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

October 28, 2021

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

RE: **Notice of Exempt Modification for T-Mobile**
Crown#876369; T-Mobile Site ID CTNH558A
53 Westminster Road, Canterbury, CT 06331
Latitude: 41° 42′ 7.15" / Longitude: -71° 58′ 50.11″

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 180-foot mount on the existing 180-foot monopole tower located at 53 Westminster Road, Canterbury, CT. The property is owned by John R. Lemire and the tower is owned by Crown Castle. T-Mobile now intends to replace six (6) antennas and ancillary equipment at the 178ft level. This modification/proposal includes hardware that is both 4G (LTE) and 5G capable through remote software configuration and either or both services may be turned on or off at various times.

Panned Modification:

Tower:

Installed New:
- (3) Ericsson – AIR6449 B41 Antennas
- (3) RFS-APXVAALL24_43-U-NA20 Antennas
- (3) Ericsson- RRU 4460 B25+B66
- (3) Ericsson- Radio 4480 B71+B85
- (3) Hybrid 1-5/8" Cables
- (3) New Antenna Mounts

Remove:
- (3) RFS -APXVTM14-C-120 Antennas
- (3) Commscope – NNVV-65B-R4
- (6) Alcatel Lucent – RRH2x50-800
- (3) Alcatel Lucent – RRH8x20-25
- (3) Alcatel Lucent – PCS MHZ 4x45W-65 MHZ
- (4) 1-1/4" Coax Cables
- (3) Hybrid 1-5/8" Cables
- (1) Antenna Mount Platform
- (1) RRH Mount

Ground:

Install New:

(1) 6160 Cabinet and enclosure
(1.) RBS 6601
(1) B160 Battery Cabinet
(1) CSR IXRE V2 (Gen2) Router
(1) PSU 4813 Voltage Booster
(3.) BB 6648 In (P) Cabinet
(1) CSR IXRc V2 Router in (P) Cabinet
(1.) DG 20 IN SSC

Remove:

(1.) Sprint Cabinets

The facility was approved by the Town of Canterbury Planning and Zoning Commission by way of Site Plan and Special Exception Application Number 99-8 on April 18, 2000.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Mr. Christopher Lippke, First Selectman Town of Canterbury, Mr. Robert Kerr, Building Official, Town of Canterbury and John R. Lemire, property owner. Crown Castle is the tower owner.

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

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

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

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

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

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

Sincerely,

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

Attachments
cc:

Christopher Lippke, First Selectman
Town of Canterbury
1 Municipal Drive
Canterbury, CT 06331
(860) 546-8135

Robert Kerr, Building Official
Town of Canterbury
1 Municipal Drive
Canterbury, CT 06331
(860) 230-7073

John R. Lemire
14 Debbie Crt
Norwich, CT 06360

Crown Castle, Tower Owner

Town of Canterbury
Notice of Action

Appeal: ☐ Site Plan: ☒ Special Exception: ☒ Special Use Permit: ☐
Subdivision: ☐ Variance: ☐ Wetlands: ☐ Zone Change: ☐
Zoning Regulation: _____ Section: _____

Applicant: Sprint Spectrum
Name of Record Owner (If different): _____
Street Address of Property: 53 Westminster Road Map#: 46 Lot(s)#: 32
Deed Reference: Volume: 85 Page: 331
Description of Property: (Should be attached)
Description of Action: Approved Application #99-8-SE, Special Exception with stipulations, submitted by Sprint Spectrum for a Telecommunications Tower on 53 Westminster Road, Map 46 Lot 32

Date Approved: _____ Effective Date: 4/26/00
Legal Notice of Action published in the Norwich Bulletin

Conditions, if any: 1) An 8 foot fence shall be substituted for the proposed 6 foot fence; 2) proper signage shall be posted as per plans and shall include "No Trespassing" signs; 3) emergency access keys shall be given to the Town Fire Company; and 4) a $30,000 bond shall be posted to ensure proper removal of the tower due to abandonment.

Patricia J. Grassi
Town Clerk

4/26/00
Date

4:00 pm
Time

Lee Wrigley (mg)
Chairman
Planning + Zoning Commission
Commission/Board
4/18/00
Date

This Notice of Action must be recorded with the Canterbury Town Clerk by the applicant within 90 days of the effective date.

RECEIVED FOR RECORD
THIS 26th DAY OF April 2000 AT 4:00 P.M.
Patricia J. Grassi
TOWN CLERK OF CANTERBURY

53 WESTMINSTER RD

Location	53 WESTMINSTER RD	**Mblu**	46/ 32/ / /
Acct#	00144000	**Owner**	LEMIRE JOHN R
Assessment	$290,500	**Appraisal**	$467,650
PID	1715	**Building Count**	1

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2020	$106,400	$361,250	$467,650
Assessment			
Valuation Year	Improvements	Land	Total
2020	$74,600	$215,900	$290,500

Owner of Record

Owner	LEMIRE JOHN R	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	14 DEBBIE CT NORWICH, CT 06360	**Book & Page**	85/ 331
		Sale Date	07/27/1988

Ownership History

Ownership History				
Owner	Sale Price	Certificate	Book & Page	Sale Date
LEMIRE JOHN R	$0		85/ 331	07/27/1988

Building Information

Building 1 : Section 1

Year Built:	1971
Living Area:	544
Replacement Cost:	$45,088
Building Percent Good:	44
Replacement Cost Less Depreciation:	$19,800

Building Attributes

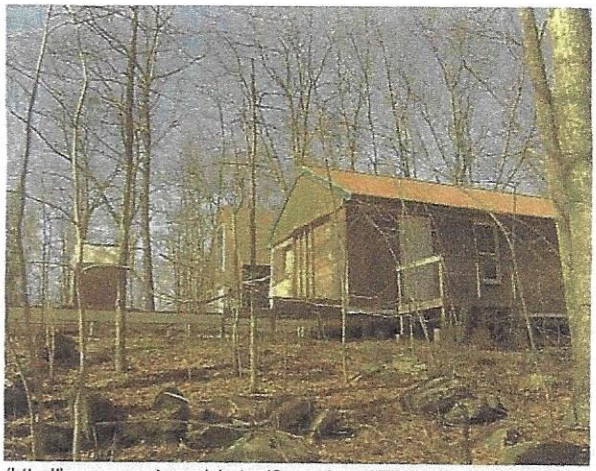
Field	Description
Style	Manufactured Home
Model	Mobile Homes
Grade:	D
Stories	1 Story
Occupancy	1
Exterior Wall 1	Pre-Fab Wood
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt
Interior Wall 1	Drywall
Interior Wall 2	Panelling
Interior Flr 1	Carpet
Interior Flr 2	Linoleum
Heat Fuel	Oil
Heat Type:	Forced Hot Air
AC Type:	None
Total Bedrooms:	1 Bedroom
Total Bthrms:	1
Total Half Baths:	0
Extra Fixtures	
Total Rooms:	2 Rooms
Bath Style:	Average
Kitchen Style:	Average
Fireplaces	0
Xtra Openings	0
Gas Fireplaces	0
Woodstove	
SF Fin Bsmt	
Fin Bsmt Qual	
Bsmt Gar	
Blocked FPL	0

Building 1 : Section 1

Year Built: 1971
Living Area: 0
Replacement Cost: $45,088
Building Percent Good: 44
Replacement Cost Less Depreciation: $19,800

Building Attributes	
Field	**Description**

Building Photo



(http://images.vgsi.com/photos/CanterburyCTPhotos/\00\00\42/67.jpg)

Building Layout

SHP

(http://images.vgsi.com/photos/CanterburyCTPhotos//Sketches/1715_2072

Building Sub-Areas (sq ft)			Legend
Code	**Description**	**Gross Area**	**Living Area**
BAS	First Floor	544	544
		544	544

Use Code	1030	**Size (Acres)**	35.43
Description	Manufactured Home	**Frontage**	0
Zone	RD	**Depth**	0
Neighborhood		**Assessed Value**	$215,900
Alt Land Appr	No	**Appraised Value**	$361,250
Category			

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
SHD6	Cell Equipment Bldg			320 S.F.	$80,000	1
SHP2	Work Shop - Good			384 S.F	$5,800	1
FN4	FENCE-8' CHAIN			240 L.F.	$800	1

