aero MP3-03 (H)	77.17 - 77.42	1.0000	1.0000
L24	57	(Area) Aero MP3-03 (H)	77.17 - 77.42	1.0000	1.0000
L25	13	LDF5-50A(7/8")	72.17 - 77.17	1.0000	1.0000
L25	33	(Area) CCI-65FP-060100 (H)	72.17 - 77.17	1.0000	1.0000
L25	34	(Area) CCI-65FP-060100 (H)	72.17 - 77.17	1.0000	1.0000
L25	44	(Area) Aero MP3-03 (H)	72.17 - 77.17	1.0000	1.0000
L25	45	(Area) Aero MP3-03 (H)	76.50 - 77.17	1.0000	1.0000
L25	46	(Area) Aero MP3-03 (H)	76.50 - 77.17	1.0000	1.0000
L25	55	(Area) Aero MP3-03 (H)	72.17 - 77.17	1.0000	1.0000
L25	56	(Area) Aero MP3-03 (H)	72.17 - 77.17	1.0000	1.0000
L25	57	(Area) Aero MP3-03 (H)	72.17 - 77.17	1.0000	1.0000
L26	13	LDF5-50A(7/8")	67.17 - 72.17	1.0000	1.0000
L26	33	(Area) CCI-65FP-060100 (H)	67.17 - 72.17	1.0000	1.0000
L26	34	(Area) CCI-65FP-060100 (H)	67.17 - 72.17	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L26	44	(Area) Aero MP3-03 (H)	67.17 - 72.17	1.0000	1.0000
L26	55	(Area) Aero MP3-03 (H)	67.17 - 72.17	1.0000	1.0000
L26	56	(Area) Aero MP3-03 (H)	67.17 - 72.17	1.0000	1.0000
L26	57	(Area) Aero MP3-03 (H)	67.17 - 72.17	1.0000	1.0000
L26	65	(Area) Aero MP3-05 (H)	67.17 - 69.00	1.0000	1.0000
L26	66	(Area) Aero MP3-05 (H)	67.17 - 69.00	1.0000	1.0000
L26	67	(Area) Aero MP3-05 (H)	67.17 - 69.00	1.0000	1.0000
L27	13	LDF5-50A(7/8")	66.58 - 67.17	1.0000	1.0000
L27	33	(Area) CCI-65FP-060100 (H)	66.58 - 67.17	1.0000	1.0000
L27	34	(Area) CCI-65FP-060100 (H)	66.58 - 67.17	1.0000	1.0000
L27	44	(Area) Aero MP3-03 (H)	66.58 - 67.17	1.0000	1.0000
L27	55	(Area) Aero MP3-03 (H)	66.58 - 67.17	1.0000	1.0000
L27	56	(Area) Aero MP3-03 (H)	66.58 - 67.17	1.0000	1.0000
L27	57	(Area) Aero MP3-03 (H)	66.58 - 67.17	1.0000	1.0000
L27	65	(Area) Aero MP3-05 (H)	66.58 - 67.17	1.0000	1.0000
L27	66	(Area) Aero MP3-05 (H)	66.58 - 67.17	1.0000	1.0000
L27	67	(Area) Aero MP3-05 (H)	66.58 - 67.17	1.0000	1.0000
L28	13	LDF5-50A(7/8")	66.33 - 66.58	1.0000	1.0000
L28	33	(Area) CCI-65FP-060100 (H)	66.33 - 66.58	1.0000	1.0000
L28	34	(Area) CCI-65FP-060100 (H)	66.33 - 66.58	1.0000	1.0000
L28	44	(Area) Aero MP3-03 (H)	66.33 - 66.58	1.0000	1.0000
L28	55	(Area) Aero MP3-03 (H)	66.33 - 66.58	1.0000	1.0000
L28	56	(Area) Aero MP3-03 (H)	66.33 - 66.58	1.0000	1.0000
L28	57	(Area) Aero MP3-03 (H)	66.33 - 66.58	1.0000	1.0000
L28	65	(Area) Aero MP3-05 (H)	66.33 - 66.58	1.0000	1.0000
L28	66	(Area) Aero MP3-05 (H)	66.33 - 66.58	1.0000	1.0000
L28	67	(Area) Aero MP3-05 (H)	66.33 - 66.58	1.0000	1.0000
L29	13	LDF5-50A(7/8")	66.17 - 66.33	1.0000	1.0000
L29	33	(Area) CCI-65FP-060100 (H)	66.17 - 66.33	1.0000	1.0000
L29	34	(Area) CCI-65FP-060100 (H)	66.17 - 66.33	1.0000	1.0000
L29	44	(Area) Aero MP3-03 (H)	66.17 - 66.33	1.0000	1.0000
L29	55	(Area) Aero MP3-03 (H)	66.17 - 66.33	1.0000	1.0000
L29	56	(Area) Aero MP3-03 (H)	66.17 - 66.33	1.0000	1.0000
L29	57	(Area) Aero MP3-03 (H)	66.17 - 66.33	1.0000	1.0000
L29	65	(Area) Aero MP3-05 (H)	66.17 - 66.33	1.0000	1.0000
L29	66	(Area) Aero MP3-05 (H)	66.17 - 66.33	1.0000	1.0000
L29	67	(Area) Aero MP3-05 (H)	66.17 - 66.33	1.0000	1.0000
L30	13	LDF5-50A(7/8")	65.92 - 66.17	1.0000	1.0000
L30	33	(Area) CCI-65FP-060100 (H)	65.92 - 66.17	1.0000	1.0000
L30	34	(Area) CCI-65FP-060100 (H)	65.92 - 66.17	1.0000	1.0000
L30	44	(Area) Aero MP3-03 (H)	65.92 - 66.17	1.0000	1.0000
L30	55	(Area) Aero MP3-03 (H)	65.92 - 66.17	1.0000	1.0000
L30	56	(Area) Aero MP3-03 (H)	65.92 - 66.17	1.0000	1.0000
L30	57	(Area) Aero MP3-03 (H)	65.92 - 66.17	1.0000	1.0000
L30	65	(Area) Aero MP3-05 (H)	65.92 - 66.17	1.0000	1.0000
L30	66	(Area) Aero MP3-05 (H)	65.92 - 66.17	1.0000	1.0000
L30	67	(Area) Aero MP3-05 (H)	65.92 - 66.17	1.0000	1.0000
L31	13	LDF5-50A(7/8")	62.67 - 65.92	1.0000	1.0000
L31	33	(Area) CCI-65FP-060100 (H)	64.50 - 65.92	1.0000	1.0000
L31	34	(Area) CCI-65FP-060100 (H)	64.50 - 65.92	1.0000	1.0000
L31	44	(Area) Aero MP3-03 (H)	62.67 - 65.92	1.0000	1.0000
L31	55	(Area) Aero MP3-03 (H)	65.00 - 65.92	1.0000	1.0000
L31	56	(Area) Aero MP3-03 (H)	65.00 - 65.92	1.0000	1.0000
L31	57	(Area) Aero MP3-03 (H)	65.00 - 65.92	1.0000	1.0000
L31	65	(Area) Aero MP3-05 (H)	62.67 - 65.92	1.0000	1.0000
L31	66	(Area) Aero MP3-05 (H)	62.67 - 65.92	1.0000	1.0000
L31	67	(Area) Aero MP3-05 (H)	62.67 - 65.92	1.0000	1.0000
L32	13	LDF5-50A(7/8")	62.42 - 62.67	1.0000	1.0000
L32	44	(Area) Aero MP3-03 (H)	62.42 - 62.67	1.0000	1.0000
L32	65	(Area) Aero MP3-05 (H)	62.42 - 62.67	1.0000	1.0000
L32	66	(Area) Aero MP3-05 (H)	62.42 - 62.67	1.0000	1.0000
L32	67	(Area) Aero MP3-05 (H)	62.42 - 62.67	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L33	13	LDF5-50A(7/8")	60.00 - 62.42	1.0000	1.0000
L33	32	(Area) CCI-65FP-060100 (H)	60.00 - 62.00	1.0000	1.0000
L33	44	(Area) Aero MP3-03 (H)	61.50 - 62.42	1.0000	1.0000
L33	65	(Area) Aero MP3-05 (H)	60.00 - 62.42	1.0000	1.0000
L33	66	(Area) Aero MP3-05 (H)	60.00 - 62.42	1.0000	1.0000
L33	67	(Area) Aero MP3-05 (H)	60.00 - 62.42	1.0000	1.0000
L34	13	LDF5-50A(7/8")	59.75 - 60.00	1.0000	1.0000
L34	32	(Area) CCI-65FP-060100 (H)	59.75 - 60.00	1.0000	1.0000
L34	65	(Area) Aero MP3-05 (H)	59.75 - 60.00	1.0000	1.0000
L34	66	(Area) Aero MP3-05 (H)	59.75 - 60.00	1.0000	1.0000
L34	67	(Area) Aero MP3-05 (H)	59.75 - 60.00	1.0000	1.0000
L35	13	LDF5-50A(7/8")	58.33 - 59.75	1.0000	1.0000
L35	32	(Area) CCI-65FP-060100 (H)	58.33 - 59.75	1.0000	1.0000
L35	65	(Area) Aero MP3-05 (H)	58.33 - 59.75	1.0000	1.0000
L35	66	(Area) Aero MP3-05 (H)	58.33 - 59.75	1.0000	1.0000
L35	67	(Area) Aero MP3-05 (H)	58.33 - 59.75	1.0000	1.0000
L36	13	LDF5-50A(7/8")	58.08 - 58.33	1.0000	1.0000
L36	32	(Area) CCI-65FP-060100 (H)	58.08 - 58.33	1.0000	1.0000
L36	65	(Area) Aero MP3-05 (H)	58.08 - 58.33	1.0000	1.0000
L36	66	(Area) Aero MP3-05 (H)	58.08 - 58.33	1.0000	1.0000
L36	67	(Area) Aero MP3-05 (H)	58.08 - 58.33	1.0000	1.0000
L37	13	LDF5-50A(7/8")	53.08 - 58.08	1.0000	1.0000
L37	32	(Area) CCI-65FP-060100 (H)	53.08 - 58.08	1.0000	1.0000
L37	65	(Area) Aero MP3-05 (H)	53.08 - 58.08	1.0000	1.0000
L37	66	(Area) Aero MP3-05 (H)	53.08 - 58.08	1.0000	1.0000
L37	67	(Area) Aero MP3-05 (H)	53.08 - 58.08	1.0000	1.0000
L38	13	LDF5-50A(7/8")	52.83 - 53.08	1.0000	1.0000
L38	32	(Area) CCI-65FP-060100 (H)	52.83 - 53.08	1.0000	1.0000
L38	65	(Area) Aero MP3-05 (H)	52.83 - 53.08	1.0000	1.0000
L38	66	(Area) Aero MP3-05 (H)	52.83 - 53.08	1.0000	1.0000
L38	67	(Area) Aero MP3-05 (H)	52.83 - 53.08	1.0000	1.0000
L39	13	LDF5-50A(7/8")	52.58 - 52.83	1.0000	1.0000
L39	32	(Area) CCI-65FP-060100 (H)	52.58 - 52.83	1.0000	1.0000
L39	65	(Area) Aero MP3-05 (H)	52.58 - 52.83	1.0000	1.0000
L39	66	(Area) Aero MP3-05 (H)	52.58 - 52.83	1.0000	1.0000
L39	67	(Area) Aero MP3-05 (H)	52.58 - 52.83	1.0000	1.0000
L40	13	LDF5-50A(7/8")	51.42 - 52.58	1.0000	1.0000
L40	32	(Area) CCI-65FP-060100 (H)	51.42 - 52.58	1.0000	1.0000
L40	52	(Area) Aero MP3-05 (H)	51.42 - 52.25	1.0000	1.0000
L40	53	(Area) Aero MP3-05 (H)	51.42 - 52.25	1.0000	1.0000
L40	54	(Area) Aero MP3-05 (H)	51.42 - 52.25	1.0000	1.0000
L40	65	(Area) Aero MP3-05 (H)	51.42 - 52.58	1.0000	1.0000
L40	66	(Area) Aero MP3-05 (H)	51.42 - 52.58	1.0000	1.0000
L40	67	(Area) Aero MP3-05 (H)	51.42 - 52.58	1.0000	1.0000
L41	13	LDF5-50A(7/8")	51.17 - 51.42	1.0000	1.0000
L41	32	(Area) CCI-65FP-060100 (H)	51.17 - 51.42	1.0000	1.0000
L41	52	(Area) Aero MP3-05 (H)	51.17 - 51.42	1.0000	1.0000
L41	53	(Area) Aero MP3-05 (H)	51.17 - 51.42	1.0000	1.0000
L41	54	(Area) Aero MP3-05 (H)	51.17 - 51.42	1.0000	1.0000
L41	65	(Area) Aero MP3-05 (H)	51.17 - 51.42	1.0000	1.0000
L41	66	(Area) Aero MP3-05 (H)	51.17 - 51.42	1.0000	1.0000
L41	67	(Area) Aero MP3-05 (H)	51.17 - 51.42	1.0000	1.0000
L42	13	LDF5-50A(7/8")	46.50 - 51.17	1.0000	1.0000
L42	32	(Area) CCI-65FP-060100 (H)	47.00 - 51.17	1.0000	1.0000
L42	52	(Area) Aero MP3-05 (H)	46.50 - 51.17	1.0000	1.0000
L42	53	(Area) Aero MP3-05 (H)	46.50 - 51.17	1.0000	1.0000
L42	54	(Area) Aero MP3-05 (H)	46.50 - 51.17	1.0000	1.0000
L42	64	(Area) Aero MP3-05 (H)	46.50 - 46.67	1.0000	1.0000
L42	65	(Area) Aero MP3-05 (H)	49.00 - 51.17	1.0000	1.0000
L42	66	(Area) Aero MP3-05 (H)	49.00 - 51.17	1.0000	1.0000
L42	67	(Area) Aero MP3-05 (H)	49.00 - 51.17	1.0000	1.0000
L42	30	(Area) CCI-65FP-060100 (H)	46.50 - 46.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L42	31	(Area) CCI-65FP-060100 (H)	46.50 - 46.50	1.0000	1.0000
L44	13	LDF5-50A(7/8")	44.25 - 45.50	1.0000	1.0000
L44	30	(Area) CCI-65FP-060100 (H)	44.25 - 45.50	1.0000	1.0000
L44	31	(Area) CCI-65FP-060100 (H)	44.25 - 45.50	1.0000	1.0000
L44	52	(Area) Aero MP3-05 (H)	44.25 - 45.50	1.0000	1.0000
L44	53	(Area) Aero MP3-05 (H)	44.25 - 45.50	1.0000	1.0000
L44	54	(Area) Aero MP3-05 (H)	44.25 - 45.50	1.0000	1.0000
L44	62	(Area) Aero MP3-05 (H)	44.25 - 45.50	1.0000	1.0000
L44	63	(Area) Aero MP3-05 (H)	44.25 - 45.50	1.0000	1.0000
L44	64	(Area) Aero MP3-05 (H)	44.25 - 45.50	1.0000	1.0000
L45	13	LDF5-50A(7/8")	44.00 - 44.25	1.0000	1.0000
L45	30	(Area) CCI-65FP-060100 (H)	44.00 - 44.25	1.0000	1.0000
L45	31	(Area) CCI-65FP-060100 (H)	44.00 - 44.25	1.0000	1.0000
L45	52	(Area) Aero MP3-05 (H)	44.00 - 44.25	1.0000	1.0000
L45	53	(Area) Aero MP3-05 (H)	44.00 - 44.25	1.0000	1.0000
L45	54	(Area) Aero MP3-05 (H)	44.00 - 44.25	1.0000	1.0000
L45	62	(Area) Aero MP3-05 (H)	44.00 - 44.25	1.0000	1.0000
L45	63	(Area) Aero MP3-05 (H)	44.00 - 44.25	1.0000	1.0000
L45	64	(Area) Aero MP3-05 (H)	44.00 - 44.25	1.0000	1.0000
L46	13	LDF5-50A(7/8")	43.08 - 44.00	1.0000	1.0000
L46	30	(Area) CCI-65FP-060100 (H)	43.08 - 44.00	1.0000	1.0000
L46	31	(Area) CCI-65FP-060100 (H)	43.08 - 44.00	1.0000	1.0000
L46	52	(Area) Aero MP3-05 (H)	43.08 - 44.00	1.0000	1.0000
L46	53	(Area) Aero MP3-05 (H)	43.08 - 44.00	1.0000	1.0000
L46	54	(Area) Aero MP3-05 (H)	43.08 - 44.00	1.0000	1.0000
L46	62	(Area) Aero MP3-05 (H)	43.08 - 44.00	1.0000	1.0000
L46	63	(Area) Aero MP3-05 (H)	43.08 - 44.00	1.0000	1.0000
L46	64	(Area) Aero MP3-05 (H)	43.08 - 44.00	1.0000	1.0000
L47	13	LDF5-50A(7/8")	42.83 - 43.08	1.0000	1.0000
L47	30	(Area) CCI-65FP-060100 (H)	42.83 - 43.08	1.0000	1.0000
L47	31	(Area) CCI-65FP-060100 (H)	42.83 - 43.08	1.0000	1.0000
L47	52	(Area) Aero MP3-05 (H)	42.83 - 43.08	1.0000	1.0000
L47	53	(Area) Aero MP3-05 (H)	42.83 - 43.08	1.0000	1.0000
L47	54	(Area) Aero MP3-05 (H)	42.83 - 43.08	1.0000	1.0000
L47	62	(Area) Aero MP3-05 (H)	42.83 - 43.08	1.0000	1.0000
L47	63	(Area) Aero MP3-05 (H)	42.83 - 43.08	1.0000	1.0000
L47	64	(Area) Aero MP3-05 (H)	42.83 - 43.08	1.0000	1.0000
L48	13	LDF5-50A(7/8")	37.83 - 42.83	1.0000	1.0000
L48	30	(Area) CCI-65FP-060100 (H)	37.83 - 42.83	1.0000	1.0000
L48	31	(Area) CCI-65FP-060100 (H)	37.83 - 42.83	1.0000	1.0000
L48	52	(Area) Aero MP3-05 (H)	40.25 - 42.83	1.0000	1.0000
L48	53	(Area) Aero MP3-05 (H)	40.25 - 42.83	1.0000	1.0000
L48	54	(Area) Aero MP3-05 (H)	40.25 - 42.83	1.0000	1.0000
L48	62	(Area) Aero MP3-05 (H)	37.83 - 42.83	1.0000	1.0000
L48	63	(Area) Aero MP3-05 (H)	37.83 - 42.83	1.0000	1.0000
L48	64	(Area) Aero MP3-05 (H)	37.83 - 42.83	1.0000	1.0000
L49	13	LDF5-50A(7/8")	32.83 - 37.83	1.0000	1.0000
L49	30	(Area) CCI-65FP-060100 (H)	32.83 - 37.83	1.0000	1.0000
L49	31	(Area) CCI-65FP-060100 (H)	32.83 - 37.83	1.0000	1.0000
L49	62	(Area) Aero MP3-05 (H)	32.83 - 37.83	1.0000	1.0000
L49	63	(Area) Aero MP3-05 (H)	32.83 - 37.83	1.0000	1.0000
L49	64	(Area) Aero MP3-05 (H)	32.83 - 37.83	1.0000	1.0000
L50	13	LDF5-50A(7/8")	29.25 - 32.83	1.0000	1.0000
L50	29	(Area) CCI-65FP-065125 (H)	29.25 - 30.50	1.0000	1.0000
L50	30	(Area) CCI-65FP-060100 (H)	29.25 - 32.83	1.0000	1.0000
L50	31	(Area) CCI-65FP-060100 (H)	29.25 - 32.83	1.0000	1.0000
L50	62	(Area) Aero MP3-05 (H)	29.25 - 32.83	1.0000	1.0000
L50	63	(Area) Aero MP3-05 (H)	29.25 - 32.83	1.0000	1.0000
L50	64	(Area) Aero MP3-05 (H)	29.25 - 32.83	1.0000	1.0000
L51	13	LDF5-50A(7/8")	29.00 - 29.25	1.0000	1.0000
L51	29	(Area) CCI-65FP-065125 (H)	29.00 - 29.25	1.0000	1.0000
L51	30	(Area) CCI-65FP-060100 (H)	29.00 - 29.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L51	31	(Area) CCI-65FP-060100 (H)	29.00 - 29.25	1.0000	1.0000
L51	62	(Area) Aero MP3-05 (H)	29.00 - 29.25	1.0000	1.0000
L51	63	(Area) Aero MP3-05 (H)	29.00 - 29.25	1.0000	1.0000
L51	64	(Area) Aero MP3-05 (H)	29.00 - 29.25	1.0000	1.0000
L52	13	LDF5-50A(7/8")	27.75 - 29.00	1.0000	1.0000
L52	29	(Area) CCI-65FP-065125 (H)	27.75 - 29.00	1.0000	1.0000
L52	30	(Area) CCI-65FP-060100 (H)	27.75 - 29.00	1.0000	1.0000
L52	31	(Area) CCI-65FP-060100 (H)	27.75 - 29.00	1.0000	1.0000
L52	62	(Area) Aero MP3-05 (H)	27.75 - 29.00	1.0000	1.0000
L52	63	(Area) Aero MP3-05 (H)	27.75 - 29.00	1.0000	1.0000
L52	64	(Area) Aero MP3-05 (H)	27.75 - 29.00	1.0000	1.0000
L53	13	LDF5-50A(7/8")	27.50 - 27.75	1.0000	1.0000
L53	29	(Area) CCI-65FP-065125 (H)	27.50 - 27.75	1.0000	1.0000
L53	30	(Area) CCI-65FP-060100 (H)	27.50 - 27.75	1.0000	1.0000
L53	31	(Area) CCI-65FP-060100 (H)	27.50 - 27.75	1.0000	1.0000
L53	62	(Area) Aero MP3-05 (H)	27.50 - 27.75	1.0000	1.0000
L53	63	(Area) Aero MP3-05 (H)	27.50 - 27.75	1.0000	1.0000
L53	64	(Area) Aero MP3-05 (H)	27.50 - 27.75	1.0000	1.0000
L54	13	LDF5-50A(7/8")	24.08 - 27.50	1.0000	1.0000
L54	29	(Area) CCI-65FP-065125 (H)	24.08 - 27.50	1.0000	1.0000
L54	30	(Area) CCI-65FP-060100 (H)	24.08 - 27.50	1.0000	1.0000
L54	31	(Area) CCI-65FP-060100 (H)	24.08 - 27.50	1.0000	1.0000
L54	40	(Area) Aero MP3-05 (H)	24.08 - 26.50	1.0000	1.0000
L54	62	(Area) Aero MP3-05 (H)	24.08 - 27.50	1.0000	1.0000
L54	63	(Area) Aero MP3-05 (H)	24.08 - 27.50	1.0000	1.0000
L54	64	(Area) Aero MP3-05 (H)	24.08 - 27.50	1.0000	1.0000
L55	13	LDF5-50A(7/8")	23.83 - 24.08	1.0000	1.0000
L55	29	(Area) CCI-65FP-065125 (H)	23.83 - 24.08	1.0000	1.0000
L55	30	(Area) CCI-65FP-060100 (H)	23.83 - 24.08	1.0000	1.0000
L55	31	(Area) CCI-65FP-060100 (H)	23.83 - 24.08	1.0000	1.0000
L55	40	(Area) Aero MP3-05 (H)	23.83 - 24.08	1.0000	1.0000
L55	62	(Area) Aero MP3-05 (H)	23.83 - 24.08	1.0000	1.0000
L55	63	(Area) Aero MP3-05 (H)	23.83 - 24.08	1.0000	1.0000
L55	64	(Area) Aero MP3-05 (H)	23.83 - 24.08	1.0000	1.0000
L56	13	LDF5-50A(7/8")	23.50 - 23.83	1.0000	1.0000
L56	29	(Area) CCI-65FP-065125 (H)	23.50 - 23.83	1.0000	1.0000
L56	30	(Area) CCI-65FP-060100 (H)	23.50 - 23.83	1.0000	1.0000
L56	31	(Area) CCI-65FP-060100 (H)	23.50 - 23.83	1.0000	1.0000
L56	40	(Area) Aero MP3-05 (H)	23.50 - 23.83	1.0000	1.0000
L56	62	(Area) Aero MP3-05 (H)	23.50 - 23.83	1.0000	1.0000
L56	63	(Area) Aero MP3-05 (H)	23.50 - 23.83	1.0000	1.0000
L56	64	(Area) Aero MP3-05 (H)	23.50 - 23.83	1.0000	1.0000
L57	13	LDF5-50A(7/8")	23.25 - 23.50	1.0000	1.0000
L57	29	(Area) CCI-65FP-065125 (H)	23.25 - 23.50	1.0000	1.0000
L57	30	(Area) CCI-65FP-060100 (H)	23.25 - 23.50	1.0000	1.0000
L57	31	(Area) CCI-65FP-060100 (H)	23.25 - 23.50	1.0000	1.0000
L57	40	(Area) Aero MP3-05 (H)	23.25 - 23.50	1.0000	1.0000
L57	62	(Area) Aero MP3-05 (H)	23.25 - 23.50	1.0000	1.0000
L57	63	(Area) Aero MP3-05 (H)	23.25 - 23.50	1.0000	1.0000
L57	64	(Area) Aero MP3-05 (H)	23.25 - 23.50	1.0000	1.0000
L58	13	LDF5-50A(7/8")	18.92 - 23.25	1.0000	1.0000
L58	29	(Area) CCI-65FP-065125 (H)	18.92 - 23.25	1.0000	1.0000
L58	30	(Area) CCI-65FP-060100 (H)	21.50 - 23.25	1.0000	1.0000
L58	31	(Area) CCI-65FP-060100 (H)	21.50 - 23.25	1.0000	1.0000
L58	40	(Area) Aero MP3-05 (H)	18.92 - 23.25	1.0000	1.0000
L58	60	(Area) Aero MP3-05 (H)	18.92 - 20.50	1.0000	1.0000
L58	61	(Area) Aero MP3-05 (H)	18.92 - 20.50	1.0000	1.0000
L58	62	(Area) Aero MP3-05 (H)	18.92 - 23.25	1.0000	1.0000
L58	63	(Area) Aero MP3-05 (H)	18.92 - 23.25	1.0000	1.0000
L58	64	(Area) Aero MP3-05 (H)	18.92 - 23.25	1.0000	1.0000
L59	13	LDF5-50A(7/8")	18.67 - 18.92	1.0000	1.0000
L59	29	(Area) CCI-65FP-065125 (H)	18.67 - 18.92	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L59	40	(Area) Aero MP3-05 (H)	18.67 - 18.92	1.0000	1.0000
L59	60	(Area) Aero MP3-05 (H)	18.67 - 18.92	1.0000	1.0000
L59	61	(Area) Aero MP3-05 (H)	18.67 - 18.92	1.0000	1.0000
L59	62	(Area) Aero MP3-05 (H)	18.67 - 18.92	1.0000	1.0000
L59	63	(Area) Aero MP3-05 (H)	18.67 - 18.92	1.0000	1.0000
L59	64	(Area) Aero MP3-05 (H)	18.67 - 18.92	1.0000	1.0000
L60	13	LDF5-50A(7/8")	18.08 - 18.67	1.0000	1.0000
L60	29	(Area) CCI-65FP-065125 (H)	18.08 - 18.67	1.0000	1.0000
L60	40	(Area) Aero MP3-05 (H)	18.08 - 18.67	1.0000	1.0000
L60	60	(Area) Aero MP3-05 (H)	18.08 - 18.67	1.0000	1.0000
L60	61	(Area) Aero MP3-05 (H)	18.08 - 18.67	1.0000	1.0000
L60	62	(Area) Aero MP3-05 (H)	18.08 - 18.67	1.0000	1.0000
L60	63	(Area) Aero MP3-05 (H)	18.08 - 18.67	1.0000	1.0000
L60	64	(Area) Aero MP3-05 (H)	18.08 - 18.67	1.0000	1.0000
L61	13	LDF5-50A(7/8")	17.83 - 18.08	1.0000	1.0000
L61	29	(Area) CCI-65FP-065125 (H)	17.83 - 18.08	1.0000	1.0000
L61	40	(Area) Aero MP3-05 (H)	17.83 - 18.08	1.0000	1.0000
L61	60	(Area) Aero MP3-05 (H)	17.83 - 18.08	1.0000	1.0000
L61	61	(Area) Aero MP3-05 (H)	17.83 - 18.08	1.0000	1.0000
L61	62	(Area) Aero MP3-05 (H)	17.83 - 18.08	1.0000	1.0000
L61	63	(Area) Aero MP3-05 (H)	17.83 - 18.08	1.0000	1.0000
L61	64	(Area) Aero MP3-05 (H)	17.83 - 18.08	1.0000	1.0000
L62	13	LDF5-50A(7/8")	14.08 - 17.83	1.0000	1.0000
L62	29	(Area) CCI-65FP-065125 (H)	14.08 - 17.83	1.0000	1.0000
L62	40	(Area) Aero MP3-05 (H)	16.50 - 17.83	1.0000	1.0000
L62	60	(Area) Aero MP3-05 (H)	14.08 - 17.83	1.0000	1.0000
L62	61	(Area) Aero MP3-05 (H)	14.08 - 17.83	1.0000	1.0000
L62	62	(Area) Aero MP3-05 (H)	14.08 - 17.83	1.0000	1.0000
L62	63	(Area) Aero MP3-05 (H)	14.08 - 17.83	1.0000	1.0000
L62	64	(Area) Aero MP3-05 (H)	14.08 - 17.83	1.0000	1.0000
L63	13	LDF5-50A(7/8")	13.83 - 14.08	1.0000	1.0000
L63	29	(Area) CCI-65FP-065125 (H)	13.83 - 14.08	1.0000	1.0000
L63	60	(Area) Aero MP3-05 (H)	13.83 - 14.08	1.0000	1.0000
L63	61	(Area) Aero MP3-05 (H)	13.83 - 14.08	1.0000	1.0000
L63	62	(Area) Aero MP3-05 (H)	13.83 - 14.08	1.0000	1.0000
L63	63	(Area) Aero MP3-05 (H)	13.83 - 14.08	1.0000	1.0000
L63	64	(Area) Aero MP3-05 (H)	13.83 - 14.08	1.0000	1.0000
L64	13	LDF5-50A(7/8")	8.83 - 13.83	1.0000	1.0000
L64	29	(Area) CCI-65FP-065125 (H)	8.83 - 13.83	1.0000	1.0000
L64	60	(Area) Aero MP3-05 (H)	8.83 - 13.83	1.0000	1.0000
L64	61	(Area) Aero MP3-05 (H)	8.83 - 13.83	1.0000	1.0000
L64	62	(Area) Aero MP3-05 (H)	8.83 - 13.83	1.0000	1.0000
L64	63	(Area) Aero MP3-05 (H)	8.83 - 13.83	1.0000	1.0000
L64	64	(Area) Aero MP3-05 (H)	11.67 - 13.83	1.0000	1.0000
L65	13	LDF5-50A(7/8")	3.83 - 8.83	1.0000	1.0000
L65	29	(Area) CCI-65FP-065125 (H)	3.83 - 8.83	1.0000	1.0000
L65	60	(Area) Aero MP3-05 (H)	3.83 - 8.83	1.0000	1.0000
L65	61	(Area) Aero MP3-05 (H)	3.83 - 8.83	1.0000	1.0000
L65	62	(Area) Aero MP3-05 (H)	3.83 - 8.83	1.0000	1.0000
L65	63	(Area) Aero MP3-05 (H)	3.83 - 8.83	1.0000	1.0000
L66	13	LDF5-50A(7/8")	0.00 - 3.83	1.0000	1.0000
L66	29	(Area) CCI-65FP-065125 (H)	0.50 - 3.83	1.0000	1.0000
L66	60	(Area) Aero MP3-05 (H)	0.50 - 3.83	1.0000	1.0000
L66	61	(Area) Aero MP3-05 (H)	0.50 - 3.83	1.0000	1.0000
L66	62	(Area) Aero MP3-05 (H)	0.50 - 3.83	1.0000	1.0000
L66	63	(Area) Aero MP3-05 (H)	0.50 - 3.83	1.0000	1.0000