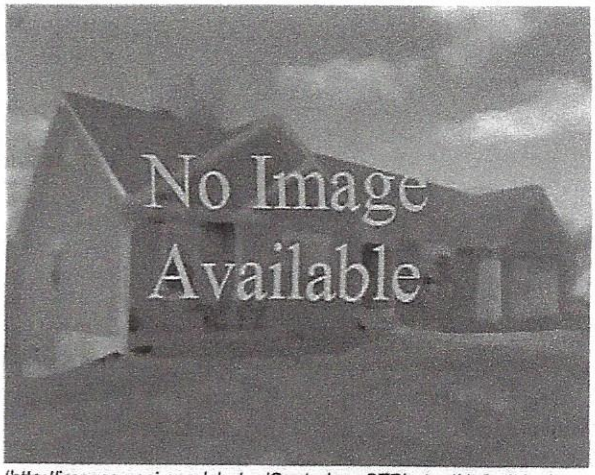
Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$21,300	$280,710	$302,010
2018	$21,300	$280,710	$302,010
2017	$21,300	$280,710	$302,010

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2019	$15,000	$162,900	$177,900
2018	$15,000	$170,300	$185,300
2017	$15,000	$170,300	$185,300

Style	Outbuildings
Model	
Grade:	
Stories	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Extra Fixtures	
Total Rooms:	
Bath Style:	
Kitchen Style:	
Fireplaces	
Xtra Openings	
Gas Fireplaces	
Woodstove	
SF Fin Bsmt	
Fin Bsmt Qual	
Bsmt Gar	
Blocked FPL	

Building Photo



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Building Layout

Building Layout

(http://images.vgsi.com/photos/CanterburyCTPhotos//Sketches/1715_3302

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

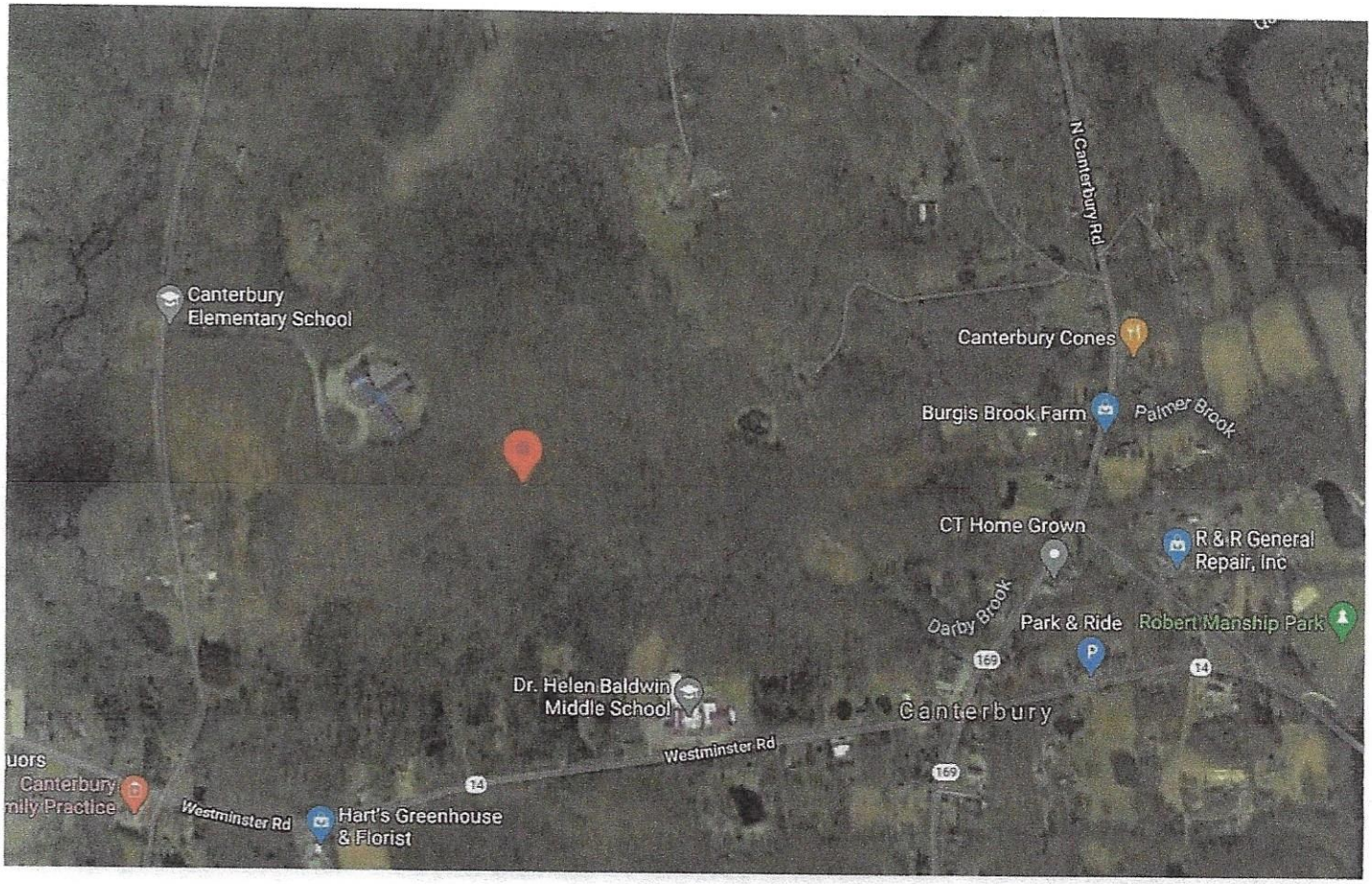
Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Land Line Valuation


Canterbury
Elementary School
N Canterbury Rd
Canterbury Cones
Burgis Brook Farm
Palmer Brook
CT Home Grown
R & R General
Repair, Inc
Darby Brook
Park & Ride
Robert Manship Park
169
14
Dr. Helen Baldwin
Middle School
Canterbury
Westminster Rd
Canterbury
mily Practice
Westminster Rd
Hart's Greenhouse
& Florist

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Monday, November 1, 2021 9:46 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 775059615270: Your package has been delivered

Hi. Your package was delivered Mon, 11/01/2021 at 9:40am.

Delivered to 1 MUNICIPAL DR, CANTERBURY, CT 06331
Received by J.BISSONNETTE

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 775059615270

FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Canterbury Christopher Lippke, First Selectman 1 Municipal Drive CANTERBURY, CT, US, 06331
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Thu 10/28/2021 06:04 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	CANTERBURY, CT, US, 06331
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Monday, November 1, 2021 9:46 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 775059647655: Your package has been delivered

Hi. Your package was delivered Mon, 11/01/2021 at 9:40am.

Delivered to 1 MUNICIPAL DR, CANTERBURY, CT 06331
Received by J.BISSONNETTE

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 775059647655

FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Canterbury Robert Kerr, Building Official 1 Municipal Drive CANTERBURY, CT, US, 06331
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Thu 10/28/2021 06:04 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	CANTERBURY, CT, US, 06331
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight

Date: **September 23, 2021**

B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
(918) 587-4630

Subject:	**Structural Analysis Report**	
Carrier Designation:	**Site Number:**	CTNL154A
	Site Name:	CT33XC084
Crown Castle Designation:	**BU Number:**	876375
	Site Name:	Canterbury / Lemire
	JDE Job Number:	684638
	Work Order Number:	2018258
	Order Number:	584633 Rev. 0
Engineering Firm Designation:	**B+T Group Project Number:**	147461.004.01
Site Data:	**53 Westminster Rd., Canterbury, Windham County, CT** **Latitude *41° 42' 7.15"*, Longitude *-71° 58' 50.11"*** **180.5 Foot - Monopole**	

B+T Group is pleased to submit this **"Structural Analysis Report"** to determine the structural integrity of the above-mentioned tower.

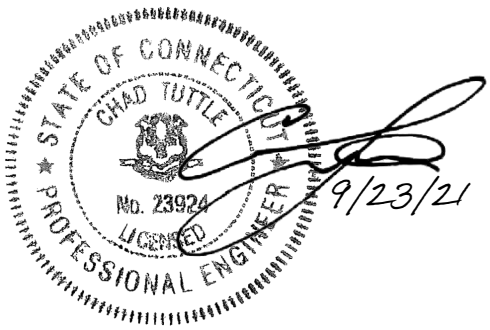
The purpose of the analysis is to determine acceptability of the tower stress level. Based on our analysis we have determined the tower stress level for the structure and foundation, under the following load case, to be:

LC7: Proposed Equipment Configuration **Sufficient Capacity - 85.9%**

This analysis utilizes an ultimate 3-second gust wind speed of 123 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Massood Sattari, EIT

Respectfully submitted by: B+T Engineering, Inc.
COA: PEC.0001564; Expires: 02/10/2022



Chad E. Tuttle, P.E.

tnxTower Report - version 8.1.1.0

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 180.5 ft. Monopole mapped by FDH Engineering, Inc. in May of 2009. The original design standard and wind speed are unavailable.

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

2) ANALYSIS CRITERIA

TIA-222 Revision: TIA-222-H
Risk Category: II
Wind Speed: 123 mph
Exposure Category: B
Topographic Factor: 1
Ice Thickness: 1 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)
180.0	183.0	3	Ericsson	AIR6449 B41_T-MOBILE	3	1-5/8
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO		
		3	Ericsson	Radio 4480_TMOV2		
		3	RFS Celwave	APXVAALL24_43-U-NA20_TMO		
	180.0	1	--	Platform Mount [LP 602-1]		
		1	Site Pro 1	HRK12 Handrail Kit		
		1	Site Pro 1	SFS-V Stabilizer Kit		

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)
170.0	170.0	1	RFS Celwave	TMA-DB-T1-6Z-8AB-0Z	--	--
		1	--	Side Arm Mount [SO 102-3]		
168.0	170.0	3	Antel	BXA-171063-12CF-EDIN-X	1	1-5/8
		6	Commscope	NHH-65B-R2B		
		1	Raycap	RVZDC-6627-PF-48_CCIV2		
		3	Samsung Telecom	MT6407-77A		
		3	Samsung Telecom	RF4439D-25A		
		3	Samsung Telecom	RF4440D-13A		
	168.0	3	--	84'' Long, P2.5 STD Pipe		
		1	--	36'' Long, P2 STD Pipe		
		1	VZWSMART	PLK 1 Support Rail Kit		
		1	--	Platform Mount [LP 303-1]		
160.0	161.0	3	KMW Comm.	AM-X-CD-17-65-00T-RET	12	1-1/4
		6	Powerwave Tech	7770.00		
		6	Powerwave Tech	LGP21401		
		6	Powerwave Tech	LGP21901		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
	160.0	1	--	Platform Mount [LP 303-1]		
158.0	160.0	3	Ericsson	RRUS 11 B12	1 2	3/8 7/16
	158.0	1	Raycap	DC6-48-60-18-8F		
		1	--	Side Arm Mount [SO 104-3]		
141.0	141.0	3	Fujitsu	TA08025-B604	1	1-1/2
		3	Fujitsu	TA08025-B605		
		3	JMA Wireless	MX08FRO665-21		
		1	Raycap	RDIDC-9181-PF-48		
		1	--	Commscope MC-PK8-DSH		
78.0	79.0	1	Spectracom	8225	1	1/2
	78.0	1	--	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Tower Mapping	2428368	CCI Sites
Mount Analysis Report	9967723	CCI Sites
Tower Modification Drawing	2435769	CCI Sites
Post Modification Inspection	2464622	CCI Sites
Tower Modification Drawing	3364133	CCI Sites
Post Modification Inspection	3841077	CCI Sites
Tower Modification Drawing	7738171	CCI Sites
Post Modification Inspection	8246170	CCI Sites
Foundation Mapping	1615348	CCI Sites
Geotech Report	1615348	CCI Sites
Crown CAD Package	Date: 09/13/2021	CCI Sites

3.1) Analysis Method

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

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

3.2) Assumptions

1) The tower and structures were maintained in accordance with the TIA-222 Standard.
2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2 and the referenced drawings.
3) Following Material grades were assumed:
   a) Tower Shaft: A572-65
   b) Anchor Rods: A615-75
   c) Base Plate: A572-50

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	180.5 - 175.5	Pole	TP18.569x17.62x0.25	1	-4.208	--	9.1	Pass
L2	175.5 - 170.5	Pole	TP19.518x18.569x0.25	2	-4.522	--	15.5	Pass
L3	170.5 - 165.5	Pole	TP20.467x19.518x0.25	3	-7.846	--	24.2	Pass
L4	165.5 - 160.5	Pole	TP21.416x20.467x0.25	4	-8.233	--	32.2	Pass
L5	160.5 - 155.5	Pole	TP22.365x21.416x0.25	5	-11.223	--	41.9	Pass
L6	155.5 - 150.5	Pole	TP23.313x22.365x0.25	6	-11.758	--	50.0	Pass
L7	150.5 - 145.5	Pole	TP24.262x23.313x0.25	7	-12.323	--	57.0	Pass
L8	145.5 - 140.5	Pole	TP25.211x24.262x0.25	8	-15.720	--	64.1	Pass
L9	140.5 - 137.79	Pole	TP26.35x25.211x0.25	9	-16.068	--	68.4	Pass
L10	137.79 - 132.79	Pole	TP26.174x25.225x0.3125	10	-17.042	--	61.6	Pass
L11	132.79 - 127.79	Pole	TP27.123x26.174x0.3125	11	-17.828	--	66.1	Pass
L12	127.79 - 122.79	Pole	TP28.072x27.123x0.3125	12	-18.632	--	70.0	Pass
L13	122.79 - 120.58	Pole	TP28.491x28.072x0.3125	13	-18.994	--	71.6	Pass
L14	120.58 - 120.33	Pole	TP28.539x28.491x0.3125	14	-19.049	--	71.7	Pass
L15	120.33 - 115.33	Pole	TP29.488x28.539x0.3125	15	-19.881	--	74.8	Pass
L16	115.33 - 112.5	Pole	TP30.025x29.488x0.3125	16	-20.363	--	76.4	Pass
L17	112.5 - 112.25	Pole + Reinf.	TP30.073x30.025x0.6375	17	-20.451	--	60.8	Pass
L18	112.25 - 107.82	Pole + Reinf.	TP30.914x30.073x0.675	18	-21.689	--	59.5	Pass
L19	107.82 - 107.57	Pole + Reinf.	TP30.961x30.914x0.675	19	-21.767	--	59.6	Pass
L20	107.57 - 102.57	Pole + Reinf.	TP31.91x30.961x0.6625	20	-23.187	--	62.3	Pass
L21	102.57 - 97.57	Pole + Reinf.	TP32.859x31.91x0.65	21	-24.636	--	64.9	Pass
L22	97.57 - 93.31	Pole + Reinf.	TP34.485x32.859x0.6375	22	-25.889	--	66.9	Pass
L23	93.31 - 88.31	Pole + Reinf.	TP33.991x33.042x0.7	23	-28.591	--	64.7	Pass
L24	88.31 - 87.5	Pole + Reinf.	TP34.145x33.991x0.7	24	-28.855	--	65.0	Pass
L25	87.5 - 87.25	Pole	TP34.192x34.145x0.375	25	-28.912	--	75.1	Pass
L26	87.25 - 82.25	Pole	TP35.141x34.192x0.375	26	-30.001	--	76.2	Pass
L27	82.25 - 80.83	Pole	TP35.41x35.141x0.375	27	-30.311	--	76.5	Pass
L28	80.83 - 80.58	Pole	TP35.457x35.41x0.375	28	-30.385	--	76.5	Pass
L29	80.58 - 75.58	Pole	TP36.406x35.457x0.375	29	-31.582	--	77.6	Pass
L30	75.58 - 70.58	Pole	TP37.355x36.406x0.375	30	-32.743	--	78.8	Pass
L31	70.58 - 65.58	Pole	TP38.304x37.355x0.375	31	-33.929	--	79.9	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L32	65.58 - 60.58	Pole	TP39.253x38.304x0.375	32	-35.140	--	80.9	Pass
L33	60.58 - 55.58	Pole	TP40.202x39.253x0.375	33	-36.375	--	81.9	Pass
L34	55.58 - 53.57	Pole	TP40.584x40.202x0.375	34	-36.879	--	82.2	Pass
L35	53.57 - 53.32	Pole	TP40.632x40.584x0.375	35	-36.954	--	82.3	Pass
L36	53.32 - 49.11	Pole	TP42.438x40.632x0.375	36	-38.010	--	83.0	Pass
L37	49.11 - 42.8	Pole + Reinf.	TP41.878x40.681x0.7	37	-41.630	--	68.8	Pass
L38	42.8 - 38.42	Pole + Reinf.	TP42.71x41.878x0.6875	38	-43.446	--	69.5	Pass
L39	38.42 - 38.07	Pole + Reinf.	TP42.776x42.71x0.6875	39	-43.599	--	69.6	Pass
L40	38.07 - 37.83	Pole + Reinf.	TP42.82x42.776x0.6875	40	-43.698	--	69.6	Pass
L41	37.83 - 32.83	Pole + Reinf.	TP43.769x42.82x0.675	41	-45.790	--	70.4	Pass
L42	32.83 - 27.83	Pole + Reinf.	TP44.718x43.769x0.675	42	-46.652	--	71.1	Pass
L43	27.83 - 23.5	Pole + Reinf.	TP45.54x44.718x0.6625	43	-47.931	--	71.7	Pass
L44	23.5 - 23.25	Pole + Reinf.	TP45.588x45.54x0.6625	44	-49.785	--	71.8	Pass
L45	23.25 - 18.25	Pole + Reinf.	TP46.537x45.588x0.6625	45	-49.900	--	72.4	Pass
L46	18.25 - 13.25	Pole + Reinf.	TP47.486x46.537x0.65	46	-52.069	--	73.0	Pass
L47	13.25 - 8.25	Pole + Reinf.	TP48.434x47.486x0.65	47	-54.262	--	73.5	Pass
L48	8.25 - 7.92	Pole + Reinf.	TP48.498x48.434x0.65	48	-56.473	--	73.5	Pass
L49	7.92 - 7.67	Pole + Reinf.	TP48.545x48.498x0.7	49	-56.622	--	69.5	Pass
L50	7.67 - 5.5	Pole + Reinf.	TP48.956x48.545x0.7	50	-56.746	--	69.7	Pass
L51	5.5 - 5.25	Pole + Reinf.	TP49.004x48.956x0.4125	51	-57.838	--	85.7	Pass
L52	5.25 - 3	Pole + Reinf.	TP49.431x49.004x0.425	52	-58.586	--	85.9	Pass
L53	3 - 2.75	Pole + Reinf.	TP49.478x49.431x0.625	53	-58.603	--	70.6	Pass
L54	2.75 - 0	Pole + Reinf.	TP50x49.478x0.625	54	-58.721	--	70.8	Pass
							Summary	
						Pole (L36)	85.9	Pass
						Reinforcement	79.1	Pass
						Rating =	85.9	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	Base	73.2	Pass
1,2	Base Plate	Base	69.9	Pass
1,2	Base Foundation (Structure)	Base	79.4	Pass
1,2	Base Foundation (Soil Interaction)	Base	78.4	Pass