Discrete Tower Loads

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 lb
***									
139									
APXV9ERR18-C-A20	A	From Centroid-Face	4.00 0.00 1.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.66 5.12 5.60 6.58	3.11 3.55 4.00 4.94	70 121 180 315
APXV9ERR18-C-A20	B	From Centroid-Face	4.00 0.00 1.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.66 5.12 5.60 6.58	3.11 3.55 4.00 4.94	70 121 180 315
APXV9ERR18-C-A20	C	From Centroid-Face	4.00 0.00 1.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.66 5.12 5.60 6.58	3.11 3.55 4.00 4.94	70 121 180 315
APXVTM14-C-120	A	From Centroid-Face	4.00 0.00 1.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.34 6.72 7.10 7.88	3.61 3.97 4.33 5.07	56 96 140 245
APXVTM14-C-120	B	From Centroid-Face	4.00 0.00 1.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.34 6.72 7.10 7.88	3.61 3.97 4.33 5.07	56 96 140 245
APXVTM14-C-120	C	From Centroid-Face	4.00 0.00 1.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.34 6.72 7.10 7.88	3.61 3.97 4.33 5.07	56 96 140 245
TD-RRH8x20-25	A	From Centroid-Face	4.00 0.00 1.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.70 3.95 4.20 4.72	1.29 1.46 1.64 2.02	66 90 117 183
TD-RRH8x20-25	B	From Centroid-Face	4.00 0.00 1.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.70 3.95 4.20 4.72	1.29 1.46 1.64 2.02	66 90 117 183
TD-RRH8x20-25	C	From Centroid-Face	4.00 0.00 1.00	0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	3.70 3.95 4.20 4.72	1.29 1.46 1.64 2.02	66 90 117 183
Platform Mount [LP 1201-1_HR-3]	C	None		0.0000	139.00	No Ice 1/2" Ice 1" Ice 2" Ice	29.96 36.80 43.24 55.52	29.96 36.80 43.24 55.52	2619 3384 4275 6430
137									
800MHz 2X50W RRH W/FILTER	A	From Face	1.00 0.00 3.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.06 2.24 2.43 2.83	1.93 2.11 2.29 2.68	64 86 111 172
800MHz 2X50W RRH W/FILTER	B	From Face	1.00 0.00 3.00	0.0000	137.00	No Ice 1/2" Ice 1" Ice 2" Ice	2.06 2.24 2.43 2.83	1.93 2.11 2.29 2.68	64 86 111 172
800MHz 2X50W RRH	C	From Face	1.00	0.0000	137.00	No Ice	2.06	1.93	64

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 lb
W/FILTER			0.00			1/2" Ice	2.24	2.11	86
			3.00			1" Ice	2.43	2.29	111
						2" Ice	2.83	2.68	172
PCS 1900MHz	A	From Face	1.00	0.0000	137.00	No Ice	2.32	2.24	60
4x45W-65MHz			0.00			1/2" Ice	2.53	2.44	83
			0.00			1" Ice	2.74	2.65	110
						2" Ice	3.19	3.09	173
PCS 1900MHz	B	From Face	1.00	0.0000	137.00	No Ice	2.32	2.24	60
4x45W-65MHz			0.00			1/2" Ice	2.53	2.44	83
			0.00			1" Ice	2.74	2.65	110
						2" Ice	3.19	3.09	173
PCS 1900MHz	C	From Face	1.00	0.0000	137.00	No Ice	2.32	2.24	60
4x45W-65MHz			0.00			1/2" Ice	2.53	2.44	83
			0.00			1" Ice	2.74	2.65	110
						2" Ice	3.19	3.09	173
Pipe Mount [PM 601-3]	C	None		0.0000	137.00	No Ice	3.17	3.17	195
						1/2" Ice	3.79	3.79	232
						1" Ice	4.42	4.42	279
						2" Ice	5.76	5.76	401
130									
RRUS 11	A	From Face	1.00	0.0000	130.00	No Ice	2.79	1.19	51
			0.00			1/2" Ice	3.00	1.34	72
			0.00			1" Ice	3.21	1.50	95
						2" Ice	3.67	1.84	153
RRUS 11	B	From Face	1.00	0.0000	130.00	No Ice	2.79	1.19	51
			0.00			1/2" Ice	3.00	1.34	72
			0.00			1" Ice	3.21	1.50	95
						2" Ice	3.67	1.84	153
RRUS 11	C	From Face	1.00	0.0000	130.00	No Ice	2.79	1.19	51
			0.00			1/2" Ice	3.00	1.34	72
			0.00			1" Ice	3.21	1.50	95
						2" Ice	3.67	1.84	153
RRUS 32 B2	A	From Face	1.00	0.0000	130.00	No Ice	2.73	1.67	53
			0.00			1/2" Ice	2.95	1.86	74
			0.00			1" Ice	3.18	2.05	98
						2" Ice	3.66	2.46	157
RRUS 32 B2	B	From Face	1.00	0.0000	130.00	No Ice	2.73	1.67	53
			0.00			1/2" Ice	2.95	1.86	74
			0.00			1" Ice	3.18	2.05	98
						2" Ice	3.66	2.46	157
RRUS 32 B2	C	From Face	1.00	0.0000	130.00	No Ice	2.73	1.67	53
			0.00			1/2" Ice	2.95	1.86	74
			0.00			1" Ice	3.18	2.05	98
						2" Ice	3.66	2.46	157
Pipe Mount [PM 601-3]	C	None		0.0000	130.00	No Ice	3.17	3.17	195
						1/2" Ice	3.79	3.79	232
						1" Ice	4.42	4.42	279
						2" Ice	5.76	5.76	401
128									
7770.00 w/ Mount Pipe	A	From Face	4.00	0.0000	128.00	No Ice	5.75	4.25	55
			0.00			1/2" Ice	6.18	5.01	103
			2.00			1" Ice	6.61	5.71	157
						2" Ice	7.49	7.16	287
7770.00 w/ Mount Pipe	B	From Face	4.00	0.0000	128.00	No Ice	5.75	4.25	55
			0.00			1/2" Ice	6.18	5.01	103
			2.00			1" Ice	6.61	5.71	157
						2" Ice	7.49	7.16	287

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 lb
7770.00 w/ Mount Pipe	C	From Face	4.00	0.0000	128.00	No Ice	5.75	4.25	55
			0.00			1/2" Ice	6.18	5.01	103
			2.00			1" Ice	6.61	5.71	157
						2" Ice	7.49	7.16	287
EPBQ-654L8H8-L2 w/ Mount Pipe	A	From Face	4.00	0.0000	128.00	No Ice	14.86	6.25	119
			0.00			1/2" Ice	15.72	7.02	228
			2.00			1" Ice	16.59	7.80	351
						2" Ice	18.38	9.41	642
EPBQ-654L8H8-L2 w/ Mount Pipe	B	From Face	4.00	0.0000	128.00	No Ice	14.86	6.25	119
			0.00			1/2" Ice	15.72	7.02	228
			2.00			1" Ice	16.59	7.80	351
						2" Ice	18.38	9.41	642
EPBQ-654L8H8-L2 w/ Mount Pipe	C	From Face	4.00	0.0000	128.00	No Ice	14.86	6.25	119
			0.00			1/2" Ice	15.72	7.02	228
			2.00			1" Ice	16.59	7.80	351
						2" Ice	18.38	9.41	642
HPA-65R-BUU-H6 w/ Mount Pipe	A	From Face	4.00	0.0000	128.00	No Ice	9.22	6.25	74
			0.00			1/2" Ice	9.98	6.96	143
			2.00			1" Ice	10.76	7.70	224
						2" Ice	12.36	9.22	420
HPA-65R-BUU-H8 w/ Mount Pipe	B	From Face	4.00	0.0000	128.00	No Ice	12.25	8.33	105
			0.00			1/2" Ice	13.19	9.23	194
			2.00			1" Ice	14.16	10.15	297
						2" Ice	16.14	12.05	543
HPA-65R-BUU-H6 w/ Mount Pipe	C	From Face	4.00	0.0000	128.00	No Ice	9.22	6.25	74
			0.00			1/2" Ice	9.98	6.96	143
			2.00			1" Ice	10.76	7.70	224
						2" Ice	12.36	9.22	420
(2) LGP21401	A	From Face	4.00	0.0000	128.00	No Ice	1.10	0.21	14
			0.00			1/2" Ice	1.24	0.27	21
			2.00			1" Ice	1.38	0.35	30
						2" Ice	1.69	0.52	55
(2) LGP21401	B	From Face	4.00	0.0000	128.00	No Ice	1.10	0.21	14
			0.00			1/2" Ice	1.24	0.27	21
			2.00			1" Ice	1.38	0.35	30
						2" Ice	1.69	0.52	55
(2) LGP21401	C	From Face	4.00	0.0000	128.00	No Ice	1.10	0.21	14
			0.00			1/2" Ice	1.24	0.27	21
			2.00			1" Ice	1.38	0.35	30
						2" Ice	1.69	0.52	55
RRUS 4478 B5	A	From Face	4.00	0.0000	128.00	No Ice	1.84	1.06	60
			0.00			1/2" Ice	2.01	1.20	76
			2.00			1" Ice	2.19	1.34	94
						2" Ice	2.57	1.66	140
RRUS 4478 B5	B	From Face	4.00	0.0000	128.00	No Ice	1.84	1.06	60
			0.00			1/2" Ice	2.01	1.20	76
			2.00			1" Ice	2.19	1.34	94
						2" Ice	2.57	1.66	140
RRUS 4478 B5	C	From Face	4.00	0.0000	128.00	No Ice	1.84	1.06	60
			0.00			1/2" Ice	2.01	1.20	76
			2.00			1" Ice	2.19	1.34	94
						2" Ice	2.57	1.66	140
RRUS 4426 B66	A	From Face	4.00	0.0000	128.00	No Ice	1.64	0.73	48
			0.00			1/2" Ice	1.80	0.84	61
			2.00			1" Ice	1.97	0.97	76
						2" Ice	2.33	1.24	115
RRUS 4426 B66	B	From Face	4.00	0.0000	128.00	No Ice	1.64	0.73	48

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 lb
			0.00				1/2" Ice	1.80	0.84	61
			2.00				1" Ice	1.97	0.97	76
							2" Ice	2.33	1.24	115
RRUS 4426 B66	C	From Face	4.00		0.0000	128.00	No Ice	1.64	0.73	48
			0.00				1/2" Ice	1.80	0.84	61
			2.00				1" Ice	1.97	0.97	76
							2" Ice	2.33	1.24	115
RRUS 32 B30	A	From Face	4.00		0.0000	128.00	No Ice	2.74	1.67	53
			0.00				1/2" Ice	2.96	1.86	74
			2.00				1" Ice	3.19	2.05	98
							2" Ice	3.68	2.46	157
RRUS 32 B30	B	From Face	4.00		0.0000	128.00	No Ice	2.74	1.67	53
			0.00				1/2" Ice	2.96	1.86	74
			2.00				1" Ice	3.19	2.05	98
							2" Ice	3.68	2.46	157
RRUS 32 B30	C	From Face	4.00		0.0000	128.00	No Ice	2.74	1.67	53
			0.00				1/2" Ice	2.96	1.86	74
			2.00				1" Ice	3.19	2.05	98
							2" Ice	3.68	2.46	157
DC6-48-60-18-8C	A	From Face	4.00		0.0000	128.00	No Ice	1.14	1.14	26
			0.00				1/2" Ice	1.79	1.79	47
			2.00				1" Ice	2.00	2.00	70
							2" Ice	2.45	2.45	125
DC6-48-60-18-8F	B	From Face	4.00		0.0000	128.00	No Ice	1.21	1.21	33
			0.00				1/2" Ice	1.89	1.89	55
			2.00				1" Ice	2.11	2.11	80
							2" Ice	2.57	2.57	138
DC6-48-60-18-8C	C	From Face	4.00		0.0000	128.00	No Ice	1.14	1.14	26
			0.00				1/2" Ice	1.79	1.79	47
			2.00				1" Ice	2.00	2.00	70
							2" Ice	2.45	2.45	125
T-Arm Mount [TA 602-3]	C	None			0.0000	128.00	No Ice	13.40	13.40	774
							1/2" Ice	16.44	16.44	1004
							1" Ice	19.70	19.70	1292
							2" Ice	25.86	25.86	2053
(2) 2.4" x 12' Stabilizer	A	From Face	2.00		0.0000	128.00	No Ice	2.88	2.88	44
			0.00				1/2" Ice	4.11	4.11	65
			0.00				1" Ice	5.35	5.35	95
							2" Ice	7.62	7.62	177
(2) 2.4" x 12' Stabilizer	B	From Face	2.00		0.0000	128.00	No Ice	2.88	2.88	44
			0.00				1/2" Ice	4.11	4.11	65
			0.00				1" Ice	5.35	5.35	95
							2" Ice	7.62	7.62	177
(2) 2.4" x 12' Stabilizer	C	From Face	2.00		0.0000	128.00	No Ice	2.88	2.88	44
			0.00				1/2" Ice	4.11	4.11	65
			0.00				1" Ice	5.35	5.35	95
							2" Ice	7.62	7.62	177
110										
DB-T1-6Z-8AB-0Z	B	From Face	1.00		0.0000	110.00	No Ice	4.80	2.00	44
			0.00				1/2" Ice	5.07	2.19	80
			0.00				1" Ice	5.35	2.39	120
							2" Ice	5.93	2.81	213
108										
CBRS w/ Mount Pipe	A	From Centroid-Face	4.00		0.0000	108.00	No Ice	1.71	1.17	32
			0.00				1/2" Ice	1.93	1.44	50
			1.00				1" Ice	2.17	1.72	72
							2" Ice	2.66	2.35	127

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 lb
CBRS w/ Mount Pipe	B	From Centroid-Face	4.00 0.00 1.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.71 1.93 2.17 2.66	1.17 1.44 1.72 2.35	32 50 72 127
CBRS w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 1.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.71 1.93 2.17 2.66	1.17 1.44 1.72 2.35	32 50 72 127
(2) SBNHH-1D65B w/ Mount Pipe	A	From Centroid-Face	4.00 0.00 1.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.09 4.49 4.89 5.72	3.30 3.68 4.07 4.87	66 130 204 386
SBNHH-1D65B w/ Mount Pipe	B	From Centroid-Face	4.00 0.00 1.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.09 4.49 4.89 5.72	3.30 3.68 4.07 4.87	66 130 204 386
SBNHH-1D65B w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 1.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.09 4.49 4.89 5.72	3.30 3.68 4.07 4.87	66 130 204 386
BXA-70063-4CF-EDIN-X w/ Mount Pipe	A	From Centroid-Face	4.00 0.00 1.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.95 5.32 5.71 6.51	3.69 4.29 4.91 6.18	28 70 118 235
BXA-70063-4CF-EDIN-X w/ Mount Pipe	B	From Centroid-Face	4.00 0.00 1.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.95 5.32 5.71 6.51	3.69 4.29 4.91 6.18	28 70 118 235
BXA-70063-4CF-EDIN-X w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 1.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	4.95 5.32 5.71 6.51	3.69 4.29 4.91 6.18	28 70 118 235
(2) RFV01U-D1A	B	From Centroid-Face	4.00 0.00 1.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.25 1.39 1.54 1.86	84 103 124 175
RFV01U-D1A	C	From Centroid-Face	4.00 0.00 1.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.25 1.39 1.54 1.86	84 103 124 175
20W CBRS	A	From Centroid-Face	4.00 0.00 1.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.86 0.98 1.10 1.37	0.42 0.51 0.61 0.83	19 26 34 58
20W CBRS	B	From Centroid-Face	4.00 0.00 1.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.86 0.98 1.10 1.37	0.42 0.51 0.61 0.83	19 26 34 58
20W CBRS	C	From Centroid-Face	4.00 0.00 1.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.86 0.98 1.10 1.37	0.42 0.51 0.61 0.83	19 26 34 58
(2) RFV01U-D2A	B	From Centroid-Face	4.00 0.00 1.00	0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	1.88 2.05 2.22 2.60	1.01 1.14 1.28 1.59	70 87 106 153
RFV01U-D2A	C	From	4.00	0.0000	108.00	No Ice	1.88	1.01	70

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 lb
		Centroid-Face	0.00 1.00			1/2" Ice 1" Ice 2" Ice	2.05 2.22 2.60	1.14 1.28 1.59	87 106 153
Platform Mount [LP 304-1_KCKR]	C	None		0.0000	108.00	No Ice 1/2" Ice 1" Ice 2" Ice	28.71 35.59 42.67 57.41	28.71 35.59 42.67 57.41	1624 2126 2729 4249
100									
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	A	From Face	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.33 6.78 7.21 8.12	5.64 6.43 7.13 8.59	112 169 233 383
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	B	From Face	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.33 6.78 7.21 8.12	5.64 6.43 7.13 8.59	112 169 233 383
ERICSSON AIR 21 B2A B4P w/ Mount Pipe	C	From Face	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.33 6.78 7.21 8.12	5.64 6.43 7.13 8.59	112 169 233 383
APXVAARR24_43-U-NA20 w/ Mount Pipe	A	From Face	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	186 315 458 788
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Face	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	186 315 458 788
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Face	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	14.69 15.46 16.23 17.82	6.87 7.55 8.25 9.67	186 315 458 788
AIR 32 B2A/B66AA w/ Mount Pipe	A	From Face	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.75 7.20 7.65 8.57	6.07 6.87 7.58 9.06	153 214 282 441
AIR 32 B2A/B66AA w/ Mount Pipe	B	From Face	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.75 7.20 7.65 8.57	6.07 6.87 7.58 9.06	153 214 282 441
AIR 32 B2A/B66AA w/ Mount Pipe	C	From Face	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	6.75 7.20 7.65 8.57	6.07 6.87 7.58 9.06	153 214 282 441
KRY 112 144/1	A	From Face	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.16 0.22 0.28 0.44	11 14 18 32
KRY 112 144/1	B	From Leg	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.16 0.22 0.28 0.44	11 14 18 32
KRY 112 144/1	C	From Face	4.00 0.00 0.00	0.0000	100.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.35 0.43 0.51 0.70	0.16 0.22 0.28 0.44	11 14 18 32
RADIO 4449 B12/B71	A	From Face	4.00	0.0000	100.00	No Ice	1.64	1.15	74