Structure Rating (max from all components) =	85.9%

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

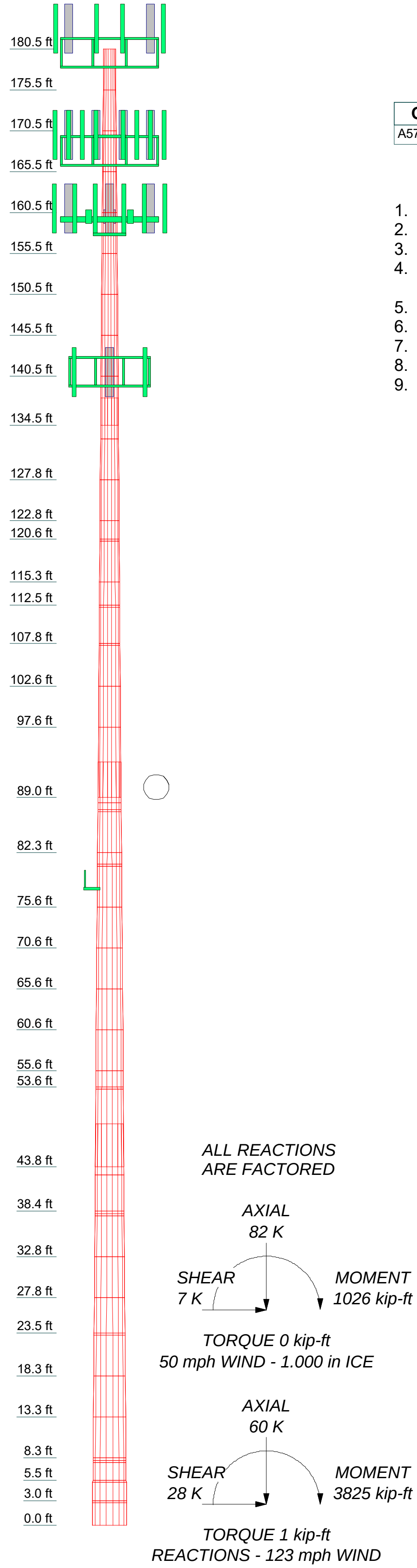
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.000	18	0.250		17.620	18.569	A572-65	0.2
2	5.000	18	0.250		18.569	19.518		0.3
3	5.000	18	0.250		19.518	20.467		0.3
4	5.000	18	0.250		20.467	21.416		0.3
5	5.000	18	0.250		21.416	22.365		0.3
6	5.000	18	0.250		22.365	23.313		0.3
7	5.000	18	0.250		23.313	24.262		0.3
8	5.000	18	0.250		24.262	25.211		0.3
9	5.000	18	0.250	3.294	25.211	26.350		0.4
10	[illegible]	18	[illegible]		[illegible]	[illegible]		0.4
11	5.000	18	0.313		[illegible]	[illegible]		0.4
12	5.000	18	0.313		27.123	[illegible]		0.5
13–20	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
21	5.000	18	0.650		31.910	32.859		1.1
22	[illegible]	18	0.637	4.311	32.859	34.485		1.9
23–29	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
30	5.000	18	0.375		36.406	37.355		0.7
31	5.000	18	0.375		37.355	38.304		0.8
32	5.000	18	0.375		38.304	39.253		0.8
33	5.000	18	0.375		39.253	40.202		0.8
34–35	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
36	[illegible]	18	0.375	5.305	40.632	42.438		1.6
37–41	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
42	5.000	18	0.675		43.769	44.718		1.6
43–45	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
46	5.000	18	0.650		46.537	47.486		1.6
47–56	[illegible]	18	[illegible]		[illegible]	[illegible]		[illegible]
								33.6



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Windham County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 123 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TIA-222-H Annex S
9. TOWER RATING: 85.9%

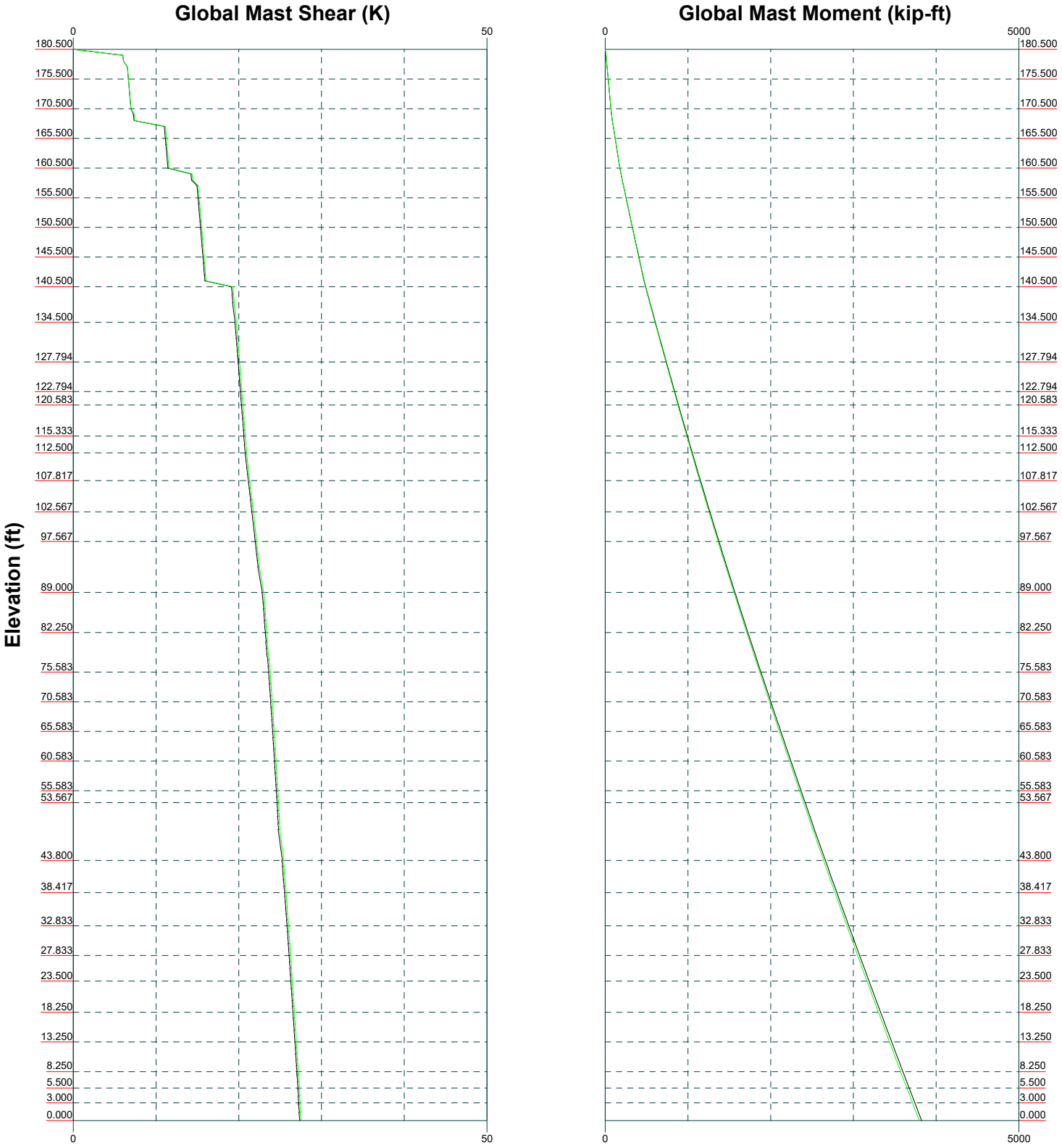
B+T Group
1717 S. Boulder, Suite 300
Tulsa, OK 74119
Phone: (918) 587-4630
FAX: (918) 295-0265