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 lb
			0.00			1/2" Ice	1.80	1.29	90
			0.00			1" Ice	1.97	1.44	109
						2" Ice	2.33	1.75	155
RADIO 4449 B12/B71	B	From Face	4.00	0.0000	100.00	No Ice	1.64	1.15	74
			0.00			1/2" Ice	1.80	1.29	90
			0.00			1" Ice	1.97	1.44	109
						2" Ice	2.33	1.75	155
RADIO 4449 B12/B71	C	From Face	4.00	0.0000	100.00	No Ice	1.64	1.15	74
			0.00			1/2" Ice	1.80	1.29	90
			0.00			1" Ice	1.97	1.44	109
						2" Ice	2.33	1.75	155
T-Arm Mount [TA 602-3]	C	None		0.0000	100.00	No Ice	13.40	13.40	774
						1/2" Ice	16.44	16.44	1004
						1" Ice	19.70	19.70	1292
						2" Ice	25.86	25.86	2053
70									
KS24019-L112A	A	From Face	3.00	0.0000	70.00	No Ice	0.08	0.08	5
			0.00			1/2" Ice	0.13	0.13	6
			2.00			1" Ice	0.19	0.19	8
						2" Ice	0.35	0.35	15
KS24019-L112A	C	From Face	3.00	0.0000	70.00	No Ice	0.08	0.08	5
			0.00			1/2" Ice	0.13	0.13	6
			2.00			1" Ice	0.19	0.19	8
						2" Ice	0.35	0.35	15
Side Arm Mount [SO 701-1]	A	From Face	1.50	0.0000	70.00	No Ice	0.85	1.67	65
			0.00			1/2" Ice	1.14	2.34	79
			0.00			1" Ice	1.43	3.01	93
						2" Ice	2.01	4.35	121
Side Arm Mount [SO 701-1]	C	From Face	1.50	0.0000	70.00	No Ice	0.85	1.67	65
			0.00			1/2" Ice	1.14	2.34	79
			0.00			1" Ice	1.43	3.01	93
						2" Ice	2.01	4.35	121
49									
KS24019-L112A	B	From Face	3.00	0.0000	49.00	No Ice	0.08	0.08	5
			0.00			1/2" Ice	0.13	0.13	6
			2.00			1" Ice	0.19	0.19	8
						2" Ice	0.35	0.35	15
Side Arm Mount [SO 701-1]	B	From Face	1.50	0.0000	49.00	No Ice	0.85	1.67	65
			0.00			1/2" Ice	1.14	2.34	79
			0.00			1" Ice	1.43	3.01	93
						2" Ice	2.01	4.35	121
***									
L 2-1/2x2-1/2x3/16 (36" Long)	A	From Leg	1.50	0.0000	6.00	No Ice	0.75	0.05	9
			0.00			1/2" Ice	0.97	0.08	17
			0.00			1" Ice	1.19	0.12	27
						2" Ice	1.66	0.22	57
L 2-1/2x2-1/2x3/16 (36" Long)	B	From Leg	1.50	0.0000	6.00	No Ice	0.75	0.05	9
			0.00			1/2" Ice	0.97	0.08	17
			0.00			1" Ice	1.19	0.12	27
						2" Ice	1.66	0.22	57
L 2-1/2x2-1/2x3/16 (36" Long)	C	From Leg	1.50	0.0000	6.00	No Ice	0.75	0.05	9
			0.00			1/2" Ice	0.97	0.08	17
			0.00			1" Ice	1.19	0.12	27
						2" Ice	1.66	0.22	57
L 2-1/2x2-1/2x3/16 (36" Long)	A	From Leg	1.50	0.0000	85.00	No Ice	0.75	0.05	9
			0.00			1/2" Ice	0.97	0.08	17
			0.00			1" Ice	1.19	0.12	27

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 lb
						2" Ice	1.66	0.22	57
L 2-1/2x2-1/2x3/16 (36" Long)	B	From Leg	1.50 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice	0.75 0.97 1.19	0.05 0.08 0.12	9 17 27
						2" Ice	1.66	0.22	57
L 2-1/2x2-1/2x3/16 (36" Long)	C	From Leg	1.50 0.00 0.00	0.0000	85.00	No Ice 1/2" Ice 1" Ice	0.75 0.97 1.19	0.05 0.08 0.12	9 17 27
						2" Ice	1.66	0.22	57
L 2-1/2x2-1/2x3/16 (36" Long)	A	From Leg	1.50 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice	0.75 0.97 1.19	0.05 0.08 0.12	9 17 27
						2" Ice	1.66	0.22	57
L 2-1/2x2-1/2x3/16 (36" Long)	B	From Leg	1.50 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice	0.75 0.97 1.19	0.05 0.08 0.12	9 17 27
						2" Ice	1.66	0.22	57
L 2-1/2x2-1/2x3/16 (36" Long)	C	From Leg	1.50 0.00 0.00	0.0000	135.00	No Ice 1/2" Ice 1" Ice	0.75 0.97 1.19	0.05 0.08 0.12	9 17 27
						2" Ice	1.66	0.22	57
***									

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

Comb. No.	Description
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 Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 135	19.751	41	1.3303	0.0019
L2	135 - 130	18.360	41	1.3259	0.0019
L3	130 - 125	16.978	41	1.3110	0.0019
L4	125 - 120	15.618	41	1.2834	0.0018
L5	120 - 115	14.297	41	1.2393	0.0016
L6	115 - 110	13.027	41	1.1835	0.0015
L7	110 - 105	11.821	41	1.1193	0.0013
L8	105 - 102	10.686	41	1.0475	0.0011
L9	102 - 101.75	10.042	41	1.0005	0.0010
L10	101.75 - 96.75	9.990	41	0.9979	0.0010
L11	96.75 - 91.75	8.974	41	0.9411	0.0008
L12	95 - 90.75	8.633	41	0.9201	0.0008
L13	90.75 - 85.75	7.827	41	0.8847	0.0007
L14	85.75 - 85.333	6.939	41	0.8119	0.0006
L15	85.333 - 85.083	6.868	41	0.8057	0.0006
L16	85.083 - 82.5	6.826	41	0.8033	0.0006
L17	82.5 - 82.25	6.399	41	0.7773	0.0005
L18	82.25 - 82	6.358	41	0.7748	0.0005
L19	82 - 81.75	6.317	41	0.7723	0.0005
L20	81.75 - 78.833	6.277	41	0.7695	0.0005
L21	78.833 - 78.583	5.817	41	0.7366	0.0005
L22	78.583 - 77.667	5.778	41	0.7343	0.0005
L23	77.667 - 77.417	5.638	41	0.7260	0.0005
L24	77.417 - 77.167	5.600	41	0.7234	0.0005
L25	77.167 - 72.167	5.563	41	0.7209	0.0005
L26	72.167 - 67.167	4.835	41	0.6685	0.0004
L27	67.167 - 66.583	4.163	41	0.6145	0.0003
L28	66.583 - 66.333	4.089	41	0.6083	0.0003
L29	66.333 - 66.167	4.057	41	0.6060	0.0003
L30	66.167 - 65.917	4.036	41	0.6045	0.0003

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L31	65.917 - 62.667	4.004	41	0.6017	0.0003
L32	62.667 - 62.417	3.607	41	0.5658	0.0003
L33	62.417 - 60	3.577	41	0.5630	0.0003
L34	60 - 59.75	3.299	41	0.5360	0.0003
L35	59.75 - 58.333	3.271	41	0.5332	0.0003
L36	58.333 - 58.083	3.115	41	0.5176	0.0003
L37	58.083 - 53.083	3.088	41	0.5148	0.0003
L38	53.083 - 52.833	2.579	41	0.4585	0.0002
L39	52.833 - 52.583	2.555	41	0.4557	0.0002
L40	52.583 - 51.417	2.531	41	0.4536	0.0002
L41	51.417 - 51.167	2.421	41	0.4440	0.0002
L42	51.167 - 46.5	2.398	41	0.4413	0.0002
L43	51 - 45.5	2.383	41	0.4394	0.0002
L44	45.5 - 44.25	1.894	41	0.4042	0.0002
L45	44.25 - 44	1.790	41	0.3910	0.0002
L46	44 - 43.083	1.770	41	0.3887	0.0002
L47	43.083 - 42.833	1.696	41	0.3801	0.0002
L48	42.833 - 37.833	1.676	41	0.3779	0.0002
L49	37.833 - 32.833	1.304	41	0.3336	0.0002
L50	32.833 - 29.25	0.977	41	0.2893	0.0001
L51	29.25 - 29	0.772	41	0.2573	0.0001
L52	29 - 27.75	0.759	41	0.2551	0.0001
L53	27.75 - 27.5	0.694	41	0.2442	0.0001
L54	27.5 - 24.083	0.681	41	0.2420	0.0001
L55	24.083 - 23.833	0.518	41	0.2120	0.0001
L56	23.833 - 23.5	0.507	41	0.2100	0.0001
L57	23.5 - 23.25	0.493	41	0.2074	0.0001
L58	23.25 - 18.917	0.482	41	0.2049	0.0001
L59	18.917 - 18.667	0.316	41	0.1609	0.0001
L60	18.667 - 18.083	0.308	41	0.1583	0.0001
L61	18.083 - 17.833	0.289	41	0.1524	0.0001
L62	17.833 - 14.083	0.281	41	0.1503	0.0001
L63	14.083 - 13.833	0.175	41	0.1191	0.0000
L64	13.833 - 8.833	0.169	41	0.1170	0.0000
L65	8.833 - 3.833	0.069	41	0.0745	0.0000
L66	3.833 - 0	0.013	41	0.0320	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
139.00	APXV9ERR18-C-A20	41	19.473	1.3298	0.0019	29325
137.00	800MHz 2X50W RRH W/FILTER	41	18.916	1.3285	0.0019	29325
135.00	L 2-1/2x2-1/2x3/16 (36" Long)	41	18.360	1.3259	0.0019	29325
130.00	RRUS 11	41	16.978	1.3110	0.0019	14086
128.00	7770.00 w/ Mount Pipe	41	16.431	1.3018	0.0019	10855
110.00	DB-T1-6Z-8AB-0Z	41	11.821	1.1193	0.0013	4228
108.00	CBRS w/ Mount Pipe	41	11.358	1.0927	0.0012	4030
100.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	41	9.628	0.9793	0.0009	4721
85.00	L 2-1/2x2-1/2x3/16 (36" Long)	41	6.812	0.8025	0.0006	4704
70.00	KS24019-L112A	41	4.537	0.6455	0.0004	5355
49.00	KS24019-L112A	41	2.200	0.4246	0.0002	8228
6.00	L 2-1/2x2-1/2x3/16 (36" Long)	41	0.031	0.0504	0.0000	6443

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	140 - 135	91.449	6	6.1700	0.0091
L2	135 - 130	85.016	6	6.1496	0.0091
L3	130 - 125	78.630	6	6.0798	0.0091
L4	125 - 120	72.342	6	5.9515	0.0085
L5	120 - 115	66.230	6	5.7466	0.0076
L6	115 - 110	60.361	6	5.4873	0.0068
L7	110 - 105	54.782	6	5.1888	0.0062
L8	105 - 102	49.530	6	4.8568	0.0051
L9	102 - 101.75	46.552	6	4.6403	0.0045
L10	101.75 - 96.75	46.310	6	4.6281	0.0044
L11	96.75 - 91.75	41.607	6	4.3659	0.0038
L12	95 - 90.75	40.027	6	4.2688	0.0036
L13	90.75 - 85.75	36.294	6	4.1046	0.0033
L14	85.75 - 85.333	32.176	6	3.7675	0.0027
L15	85.333 - 85.083	31.849	6	3.7389	0.0026
L16	85.083 - 82.5	31.654	6	3.7275	0.0026
L17	82.5 - 82.25	29.672	6	3.6074	0.0025
L18	82.25 - 82	29.484	6	3.5958	0.0024
L19	82 - 81.75	29.296	6	3.5842	0.0024
L20	81.75 - 78.833	29.109	6	3.5712	0.0024
L21	78.833 - 78.583	26.976	6	3.4183	0.0022
L22	78.583 - 77.667	26.797	6	3.4077	0.0022
L23	77.667 - 77.417	26.148	6	3.3691	0.0021
L24	77.417 - 77.167	25.972	6	3.3573	0.0021
L25	77.167 - 72.167	25.797	6	3.3455	0.0021
L26	72.167 - 67.167	22.423	6	3.1025	0.0018
L27	67.167 - 66.583	19.308	6	2.8521	0.0016
L28	66.583 - 66.333	18.961	6	2.8229	0.0016
L29	66.333 - 66.167	18.814	6	2.8123	0.0016
L30	66.167 - 65.917	18.716	6	2.8052	0.0016
L31	65.917 - 62.667	18.570	6	2.7924	0.0015
L32	62.667 - 62.417	16.727	6	2.6254	0.0014
L33	62.417 - 60	16.590	6	2.6126	0.0014
L34	60 - 59.75	15.300	6	2.4871	0.0013
L35	59.75 - 58.333	15.170	6	2.4743	0.0013
L36	58.333 - 58.083	14.447	6	2.4018	0.0013
L37	58.083 - 53.083	14.321	6	2.3887	0.0013
L38	53.083 - 52.833	11.958	6	2.1271	0.0011
L39	52.833 - 52.583	11.847	6	2.1141	0.0011
L40	52.583 - 51.417	11.737	6	2.1045	0.0011
L41	51.417 - 51.167	11.228	6	2.0601	0.0011
L42	51.167 - 46.5	11.121	6	2.0473	0.0010
L43	51 - 45.5	11.049	6	2.0387	0.0010
L44	45.5 - 44.25	8.784	6	1.8753	0.0009
L45	44.25 - 44	8.301	6	1.8140	0.0009
L46	44 - 43.083	8.206	6	1.8031	0.0009
L47	43.083 - 42.833	7.864	6	1.7633	0.0009
L48	42.833 - 37.833	7.772	6	1.7530	0.0009
L49	37.833 - 32.833	6.044	6	1.5477	0.0007
L50	32.833 - 29.25	4.532	6	1.3417	0.0006
L51	29.25 - 29	3.581	6	1.1934	0.0005
L52	29 - 27.75	3.519	6	1.1831	0.0005
L53	27.75 - 27.5	3.216	6	1.1323	0.0005
L54	27.5 - 24.083	3.157	6	1.1223	0.0005
L55	24.083 - 23.833	2.403	6	0.9833	0.0004
L56	23.833 - 23.5	2.352	6	0.9741	0.0004

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L57	23.5 - 23.25	2.285	6	0.9618	0.0004
L58	23.25 - 18.917	2.235	6	0.9502	0.0004
L59	18.917 - 18.667	1.465	6	0.7461	0.0003
L60	18.667 - 18.083	1.426	6	0.7342	0.0003
L61	18.083 - 17.833	1.338	6	0.7064	0.0003
L62	17.833 - 14.083	1.302	6	0.6969	0.0003
L63	14.083 - 13.833	0.811	6	0.5523	0.0002
L64	13.833 - 8.833	0.782	6	0.5423	0.0002
L65	8.833 - 3.833	0.318	6	0.3455	0.0001
L66	3.833 - 0	0.060	6	0.1485	0.0001

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
139.00	APXV9ERR18-C-A20	6	90.161	6.1679	0.0091	6402
137.00	800MHz 2X50W RRH W/FILTER	6	87.586	6.1617	0.0091	6402
135.00	L 2-1/2x2-1/2x3/16 (36" Long)	6	85.016	6.1496	0.0091	6402
130.00	RRUS 11	6	78.630	6.0798	0.0091	3082
128.00	7770.00 w/ Mount Pipe	6	76.099	6.0368	0.0089	2384
110.00	DB-T1-6Z-8AB-0Z	6	54.782	5.1888	0.0062	926
108.00	CBRS w/ Mount Pipe	6	52.640	5.0654	0.0058	885
100.00	ERICSSON AIR 21 B2A B4P w/ Mount Pipe	6	44.633	4.5421	0.0042	1037
85.00	L 2-1/2x2-1/2x3/16 (36" Long)	6	31.589	3.7240	0.0026	1025
70.00	KS24019-L112A	6	21.041	2.9957	0.0017	1161
49.00	KS24019-L112A	6	10.204	1.9699	0.0010	1777
6.00	L 2-1/2x2-1/2x3/16 (36" Long)	6	0.144	0.2337	0.0001	1390

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L1	140 - 135 (1)	TP17.0249x16x0.25	5.00	0.00	0.0	13.5038	-4397	729204	0.006
L2	135 - 130 (2)	TP18.0497x17.0249x0.25	5.00	0.00	0.0	14.3288	-4716	773755	0.006
L3	130 - 125 (3)	TP19.0746x18.0497x0.25	5.00	0.00	0.0	15.1538	-8098	818306	0.010
L4	125 - 120 (4)	TP20.0995x19.0746x0.25	5.00	0.00	0.0	15.9788	-8493	862857	0.010
L5	120 - 115 (5)	TP21.1244x20.0995x0.25	5.00	0.00	0.0	16.8039	-8916	907408	0.010
L6	115 - 110 (6)	TP22.1492x21.1244x0.25	5.00	0.00	0.0	17.6289	-9366	951959	0.010
L7	110 - 105 (7)	TP23.1741x22.1492x0.25	5.00	0.00	0.0	18.4539	-12781	996510	0.013
L8	105 - 102 (8)	TP23.789x23.1741x0.25	3.00	0.00	0.0	18.9489	-13114	1023240	0.013
L9	102 - 101.75 (9)	TP23.8403x23.789x0.3875	0.25	0.00	0.0	29.2632	-13156	1580210	0.008
L10	101.75 - 96.75 (10)	TP24.8651x23.8403x0.375	5.00	0.00	0.0	29.5718	-16524	1596880	0.010
L11	96.75 - 91.75 (11)	TP25.89x24.8651x0.375	5.00	0.00	0.0	30.0050	-16792	1620270	0.010

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L12	91.75 - 90.75 (12)	TP25.5952x24.7238x0.3563	4.25	0.00	0.0	28.9522	-17973	1693700	0.011
L13	90.75 - 85.75 (13)	TP26.6203x25.5952x0.3563	5.00	0.00	0.0	30.1281	-18971	1762500	0.011
L14	85.75 - 85.333 (14)	TP26.7058x26.6203x0.3563	0.42	0.00	0.0	30.2262	-19062	1768230	0.011
L15	85.333 - 85.083 (15)	TP26.757x26.7058x0.55	0.25	0.00	0.0	46.4127	-19120	2715140	0.007
L16	85.083 - 82.5 (16)	TP27.2866x26.757x0.5438	2.58	0.00	0.0	46.8234	-19712	2739170	0.007
L17	82.5 - 82.25 (17)	TP27.3379x27.2866x0.55	0.25	0.00	0.0	47.4413	-19788	2775320	0.007
L18	82.25 - 82 (18)	TP27.3891x27.3379x0.55	0.25	0.00	0.0	47.5321	-19856	2780630	0.007
L19	82 - 81.75 (19)	TP27.4404x27.3891x0.4875	0.25	0.00	0.0	42.3093	-19912	2475090	0.008
L20	81.75 - 78.833 (20)	TP28.0384x27.4404x0.4875	2.92	0.00	0.0	43.2481	-20560	2530010	0.008
L21	78.833 - 78.583 (21)	TP28.0897x28.0384x0.6125	0.25	0.00	0.0	54.1919	-20637	3170230	0.007
L22	78.583 - 77.667 (22)	TP28.2775x28.0897x0.6125	0.92	0.00	0.0	54.5623	-20871	3191890	0.007
L23	77.667 - 77.417 (23)	TP28.3287x28.2775x0.55	0.25	0.00	0.0	49.1962	-20936	2877980	0.007
L24	77.417 - 77.167 (24)	TP28.38x28.3287x0.55	0.25	0.00	0.0	49.2869	-20996	2883290	0.007
L25	77.167 - 72.167 (25)	TP29.4055x28.38x0.5375	5.00	0.00	0.0	49.9633	-22200	2922860	0.008
L26	72.167 - 67.167 (26)	TP30.4311x29.4055x0.525	5.00	0.00	0.0	50.5562	-23605	2957540	0.008
L27	67.167 - 66.583 (27)	TP30.5508x30.4311x0.525	0.58	0.00	0.0	50.7587	-23757	2969380	0.008
L28	66.583 - 66.333 (28)	TP30.6021x30.5508x0.625	0.25	0.00	0.0	60.3290	-23828	3529240	0.007
L29	66.333 - 66.167 (29)	TP30.6362x30.6021x0.625	0.17	0.00	0.0	60.3975	-23874	3533250	0.007
L30	66.167 - 65.917 (30)	TP30.6874x30.6362x0.5125	0.25	0.00	0.0	49.7962	-23933	2913080	0.008
L31	65.917 - 62.667 (31)	TP31.354x30.6874x0.5125	3.25	0.00	0.0	50.8963	-24707	2977430	0.008
L32	62.667 - 62.417 (32)	TP31.4053x31.354x0.5125	0.25	0.00	0.0	50.9809	-24777	2982380	0.008
L33	62.417 - 60 (33)	TP31.9011x31.4053x0.5063	2.42	0.00	0.0	51.1775	-25359	2993880	0.008
L34	60 - 59.75 (34)	TP31.9523x31.9011x0.5125	0.25	0.00	0.0	51.8836	-25436	3035190	0.008
L35	59.75 - 58.333 (35)	TP32.243x31.9523x0.5063	1.42	0.00	0.0	51.7348	-25809	3026490	0.009
L36	58.333 - 58.083 (36)	TP32.2943x32.243x0.5	0.25	0.00	0.0	51.1887	-25889	2994540	0.009
L37	58.083 - 53.083 (37)	TP33.3198x32.2943x0.5	5.00	0.00	0.0	52.8399	-27252	3091130	0.009
L38	53.083 - 52.833 (38)	TP33.3711x33.3198x0.5	0.25	0.00	0.0	52.9224	-27330	3095960	0.009
L39	52.833 - 52.583 (39)	TP33.4223x33.3711x0.6875	0.25	0.00	0.0	72.4667	-27416	4239300	0.006
L40	52.583 - 51.417 (40)	TP33.6615x33.4223x0.6875	1.17	0.00	0.0	72.9962	-27808	4270280	0.007
L41	51.417 - 51.167 (41)	TP33.7128x33.6615x0.5063	0.25	0.00	0.0	54.1308	-27884	3166650	0.009
L42	51.167 - 46.5 (42)	TP34.67x33.7128x0.5063	4.67	0.00	0.0	54.1866	-27932	3169920	0.009
L43	46.5 - 45.5 (43)	TP34.2498x33.122x0.55	5.50	0.00	0.0	59.6824	-30563	3491420	0.009

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u lb	ϕP_n lb	Ratio $\frac{P_u}{\phi P_n}$
L44	45.5 - 44.25 (44)	TP34.5062x34.2498x0.55	1.25	0.00	0.0	60.1364	-30918	3517980	0.009
L45	44.25 - 44 (45)	TP34.5574x34.5062x0.625	0.25	0.00	0.0	68.2890	-31018	3994910	0.008
L46	44 - 43.083 (46)	TP34.7455x34.5574x0.625	0.92	0.00	0.0	68.6674	-31339	4017050	0.008
L47	43.083 - 42.833 (47)	TP34.7967x34.7455x0.6625	0.25	0.00	0.0	72.8168	-31429	4259790	0.007
L48	42.833 - 37.833 (48)	TP35.822x34.7967x0.6625	5.00	0.00	0.0	75.0041	-33102	4387740	0.008
L49	37.833 - 32.833 (49)	TP36.8473x35.822x0.65	5.00	0.00	0.0	75.7610	-34811	4432020	0.008
L50	32.833 - 29.25 (50)	TP37.582x36.8473x0.6375	3.58	0.00	0.0	75.8379	-36054	4436520	0.008
L51	29.25 - 29 (51)	TP37.6333x37.582x0.6375	0.25	0.00	0.0	75.9431	-36150	4442670	0.008
L52	29 - 27.75 (52)	TP37.8896x37.6333x0.6375	1.25	0.00	0.0	76.4693	-36580	4473450	0.008
L53	27.75 - 27.5 (53)	TP37.9409x37.8896x0.65	0.25	0.00	0.0	78.0498	-36685	4565920	0.008
L54	27.5 - 24.083 (54)	TP38.6416x37.9409x0.6375	3.42	0.00	0.0	78.0129	-37997	4563750	0.008
L55	24.083 - 23.833 (55)	TP38.6928x38.6416x0.7	0.25	0.00	0.0	85.6359	-38108	5009700	0.008
L56	23.833 - 23.5 (56)	TP38.7611x38.6928x0.7	0.33	0.00	0.0	85.7898	-38244	5018700	0.008
L57	23.5 - 23.25 (57)	TP38.8124x38.7611x0.55	0.25	0.00	0.0	67.7627	-38336	3964120	0.010
L58	23.25 - 18.917 (58)	TP39.7009x38.8124x0.5375	4.33	0.00	0.0	67.7821	-39924	3965250	0.010
L59	18.917 - 18.667 (59)	TP39.7522x39.7009x0.525	0.25	0.00	0.0	66.3135	-40021	3879340	0.010
L60	18.667 - 18.083 (60)	TP39.8719x39.7522x0.525	0.58	0.00	0.0	66.5160	-40221	3891190	0.010
L61	18.083 - 17.833 (61)	TP39.9232x39.8719x0.6625	0.25	0.00	0.0	83.7529	-40324	4899540	0.008
L62	17.833 - 14.083 (62)	TP40.6922x39.9232x0.65	3.75	0.00	0.0	83.8082	-41791	4902780	0.009
L63	14.083 - 13.833 (63)	TP40.7434x40.6922x0.625	0.25	0.00	0.0	80.7383	-41894	4723190	0.009
L64	13.833 - 8.833 (64)	TP41.7687x40.7434x0.625	5.00	0.00	0.0	82.8017	-43769	4843900	0.009
L65	8.833 - 3.833 (65)	TP42.794x41.7687x0.6125	5.00	0.00	0.0	83.1925	-45712	4866760	0.009
L66	3.833 - 0 (66)	TP43.58x42.794x0.6125	3.83	0.00	0.0	84.7427	-47194	4957450	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	140 - 135 (1)	TP17.0249x16x0.25	15995	311838	0.051	0	311838	0.000
L2	135 - 130 (2)	TP18.0497x17.0249x0.25	36825	351403	0.105	0	351403	0.000
L3	130 - 125 (3)	TP19.0746x18.0497x0.25	82634	393330	0.210	0	393330	0.000
L4	125 - 120 (4)	TP20.0995x19.0746x0.25	132747	437621	0.303	0	437621	0.000
L5	120 - 115 (5)	TP21.1244x20.0995x0.25	184635	484273	0.381	0	484273	0.000
L6	115 - 110 (6)	TP22.1492x21.1244x0.25	238318	528982	0.451	0	528982	0.000
L7	110 - 105 (7)	TP23.1741x22.1492x0.25	305589	571727	0.535	0	571727	0.000
L8	105 - 102 (8)	TP23.789x23.1741x0.25	348678	597779	0.583	0	597779	0.000

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L9	102 - 101.75 (9)	TP23.8403x23.789x0.3875	352298	943275	0.373	0	943275	0.000
L10	101.75 - 96.75 (10)	TP24.8651x23.8403x0.375	435852	996575	0.437	0	996575	0.000
L11	96.75 - 91.75 (11)	TP25.89x24.8651x0.375	467560	1026200	0.456	0	1026200	0.000
L12	91.75 - 90.75 (12)	TP25.5952x24.7238x0.3563	546023	1090600	0.501	0	1090600	0.000
L13	90.75 - 85.75 (13)	TP26.6203x25.5952x0.3563	640699	1181633	0.542	0	1181633	0.000
L14	85.75 - 85.333 (14)	TP26.7058x26.6203x0.3563	648704	1189392	0.545	0	1189392	0.000
L15	85.333 - 85.083 (15)	TP26.757x26.7058x0.55	653512	1803167	0.362	0	1803167	0.000
L16	85.083 - 82.5 (16)	TP27.2866x26.757x0.5438	703706	1857508	0.379	0	1857508	0.000
L17	82.5 - 82.25 (17)	TP27.3379x27.2866x0.55	708607	1884817	0.376	0	1884817	0.000
L18	82.25 - 82 (18)	TP27.3891x27.3379x0.55	713516	1892108	0.377	0	1892108	0.000
L19	82 - 81.75 (19)	TP27.4404x27.3891x0.4875	718432	1695342	0.424	0	1695342	0.000
L20	81.75 - 78.833 (20)	TP28.0384x27.4404x0.4875	776343	1772092	0.438	0	1772092	0.000
L21	78.833 - 78.583 (21)	TP28.0897x28.0384x0.6125	781353	2204617	0.354	0	2204617	0.000
L22	78.583 - 77.667 (22)	TP28.2775x28.0897x0.6125	799777	2235192	0.358	0	2235192	0.000
L23	77.667 - 77.417 (23)	TP28.3287x28.2775x0.55	804823	2028292	0.397	0	2028292	0.000
L24	77.417 - 77.167 (24)	TP28.38x28.3287x0.55	809877	2035858	0.398	0	2035858	0.000
L25	77.167 - 72.167 (25)	TP29.4055x28.38x0.5375	912458	2143175	0.426	0	2143175	0.000
L26	72.167 - 67.167 (26)	TP30.4311x29.4055x0.525	1018025	2248933	0.453	0	2248933	0.000
L27	67.167 - 66.583 (27)	TP30.5508x30.4311x0.525	1030600	2267142	0.455	0	2267142	0.000
L28	66.583 - 66.333 (28)	TP30.6021x30.5508x0.625	1036000	2681367	0.386	0	2681367	0.000
L29	66.333 - 66.167 (29)	TP30.6362x30.6021x0.625	1039583	2687517	0.387	0	2687517	0.000
L30	66.167 - 65.917 (30)	TP30.6874x30.6362x0.5125	1044992	2236300	0.467	0	2236300	0.000
L31	65.917 - 62.667 (31)	TP31.354x30.6874x0.5125	1115908	2337042	0.477	0	2337042	0.000
L32	62.667 - 62.417 (32)	TP31.4053x31.354x0.5125	1121408	2344883	0.478	0	2344883	0.000
L33	62.417 - 60 (33)	TP31.9011x31.4053x0.5063	1174917	2393267	0.491	0	2393267	0.000
L34	60 - 59.75 (34)	TP31.9523x31.9011x0.5125	1180483	2429350	0.486	0	2429350	0.000
L35	59.75 - 58.333 (35)	TP32.243x31.9523x0.5063	1212175	2446100	0.496	0	2446100	0.000
L36	58.333 - 58.083 (36)	TP32.2943x32.243x0.5	1217792	2425200	0.502	0	2425200	0.000
L37	58.083 - 53.083 (37)	TP33.3198x32.2943x0.5	1331417	2585425	0.515	0	2585425	0.000
L38	53.083 - 52.833 (38)	TP33.3711x33.3198x0.5	1337167	2593575	0.516	0	2593575	0.000
L39	52.833 - 52.583 (39)	TP33.4223x33.3711x0.6875	1342925	3516608	0.382	0	3516608	0.000
L40	52.583 -	TP33.6615x33.4223x0.6875	1369858	3568708	0.384	0	3568708	0.000

Section No.	Elevation ft	Size	M_{ux} lb-ft	ϕM_{nx} lb-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} lb-ft	ϕM_{ny} lb-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L41	51.417 (40) - 51.417 - 51.167 (41)	TP33.7128x33.6615x0.5063	1375658	2679775	0.513	0	2679775	0.000
L42	51.167 - 46.5 (42)	TP34.67x33.7128x0.5063	1379533	2685342	0.514	0	2685342	0.000
L43	46.5 - 45.5 (43)	TP34.2498x33.122x0.55	1509458	2995333	0.504	0	2995333	0.000
L44	45.5 - 44.25 (44)	TP34.5062x34.2498x0.55	1539425	3041442	0.506	0	3041442	0.000
L45	44.25 - 44 (45)	TP34.5574x34.5062x0.625	1545433	3443825	0.449	0	3443825	0.000
L46	44 - 43.083 (46)	TP34.7455x34.5574x0.625	1567542	3482442	0.450	0	3482442	0.000
L47	43.083 - 42.833 (47)	TP34.7967x34.7455x0.6625	1573583	3690417	0.426	0	3690417	0.000
L48	42.833 - 37.833 (48)	TP35.822x34.7967x0.6625	1695800	3917617	0.433	0	3917617	0.000
L49	37.833 - 32.833 (49)	TP36.8473x35.822x0.65	1820517	4077500	0.446	0	4077500	0.000
L50	32.833 - 29.25 (50)	TP37.582x36.8473x0.6375	1911375	4168767	0.458	0	4168767	0.000
L51	29.25 - 29 (51)	TP37.6333x37.582x0.6375	1917758	4180442	0.459	0	4180442	0.000
L52	29 - 27.75 (52)	TP37.8896x37.6333x0.6375	1949775	4239067	0.460	0	4239067	0.000
L53	27.75 - 27.5 (53)	TP37.9409x37.8896x0.65	1956200	4329833	0.452	0	4329833	0.000
L54	27.5 - 24.083 (54)	TP38.6416x37.9409x0.6375	2044592	4413400	0.463	0	4413400	0.000
L55	24.083 - 23.833 (55)	TP38.6928x38.6416x0.7	2051108	4835375	0.424	0	4835375	0.000
L56	23.833 - 23.5 (56)	TP38.7611x38.6928x0.7	2059792	4852925	0.424	0	4852925	0.000
L57	23.5 - 23.25 (57)	TP38.8124x38.7611x0.55	2066317	3868708	0.534	0	3868708	0.000
L58	23.25 - 18.917 (58)	TP39.7009x38.8124x0.5375	2180375	3963483	0.550	0	3963483	0.000
L59	18.917 - 18.667 (59)	TP39.7522x39.7009x0.525	2187008	3885233	0.563	0	3885233	0.000
L60	18.667 - 18.083 (60)	TP39.8719x39.7522x0.525	2202533	3909142	0.563	0	3909142	0.000
L61	18.083 - 17.833 (61)	TP39.9232x39.8719x0.6625	2209183	4894317	0.451	0	4894317	0.000
L62	17.833 - 14.083 (62)	TP40.6922x39.9232x0.65	2309742	4998183	0.462	0	4998183	0.000
L63	14.083 - 13.833 (63)	TP40.7434x40.6922x0.625	2316492	4827375	0.480	0	4827375	0.000
L64	13.833 - 8.833 (64)	TP41.7687x40.7434x0.625	2452867	5079217	0.483	0	5079217	0.000
L65	8.833 - 3.833 (65)	TP42.794x41.7687x0.6125	2591792	5235358	0.495	0	5235358	0.000
L66	3.833 - 0 (66)	TP43.58x42.794x0.6125	2700025	5433708	0.497	0	5433708	0.000

Pole Shear Design Data

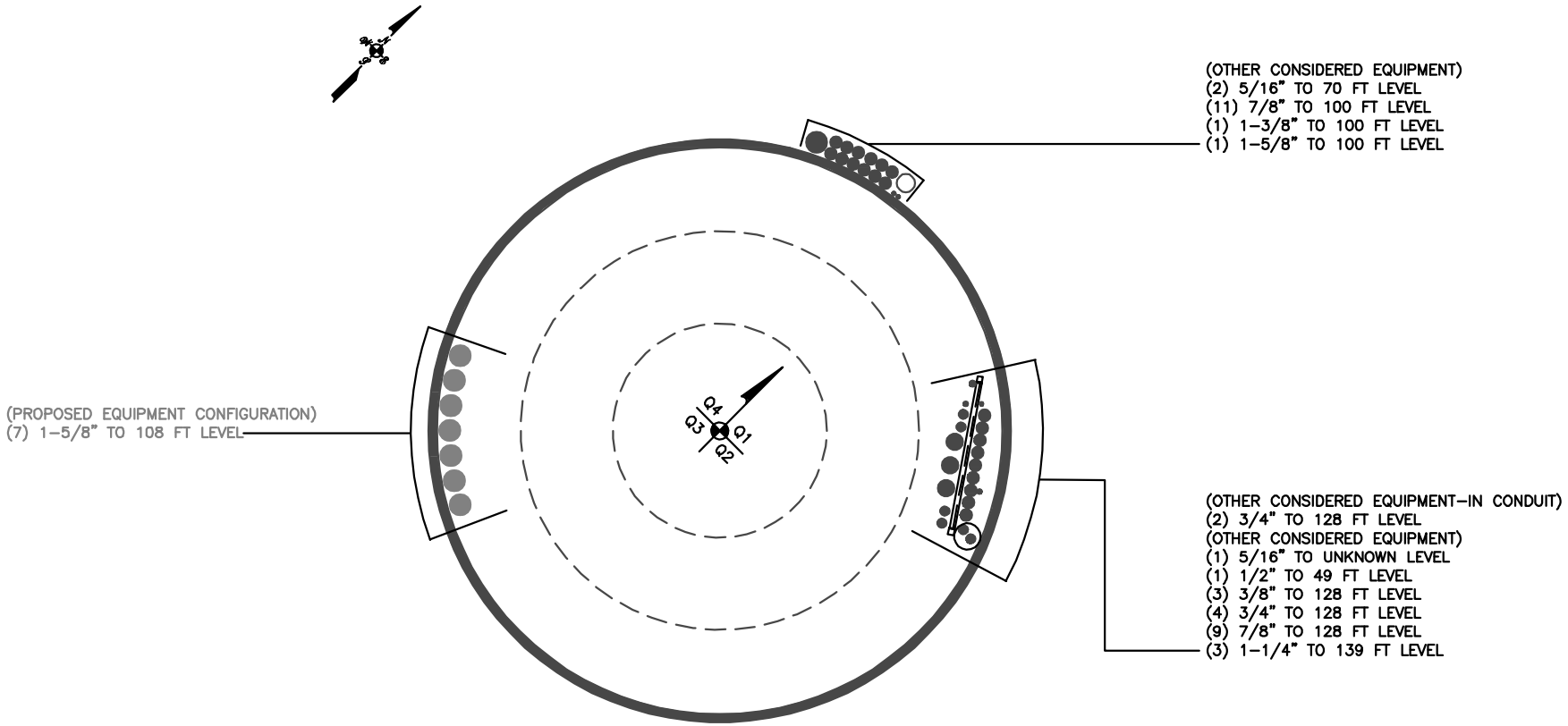
Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	140 - 135 (1)	TP17.0249x16x0.25	3952	218761	0.018	0	322797	0.000
L2	135 - 130 (2)	TP18.0497x17.0249x0.25	4340	232126	0.019	0	363444	0.000

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L3	130 - 125 (3)	TP19.0746x18.0497x0.25	9849	245492	0.040	0	406503	0.000
L4	125 - 120 (4)	TP20.0995x19.0746x0.25	10203	258857	0.039	0	451969	0.000
L5	120 - 115 (5)	TP21.1244x20.0995x0.25	10561	272222	0.039	0	499847	0.000
L6	115 - 110 (6)	TP22.1492x21.1244x0.25	10923	285588	0.038	0	550133	0.000
L7	110 - 105 (7)	TP23.1741x22.1492x0.25	14266	298953	0.048	82	602830	0.000
L8	105 - 102 (8)	TP23.789x23.1741x0.25	14476	306972	0.047	82	635605	0.000
L9	102 - 101.75 (9)	TP23.8403x23.789x0.3875	14495	474064	0.031	82	977983	0.000
L10	101.75 - 96.75 (10)	TP24.8651x23.8403x0.375	18039	479064	0.038	61	1032008	0.000
L11	96.75 - 91.75 (11)	TP25.89x24.8651x0.375	18222	486080	0.037	61	1062467	0.000
L12	91.75 - 90.75 (12)	TP25.5952x24.7238x0.3563	18708	508111	0.037	61	1128050	0.000
L13	90.75 - 85.75 (13)	TP26.6203x25.5952x0.3563	19187	528749	0.036	61	1221550	0.000
L14	85.75 - 85.333 (14)	TP26.7058x26.6203x0.3563	19222	530470	0.036	61	1229517	0.000
L15	85.333 - 85.083 (15)	TP26.757x26.7058x0.55	19247	814542	0.024	61	1877725	0.000
L16	85.083 - 82.5 (16)	TP27.2866x26.757x0.5438	19599	821751	0.024	61	1933075	0.000
L17	82.5 - 82.25 (17)	TP27.3379x27.2866x0.55	19622	832595	0.024	61	1961875	0.000
L18	82.25 - 82 (18)	TP27.3891x27.3379x0.55	19654	834188	0.024	61	1969392	0.000
L19	82 - 81.75 (19)	TP27.4404x27.3891x0.4875	19684	742528	0.027	61	1760425	0.000
L20	81.75 - 78.833 (20)	TP28.0384x27.4404x0.4875	20041	759004	0.026	61	1839417	0.000
L21	78.833 - 78.583 (21)	TP28.0897x28.0384x0.6125	20061	951068	0.021	61	2298708	0.000
L22	78.583 - 77.667 (22)	TP28.2775x28.0897x0.6125	20178	957568	0.021	61	2330233	0.000
L23	77.667 - 77.417 (23)	TP28.3287x28.2775x0.55	20203	863393	0.023	61	2109700	0.000
L24	77.417 - 77.167 (24)	TP28.38x28.3287x0.55	20233	864986	0.023	61	2117492	0.000
L25	77.167 - 72.167 (25)	TP29.4055x28.38x0.5375	20815	876857	0.024	61	2226617	0.000
L26	72.167 - 67.167 (26)	TP30.4311x29.4055x0.525	21509	887261	0.024	61	2334050	0.000
L27	67.167 - 66.583 (27)	TP30.5508x30.4311x0.525	21574	890815	0.024	61	2352783	0.000
L28	66.583 - 66.333 (28)	TP30.6021x30.5508x0.625	21601	1058770	0.020	61	2791858	0.000
L29	66.333 - 66.167 (29)	TP30.6362x30.6021x0.625	21622	1059980	0.020	61	2798200	0.000
L30	66.167 - 65.917 (30)	TP30.6874x30.6362x0.5125	21651	873923	0.025	61	2319633	0.000
L31	65.917 - 62.667 (31)	TP31.354x30.6874x0.5125	22005	893229	0.025	61	2423250	0.000
L32	62.667 - 62.417 (32)	TP31.4053x31.354x0.5125	22017	894714	0.025	61	2431317	0.000
L33	62.417 - 60 (33)	TP31.9011x31.4053x0.5063	22278	898165	0.025	61	2480350	0.000
L34	60 - 59.75 (34)	TP31.9523x31.9011x0.5125	22294	910557	0.024	61	2518183	0.000
L35	59.75 - 58.333 (35)	TP32.243x31.9523x0.5063	22456	907946	0.025	61	2534675	0.000
L36	58.333 - 58.083 (36)	TP32.2943x32.243x0.5	22469	898363	0.025	61	2512467	0.000
L37	58.083 -	TP33.3198x32.2943x0.5	22997	927339	0.025	61	2677158	0.000

Section No.	Elevation ft	Size	Actual V_u lb	ϕV_n lb	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u lb-ft	ϕT_n lb-ft	Ratio $\frac{T_u}{\phi T_n}$
L38	53.083 (37) 53.083 - 52.833 (38)	TP33.3711x33.3198x0.5	23014	928788	0.025	61	2685533	0.000
L39	52.833 - 52.583 (39)	TP33.4223x33.3711x0.6875	23041	1271790	0.018	61	3662067	0.000
L40	52.583 - 51.417 (40)	TP33.6615x33.4223x0.6875	23183	1281080	0.018	61	3715767	0.000
L41	51.417 - 51.167 (41)	TP33.7128x33.6615x0.5063	23203	949995	0.024	61	2774883	0.000
L42	51.167 - 46.5 (42)	TP34.67x33.7128x0.5063	23219	950975	0.024	61	2780608	0.000
L43	46.5 - 45.5 (43)	TP34.2498x33.122x0.55	23918	1047430	0.023	61	3104925	0.000
L44	45.5 - 44.25 (44)	TP34.5062x34.2498x0.55	24050	1055390	0.023	61	3152342	0.000
L45	44.25 - 44 (45)	TP34.5574x34.5062x0.625	24063	1198470	0.020	61	3577200	0.000
L46	44 - 43.083 (46)	TP34.7455x34.5574x0.625	24170	1205110	0.020	61	3616950	0.000
L47	43.083 - 42.833 (47)	TP34.7967x34.7455x0.6625	24189	1277940	0.019	61	3837067	0.000
L48	42.833 - 37.833 (48)	TP35.822x34.7967x0.6625	24714	1316320	0.019	61	4071033	0.000
L49	37.833 - 32.833 (49)	TP36.8473x35.822x0.65	25199	1329610	0.019	61	4233492	0.000
L50	32.833 - 29.25 (50)	TP37.582x36.8473x0.6375	25543	1330960	0.019	61	4325275	0.000
L51	29.25 - 29 (51)	TP37.6333x37.582x0.6375	25556	1332800	0.019	61	4337283	0.000
L52	29 - 27.75 (52)	TP37.8896x37.6333x0.6375	25692	1342040	0.019	61	4397592	0.000
L53	27.75 - 27.5 (53)	TP37.9409x37.8896x0.65	25703	1369770	0.019	61	4493158	0.000
L54	27.5 - 24.083 (54)	TP38.6416x37.9409x0.6375	26054	1369130	0.019	61	4576925	0.000
L55	24.083 - 23.833 (55)	TP38.6928x38.6416x0.7	26067	1502910	0.017	61	5022667	0.000
L56	23.833 - 23.5 (56)	TP38.7611x38.6928x0.7	26102	1505610	0.017	61	5040742	0.000
L57	23.5 - 23.25 (57)	TP38.8124x38.7611x0.55	26126	1189240	0.022	61	4002575	0.000
L58	23.25 - 18.917 (58)	TP39.7009x38.8124x0.5375	26542	1189580	0.022	61	4098000	0.000
L59	18.917 - 18.667 (59)	TP39.7522x39.7009x0.525	26552	1163800	0.023	61	4015742	0.000
L60	18.667 - 18.083 (60)	TP39.8719x39.7522x0.525	26612	1167360	0.023	61	4040300	0.000
L61	18.083 - 17.833 (61)	TP39.9232x39.8719x0.6625	26631	1469860	0.018	61	5076150	0.000
L62	17.833 - 14.083 (62)	TP40.6922x39.9232x0.65	27020	1470830	0.018	61	5180617	0.000
L63	14.083 - 13.833 (63)	TP40.7434x40.6922x0.625	27031	1416960	0.019	61	5000350	0.000
L64	13.833 - 8.833 (64)	TP41.7687x40.7434x0.625	27539	1453170	0.019	61	5259200	0.000
L65	8.833 - 3.833 (65)	TP42.794x41.7687x0.6125	28064	1460030	0.019	61	5417300	0.000
L66	3.833 - 0 (66)	TP43.58x42.794x0.6125	28446	1487230	0.019	61	5621075	0.000

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(2) 5/16" TO 70 FT LEVEL
(11) 7/8" TO 100 FT LEVEL
(1) 1-3/8" TO 100 FT LEVEL
(1) 1-5/8" TO 100 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(7) 1-5/8" TO 108 FT LEVEL
Q4
Q1
Q3
Q2
(OTHER CONSIDERED EQUIPMENT-IN CONDUIT)
(2) 3/4" TO 128 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 5/16" TO UNKNOWN LEVEL
(1) 1/2" TO 49 FT LEVEL
(3) 3/8" TO 128 FT LEVEL
(4) 3/4" TO 128 FT LEVEL
(9) 7/8" TO 128 FT LEVEL
(3) 1-1/4" TO 139 FT LEVEL

APPENDIX C

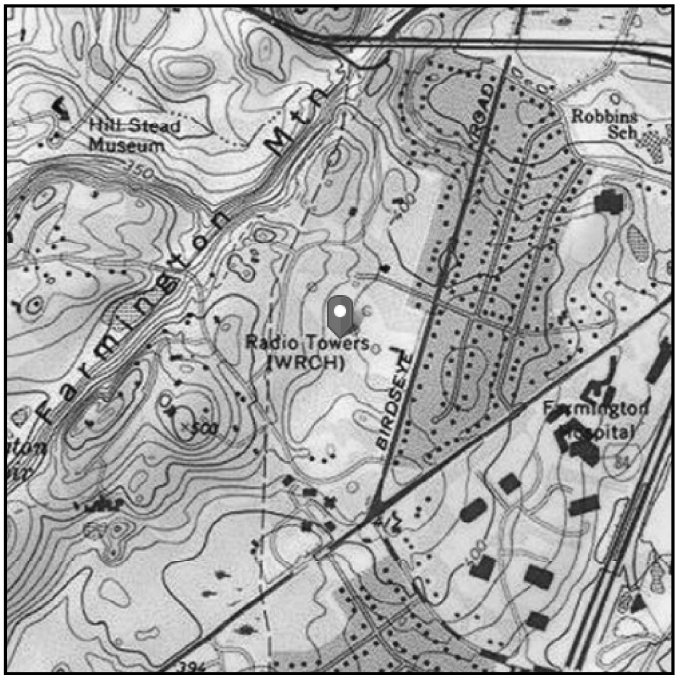
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 413.61 ft (NAVD 88)
Latitude: 41.715817
Longitude: -72.810394



Wind

Results:

Wind Speed:	121 Vmph
10-year MRI	76 Vmph
25-year MRI	86 Vmph
50-year MRI	92 Vmph
100-year MRI	99 Vmph

Windspeed updated per local jurisdiction requirements

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 Nov 05 2019

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

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

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

ASCE
AMERICAN SOCIETY OF CIVIL ENGINEERS

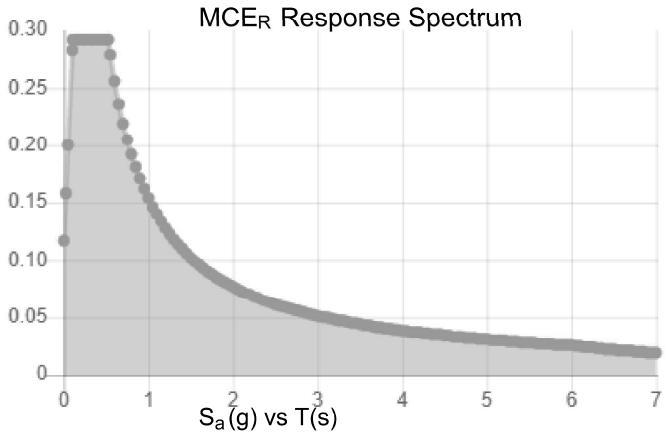
Seismic

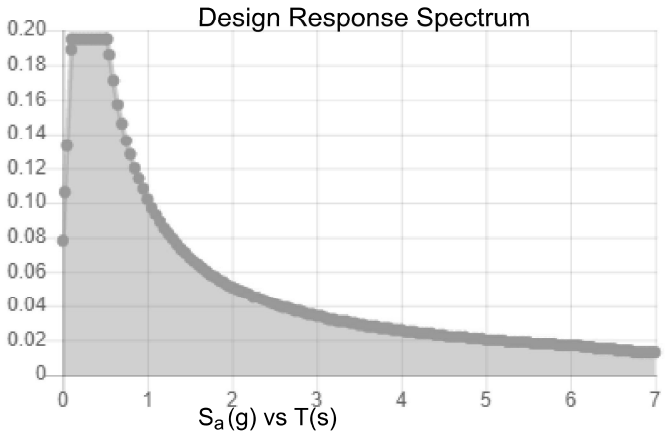
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.182	S_{DS} :	0.195
S_1 :	0.064	S_{D1} :	0.102
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.092
S_{MS} :	0.292	PGA_M :	0.148
S_{M1} :	0.154	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: Tue Nov 05 2019

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	5 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Tue Nov 05 2019

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

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

CCIpole

per TIA-222- H

Site BU: 876335

Work Order: 1802921

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	140	48.25	3.25	12	16	25.89	0.25	Auto	A607-60
2	95	17.833	0	12	24.72	28.38	0.3125	Auto	A607-65
3	77.167	30.667	4.5	12	28.38	34.67	0.3125	Auto	A607-65
4	51	51	0	12	33.12	43.58	0.375	Auto	A607-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12
1	0	27.75	channel	05 (1.1875in) - Bottom	2					x				x			
2	27.75	43.083	channel	MP3-05 (1.1875in)	2					x				x			
3	51.417	66.583	channel	MP3-05 (1.1875in)	3	x				x				x			
4	0	18.083	channel	05 (1.1875in) - Bottom	2		x										x
5	14.083	29.25	channel	MP3-05 (1.1875in)	1	x											
6	29.25	44.25	channel	MP3-05 (1.1875in)	1	x											
7	43.083	52.833	channel	MP3-05 (1.1875in)	3		x				x				x		
8	66.167	78.833	channel	MP3-03 (1.1875in)	3		x				x				x		
9	18.917	24.083	channel	MP3-05 (1.1875in)	1			x									
10	62.667	58.333	channel	MP3-03 (1.1875in)	1							x					
11	77.667	85.333	channel	MP3-03 (1.1875in)	2			x								x	
12	94.333	102	channel	MP3-03 (1.1875in)	3				x				x				x
13	0	27.75	plate	CCI-SFP-065125	1										x		
14	23.5	44.25	plate	CCI-SFP-060100	2							x				x	
15	49	60	plate	CCI-SFP-060100	1								x				
16	66.583	82.5	plate	CCI-SFP-060100	2								x				x
17	82	93	plate	CCI-SFP-060100	2	x								x			
18																	