Job: 147461.004.01 - CANTERBURY / LEMIRE, CT (BU# 87637		
Project:		
Client: Crown Castle	Drawn by: JD Prabhu	App'd:
Code: TIA-222-H	Date: 09/17/21	Scale: NTS
Path:		Dwg No. E-1

TIA-222-H - 123 mph/50 mph 1.000 in Ice Exposure B

Maximum Values

Vx Vz Mx Mz



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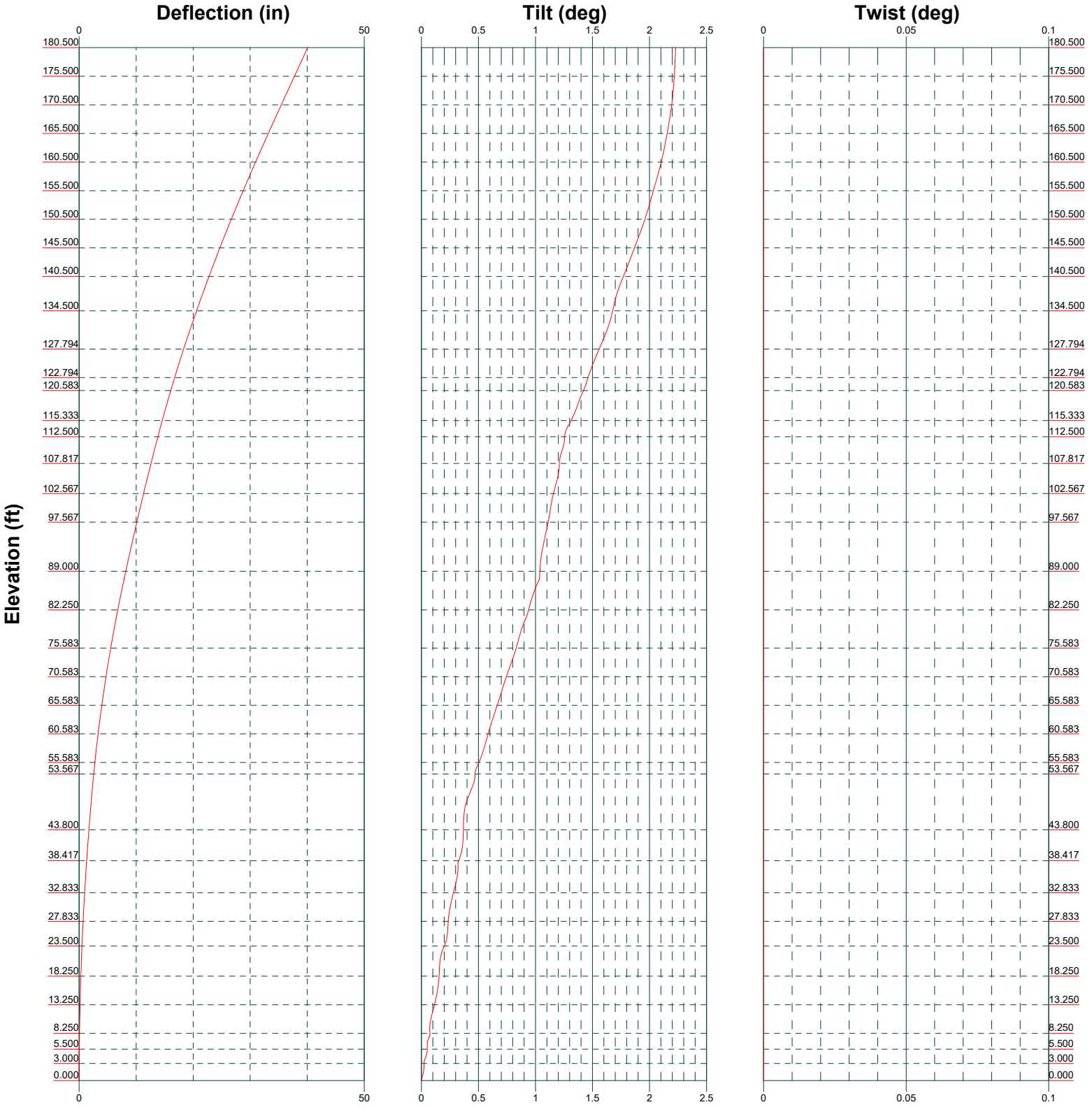
Job: 147461.004.01 - CANTERBURY / LEMIRE, CT (BU# 87637			
Project:			
Client: Crown Castle	Drawn by: JD Prabhu	App'd:	
Code: TIA-222-H	Date: 09/17/21	Scale: NTS	
Path:		Dwg No. E-4	

TIA-222-H - Service - 60 mph

Maximum Values



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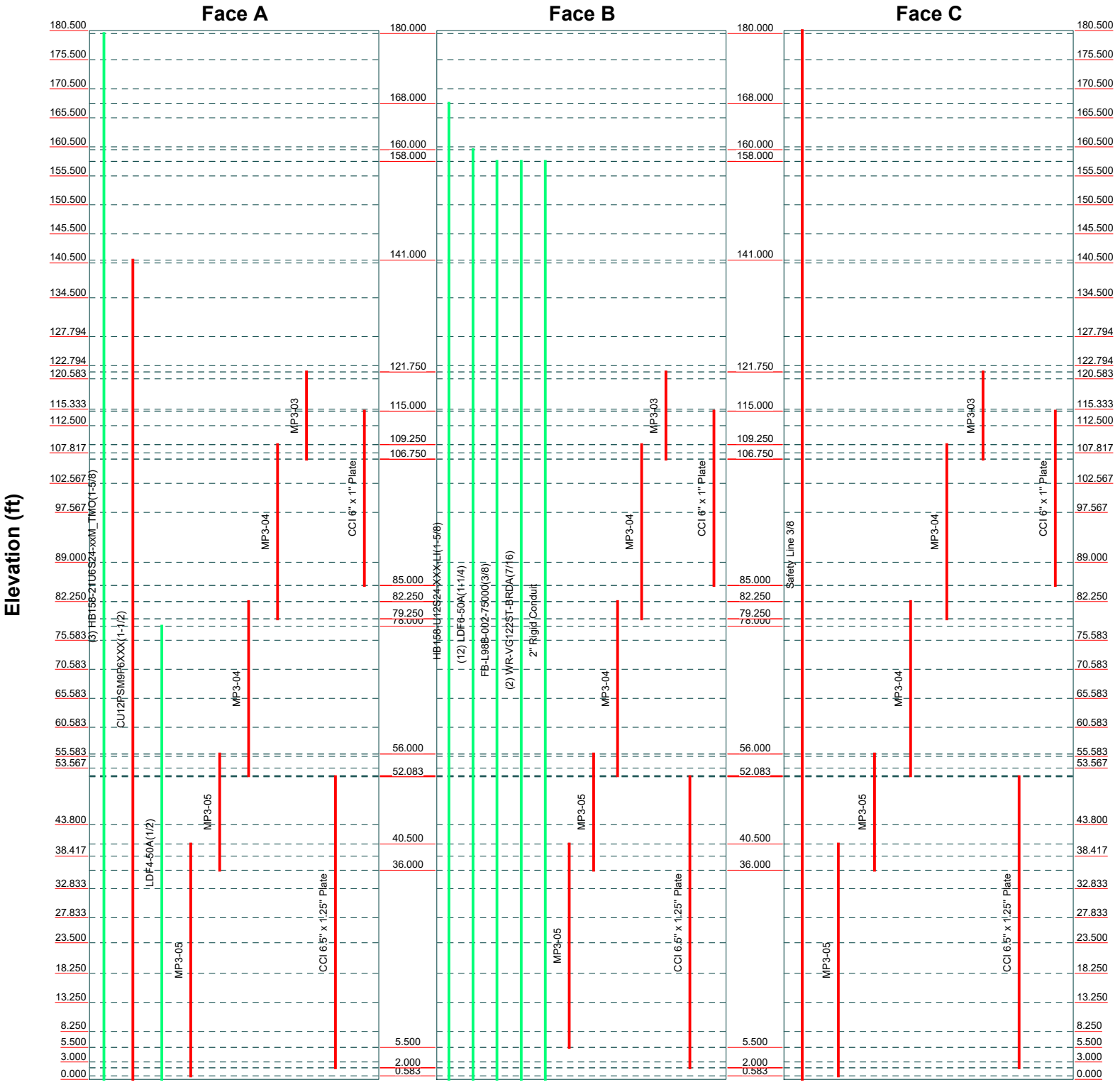
Job: 147461.004.01 - CANTERBURY / LEMIRE, CT (BU# 87637			
Project:			
Client: Crown Castle	Drawn by: JD Prabhu	App'd:	
Code: TIA-222-H	Date: 09/17/21	Scale: NTS	
Path:		Dwg No. E-5	