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Length (in)	Top Termination Length (in)	L_u (in)	Net Area (in^2)	Bolt Hole Size (in)	Reinforcement Material
1	5.33	2.09	5.65	0.79	n/a	29.000	18.000	5.025	1.1875	A572-65
2	5.33	2.09	5.65	0.79	29.000	29.000	18.000	5.025	1.1875	A572-65
3	5.33	2.09	5.65	0.79	29.000	29.000	18.000	5.025	1.1875	A572-65
4	5.33	2.09	5.65	0.79	n/a	29.000	18.000	5.025	1.1875	A572-65
5	5.33	2.09	5.65	0.79	29.000	29.000	18.000	5.025	1.1875	A572-65
6	5.33	2.09	5.65	0.79	29.000	29.000	18.000	5.025	1.1875	A572-65
7	5.33	2.09	5.65	0.79	29.000	29.000	18.000	5.025	1.1875	A572-65
8	4.06	1.57	2.92	0.59	14.000	14.000	18.000	2.545	1.1875	A572-65
9	5.33	2.09	5.65	0.79	29.000	29.000	18.000	5.025	1.1875	A572-65
10	4.06	1.57	2.92	0.59	14.000	14.000	18.000	2.545	1.1875	A572-65
11	4.06	1.57	2.92	0.59	14.000	14.000	18.000	2.545	1.1875	A572-65
12	4.06	1.57	2.92	0.59	14.000	14.000	18.000	2.545	1.1875	A572-65
13	6.5	1.25	8.125	0.625	33.000	33.000	19.000	6.563	1.1875	A572-65
14	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
15	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
16	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	A572-65
17	6	1	6	0.5	24.000	24.000	16.000	4.750	1.1875	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	140 - 135	5		12	16.000	17.025	0.25	A607-60	1.000
2	135 - 130	5		12	17.025	18.050	0.25	A607-60	1.000
3	130 - 125	5		12	18.050	19.075	0.25	A607-60	1.000
4	125 - 120	5		12	19.075	20.099	0.25	A607-60	1.000
5	120 - 115	5		12	20.099	21.124	0.25	A607-60	1.000
6	115 - 110	5		12	21.124	22.149	0.25	A607-60	1.000
7	110 - 105	5		12	22.149	23.174	0.25	A607-60	1.000
8	105 - 102	3		12	23.174	23.789	0.25	A607-60	1.000
9	102 - 101.75	0.25		12	23.789	23.840	0.3875	A607-60	0.949
10	101.75 - 96.75	5		12	23.840	24.865	0.375	A607-60	0.967
11	96.75 - 95	5	3.25	12	24.865	25.890	0.375	A607-60	0.962
12	95 - 90.75	4.25		12	24.724	25.595	0.35625	A607-65	1.294
13	90.75 - 85.75	5		12	25.595	26.620	0.35625	A607-65	1.278
14	85.75 - 85.333	0.417		12	26.620	26.706	0.35625	A607-65	1.276
15	85.333 - 85.083	0.25		12	26.706	26.757	0.55	A607-65	0.958
16	85.083 - 82.5	2.583		12	26.757	27.287	0.54375	A607-65	0.961
17	82.5 - 82.25	0.25		12	27.287	27.338	0.55	A607-65	1.203
18	82.25 - 82	0.25		12	27.338	27.389	0.55	A607-65	1.202
19	82 - 81.75	0.25		12	27.389	27.440	0.4875	A607-65	1.067
20	81.75 - 78.833	2.917		12	27.440	28.038	0.4875	A607-65	1.058
21	78.833 - 78.583	0.25		12	28.038	28.090	0.6125	A607-65	1.007
22	78.583 - 77.667	0.916		12	28.090	28.277	0.6125	A607-65	1.004
23	77.667 - 77.417	0.25		12	28.277	28.329	0.55	A607-65	0.996
24	77.417 - 77.167	0.25	0	12	28.329	28.380	0.55	A607-65	0.995
25	77.167 - 72.167	5		12	28.380	29.406	0.5375	A607-65	1.002
26	72.167 - 67.167	5		12	29.406	30.431	0.525	A607-65	1.011
27	67.167 - 66.583	0.584		12	30.431	30.551	0.525	A607-65	1.009
28	66.583 - 66.333	0.25		12	30.551	30.602	0.625	A607-65	0.932
29	66.333 - 66.167	0.166		12	30.602	30.636	0.625	A607-65	0.931
30	66.167 - 65.917	0.25		12	30.636	30.687	0.5125	A607-65	0.955
31	65.917 - 62.667	3.25		12	30.687	31.354	0.5125	A607-65	0.947
32	62.667 - 62.417	0.25		12	31.354	31.405	0.5125	A607-65	0.947
33	62.417 - 60	2.417		12	31.405	31.901	0.50625	A607-65	0.953
34	60 - 59.75	0.25		12	31.901	31.952	0.5125	A607-65	1.057
35	59.75 - 58.333	1.417		12	31.952	32.243	0.50625	A607-65	1.065
36	58.333 - 58.083	0.25		12	32.243	32.294	0.5	A607-65	1.078
37	58.083 - 53.083	5		12	32.294	33.320	0.5	A607-65	1.064
38	53.083 - 52.833	0.25		12	33.320	33.371	0.5	A607-65	1.063
39	52.833 - 52.583	0.25		12	33.371	33.422	0.6875	A607-65	1.011
40	52.583 - 51.417	1.166		12	33.422	33.661	0.6875	A607-65	1.007
41	51.417 - 51.167	0.25		12	33.661	33.713	0.50625	A607-65	1.045
42	51.167 - 51	4.667	4.5	12	33.713	34.670	0.50625	A607-65	1.045
43	51 - 45.5	5.5		12	33.122	34.250	0.55	A607-65	0.970
44	45.5 - 44.25	1.25		12	34.250	34.506	0.55	A607-65	0.968
45	44.25 - 44	0.25		12	34.506	34.557	0.625	A607-65	1.112
46	44 - 43.083	0.917		12	34.557	34.745	0.625	A607-65	1.109
47	43.083 - 42.833	0.25		12	34.745	34.797	0.6625	A607-65	0.969
48	42.833 - 37.833	5		12	34.797	35.822	0.6625	A607-65	0.957
49	37.833 - 32.833	5		12	35.822	36.847	0.65	A607-65	0.964
50	32.833 - 29.25	3.583		12	36.847	37.582	0.6375	A607-65	0.975
51	29.25 - 29	0.25		12	37.582	37.633	0.6375	A607-65	0.974
52	29 - 27.75	1.25		12	37.633	37.890	0.6375	A607-65	0.972
53	27.75 - 27.5	0.25		12	37.890	37.941	0.65	A607-65	1.057
54	27.5 - 24.083	3.417		12	37.941	38.642	0.6375	A607-65	1.068
55	24.083 - 23.833	0.25		12	38.642	38.693	0.7	A607-65	1.040
56	23.833 - 23.5	0.333		12	38.693	38.761	0.7	A607-65	1.039
57	23.5 - 23.25	0.25		12	38.761	38.812	0.55	A607-65	1.139
58	23.25 - 18.917	4.333		12	38.812	39.701	0.5375	A607-65	1.155
59	18.917 - 18.667	0.25		12	39.701	39.752	0.525	A607-65	1.096
60	18.667 - 18.083	0.584		12	39.752	39.872	0.525	A607-65	1.095
61	18.083 - 17.833	0.25		12	39.872	39.923	0.6625	A607-65	1.005
62	17.833 - 14.083	3.75		12	39.923	40.692	0.65	A607-65	1.016
63	14.083 - 13.833	0.25		12	40.692	40.743	0.625	A607-65	0.985
64	13.833 - 8.833	5		12	40.743	41.769	0.625	A607-65	0.975
65	8.833 - 3.833	5		12	41.769	42.794	0.6125	A607-65	0.986
66	3.833 - 0	3.833		12	42.794	43.580	0.6125	A607-65	0.979

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	140 - 135	4.40	16.00	3.95
2	135 - 130	4.72	36.82	4.34
3	130 - 125	8.10	82.63	9.85
4	125 - 120	8.49	132.75	10.20
5	120 - 115	8.92	184.63	10.56
6	115 - 110	9.37	238.32	10.92
7	110 - 105	12.78	305.59	14.27
8	105 - 102	13.11	348.68	14.48
9	102 - 101.75	13.16	352.30	14.50
10	101.75 - 96.75	16.52	435.85	18.04
11	96.75 - 95	16.79	467.56	18.22
12	95 - 90.75	17.97	546.02	18.71
13	90.75 - 85.75	18.97	640.70	19.19
14	85.75 - 85.333	19.06	648.70	19.22
15	85.333 - 85.083	19.12	653.51	19.25
16	85.083 - 82.5	19.71	703.71	19.60
17	82.5 - 82.25	19.79	708.61	19.62
18	82.25 - 82	19.86	713.52	19.65
19	82 - 81.75	19.91	718.43	19.68
20	81.75 - 78.833	20.56	776.34	20.04
21	78.833 - 78.583	20.64	781.35	20.06
22	78.583 - 77.667	20.87	799.78	20.18
23	77.667 - 77.417	20.94	804.82	20.20
24	77.417 - 77.167	21.00	809.88	20.23
25	77.167 - 72.167	22.20	912.46	20.82
26	72.167 - 67.167	23.60	1018.02	21.51
27	67.167 - 66.583	23.76	1030.60	21.57
28	66.583 - 66.333	23.83	1036.00	21.60
29	66.333 - 66.167	23.87	1039.58	21.62
30	66.167 - 65.917	23.93	1044.99	21.65
31	65.917 - 62.667	24.71	1115.91	22.01
32	62.667 - 62.417	24.78	1121.41	22.02
33	62.417 - 60	25.36	1174.92	22.28
34	60 - 59.75	25.44	1180.49	22.29
35	59.75 - 58.333	25.81	1212.18	22.46
36	58.333 - 58.083	25.89	1217.79	22.47
37	58.083 - 53.083	27.25	1331.42	23.00
38	53.083 - 52.833	27.33	1337.16	23.01
39	52.833 - 52.583	27.42	1342.92	23.04
40	52.583 - 51.417	27.81	1369.86	23.18
41	51.417 - 51.167	27.88	1375.66	23.20
42	51.167 - 51	27.93	1379.53	23.22
43	51 - 45.5	30.56	1509.46	23.92
44	45.5 - 44.25	30.92	1539.42	24.05
45	44.25 - 44	31.02	1545.43	24.06
46	44 - 43.083	31.34	1567.54	24.17
47	43.083 - 42.833	31.43	1573.58	24.19
48	42.833 - 37.833	33.10	1695.80	24.71
49	37.833 - 32.833	34.81	1820.52	25.20
50	32.833 - 29.25	36.05	1911.38	25.54
51	29.25 - 29	36.15	1917.76	25.56
52	29 - 27.75	36.58	1949.78	25.69
53	27.75 - 27.5	36.69	1956.20	25.70
54	27.5 - 24.083	38.00	2044.59	26.05
55	24.083 - 23.833	38.11	2051.11	26.07
56	23.833 - 23.5	38.24	2059.79	26.10
57	23.5 - 23.25	38.34	2066.32	26.13
58	23.25 - 18.917	39.92	2180.38	26.54
59	18.917 - 18.667	40.02	2187.01	26.55
60	18.667 - 18.083	40.22	2202.53	26.61
61	18.083 - 17.833	40.32	2209.19	26.63
62	17.833 - 14.083	41.79	2309.74	27.02
63	14.083 - 13.833	41.89	2316.49	27.03
64	13.833 - 8.833	43.77	2452.87	27.54
65	8.833 - 3.833	45.71	2591.79	28.06
66	3.833 - 0	47.19	2700.02	28.45

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
140 - 135	Pole	TP17.025x16x0.25	Pole	5.3%	Pass
135 - 130	Pole	TP18.05x17.025x0.25	Pole	10.4%	Pass
130 - 125	Pole	TP19.075x18.05x0.25	Pole	20.7%	Pass
125 - 120	Pole	TP20.099x19.075x0.25	Pole	29.6%	Pass
120 - 115	Pole	TP21.124x20.099x0.25	Pole	37.0%	Pass
115 - 110	Pole	TP22.149x21.124x0.25	Pole	43.6%	Pass
110 - 105	Pole	TP23.174x22.149x0.25	Pole	51.8%	Pass
105 - 102	Pole	TP23.789x23.174x0.25	Pole	56.4%	Pass
102 - 101.75	Pole + Reinf.	TP23.84x23.789x0.3875	Reinf. 12 Tension Rupture	50.5%	Pass
101.75 - 96.75	Pole + Reinf.	TP24.865x23.84x0.375	Reinf. 12 Tension Rupture	58.2%	Pass
96.75 - 95	Pole + Reinf.	TP25.89x24.865x0.375	Reinf. 12 Tension Rupture	60.9%	Pass
95 - 90.75	Pole + Reinf.	TP25.595x24.724x0.3563	Pole	52.6%	Pass
90.75 - 85.75	Pole + Reinf.	TP26.62x25.595x0.3563	Pole	57.5%	Pass
85.75 - 85.33	Pole + Reinf.	TP26.706x26.62x0.3563	Pole	57.9%	Pass
85.33 - 85.08	Pole + Reinf.	TP26.757x26.706x0.55	Reinf. 11 Tension Rupture	52.2%	Pass
85.08 - 82.5	Pole + Reinf.	TP27.287x26.757x0.5438	Reinf. 11 Tension Rupture	54.4%	Pass
82.5 - 82.25	Pole + Reinf.	TP27.338x27.287x0.55	Reinf. 11 Tension Rupture	54.8%	Pass
82.25 - 82	Pole + Reinf.	TP27.389x27.338x0.55	Reinf. 11 Tension Rupture	55.0%	Pass
82 - 81.75	Pole + Reinf.	TP27.44x27.389x0.4875	Reinf. 11 Tension Rupture	63.9%	Pass
81.75 - 78.83	Pole + Reinf.	TP28.038x27.44x0.4875	Reinf. 11 Tension Rupture	66.5%	Pass
78.83 - 78.58	Pole + Reinf.	TP28.09x28.038x0.6125	Reinf. 11 Tension Rupture	53.7%	Pass
78.58 - 77.67	Pole + Reinf.	TP28.277x28.09x0.6125	Reinf. 11 Tension Rupture	54.4%	Pass
77.67 - 77.42	Pole + Reinf.	TP28.329x28.277x0.55	Reinf. 8 Tension Rupture	58.3%	Pass
77.42 - 77.17	Pole + Reinf.	TP28.38x28.329x0.55	Reinf. 8 Tension Rupture	58.5%	Pass
77.17 - 72.17	Pole + Reinf.	TP29.406x28.38x0.5375	Reinf. 8 Tension Rupture	62.1%	Pass
72.17 - 67.17	Pole + Reinf.	TP30.431x29.406x0.525	Reinf. 8 Tension Rupture	65.4%	Pass
67.17 - 66.58	Pole + Reinf.	TP30.551x30.431x0.525	Reinf. 8 Tension Rupture	65.8%	Pass
66.58 - 66.33	Pole + Reinf.	TP30.602x30.551x0.625	Reinf. 8 Tension Rupture	55.6%	Pass
66.33 - 66.17	Pole + Reinf.	TP30.636x30.602x0.625	Reinf. 8 Tension Rupture	55.7%	Pass
66.17 - 65.92	Pole + Reinf.	TP30.687x30.636x0.5125	Reinf. 3 Tension Rupture	64.7%	Pass
65.92 - 62.67	Pole + Reinf.	TP31.354x30.687x0.5125	Reinf. 3 Tension Rupture	66.6%	Pass
62.67 - 62.42	Pole + Reinf.	TP31.405x31.354x0.5125	Reinf. 3 Tension Rupture	66.8%	Pass
62.42 - 60	Pole + Reinf.	TP31.901x31.405x0.5063	Reinf. 3 Tension Rupture	68.2%	Pass
60 - 59.75	Pole + Reinf.	TP31.952x31.901x0.5125	Reinf. 3 Tension Rupture	68.3%	Pass
59.75 - 58.33	Pole + Reinf.	TP32.243x31.952x0.5063	Reinf. 3 Tension Rupture	69.1%	Pass
58.33 - 58.08	Pole + Reinf.	TP32.294x32.243x0.5	Reinf. 3 Tension Rupture	69.3%	Pass
58.08 - 53.08	Pole + Reinf.	TP33.32x32.294x0.5	Reinf. 3 Tension Rupture	71.9%	Pass
53.08 - 52.83	Pole + Reinf.	TP33.371x33.32x0.5	Reinf. 3 Tension Rupture	72.0%	Pass
52.83 - 52.58	Pole + Reinf.	TP33.422x33.371x0.6875	Reinf. 3 Tension Rupture	53.1%	Pass
52.58 - 51.42	Pole + Reinf.	TP33.661x33.422x0.6875	Reinf. 3 Tension Rupture	53.6%	Pass
51.42 - 51.17	Pole + Reinf.	TP33.713x33.661x0.5063	Reinf. 7 Tension Rupture	67.3%	Pass
51.17 - 51	Pole + Reinf.	TP34.67x33.713x0.5063	Reinf. 7 Tension Rupture	67.3%	Pass
51 - 45.5	Pole + Reinf.	TP34.25x33.122x0.55	Reinf. 7 Tension Rupture	69.1%	Pass
45.5 - 44.25	Pole + Reinf.	TP34.506x34.25x0.55	Reinf. 7 Tension Rupture	69.6%	Pass
44.25 - 44	Pole + Reinf.	TP34.557x34.506x0.625	Reinf. 7 Tension Rupture	57.1%	Pass
44 - 43.08	Pole + Reinf.	TP34.745x34.557x0.625	Reinf. 7 Tension Rupture	57.4%	Pass
43.08 - 42.83	Pole + Reinf.	TP34.797x34.745x0.6625	Reinf. 6 Tension Rupture	59.7%	Pass
42.83 - 37.83	Pole + Reinf.	TP35.822x34.797x0.6625	Reinf. 6 Tension Rupture	61.4%	Pass
37.83 - 32.83	Pole + Reinf.	TP36.847x35.822x0.65	Reinf. 6 Tension Rupture	62.9%	Pass
32.83 - 29.25	Pole + Reinf.	TP37.582x36.847x0.6375	Reinf. 6 Tension Rupture	63.9%	Pass
29.25 - 29	Pole + Reinf.	TP37.633x37.582x0.6375	Reinf. 5 Tension Rupture	64.0%	Pass
29 - 27.75	Pole + Reinf.	TP37.89x37.633x0.6375	Reinf. 5 Tension Rupture	64.3%	Pass
27.75 - 27.5	Pole + Reinf.	TP37.941x37.89x0.65	Reinf. 5 Tension Rupture	64.9%	Pass
27.5 - 24.08	Pole + Reinf.	TP38.642x37.941x0.6375	Reinf. 5 Tension Rupture	65.8%	Pass
24.08 - 23.83	Pole + Reinf.	TP38.693x38.642x0.7	Reinf. 14 Tension Rupture	63.1%	Pass
23.83 - 23.5	Pole + Reinf.	TP38.761x38.693x0.7	Reinf. 14 Tension Rupture	63.2%	Pass
23.5 - 23.25	Pole + Reinf.	TP38.812x38.761x0.55	Reinf. 5 Tension Rupture	70.4%	Pass
23.25 - 18.92	Pole + Reinf.	TP39.701x38.812x0.5375	Reinf. 5 Tension Rupture	71.4%	Pass
18.92 - 18.67	Pole + Reinf.	TP39.752x39.701x0.525	Reinf. 5 Tension Rupture	77.4%	Pass
18.67 - 18.08	Pole + Reinf.	TP39.872x39.752x0.525	Reinf. 5 Tension Rupture	77.5%	Pass
18.08 - 17.83	Pole + Reinf.	TP39.923x39.872x0.6625	Reinf. 1 Tension Rupture	67.5%	Pass
17.83 - 14.08	Pole + Reinf.	TP40.692x39.923x0.65	Reinf. 1 Tension Rupture	68.4%	Pass
14.08 - 13.83	Pole + Reinf.	TP40.743x40.692x0.625	Reinf. 1 Tension Rupture	68.9%	Pass
13.83 - 8.83	Pole + Reinf.	TP41.769x40.743x0.625	Reinf. 1 Tension Rupture	70.0%	Pass
8.83 - 3.83	Pole + Reinf.	TP42.794x41.769x0.6125	Reinf. 1 Tension Rupture	70.9%	Pass
3.83 - 0	Pole + Reinf.	TP43.58x42.794x0.6125	Reinf. 1 Tension Rupture	71.6%	Pass
				Summary	
			Pole	59.5%	Pass
			Reinforcement	77.5%	Pass
			Overall	77.5%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity*																
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8	R9	R10	R11	R12	R13	R14	R15	R16	R17
140 - 135	486	n/a	486	13.48	n/a	13.48	5.3%																	
135 - 130	580	n/a	580	14.31	n/a	14.31	10.4%																	
130 - 125	686	n/a	686	15.13	n/a	15.13	20.7%																	
125 - 120	805	n/a	805	15.96	n/a	15.96	29.6%																	
120 - 115	936	n/a	936	16.78	n/a	16.78	37.0%																	
115 - 110	1081	n/a	1081	17.60	n/a	17.60	43.6%																	
110 - 105	1240	n/a	1240	18.43	n/a	18.43	51.8%																	
105 - 102	1342	n/a	1342	18.92	n/a	18.92	56.4%																	
102 - 101.75	1351	688	2039	18.96	8.76	27.72	36.5%												50.5%					
101.75 - 96.75	1535	746	2280	19.79	8.76	28.55	42.8%												58.2%					
96.75 - 95	1603	766	2369	20.08	8.76	28.84	45.0%												60.9%					
95 - 90.75	2193	282	2475	25.40	12.00	37.40	52.6%																	49.2%
90.75 - 85.75	2464	309	2772	26.43	12.00	38.43	57.5%																	54.1%
85.75 - 85.33	2487	311	2798	26.52	12.00	38.52	57.9%																	54.5%
85.33 - 85.08	2435	1681	4115	26.57	17.84	44.41	38.2%											52.2%						49.0%
85.08 - 82.5	2582	1746	4328	27.10	17.84	44.94	40.0%											54.4%						51.2%
82.5 - 82.25	2749	1796	4545	27.16	29.84	57.00	41.0%											54.8%					40.7%	39.4%
82.25 - 82	2764	1802	4567	27.21	29.84	57.05	41.1%											55.0%					40.8%	39.5%
82 - 81.75	2636	1390	4026	27.26	17.84	45.10	45.1%											63.9%					54.2%	
81.75 - 78.83	2812	1449	4262	27.86	17.84	45.70	47.3%											66.5%					56.6%	
78.83 - 78.58	2799	2490	5289	27.91	26.60	54.51	37.5%								52.8%			53.7%					47.6%	
78.58 - 77.67	2856	2522	5377	28.10	26.60	54.70	38.1%								53.5%			54.4%					48.3%	
77.67 - 77.42	2882	2008	4890	28.15	20.76	48.91	42.6%								58.3%								50.7%	
77.42 - 77.17	2897	2015	4913	28.20	20.76	48.96	42.7%								58.5%								50.9%	
77.17 - 72.17	3224	2159	5383	29.23	20.76	49.99	46.0%								62.1%								54.3%	
72.17 - 67.17	3575	2307	5882	30.26	20.76	51.02	49.1%								65.4%								57.5%	
67.17 - 66.58	3617	2325	5942	30.38	20.76	51.14	49.4%								65.8%								57.8%	
66.58 - 66.33	3574	3314	6888	30.44	25.71	56.15	38.3%			54.1%					55.6%									
66.33 - 66.17	3586	3321	6907	30.47	25.71	56.18	38.4%			54.2%					55.7%									
66.17 - 65.92	3604	2217	5821	30.52	16.95	47.47	45.9%			64.7%														
65.92 - 62.67	3847	2309	6156	31.19	16.95	48.14	47.7%			66.6%														
62.67 - 62.42	3866	2316	6182	31.24	16.95	48.19	47.9%			66.8%														
62.42 - 60	4054	2386	6440	31.74	16.95	48.69	49.2%			68.2%														
60 - 59.75	4074	2421	6496	31.79	22.95	54.74	50.5%			68.3%												53.4%		
59.75 - 58.33	4188	2463	6651	32.08	22.95	55.03	51.2%			69.1%												54.1%		
58.33 - 58.08	4208	2470	6678	32.14	22.95	55.09	51.4%			69.3%												54.2%		
58.08 - 53.08	4626	2620	7246	33.17	22.95	56.12	54.1%			71.9%												56.6%		
53.08 - 52.83	4647	2628	7275	33.22	22.95	56.17	54.2%			72.0%												56.7%		
52.83 - 52.58	4669	5243	9912	33.27	39.90	73.17	40.0%			53.1%				49.8%								44.9%		
52.58 - 51.42	4771	5314	10085	33.51	39.90	73.41	40.5%			53.6%				50.3%								45.4%		
51.42 - 51.17	4805	2841	7647	33.56	22.95	56.51	55.9%							67.3%								57.5%		
51.17 - 51	4820	2847	7667	33.60	22.95	56.55	56.0%							67.3%								57.5%		
51 - 45.5	5999	2731	8730	40.85	16.95	57.80	48.1%							69.1%										
45.5 - 44.25	6136	2770	8906	41.15	16.95	58.10	48.5%							69.6%										
44.25 - 44	6219	3952	10171	41.22	34.60	75.82	46.3%						47.1%	57.1%							54.9%			
44 - 43.08	6322	3993	10315	41.44	34.60	76.04	46.7%						47.4%	57.4%							55.2%			
43.08 - 42.83	6343	4625	10968	41.50	28.95	70.45	44.6%		59.7%				59.7%								57.4%			
42.83 - 37.83	6925	4891	11816	42.74	28.95	71.69	46.4%		61.4%				61.4%								59.1%			
37.83 - 32.83	7541	5165	12706	43.98	28.95	72.93	48.1%		62.9%				62.9%								60.8%			
32.83 - 29.25	8005	5366	13370	44.86	28.95	73.81	49.3%		63.9%				63.9%								61.9%			
29.25 - 29	8038	5380	13417	44.92	28.95	73.87	49.4%		64.0%			64.0%									62.0%			
29 - 27.75	8204	5451	13655	45.23	28.95	74.18	49.8%		64.3%			64.3%									62.3%			
27.75 - 27.5	8284	5560	13844	45.30	37.08	82.37	50.2%	58.3%				64.9%								49.8%	62.3%			
27.5 - 24.08	8754	5761	14515	46.14	37.08	83.22	51.3%	59.2%				65.8%								50.7%	63.2%			
24.08 - 23.83	8684	7048	15732	46.20	42.73	88.93	43.9%	54.4%				59.0%				56.3%				47.8%	63.1%			
23.83 - 23.5	8730	7072	15802	46.28	42.73	89.01	44.0%	54.4%				59.1%				56.3%				47.9%	63.2%			
23.5 - 23.25	8795	3857	12651	46.35	30.73	77.07	57.0%	66.2%				70.4%				56.5%				55.6%				
23.25 - 18.92	9418	4027	13445	47.42	30.73	78.14	58.4%	67.3%				71.4%				57.6%				56.7%				
18.92 - 18.67	9425	3680	13105	47.48	25.08	72.55	58.5%	70.6%				77.4%								59.2%				
18.67 - 18.08	9511	3701	13212	47.62	25.08	72.70	58.7%	70.8%				77.5%								59.4%				
18.08 - 17.83	9980	6808	16788	47.69	36.38	84.06	52.8%	67.5%			55.5%	55.3%								56.2%				
17.83 - 14.08	10563	7072	17635	48.61	36.38	84.99	53.9%	68.4%			56.3%	56.1%								57.1%				
14.08 - 13.83	10423	6479	16902	48.68	30.73	79.40	55.4%	68.9%			66.4%									56.7%				
13.83 - 8.83	11228	6805	18033	49.91	30.73	80.64	56.9%	70.0%			67.4%									57.8%				
8.83 - 3.83	12073	7139	19212	51.15	30.73	81.87	58.4%	70.9%			68.4%									58.9%				
3.83 - 0	12749	7401	20150	52.10	30.73	82.82	59.5%	71.6%			69.2%									59.7%				