Feed Line Distribution Chart
0' - 180'6"

Round | Flat | App In Face | App Out Face | Truss Leg



B+T GRP

B+T Group
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Phone: (918) 587-4630
FAX: (918) 295-0265

Job: ***147461.004.01 - CANTERBURY / LEMIRE, CT (BU# 87637***			
Project:			
Client: Crown Castle	Drawn by: JD Prabhu	App'd:	
Code: TIA-222-H	Date: 09/17/21	Scale: NTS	
Path:		Dwg No. E-7	

Tower Input Data

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

Tower is located in Windham County, Connecticut.
Tower base elevation above sea level: 339.000 ft.
Basic wind speed of 123 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.000 in.
Ice thickness is considered to increase with height.
Ice density of 56.000 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50.000 °F.
Deflections calculated using a wind speed of 60 mph.
TIA-222-H Annex S.
TOWER RATING: 85.9%.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Tower analysis based on target reliabilities in accordance with Annex S.
Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.
Maximum demand-capacity ratio is: 1.05.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	180.500-175.500	5.000	0.000	18	17.620	18.569	0.250	1.000	A572-65 (65 ksi)
L2	175.500-170.500	5.000	0.000	18	18.569	19.518	0.250	1.000	A572-65 (65 ksi)
L3	170.500-165.500	5.000	0.000	18	19.518	20.467	0.250	1.000	A572-65 (65 ksi)
L4	165.500-160.500	5.000	0.000	18	20.467	21.416	0.250	1.000	A572-65 (65 ksi)
L5	160.500-155.500	5.000	0.000	18	21.416	22.365	0.250	1.000	A572-65 (65 ksi)
L6	155.500-150.500	5.000	0.000	18	22.365	23.313	0.250	1.000	A572-65 (65 ksi)
L7	150.500-145.500	5.000	0.000	18	23.313	24.262	0.250	1.000	A572-65 (65 ksi)
L8	145.500-140.500	5.000	0.000	18	24.262	25.211	0.250	1.000	A572-65 (65 ksi)
L9	140.500-134.500	6.000	3.294	18	25.211	26.350	0.250	1.000	A572-65 (65 ksi)
L10	134.500-132.794	5.000	0.000	18	25.225	26.174	0.313	1.250	A572-65 (65 ksi)
L11	132.794-127.794	5.000	0.000	18	26.174	27.123	0.313	1.250	A572-65 (65 ksi)
L12	127.794-122.794	5.000	0.000	18	27.123	28.072	0.313	1.250	A572-65 (65 ksi)
L13	122.794-120.583	2.211	0.000	18	28.072	28.491	0.313	1.250	A572-65 (65 ksi)
L14	120.583-120.333	0.250	0.000	18	28.491	28.539	0.313	1.250	A572-65 (65 ksi)
L15	120.333-115.333	5.000	0.000	18	28.539	29.488	0.313	1.250	A572-65 (65 ksi)
L16	115.333-112.500	2.833	0.000	18	29.488	30.025	0.313	1.250	A572-65 (65 ksi)
L17	112.500-112.250	0.250	0.000	18	30.025	30.073	0.637	2.550	A572-65 (65 ksi)
L18	112.250-107.817	4.433	0.000	18	30.073	30.914	0.675	2.700	A572-65 (65 ksi)
L19	107.817-107.567	0.250	0.000	18	30.914	30.961	0.675	2.700	A572-65 (65 ksi)
L20	107.567-102.567	5.000	0.000	18	30.961	31.910	0.662	2.650	A572-65 (65 ksi)
L21	102.567-97.567	5.000	0.000	18	31.910	32.859	0.650	2.600	A572-65 (65 ksi)
L22	97.567-89.000	8.567	4.311	18	32.859	34.485	0.637	2.550	A572-65 (65 ksi)
L23	89.000-88.311	5.000	0.000	18	33.042	33.991	0.700	2.800	A572-65 (65 ksi)
L24	88.311-87.500	0.811	0.000	18	33.991	34.145	0.700	2.800	A572-65 (65 ksi)
L25	87.500-87.250	0.250	0.000	18	34.145	34.192	0.375	1.500	A572-65 (65 ksi)
L26	87.250-82.250	5.000	0.000	18	34.192	35.141	0.375	1.500	A572-65 (65 ksi)
L27	82.250-80.833	1.417	0.000	18	35.141	35.410	0.375	1.500	A572-65 (65 ksi)
L28	80.833-80.583	0.250	0.000	18	35.410	35.457	0.375	1.500	A572-65 (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
L29	80.583-75.583	5.000	0.000	18	35.457	36.406	0.375	1.500	A572-65 (65 ksi)
L30	75.583-70.583	5.000	0.000	18	36.406	37.355	0.375	1.500	A572-65 (65 ksi)
L31	70.583-65.583	5.000	0.000	18	37.355	38.304	0.375	1.500	A572-65 (65 ksi)
L32	65.583-60.583	5.000	0.000	18	38.304	39.253	0.375	1.500	A572-65 (65 ksi)
L33	60.583-55.583	5.000	0.000	18	39.253	40.202	0.375	1.500	A572-65 (65 ksi)
L34	55.583-53.567	2.016	0.000	18	40.202	40.584	0.375	1.500	A572-65 (65 ksi)
L35	53.567-53.317	0.250	0.000	18	40.584	40.632	0.375	1.500	A572-65 (65 ksi)
L36	53.317-43.800	9.517	5.305	18	40.632	42.438	0.375	1.500	A572-65 (65 ksi)
L37	43.800-42.800	6.305	0.000	18	40.681	41.878	0.700	2.800	A572-65 (65 ksi)
L38	42.800-38.417	4.383	0.000	18	41.878	42.710	0.688	2.750	A572-65 (65 ksi)
L39	38.417-38.067	0.350	0.000	18	42.710	42.776	0.688	2.750	A572-65 (65 ksi)
L40	38.067-37.833	0.234	0.000	18	42.776	42.820	0.688	2.750	A572-65 (65 ksi)
L41	37.833-32.833	5.000	0.000	18	42.820	43.769	0.675	2.700	A572-65 (65 ksi)
L42	32.833-27.833	5.000	0.000	18	43.769	44.718	0.675	2.700	A572-65 (65 ksi)
L43	27.833-23.500	4.333	0.000	18	44.718	45.540	0.662	2.650	A572-65 (65 ksi)
L44	23.500-23.250	0.250	0.000	18	45.540	45.588	0.662	2.650	A572-65 (65 ksi)
L45	23.250-18.250	5.000	0.000	18	45.588	46.537	0.662	2.650	A572-65 (65 ksi)
L46	18.250-13.250	5.000	0.000	18	46.537	47.486	0.650	2.600	A572-65 (65 ksi)
L47	13.250-8.250	5.000	0.000	18	47.486	48.434	0.650	2.600	A572-65 (65 ksi)
L48	8.250-7.917	0.333	0.000	18	48.434	48.498	0.650	2.600	A572-65 (65 ksi)
L49	7.917-7.667	0.250	0.000	18	48.498	48.545	0.700	2.800	A572-65 (65 ksi)
L50	7.667-5.500	2.167	0.000	18	48.545	48.956	0.700	2.800	A572-65 (65 ksi)
L51	5.500-5.250	0.250	0.000	18	48.956	49.004	0.412	1.650	A572-65 (65 ksi)
L52	5.250-3.000	2.250	0.000	18	49.004	49.431	0.425	1.700	A572-65 (65 ksi)
L53	3.000-2.750	0.250	0.000	18	49.431	49.478	0.625	2.500	A572-65 (65 ksi)
L54	2.750-0.000	2.750		18	49.478	50.000	0.625	2.500	A572-65 (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	17.853	13.783	525.392	6.166	8.951	58.697	1051.476	6.893	2.661	10.644
	18.817	14.536	616.288	6.503	9.433	65.333	1233.386	7.269	2.828	11.313
L2	18.817	14.536	616.288	6.503	9.433	65.333	1233.386	7.269	2.828	11.313
	19.780	15.289	717.105	6.840	9.915	72.325	1435.153	7.646	2.995	11.981
L3	19.780	15.289	717.105	6.840	9.915	72.325	1435.153	7.646	2.995	11.981
	20.744	16.042	828.357	7.177	10.397	79.672	1657.805	8.023	3.162	12.649
L4	20.744	16.042	828.357	7.177	10.397	79.672	1657.805	8.023	3.162	12.649
	21.707	16.795	950.560	7.514	10.879	87.374	1902.370	8.399	3.329	13.317
L5	21.707	16.795	950.560	7.514	10.879	87.374	1902.370	8.399	3.329	13.317
	22.671	17.548	1084.225	7.851	11.361	95.432	2169.878	8.776	3.496	13.985
L6	22.671	17.548	1084.225	7.851	11.361	95.432	2169.878	8.776	3.496	13.985
	23.635	18.301	1229.869	8.188	11.843	103.846	2461.356	9.152	3.663	14.653
L7	23.635	18.301	1229.869	8.188	11.843	103.846	2461.356	9.152	3.663	14.653
	24.598	19.054	1388.004	8.524	12.325	112.614	2777.834	9.529	3.830	15.321
L8	24.598	19.054	1388.004	8.524	12.325	112.614	2777.834	9.529	3.830	15.321
	25.562	19.807	1559.144	8.861	12.807	121.738	3120.339	9.905	3.997	15.989
L9	25.562	19.807	1559.144	8.861	12.807	121.738	3120.339	9.905	3.997	15.989
	26.718	20.710	1782.403	9.265	13.386	133.156	3567.151	10.357	4.198	16.79
L10	26.201	24.710	1937.487	8.844	12.814	151.198	3877.523	12.357	3.890	12.447
	26.529	25.651	2167.421	9.181	13.296	163.010	4337.695	12.828	4.057	12.981
L11	26.529	25.651	2167.421	9.181	13.296	163.010	4337.695	12.828	4.057	12.981
	27.493	26.592	2414.864	9.518	13.778	175.266	4832.905	13.299	4.224	13.515
L12	27.493	26.592	2414.864	9.518	13.778	175.266	4832.905	13.299	4.224	13.515
	28.456	27.534	2680.456	9.854	14.260	187.966	5364.440	13.769	4.391	14.05
L13	28.456	27.534	2680.456	9.854	14.260	187.966	5364.440	13.769	4.391	14.05
	28.882	27.950	2803.856	10.003	14.474	193.723	5611.401	13.978	4.464	14.286
L14	28.882	27.950	2803.856	10.003	14.474	193.723	5611.401	13.978	4.464	14.286
	28.931	27.997	2818.043	10.020	14.498	194.380	5639.793	14.001	4.473	14.313
L15	28.931	27.997	2818.043	10.020	14.498	194.380	5639.793	14.001	4.473	14.313
	29.894	28.938	3111.914	10.357	14.980	207.743	6227.923	14.472	4.640	14.847
L16	29.894	28.938	3111.914	10.357	14.980	207.743	6227.923	14.472	4.640	14.847
	30.440	29.471	3287.146	10.548	15.253	215.511	6578.618	14.738	4.734	15.15
L17	30.390	59.464	6488.131	10.433	15.253	425.374	12984.800	29.738	4.162	6.529
	30.438	59.560	6519.606	10.449	15.277	426.763	13047.792	29.786	4.171	6.542
L18	30.432	62.983	6876.763	10.436	15.277	450.142	13762.574	31.497	4.105	6.081
	31.287	64.785	7484.214	10.735	15.704	476.572	14978.277	32.399	4.253	6.301
L19	31.287	64.785	7484.214	10.735	15.704	476.572	14978.277	32.399	4.253	6.301
	31.335	64.887	7519.498	10.752	15.728	478.085	15048.891	32.450	4.261	6.313
L20	31.337	63.712	7389.390	10.756	15.728	469.813	14788.503	31.862	4.283	6.465
	32.300	65.707	8105.625	11.093	16.210	500.026	16221.915	32.860	4.450	6.717
L21	32.302	64.493	7962.236	11.097	16.210	491.181	15934.949	32.253	4.472	6.88
	33.266	66.451	8709.547	11.434	16.692	521.766	17430.555	33.232	4.639	7.137
L22	33.268	65.198	8552.005	11.439	16.692	512.328	17115.263	32.605	4.661	7.312
	34.919	68.488	9912.983	12.016	17.518	565.862	19839.009	34.250	4.947	7.761
L23	34.274	71.857	9495.925	11.481	16.785	565.730	19004.344	35.935	4.583	6.548
	34.407	73.965	10356.505	11.818	17.267	599.776	20726.636	36.990	4.750	6.786
L24	34.407	73.965	10356.505	11.818	17.267	599.776	20726.636	36.990	4.750	6.786
	34.563	74.307	10500.811	11.873	17.345	605.391	21015.439	37.161	4.777	6.825
L25	34.614	40.194	5791.030	11.988	17.345	333.864	11589.679	20.101	5.349	14.265
	34.662	40.251	5815.472	12.005	17.370	334.808	11638.597	20.129	5.358	14.287
L26	34.662	40.251	5815.472	12.005	17.370	334.808	11638.597	20.129	5.358	14.287
	35.625	41.380	6318.876	12.342	17.852	353.966	12646.067	20.694	5.525	14.733
L27	35.625	41.380	6318.876	12.342	17.852	353.966	12646.067	20.694	5.525	14.733
	35.898	41.700	6466.644	12.437	17.988	359.493	12941.797	20.854	5.572	14.859
L28	35.898	41.700	6466.644	12.437	17.988	359.493	12941.797	20.854	5.572	14.859
	35.946	41.757	6492.951	12.454	18.012	360.472	12994.446	20.882	5.580	14.881
L29	35.946	41.757	6492.951	12.454	18.012	360.472	12994.446	20.882	5.580	14.881
	36.910	42.886	7034.187	12.791	18.494	380.342	14077.629	21.447	5.748	15.327
L30	36.910	42.886	7034.187	12.791	18.494	380.342	14077.629	21.447	5.748	15.327
	37.874	44.016	7604.693	13.128	18.976	400.744	15219.393	22.012	5.915	15.772
L31	37.874	44.016	7604.693	13.128	18.976	400.744	15219.393	22.012	5.915	15.772
	38.837	45.145	8205.242	13.465	19.458	421.680	16421.281	22.577	6.082	16.217