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

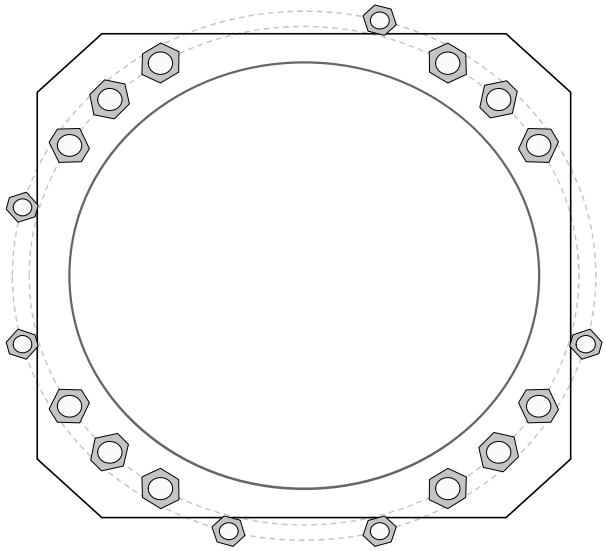
Monopole Base Plate Connection

Site Info	
BU #	876335
Site Name	East Farmington
Order #	506768 Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	2.25

Applied Loads	
Moment (kip-ft)	2700.02
Axial Force (kips)	47.19
Shear Force (kips)	28.45

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (12) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 51" BC

Anchor Spacing: 6 in

GROUP 2: (6) 1-3/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 54.08" BC

Base Plate Data

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

Stiffener Data

N/A

Pole Data

43.58" x 0.375" 12-sided pole (A607-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

GROUP 1:		
Pu_c = 172.31	ϕPn_c = 243.75	**Stress Rating**
Vu = 1.83	ϕVn = 73.13	**67.4%**
Mu = n/a	ϕMn = n/a	Pass
GROUP 2:		
Pu_c = 106.2	ϕPn_c = 199.5	**Stress Rating**
Vu = 1.07	ϕVn = 59.85	**53.3%**
Mu = 1.57	ϕMn = 59.26	Pass

Base Plate Summary

Max Stress (ksi):	30.42	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**64.4%**	Pass

Pier and Pad Foundation

BU # :	876335
Site Name:	East Farmington
App. Number:	506768 Rev. 0

TIA-222 Revision:	H
Tower Type:	Monopole

Top & Bot. Pad Rein. Different?:	☐
Block Foundation?:	☐

Superstructure Analysis Reactions		
Compression, P_{comp}:	47.206	kips
Base Shear, Vu_comp:	28.425	kips
Moment, M_u:	2700.03	ft-kips
Tower Height, **H**:	140	ft
BP Dist. Above Fdn, bp_{dist}:	4.5	in

Pier Properties		
Pier Shape:	Square	
Pier Diameter, **dpier**:	8	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	11	
Pier Rebar Quantity, **mc**:	24	
Pier Tie/Spiral Size, **St**:	5	
Pier Tie/Spiral Quantity, **mt**:	12	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	9	ft
Pad Width, **W**:	20	ft
Pad Thickness, **T**:	4	ft
Pad Rebar Size (Bottom), **Sp**:	9	
Pad Rebar Quantity (Bottom), **mp**:	27	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties		
Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	5	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties		
Total Soil Unit Weight, γ:	130	pcf
Ultimate Net Bearing, Qnet:	30.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	38	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:	0.35	
Neglected Depth, **N**:	3.30	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	8	ft

<--Toggle between Gross and Net

Foundation Analysis Checks				
	Capacity	**Demand**	**Rating***	**Check**
Lateral (Sliding) (kips)	374.86	28.43	**7.2%**	**Pass**
Bearing Pressure (ksf)	23.33	3.17	**13.6%**	**Pass**
*Overturning (kip*ft)*	5419.65	2980.73	**55.0%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	7182.89	2856.37	**37.9%**	**Pass**
Pier Compression (kip)	50918.40	110.57	**0.2%**	**Pass**
*Pad Flexure (kip*ft)*	5165.44	873.31	**16.1%**	**Pass**
Pad Shear - 1-way (kips)	1102.44	130.79	**11.3%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.212	0.000	**0.0%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	10330.87	1713.82	**15.8%**	**Pass**

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

Soil Rating*:	**55.0%**
Structural Rating*:	**37.9%**

Version 3.3.0

Exhibit E

Mount Analysis

Date: October 28, 2019

CLS Engineering PLLC
319 Chapanoke Road, Suite 118
Raleigh, NC 27603
(405) 348-5460
Engineering@clsengineeringpllc.com

Kevin Morrow
Crown Castle
3530 Toringdon Way, Suite 300,
Charlotte, NC 28277
(704) 405-6619

Subject:	**Mount Analysis Report**	
Carrier Designation:	**Verizon Wireless Equipment Change-Out**	
	Carrier Site Number:	NG64052
	Carrier Site Name:	New Britain 5 CT
Crown Castle Designation:	**Crown Castle BU Number:**	876335
	Crown Castle Site Name:	East Farmington
	Crown Castle JDE Job Number:	592670
	Crown Castle Order Number:	506768 Rev. 0
Engineering Firm Designation:	**CLS Engineering PLLC Project #:**	42284-NG64052-03-MA
Site Data:	**3 A Birdseye Road, Farmington, CT 06030, Hartford County**	
	Latitude: 41° 42' 56.94" Longitude: -72° 48' 37.42"	
Structure Information:	**Tower Height & Type:**	140 ft Monopole
	Mount Elevation:	108 ft
	Mount Width & Type:	14 ft Low Profile Platform

Dear Kevin Morrow,

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

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

Low Profile Platform **Sufficient***

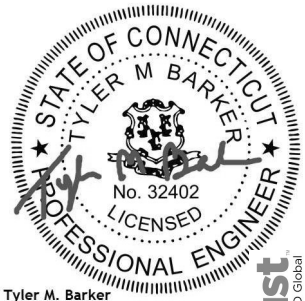
***Sufficient upon completion of the changes listed in the 'Conclusion and Recommendations' section of this report.**

This analysis utilizes an ultimate 3-second gust wind speed of 125 mph as required by the 2018 Connecticut State Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Daniel Gomez

Respectfully Submitted by:

Tyler M. Barker, P.E.
Director of Engineering



Tyler M. Barker
CLS Engineering, PLLC
Director of Engineering
PE # 32402 Exp. 1/31/2020
COA # PEC.001833 Exp. 8/14/2020

IdenTrust part of HID Global

Digitally signed by Tyler Barker
DN: c=US, o=Telamon Corporation, ou=A01427E0000016A4525ADF800001D17, cn=Tyler Barker
Date: 2019.10.29 08:56:05 -04'00'

TABLE OF CONTENTS

1. INTRODUCTION

The proposed equipment is to be mounted to the existing Low Profile Platform. This proposed mounting configuration was analyzed using RISA-3D, a commercially available finite element analysis software package. A selection of input and output from our analysis is attached to the end of this report.

2. ANALYSIS CRITERIA

STANDARD	2015 IBC / 2018 Connecticut State Building Code / TIA-222-G
BASIC WIND SPEED	125 mph, V_{ult} / 96.8 mph, V_{asd} (3-Second Gust)
BASIC WIND SPEED W/ ICE	50 mph (3-Second Gust) w/ 1" Radial Ice (Escalating)
EXPOSURE CATEGORY	B
MAX. TOPOGRAPHIC FACTOR,	1.00
RISK CATEGORY	II
MAINTENANCE LIVE LOAD	L_M: 500 lb

Table 1 - Final Equipment Configuration

ELEVATION (ft)		ANTENNAS	
MOUNT	RAD.	#	NAME
108.0	109.0	4	Andrew SBNHH-1D65B
		3	Antel BXA-70063-4CF-EDIN-X
		1	RFS Celwave DB-T1-6Z-8AB-0Z
		3	Samsung CBRS
		3	Samsung RFV01U-D1A
		3	Samsung RFV01U-D2A
		3	Samsung 20W CBRS

3. ANALYSIS PROCEDURE

Table 2 - Documents Provided

STRUCTURAL DATA	Site Photos, dated September 05, 2018
PREVIOUS ANALYSES	Mount Modification by CLS Engineering PLLC, Project #: 42284-NG64052-02-MOD, dated July 24, 2019 Tower Structural Analysis by B+T Group, Project #77969.015.01, dated September 06, 2018
LOADING DATA	Crown Castle, Order #506768, Rev. 0, dated October 22, 2019
MODIFICATIONS	Site Pro 1 Construction Drawing #PRK-1245 Rev. B, dated September 19, 2018

3.1. Analysis Method

RISA-3D, a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases. This analysis was performed in accordance with Crown Castle's ENG-SOW-10208 Tower Mount Analysis (Revision B).

4. ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity

COMPONENT	PEAK USAGE	RESULT
Corner Plates	61%	Pass
Collar Reactions	27%	Pass
Mount Pipes	23%	Pass
Platform Base	23%	Pass
Stand-Off Horizontals	22%	Pass
Connections	18%	Pass
Face Horizontals	18%	Pass

Structure Rating (max from all components) =	61%

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

4.1 Conclusion and Recommendations

According to our structural analysis, the mounts have been found to **PASS PENDING MODIFICATIONS**. The mounting configuration considered in this analysis will be capable of supporting the referenced loading pursuant to referenced standards once the referenced modifications are installed.

The analysis assumes modifications by CLS Engineering PLLC, dated July 24, 2019, have been installed. This analysis does not alter modifications.

- Install (1) proposed Site Pro 1 PRK-1245 as specified.

5. ASSUMPTIONS AND CONDITIONS

This analysis is inclusive of the antenna supporting frames/mounts and all recorded connections that will support the equipment listed in this report. It considers only the theoretical capacity of structural components and it is not a condition assessment. The validity of the analysis may be dependent on the accuracy of structural information supplied by others. The client is responsible for verifying this information. If any provided information is revised after completion of this analysis, CLS Engineering PLLC should be notified immediately to revise results.

This analysis assumes the following:

1. The tower or other superstructure and mounts (if existing) were properly constructed as per the original design and have been properly maintained in accordance with applicable code standards.
2. Member sizes and strengths are accurate as supplied or are assumed as stated in the calculations.
3. In the absence of sufficient design information, all welds and connections are assumed to develop at least the capacity of the connected member, unless otherwise stated in this analysis.
4. All prior structural modifications, if any, are assumed to be correctly installed and fully effective.
5. The loading configuration is complete and accurate as supplied and/or as modeled in the previous analysis. All appurtenances are assumed to be properly installed and supported as per manufacturer requirements.
6. Some conservative assumptions may be used regarding appurtenances and their projected areas based on careful interpretation of data supplied, previous experience and standard industry practice.

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of the report. All opinions and conclusions contained herein are subject to revision based upon receipt of new or updated information. All services are provided exercising a level of care and diligence equivalent to the standard of our profession. No warranty or guarantee, either expressed or implied, is offered. All services are confidential in nature and this report will not be released to any other party without the client's consent. The use of this analysis is limited to the expressed purpose for which it was commissioned and it may not be reused, copied or disseminated for any other purpose without consent from CLS Engineering PLLC.

All services were performed, results obtained and recommendations made in accordance with generally accepted engineering principles and practices. CLS Engineering PLLC is not responsible for the conclusions, opinions or recommendations made by others based on the information supplied in this analysis.

It is not possible to have the fully detailed information necessary to perform a complete and thorough analysis of every structural sub-component of an existing structure. The structural analysis by CLS Engineering PLLC verifies the adequacy of the primary members of the structure. CLS Engineering PLLC provides a limited scope of service in that we cannot verify the adequacy of every weld, bolt, gusset, etc.

APPENDIX A

SOFTWARE INPUT CALCULATIONS

Wind & Ice Loading

Nominal Mount Elevation (AGL), z_{mount}	108 ft	K_{ii}	0.90
Nominal Rad Elevation (AGL), z_{rad}	109 ft	K_d	0.95
Elevation AMSL (ft)	-	K_e	-
TIA Standard	G	K_z	1.01
Basic Wind Speed, V_{ult} (bare)	125 mph	K_{zt}	1.00
Basic Wind Speed, V (ice)	50 mph	K_s	-
Design Ice Thickness, t_i	1 in	t_{iz}	2.25 in
Exposure Category	B	G_h	1.00
Risk Category	II	q_z (bare)	38.4 psf
Seismic Response Coeff., C_s	-	q_z (ice)	6.1 psf

Live Loading

At Mount Pipes, L_M	500 lb
Joint Labels Considered	M1
	M2
	M3
	M4

Member Distributed Loading

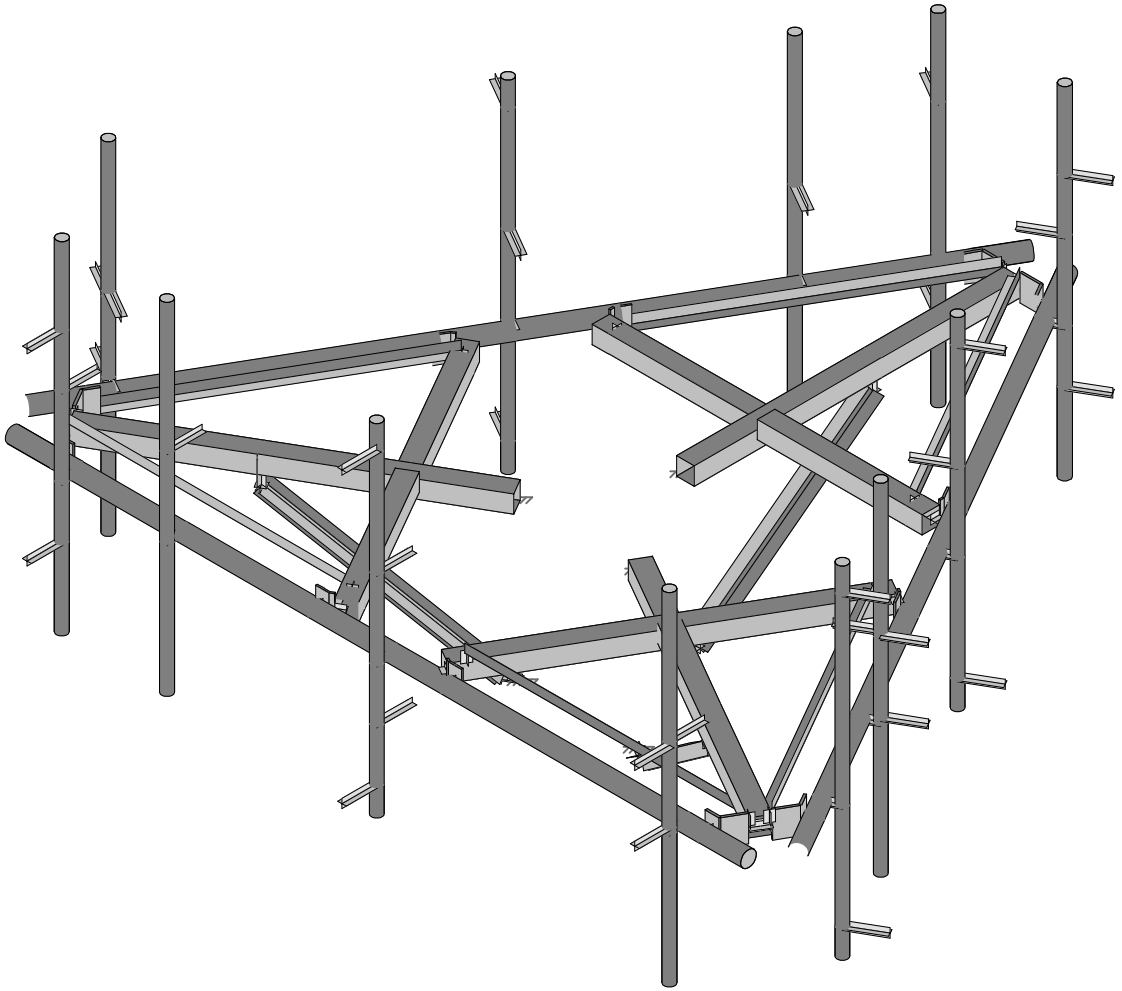
Section Set Label	Shape Label	F_A (lb/ft)		Ice Wt. (lb/ft)
		Bare	Ice	
Offsett Tube	HSS4X4X4	23.03	2.77	20.21
Offset End Plate	0.5 x 6 Plate	34.55	5.82	17.58
Offset Side Plate	0.38 X 6 Plate	34.55	5.81	17.37
Grating Angle	L2x2x3	11.52	4.05	13.98
Platform Horizontal Pipe	PIPE_3.0	12.09	4.42	15.82
Mount Pipe	PIPE_2.0	8.21	3.80	12.73
Previous MOD PRK	L2.5x2.5x3	14.40	2.66	14.53

Appurtenances

Appurtenance Model	Status	Azimuth Offset (°, ↻)	Rad Elev. Override (ft)	Swap Width & Depth	Area Factor		Qty. per Azimuth			Total Qty. Override	0° Joints		120° Joints		240° Joints		Height (in)	Width (in)	Depth (in)	Weight (Bare) (lb)	Shape	Weight of Ice (lb)	EPA_A (Bare) (ft²)		EPA_A (Ice) (ft²)		F_A (Bare) (lb)		F_A (Ice) (lb)	
					Front	Side	0°	120°	240°		1	2	1	2	1	2							N	T	N	T	N	T	N	T
SBNHH-1D65B				☐			1	1	1		A1	A2	B1	B2	G1	G2	72.9	11.9	7.1	40.6	Generic	228.27	4.16	2.49	6.01	4.25	144.10	86.25	33.30	23.54
SBNHH-1D65B				☐					1						G5	G6	72.9	11.9	7.1	40.6	Generic	228.27	4.16	2.49	6.01	4.25	144.10	86.25	33.30	23.54
BXA-70063-4CF-EDIN-X				☐			1	1	1		A5	A6	B5	B6	G3	G4	47.4	11.2	5.2	9.9	Flat	131.53	4.71	2.52	7.00	4.64	163.08	87.19	38.78	25.73
20W CBRS				☐			1	1	1		R1		R2		R3		12.1	8.5	4.1	18.64	Flat	46.60	0.86	0.42	1.80	1.19	29.69	14.56	9.98	6.60
DB-T1-6Z-8AB-0Z				☐	0.5		1				R10						25.66	15.73	10.25	21.5	Flat	157.91	1.68	2.19	2.54	3.71	58.26	75.93	14.10	20.56
RFV01U-D1A				☐	0.5		1	1	1		R4		R5		R6		15	15	10	84.4	Flat	82.68	0.94	1.25	1.59	2.36	32.48	43.30	8.79	13.07
RFV01U-D2A				☐	0.5		1	1	1		R7		R8		R9		15	15	8.1	70.3	Flat	74.08	0.94	1.01	1.59	2.05	32.48	35.07	8.79	11.36
CBRS				☐			1	1	1		A3	A4	B3	B4	G7	G8	16.16	11.39	5.45	23.14	Flat	73.52	1.53	0.75	2.74	1.72	53.13	25.86	15.18	9.51

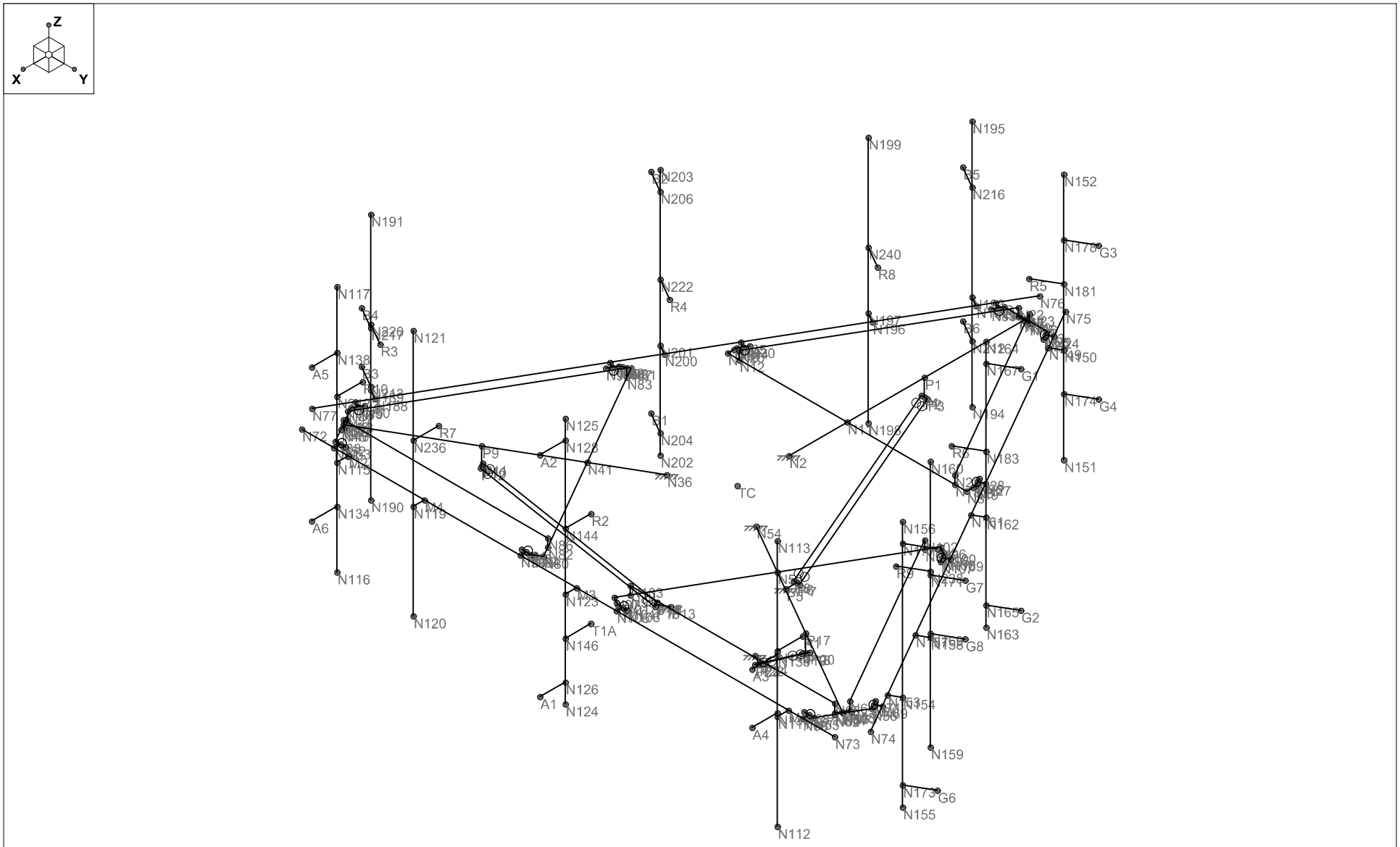
APPENDIX B

WIRE FRAME AND RENDERED MODELS



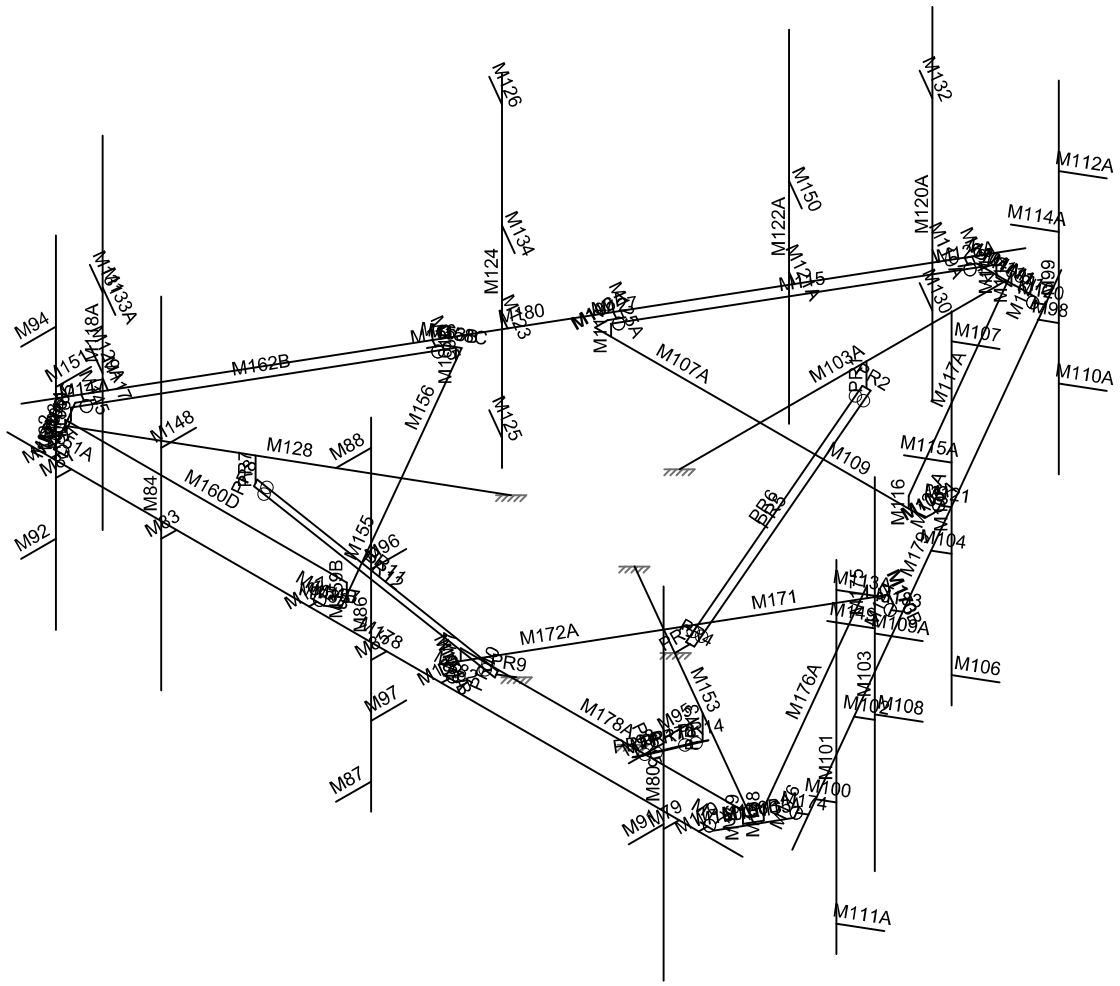
Envelope Only Solution

CLS	42284-NG64052-64052-NEW BRITAIN 5 CT	SK - 1
DG		Oct 25, 2019 at 3:53 PM
42284-NG64052-03-MA	Rendered	42284-NG64052-03-MA.r3d



Envelope Only Solution

CLS	42284-NG64052-64052-NEW BRITAIN 5 CT	SK - 2
DG		Oct 25, 2019 at 3:53 PM
42284-NG64052-03-MA	Joint Labels	42284-NG64052-03-MA.r3d



Envelope Only Solution

CLS	42284-NG64052-64052-NEW BRITAIN 5 CT	SK - 3
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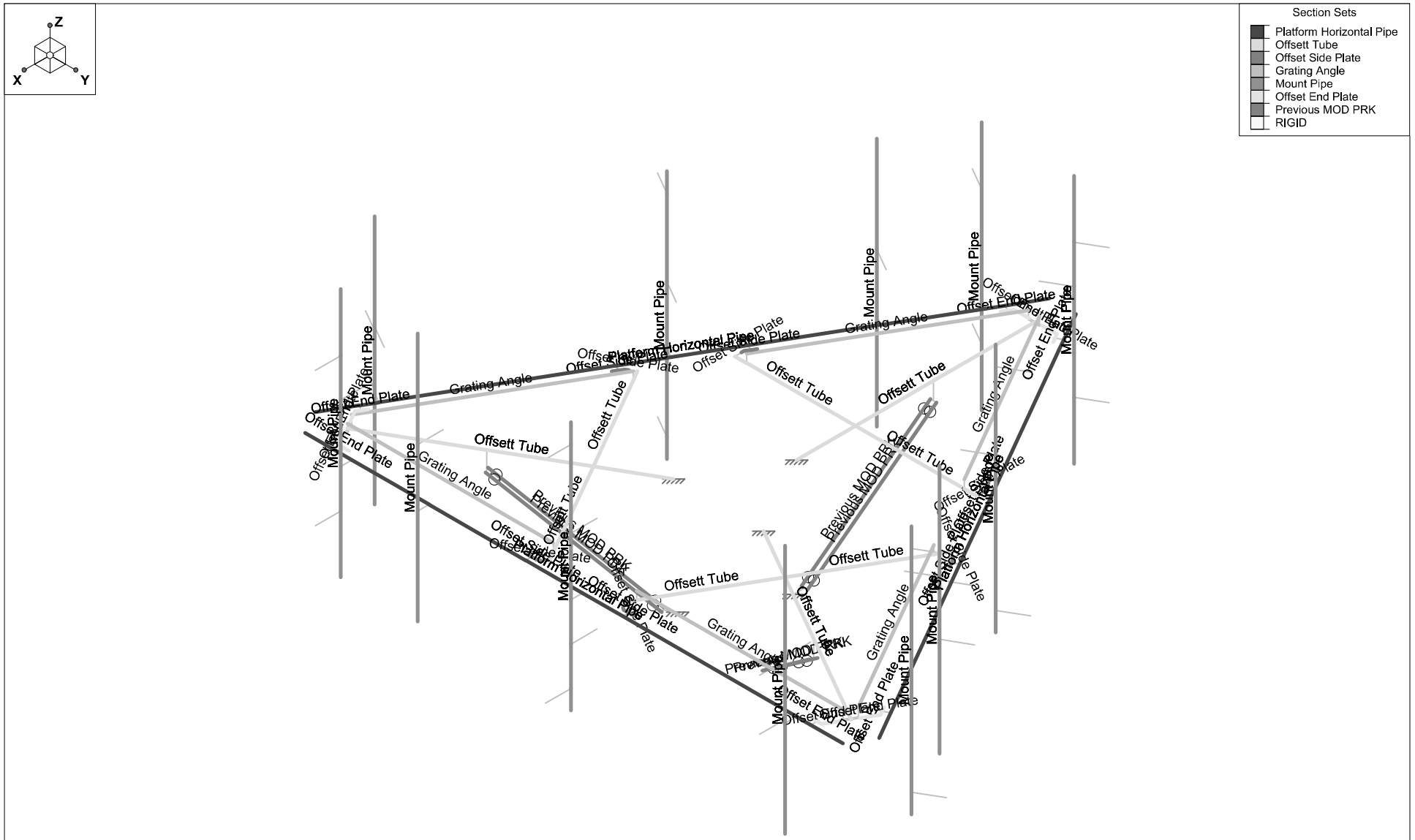
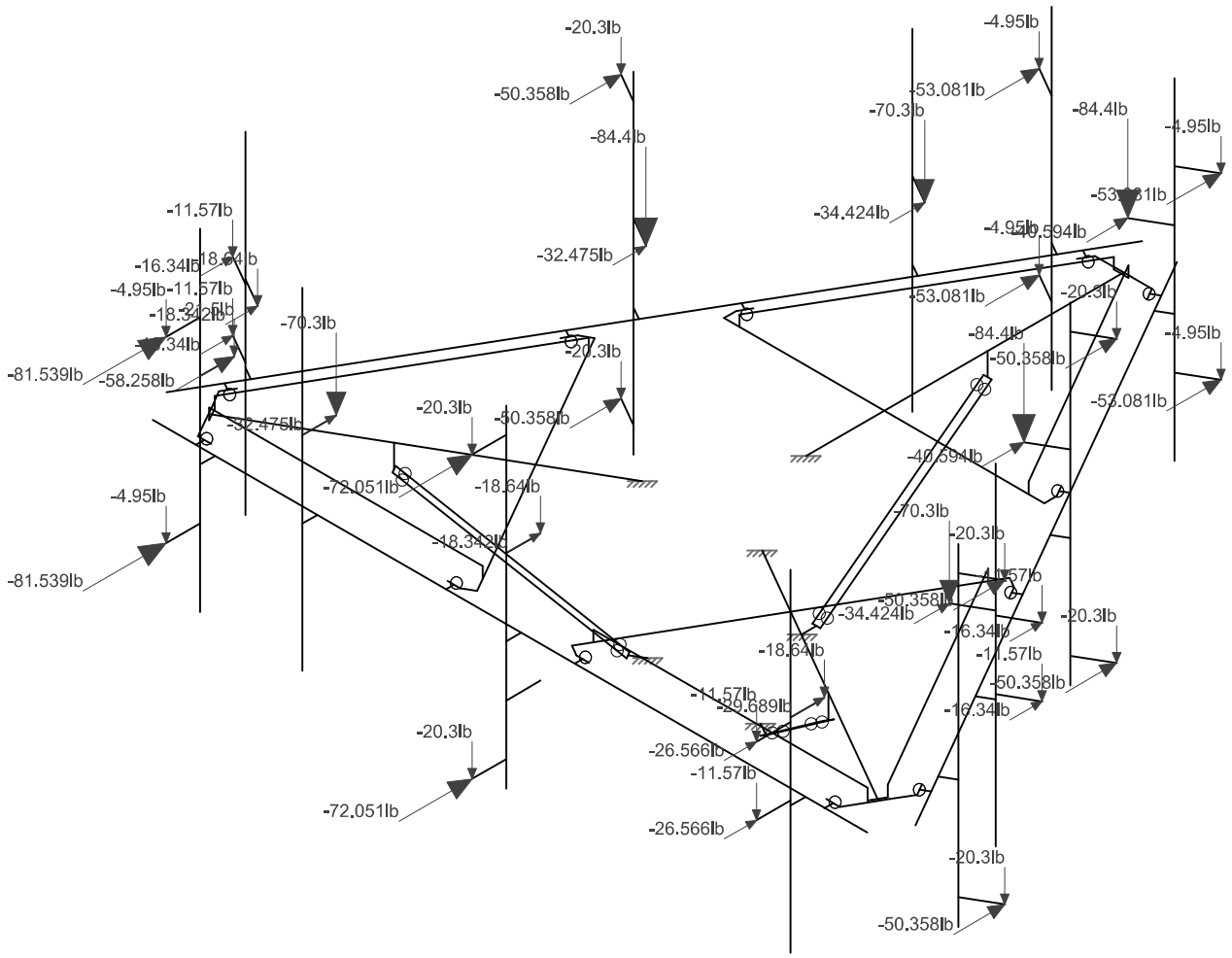
42284-NG64052-03-MA	Member Labels	42284-NG64052-03-MA.r3d

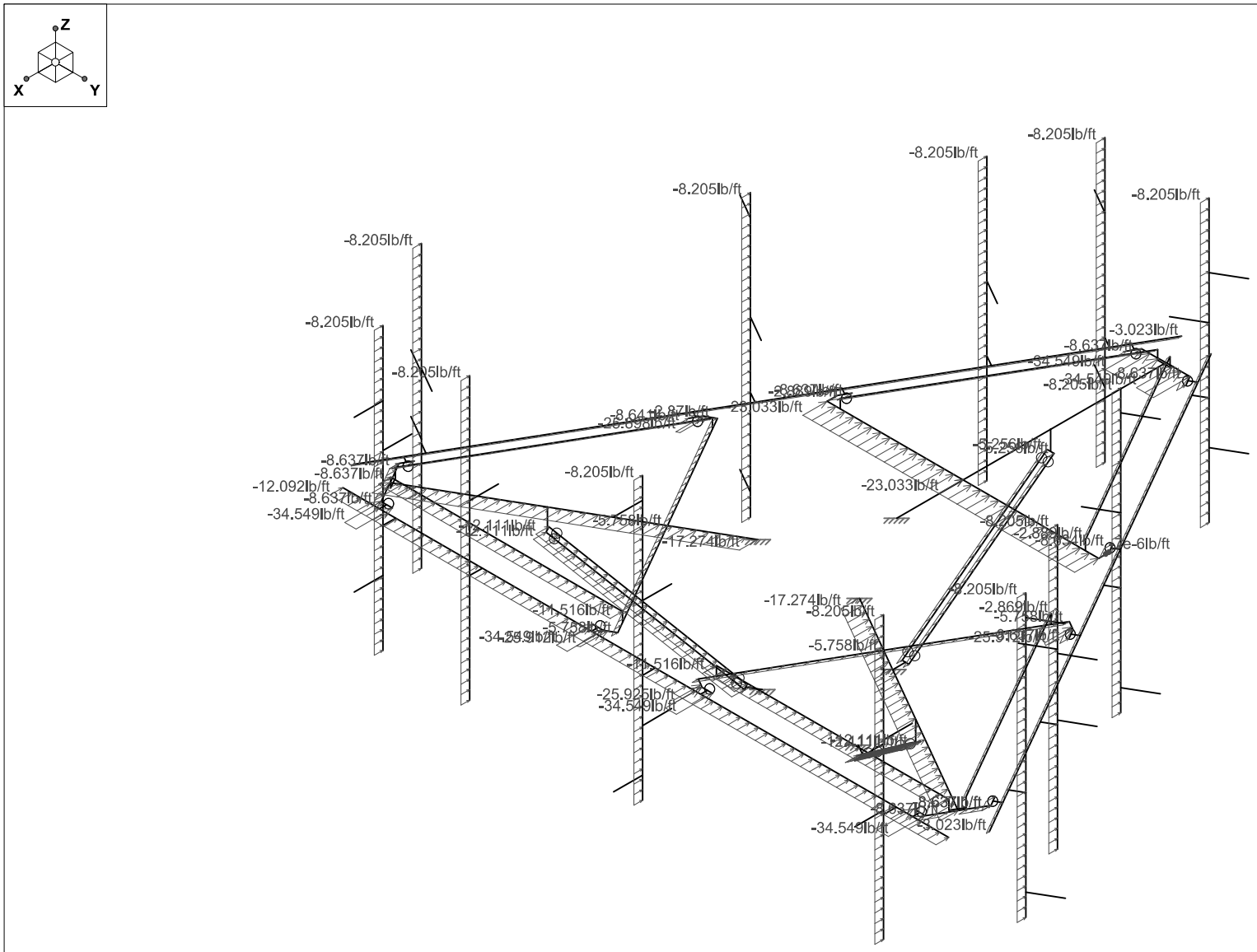


CLS	42284-NG64052-64052-NEW BRITAIN 5 CT	SK - 4
DG		Oct 25, 2019 at 4:15 PM
42284-NG64052-03-MA	Section Sets	42284-NG64052-03-MA.r3d



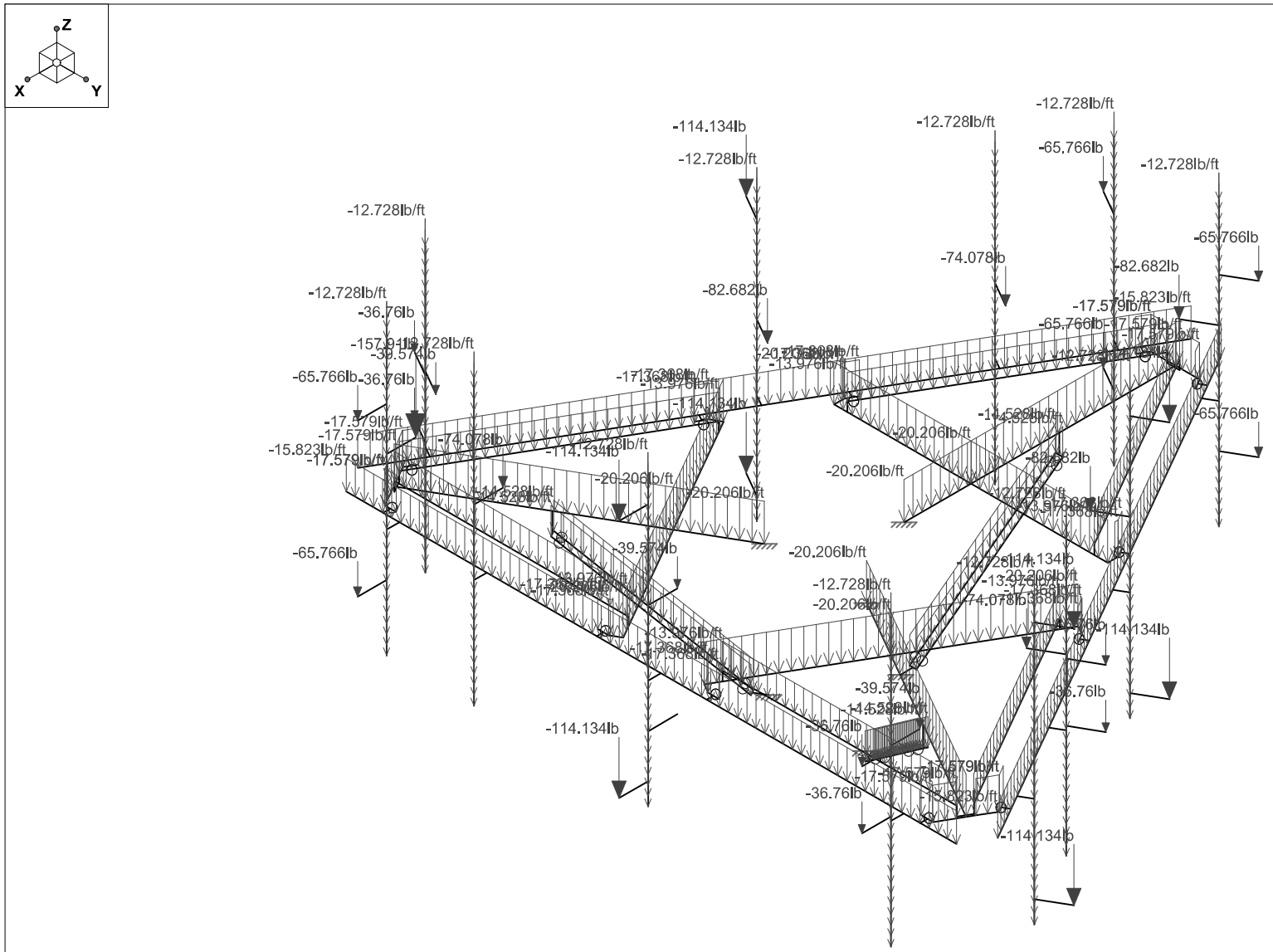
Loads: LC 1, DISPLAY (1.0D + 1.0W_0°)
Envelope Only Solution

CLS	42284-NG64052-64052-NEW BRITAIN 5 CT	SK - 5
DG		Oct 25, 2019 at 3:54 PM
42284-NG64052-03-MA	Joint Loads - Dead and Normal Wind	42284-NG64052-03-MA.r3d



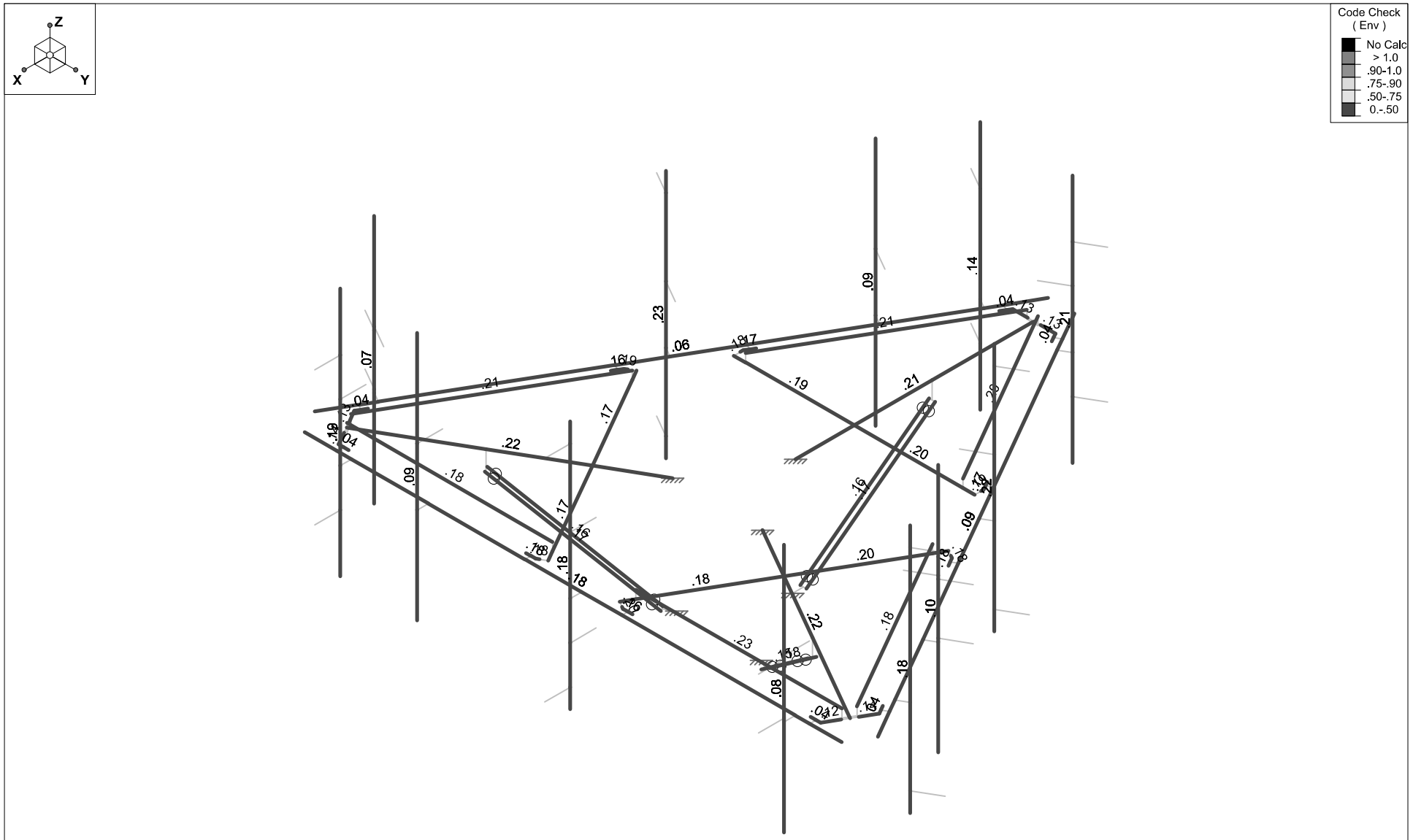
Loads: BLC 4, Structure Wind 0°
Envelope Only Solution

CLS	42284-NG64052-64052-NEW BRITAIN 5 CT	SK - 6
DG		Oct 25, 2019 at 3:55 PM
42284-NG64052-03-MA	Distributed Load - Normal Wind	42284-NG64052-03-MA.r3d



Loads: BLC 2, Ice Dead
Envelope Only Solution

CLS	42284-NG64052-64052-NEW BRITAIN 5 CT	SK - 7
DG		Oct 25, 2019 at 3:55 PM
42284-NG64052-03-MA	Ice Dead Loads	42284-NG64052-03-MA.r3d



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

CLS	42284-NG64052-64052-NEW BRITAIN 5 CT	SK - 8
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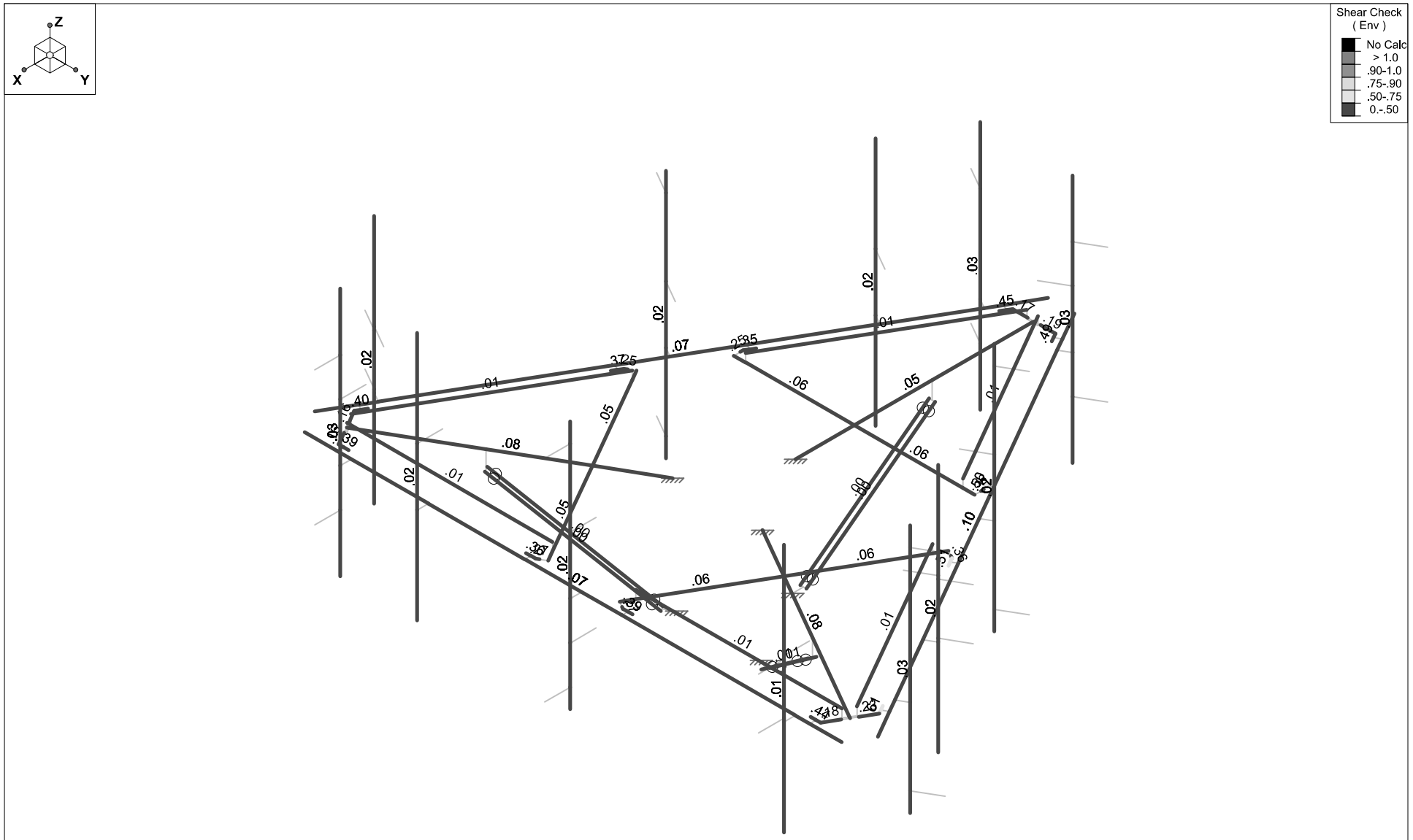
42284-NG64052-03-MA	Envelope Member Unity Check Results - Bending	42284-NG64052-03-MA.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

CLS	42284-NG64052-64052-NEW BRITAIN 5 CT	SK - 9
DG		Oct 25, 2019 at 3:56 PM
42284-NG64052-03-MA	Envelope Member Check Results - Shear	42284-NG64052-03-MA.r3d

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Dead	DL			-1	30				
2	Ice Dead	RL				30		60		
4	Structure Wind 0°	None						58		
5	Structure Wind 30°	None						102		
6	Structure Wind 45°	None						120		
7	Structure Wind 60°	None						116		
8	Structure Wind 90°	None						51		
9	Structure Wind 120°	None						116		
10	Structure Wind 135°	None						120		
11	Structure Wind 150°	None						102		
12	Structure Wind w/ Ice ...	None						58		
13	Structure Wind w/ Ice ...	None						104		
14	Structure Wind w/ Ice ...	None						120		
15	Structure Wind w/ Ice ...	None						116		
16	Structure Wind w/ Ice ...	None						52		
17	Structure Wind w/ Ice ...	None						116		
18	Structure Wind w/ Ice ...	None						120		
19	Structure Wind w/ Ice ...	None						104		
20	Antenna Wind 0°	None				30				
21	Antenna Wind 30°	None				60				
22	Antenna Wind 45°	None				60				
23	Antenna Wind 60°	None				60				
24	Antenna Wind 90°	None				30				
25	Antenna Wind 120°	None				60				
26	Antenna Wind 135°	None				60				
27	Antenna Wind 150°	None				60				
28	Antenna Wind w/ Ice 0°	None				30				
29	Antenna Wind w/ Ice ...	None				60				
30	Antenna Wind w/ Ice ...	None				60				
31	Antenna Wind w/ Ice ...	None				60				
32	Antenna Wind w/ Ice ...	None				30				
33	Antenna Wind w/ Ice ...	None				60				
34	Antenna Wind w/ Ice ...	None				60				
35	Antenna Wind w/ Ice ...	None				60				
39	Maintenance Live 50...	OL1				1				
40	Maintenance Live 50...	OL2				1				
41	Maintenance Live 50...	OL3				1				
42	Maintenance Live 50...	OL4				1				

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	DISPLAY (1.0D + 1.0...	Yes	Y		DL	1	20	1																		
2	1.4D	Yes	Y		DL	1.4																				
3	1.2D + 1.0W_0°	Yes	Y		DL	1.2	4	1	20	1																
4	1.2D + 1.0W_30°	Yes	Y		DL	1.2	5	1	21	1																
5	1.2D + 1.0W_45°	Yes	Y		DL	1.2	6	1	22	1																
6	1.2D + 1.0W_60°	Yes	Y		DL	1.2	7	1	23	1																
7	1.2D + 1.0W_90°	Yes	Y		DL	1.2	8	1	24	1																
8	1.2D + 1.0W_120°	Yes	Y		DL	1.2	9	1	25	1																
9	1.2D + 1.0W_135°	Yes	Y		DL	1.2	10	1	26	1																
10	1.2D + 1.0W_150°	Yes	Y		DL	1.2	11	1	27	1																
11	1.2D + 1.0W_180°	Yes	Y		DL	1.2	4	-1	20	-1																
12	1.2D + 1.0W_210°	Yes	Y		DL	1.2	5	-1	21	-1																
13	1.2D + 1.0W_225°	Yes	Y		DL	1.2	6	-1	22	-1																

Load Combinations (Continued)

	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...
14	1.2D + 1.0W_240°	Yes	Y		DL	1.2	7	-1	23	-1																
15	1.2D + 1.0W_270°	Yes	Y		DL	1.2	8	-1	24	-1																
16	1.2D + 1.0W_300°	Yes	Y		DL	1.2	9	-1	25	-1																
17	1.2D + 1.0W_315°	Yes	Y		DL	1.2	10	-1	26	-1																
18	1.2D + 1.0W_330°	Yes	Y		DL	1.2	11	-1	27	-1																
19	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	12	1	28	1	RL	1														
20	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	13	1	29	1	RL	1														
21	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	14	1	30	1	RL	1														
22	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	15	1	31	1	RL	1														
23	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	16	1	32	1	RL	1														
24	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	17	1	33	1	RL	1														
25	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	18	1	34	1	RL	1														
26	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	19	1	35	1	RL	1														
27	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	12	-1	28	-1	RL	1														
28	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	13	-1	29	-1	RL	1														
29	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	14	-1	30	-1	RL	1														
30	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	15	-1	31	-1	RL	1														
31	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	16	-1	32	-1	RL	1														
32	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	17	-1	33	-1	RL	1														
33	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	18	-1	34	-1	RL	1														
34	1.2D + 1.0Di + 1.0Wi...	Yes	Y		DL	1.2	19	-1	35	-1	RL	1														
35	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	4	.061	20	.061	O...	1.5														
36	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	5	.061	21	.061	O...	1.5														
37	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	6	.061	22	.061	O...	1.5														
38	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	7	.061	23	.061	O...	1.5														
39	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	8	.061	24	.061	O...	1.5														
40	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	9	.061	25	.061	O...	1.5														
41	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	10	.061	26	.061	O...	1.5														
42	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	11	.061	27	.061	O...	1.5														
43	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	4	-.061	20	-.061	O...	1.5														
44	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	5	-.061	21	-.061	O...	1.5														
45	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	6	-.061	22	-.061	O...	1.5														
46	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	7	-.061	23	-.061	O...	1.5														
47	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	8	-.061	24	-.061	O...	1.5														
48	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	9	-.061	25	-.061	O...	1.5														
49	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	10	-.061	26	-.061	O...	1.5														
50	1.2D + 1.5Lm_1 + 1....	Yes	Y		DL	1.2	11	-.061	27	-.061	O...	1.5														
51	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	4	.061	20	.061	O...	1.5														
52	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	5	.061	21	.061	O...	1.5														
53	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	6	.061	22	.061	O...	1.5														
54	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	7	.061	23	.061	O...	1.5														
55	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	8	.061	24	.061	O...	1.5														
56	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	9	.061	25	.061	O...	1.5														
57	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	10	.061	26	.061	O...	1.5														
58	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	11	.061	27	.061	O...	1.5														
59	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	4	-.061	20	-.061	O...	1.5														
60	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	5	-.061	21	-.061	O...	1.5														
61	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	6	-.061	22	-.061	O...	1.5														
62	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	7	-.061	23	-.061	O...	1.5														
63	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	8	-.061	24	-.061	O...	1.5														
64	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	9	-.061	25	-.061	O...	1.5														
65	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	10	-.061	26	-.061	O...	1.5														
66	1.2D + 1.5Lm_2 + 1....	Yes	Y		DL	1.2	11	-.061	27	-.061	O...	1.5														
67	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	4	.061	20	.061	O...	1.5														
68	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	5	.061	21	.061	O...	1.5														
69	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	6	.061	22	.061	O...	1.5														
70	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	7	.061	23	.061	O...	1.5														

Load Combinations (Continued)

	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...
71	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	8	.061	24	.061	O...	1.5														
72	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	9	.061	25	.061	O...	1.5														
73	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	10	.061	26	.061	O...	1.5														
74	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	11	.061	27	.061	O...	1.5														
75	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	4	-.061	20	-.061	O...	1.5														
76	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	5	-.061	21	-.061	O...	1.5														
77	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	6	-.061	22	-.061	O...	1.5														
78	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	7	-.061	23	-.061	O...	1.5														
79	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	8	-.061	24	-.061	O...	1.5														
80	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	9	-.061	25	-.061	O...	1.5														
81	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	10	-.061	26	-.061	O...	1.5														
82	1.2D + 1.5Lm_3 + 1....	Yes	Y		DL	1.2	11	-.061	27	-.061	O...	1.5														
83	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	4	.061	20	.061	O...	1.5														
84	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	5	.061	21	.061	O...	1.5														
85	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	6	.061	22	.061	O...	1.5														
86	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	7	.061	23	.061	O...	1.5														
87	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	8	.061	24	.061	O...	1.5														
88	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	9	.061	25	.061	O...	1.5														
89	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	10	.061	26	.061	O...	1.5														
90	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	11	.061	27	.061	O...	1.5														
91	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	4	-.061	20	-.061	O...	1.5														
92	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	5	-.061	21	-.061	O...	1.5														
93	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	6	-.061	22	-.061	O...	1.5														
94	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	7	-.061	23	-.061	O...	1.5														
95	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	8	-.061	24	-.061	O...	1.5														
96	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	9	-.061	25	-.061	O...	1.5														
97	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	10	-.061	26	-.061	O...	1.5														
98	1.2D + 1.5Lm_4 + 1....	Yes	Y		DL	1.2	11	-.061	27	-.061	O...	1.5														

Hot Rolled Steel Properties

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

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Platform Horizontal Pi...	PIPE 3.0	Beam	None	A53 Gr.B	Typical	2.07	2.85	2.85	5.69
2	Offsett Tube	HSS4X4X4	Beam	None	A36 Gr.36	Typical	3.37	7.8	7.8	12.8
3	Offset Side Plate	0.38 X 6 Plate	Beam	None	A36 Gr.36	Typical	2.28	.027	6.84	.105
4	Grating Angle	L2x2x3	Beam	None	A36 Gr.36	Typical	.722	.271	.271	.009
5	Mount Pipe	PIPE 2.0	Beam	None	A53 Gr.B	Typical	1.02	.627	.627	1.25
6	Offset End Plate	0.5 x 6 Plate	Beam	None	A36 Gr.36	Typical	3	.063	9	.237
7	Previous MOD PRK	L2.5x2.5x3	Beam	None	A36 Gr.36	Typical	.901	.535	.535	.011

Hot Rolled Steel Design Parameters

	Label	Shape	Length[i...	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp bot[...	L-torque[in]	Kyy	Kzz	Cb	Function
1	M103A	Offsett Tube	74.679									Lateral
2	M104A	Offset End ...	4.688			Lbyy						Lateral
3	M105A	Offset Side...	.875			Lbyy						Lateral
4	M106A	Offset Side...	.875			Lbyy						Lateral
5	M107A	Offsett Tube	37.688			Lbyy						Lateral
6	M109	Offsett Tube	37.687			Lbyy						Lateral
7	M110	Offset End ...	4.688			Lbyy						Lateral
8	M115	Grating An...	64.434			Lbyy						Lateral
9	M117A	Grating An...	64.434			Lbyy						Lateral
10	M122	Offset End ...	3.122			Lbyy						Lateral
11	M123A	Offset Side...	3			Lbyy						Lateral
12	M126A	Offset End ...	3.122			Lbyy						Lateral
13	M127	Offset Side...	3			Lbyy						Lateral
14	M128	Offsett Tube	74.679									Lateral
15	M129	Offset End ...	4.688			Lbyy						Lateral
16	M135	Offset End ...	4.688			Lbyy						Lateral
17	M147	Offset End ...	3.122			Lbyy						Lateral
18	M151A	Offset End ...	3.122			Lbyy						Lateral
19	M153	Offsett Tube	74.679									Lateral
20	M154	Offset End ...	4.688			Lbyy						Lateral
21	M160C	Offset End ...	4.688			Lbyy						Lateral
22	M172	Offset End ...	3.122			Lbyy						Lateral
23	M176	Offset End ...	3.122			Lbyy						Lateral
24	M178	Platform H...	168	59	67	Lbyy						Lateral
25	M179	Platform H...	168	59	67	Lbyy						Lateral
26	M180	Platform H...	168	59	67	Lbyy						Lateral
27	M153B	Offset Side...	.875			Lbyy						Lateral
28	M154B	Offset Side...	.875			Lbyy						Lateral
29	M155	Offsett Tube	37.688			Lbyy						Lateral
30	M156	Offsett Tube	37.687			Lbyy						Lateral
31	M160D	Grating An...	64.434			Lbyy						Lateral
32	M162B	Grating An...	64.434			Lbyy						Lateral
33	M166	Offset Side...	3			Lbyy						Lateral
34	M168B	Offset Side...	3			Lbyy						Lateral
35	M169B	Offset Side...	.875			Lbyy						Lateral
36	M170B	Offset Side...	.875			Lbyy						Lateral
37	M171	Offsett Tube	37.688			Lbyy						Lateral
38	M172A	Offsett Tube	37.687			Lbyy						Lateral
39	M176A	Grating An...	64.434			Lbyy						Lateral
40	M178A	Grating An...	64.434			Lbyy						Lateral
41	M182	Offset Side...	3			Lbyy						Lateral
42	M184	Offset Side...	3			Lbyy						Lateral
43	M80	Mount Pipe	78			Lbyy						Lateral
44	M82	Mount Pipe	78			Lbyy						Lateral
45	M84	Mount Pipe	78			Lbyy						Lateral
46	M86	Mount Pipe	78			Lbyy						Lateral
47	M99	Mount Pipe	78			Lbyy						Lateral
48	M101	Mount Pipe	78			Lbyy						Lateral
49	M103	Mount Pipe	78			Lbyy						Lateral
50	M105	Mount Pipe	78			Lbyy						Lateral
51	M118A	Mount Pipe	78			Lbyy						Lateral
52	M120A	Mount Pipe	78			Lbyy						Lateral
53	M122A	Mount Pipe	78			Lbyy						Lateral
54	M124	Mount Pipe	78			Lbyy						Lateral
55	PR5	Previous M...	50.531									Lateral
56	PR6	Previous M...	50.531									Lateral
57	PR11	Previous M...	50.531									Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[i...	Lbyy[in]	Lbzz[in]	Lcomp top[...	Lcomp bot[...	L-torque[in]	Kyy	Kzz	Cb	Function
58	PR12	Previous M...	50.531									Lateral
59	PR17	Previous M...	50.531									Lateral
60	PR18	Previous M...	50.531									Lateral

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	N2	max	2778.22	19	925.661	15	445.743	28	242.682	7	554.306	27	1349.197	7
2		min	-869.373	11	-929.838	7	32.632	68	-223.23	15	32.578	67	-1341.593	15
3	N36	max	671.182	3	2390.798	30	479.952	71	311.394	59	173.807	16	1138.933	18
4		min	-1430.276	27	-764.442	6	-154.962	63	-325.204	19	-870.352	72	-1136.424	10
5	N54	max	539.869	3	758.016	16	503.03	67	661.789	19	251.426	20	1151.462	12
6		min	-1437.757	27	-2456.265	24	-145.326	43	-233.57	43	-821.029	77	-1152.366	4
7	P13	max	1509.432	30	-470.045	6	2371.186	30	-101.408	6	-50.114	1	57.167	18
8		min	271.334	6	-2614.627	30	410.291	6	-573.985	30	-339.62	30	-55.62	10
9	P5	max	-636.901	11	60.016	15	2370.846	19	36.599	7	666.8	19	65.138	7
10		min	-3018.703	19	-60.015	7	481.694	11	-34.393	15	135.476	11	-62.286	15
11	P21	max	1535.409	24	2658.196	24	2409.594	24	599.56	24	-50.576	1	46.55	12
12		min	305.16	1	528.61	1	475.783	1	123.576	16	-318.663	27	-66.59	4
13	Totals:	max	3140.411	3	3187.01	15	8023.632	34						
14		min	-3140.408	11	-3187.01	7	2011.282	1						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	M176	0.5 x 6 Pla...	.043	0	15	.606	0	y	22	94834.571	97200	1012.5	12150	3...	H1-1b
2	M184	0.38 X 6 P...	.180	1.5	15	.505	3	y	22	71019.885	73872	584.82	9234	3...	H1-1b
3	M123A	0.38 X 6 P...	.173	1.5	12	.502	3	y	22	71020.258	73872	584.82	9234	3...	H1-1b
4	M122	0.5 x 6 Pla...	.043	0	12	.493	0	y	22	94834.571	97200	1012.5	12150	3...	H1-1b
5	M126A	0.5 x 6 Pla...	.041	0	18	.446	0	y	32	94834.571	97200	1012.5	12150	3...	H1-1b
6	M172	0.5 x 6 Pla...	.038	0	10	.438	0	y	27	94834.571	97200	1012.5	12150	3...	H1-1b
7	M147	0.5 x 6 Pla...	.040	0	7	.395	0	y	32	94834.571	97200	1012.5	12150	3...	H1-1b
8	M151A	0.5 x 6 Pla...	.044	0	4	.394	0	y	27	94834.571	97200	1012.5	12150	3...	H1-1b
9	M182	0.38 X 6 P...	.158	1.5	18	.392	3	y	27	71020.258	73872	584.82	9234	3...	H1-1b
10	M166	0.38 X 6 P...	.161	1.5	7	.366	3	y	32	71020.258	73872	584.82	9234	3...	H1-1b
11	M170B	0.38 X 6 P...	.180	.875	31	.364	.875	y	22	73624.978	73872	584.82	9234	1...	H1-1b
12	M168B	0.38 X 6 P...	.179	1.5	4	.363	3	y	27	71019.885	73872	584.82	9234	3...	H1-1b
13	M105A	0.38 X 6 P...	.192	.875	28	.361	.875	y	22	73624.978	73872	584.82	9234	1...	H1-1b
14	M127	0.38 X 6 P...	.175	1.5	9	.355	3	y	32	71019.885	73872	584.82	9234	3...	H1-1b
15	M169B	0.38 X 6 P...	.195	.875	34	.273	.875	y	27	73624.978	73872	584.82	9234	1...	H1-1b
16	M154B	0.38 X 6 P...	.178	.875	20	.270	.875	y	11	73624.978	73872	584.82	9234	1...	H1-1b
17	M153B	0.38 X 6 P...	.192	.875	23	.254	.875	y	32	73624.978	73872	584.82	9234	1...	H1-1b
18	M106A	0.38 X 6 P...	.182	.875	26	.251	.875	y	8	73624.978	73872	584.82	9234	1...	H1-1b
19	M154	0.5 x 6 Pla...	.136	4.688	7	.227	4.688	y	22	91950.093	97200	1012.5	12150	1...	H1-1b
20	M110	0.5 x 6 Pla...	.134	0	4	.191	0	y	22	91950.093	97200	1012.5	12150	1...	H1-1b
21	M160C	0.5 x 6 Pla...	.123	0	10	.184	0	y	27	91950.093	97200	1012.5	12150	1...	H1-1b
22	M104A	0.5 x 6 Pla...	.131	4.688	18	.171	4.688	y	32	91950.093	97200	1012.5	12150	1...	H1-1b
23	M129	0.5 x 6 Pla...	.136	4.688	12	.160	4.688	y	11	91950.093	97200	1012.5	12150	1...	H1-1b
24	M135	0.5 x 6 Pla...	.125	0	15	.160	0	y	32	91950.093	97200	1012.5	12150	1...	H1-1b
25	M179	PIPE_3.0	.090	39.789	34	.098	13.263		22	55183.305	65205	5748.75	5748.75	1	H1-1b
26	M128	HSS4X4X4	.218	43.235	29	.081	0	y	73	96180.074	109188	12663	12663	2...	H1-1b
27	M153	HSS4X4X4	.220	43.235	23	.076	0	y	76	96180.074	109188	12663	12663	2...	H1-1b
28	M180	PIPE_3.0	.060	39.789	28	.072	13.263		32	55183.305	65205	5748.75	5748.75	1	H1-1b
29	M178	PIPE_3.0	.177	39.789	87	.068	154.737		27	55183.305	65205	5748.75	5748.75	1	H1-1b
30	M171	HSS4X4X4	.198	37.688	23	.063	37.688	y	30	105716.944	109188	12663	12663	1...	H1-1b
31	M109	HSS4X4X4	.197	0	20	.062	0	y	30	105717.017	109188	12663	12663	1...	H1-1b

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
32	M107A	HSS4X4X4	.194	37.688	34	.060	37.688	y	24	105716.944	109188	12663	12663	1...	H1-1b
33	M172A	HSS4X4X4	.182	0	25	.056	0	y	19	105717.017	109188	12663	12663	1...	H1-1b
34	M156	HSS4X4X4	.174	0	31	.055	0	y	25	105717.017	109188	12663	12663	1...	H1-1b
35	M103A	HSS4X4X4	.213	43.235	20	.054	0	z	7	96180.074	109188	12663	12663	2...	H1-1b
36	M155	HSS4X4X4	.165	37.688	28	.053	37.688	y	20	105716.944	109188	12663	12663	1...	H1-1b
37	M82	PIPE_2.0	.193	47.211	3	.029	47.211		7	19360.206	32130	1871.6...	1871.6...	2...	H1-1b
38	M120A	PIPE_2.0	.143	47.211	16	.027	47.211		6	19360.206	32130	1871.6...	1871.6...	2...	H1-1b
39	M101	PIPE_2.0	.176	47.211	6	.026	47.211		16	19360.206	32130	1871.6...	1871.6...	1...	H1-1b
40	M99	PIPE_2.0	.209	47.211	14	.026	28.737		16	19360.206	32130	1871.6...	1871.6...	2...	H1-1b
41	M86	PIPE_2.0	.183	47.211	11	.025	28.737		16	19360.206	32130	1871.6...	1871.6...	1...	H1-1b
42	M105	PIPE_2.0	.223	47.211	14	.025	28.737		11	19360.206	32130	1871.6...	1871.6...	2...	H1-1b
43	M124	PIPE_2.0	.229	47.211	8	.025	28.737		11	19360.206	32130	1871.6...	1871.6...	2...	H1-1b
44	M84	PIPE_2.0	.092	47.211	3	.021	47.211		15	19360.206	32130	1871.6...	1871.6...	2...	H1-1b
45	M122A	PIPE_2.0	.092	47.211	8	.021	47.211		12	19360.206	32130	1871.6...	1871.6...	2...	H1-1b
46	M103	PIPE_2.0	.102	47.211	14	.020	30.789		18	19360.206	32130	1871.6...	1871.6...	2...	H1-1b
47	M118A	PIPE_2.0	.074	47.211	15	.016	30.789		13	19360.206	32130	1871.6...	1871.6...	2...	H1-1b
48	M80	PIPE_2.0	.080	47.211	11	.015	47.211		10	19360.206	32130	1871.6...	1871.6...	2...	H1-1b
49	M178A	L2x2x3	.233	64.434	22	.012	64.434	z	21	5944.929	23392.8	557.717	1230.2...	2...	H2-1
50	M162B	L2x2x3	.212	64.434	27	.011	64.434	z	26	5944.929	23392.8	557.717	1236.5...	2...	H2-1
51	M115	L2x2x3	.207	64.434	22	.011	64.434	y	23	5944.892	23392.8	557.717	1238.92	2...	H2-1
52	M117A	L2x2x3	.199	64.434	32	.010	64.434	z	31	5944.929	23392.8	557.717	1239.29	2...	H2-1
53	M176A	L2x2x3	.176	64.434	27	.008	64.434	y	29	5944.892	23392.8	557.717	1239.29	3...	H2-1
54	M160D	L2x2x3	.175	64.434	33	.008	64.434	y	19	5944.892	23392.8	557.717	1239.29	3...	H2-1
55	PR18	L2.5x2.5x3	.181	25.266	21	.006	50.531	z	23	16255.014	29192.4	872.574	1733.1...	1...	H2-1
56	PR17	L2.5x2.5x3	.148	25.266	27	.006	0	y	23	16255.014	29192.4	872.574	1733.1...	1...	H2-1
57	PR11	L2.5x2.5x3	.158	25.266	33	.004	50.531	y	28	16255.014	29192.4	872.574	1733.1...	1...	H2-1
58	PR12	L2.5x2.5x3	.166	25.266	27	.004	50.531	z	28	16255.014	29192.4	872.574	1733.1...	1...	H2-1
59	PR5	L2.5x2.5x3	.166	25.266	22	.004	50.531	y	20	16255.014	29192.4	872.574	1733.1...	1...	H2-1
60	PR6	L2.5x2.5x3	.160	25.266	32	.004	0	z	20	16255.014	29192.4	872.574	1733.1...	1...	H2-1

APPENDIX D

ADDITIONAL CALCULATIONS

CLSGroup

Bolted Connection Checks
AISC 14th Edition (360-10)

Member/ Node Number	LC	Tensile Load, T_u (kips)	Shear Load, V_u (kips)	Bolt Diameter (in)	Number of Bolts	Shear Planes per Bolt	U-Bolt?	Bolt Grade	Connected Member Thickness (in)	Connected Member Edge Clear Distance (in)	Connected Member Ultimate Strength, F_u (ksi)	Bolt Tensile Usage	Bolt Shear Usage	Member Bearing Usage
PR18	20	0.000	2.275	0.625	1	1	No	A325-N (1/2" to 1" Dia)	0.5	0.875	58	**0%**	**18%**	**10%**
M104	30	0.067	0.571	0.5	1	1	Yes	A36	0.5	0.875	58	**1%**	**7%**	**1%**

Exhibit F

Power Density/RF Emissions Report

Site Name: New Britain 5, 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)	(%)
CBRS	3500	1	50	50	110	0.0015	1.0	0.15%
VZW PCS	1970	1	6230	6230	110	0.1852	1.0	18.52%
VZW Cellular LTE	869	1	1670	1670	110	0.0496	0.579333333	8.57%
VZW Cellular	869	2	411	822	110	0.0244	0.579333333	4.22%
VZW AWS	2145	1	6220	6220	110	0.1849	1.0	18.49%
VZW 700	746	1	2750	2750	110	0.0817	0.497333333	16.43%

Total Percentage of Maximum Permissible Exposure 66.37%

*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.