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
L32	38.837	45.145	8205.242	13.465	19.458	421.680	16421.281	22.577	6.082	16.217
	39.801	46.274	8836.604	13.802	19.940	443.149	17684.836	23.142	6.249	16.663
L33	39.801	46.274	8836.604	13.802	19.940	443.149	17684.836	23.142	6.249	16.663
	40.764	47.404	9499.550	14.139	20.423	465.150	19011.600	23.706	6.416	17.108
L34	40.764	47.404	9499.550	14.139	20.423	465.150	19011.600	23.706	6.416	17.108
	41.153	47.859	9775.959	14.274	20.617	474.172	19564.782	23.934	6.483	17.288
L35	41.153	47.859	9775.959	14.274	20.617	474.172	19564.782	23.934	6.483	17.288
	41.201	47.916	9810.605	14.291	20.641	475.297	19634.119	23.962	6.491	17.31
L36	41.201	47.916	9810.605	14.291	20.641	475.297	19634.119	23.962	6.491	17.31
	43.035	50.065	11191.193	14.932	21.559	519.108	22397.111	25.038	6.809	18.158
L37	42.223	88.830	17939.512	14.193	20.666	868.066	35902.630	44.424	5.928	8.468
	42.416	91.489	19598.818	14.618	21.274	921.262	39223.425	45.753	6.138	8.769
L38	42.418	89.882	19266.374	14.623	21.274	905.635	38558.099	44.950	6.160	8.961
	43.262	91.697	20457.265	14.918	21.696	942.886	40941.448	45.857	6.307	9.174
L39	43.262	91.697	20457.265	14.918	21.696	942.886	40941.448	45.857	6.307	9.174
	43.330	91.842	20554.423	14.941	21.730	945.893	41135.893	45.930	6.319	9.191
L40	43.330	91.842	20554.423	14.941	21.730	945.893	41135.893	45.930	6.319	9.191
	43.375	91.939	20619.552	14.957	21.753	947.906	41266.235	45.978	6.326	9.202
L41	43.377	90.294	20262.675	14.962	21.753	931.500	40552.012	45.156	6.348	9.405
	44.340	92.327	21662.303	15.298	22.235	974.254	43353.110	46.172	6.515	9.652
L42	44.340	92.327	21662.303	15.298	22.235	974.254	43353.110	46.172	6.515	9.652
	45.304	94.360	23124.944	15.635	22.717	1017.968	46280.316	47.189	6.682	9.9
L43	45.306	92.639	22716.034	15.640	22.717	999.967	45461.959	46.328	6.704	10.12
	46.141	94.368	24011.887	15.932	23.134	1037.926	48055.370	47.193	6.849	10.338
L44	46.141	94.368	24011.887	15.932	23.134	1037.926	48055.370	47.193	6.849	10.338
	46.189	94.468	24088.121	15.948	23.159	1040.137	48207.938	47.243	6.857	10.351
L45	46.189	94.468	24088.121	15.948	23.159	1040.137	48207.938	47.243	6.857	10.351
	47.152	96.463	25646.873	16.285	23.641	1084.865	51327.492	48.241	7.024	10.603
L46	47.154	94.669	25183.545	16.290	23.641	1065.266	50400.226	47.343	7.046	10.841
	48.118	96.626	26778.338	16.627	24.123	1110.091	53591.912	48.322	7.213	11.098
L47	48.118	96.626	26778.338	16.627	24.123	1110.091	53591.912	48.322	7.213	11.098
	49.081	98.584	28439.078	16.963	24.605	1155.841	56915.578	49.301	7.380	11.355
L48	49.081	98.584	28439.078	16.963	24.605	1155.841	56915.578	49.301	7.380	11.355
	49.145	98.714	28552.059	16.986	24.637	1158.921	57141.687	49.367	7.392	11.372
L49	49.138	106.197	30652.077	16.968	24.637	1244.160	61344.486	53.108	7.304	10.434
	49.186	106.302	30743.442	16.985	24.661	1246.649	61527.336	53.161	7.312	10.446
L50	49.186	106.302	30743.442	16.985	24.661	1246.649	61527.336	53.161	7.312	10.446
	49.603	107.216	31543.012	17.131	24.870	1268.327	63127.529	53.618	7.384	10.549
L51	49.648	63.557	18922.056	17.233	24.870	760.845	37869.011	31.785	7.890	19.128
	49.696	63.619	18977.590	17.250	24.894	762.340	37980.151	31.816	7.899	19.148
L52	49.694	65.530	19537.582	17.245	24.894	784.835	39100.873	32.771	7.877	18.533
	50.128	66.106	20057.307	17.397	25.111	798.753	40141.007	33.059	7.952	18.71
L53	50.097	96.818	29136.378	17.326	25.111	1160.313	58311.094	48.418	7.600	12.16
	50.145	96.912	29221.430	17.343	25.135	1162.584	58481.309	48.465	7.608	12.173
L54	50.145	96.912	29221.430	17.343	25.135	1162.584	58481.309	48.465	7.608	12.173
	50.675	97.948	30167.944	17.528	25.400	1187.714	60375.584	48.983	7.700	12.32

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 180.500-175.500				1	1	1			
L2 175.500-170.500				1	1	1			
L3 170.500-165.500				1	1	1			

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
L4 165.500-160.500				1	1	1			
L5 160.500-155.500				1	1	1			
L6 155.500-150.500				1	1	1			
L7 150.500-145.500				1	1	1			
L8 145.500-140.500				1	1	1			
L9 140.500-134.500				1	1	1			
L10 134.500-132.794				1	1	1			
L11 132.794-127.794				1	1	1			
L12 127.794-122.794				1	1	1			
L13 122.794-120.583				1	1	1			
L14 120.583-120.333				1	1	1			
L15 120.333-115.333				1	1	1			
L16 115.333-112.500				1	1	1			
L17 112.500-112.250				1	1	0.944922			
L18 112.250-107.817				1	1	0.937617			
L19 107.817-107.567				1	1	0.936874			
L20 107.567-102.567				1	1	0.939506			
L21 102.567-97.567				1	1	0.943155			
L22 97.567-89.000				1	1	0.949755			
L23 89.000-88.311				1	1	0.951827			
L24				1	1	0.949912			

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
88.311-87.500									
L25				1	1	1			
87.500-87.250									
L26				1	1	1			
87.250-82.250									
L27				1	1	1			
82.250-80.833									
L28				1	1	1			
80.833-80.583									
L29				1	1	1			
80.583-75.583									
L30				1	1	1			
75.583-70.583									
L31				1	1	1			
70.583-65.583									
L32				1	1	1			
65.583-60.583									
L33				1	1	1			
60.583-55.583									
L34				1	1	1			
55.583-53.567									
L35				1	1	1			
53.567-53.317									
L36				1	1	1			
53.317-43.800									
L37				1	1	0.991654			
43.800-42.800									
L38				1	1	1.00019			
42.800-38.417									
L39				1	1	0.999477			
38.417-38.067									
L40				1	1	0.998999			
38.067-37.833									
L41				1	1	1.00703			
37.833-32.833									
L42				1	1	0.997306			
32.833-27.833									
L43				1	1	1.00759			
27.833-23.500									
L44				1	1	1.00713			
23.500-23.250									
L45				1	1	0.998003			
23.250-18.250									
L46				1	1	1.008			
18.250-13.250									
L47				1	1	0.999444			
13.250-8.250									
L48				1	1	0.998886			
8.250-7.917									
L49				1	1	0.98227			
7.917-7.667									
L50				1	1	0.978464			
7.667-5.500									
L51				1	1	1.08909			
5.500-5.250									
L52				1	1	1.0558			
5.250-3.000									
L53				1	1	0.978745			
3.000-2.750									

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
L54 2.750-0.000				1	1	0.974742			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
*										
CU12PSM9P6XXX(1-1/2)	A	No	Surface Ar (CaAa)	141.000 - 0.000	1	1	0.000 0.030	1.600		0.002
*										
Safety Line 3/8	C	No	Surface Ar (CaAa)	180.500 - 0.000	1	1	0.200 0.210	0.375		0.000
*										
MP3-05	A	No	Surface Af (CaAa)	40.500 - 0.583	1	1	0.100 0.150	5.330	14.840	0.000
MP3-05	B	No	Surface Af (CaAa)	40.500 - 5.500	1	1	0.100 0.150	5.330	14.840	0.000
MP3-05	C	No	Surface Af (CaAa)	40.500 - 0.583	1	1	0.100 0.150	5.330	14.840	0.000
*										
MP3-05	A	No	Surface Af (CaAa)	56.000 - 36.000	1	1	-0.150 -0.100	5.330	14.840	0.000
MP3-05	B	No	Surface Af (CaAa)	56.000 - 36.000	1	1	-0.150 -0.100	5.330	14.840	0.000
MP3-05	C	No	Surface Af (CaAa)	56.000 - 36.000	1	1	-0.150 -0.100	5.330	14.840	0.000
*										
MP3-04	A	No	Surface Af (CaAa)	82.250 - 52.250	1	1	0.100 0.150	4.780	12.780	0.000
MP3-04	B	No	Surface Af (CaAa)	82.250 - 52.250	1	1	0.100 0.150	4.780	12.780	0.000
MP3-04	C	No	Surface Af (CaAa)	82.250 - 52.250	1	1	0.100 0.150	4.780	12.780	0.000
*										
MP3-04	A	No	Surface Af (CaAa)	109.250 - 79.250	1	1	-0.150 -0.100	4.780	12.780	0.000
MP3-04	B	No	Surface Af (CaAa)	109.250 - 79.250	1	1	-0.150 -0.100	4.780	12.780	0.000
MP3-04	C	No	Surface Af (CaAa)	109.250 - 79.250	1	1	-0.150 -0.100	4.780	12.780	0.000
*										
MP3-03	A	No	Surface Af (CaAa)	121.750 - 106.750	1	1	0.100 0.150	4.060	11.260	0.000
MP3-03	B	No	Surface Af (CaAa)	121.750 - 106.750	1	1	0.100 0.150	4.060	11.260	0.000
MP3-03	C	No	Surface Af (CaAa)	121.750 - 106.750	1	1	0.100 0.150	4.060	11.260	0.000
*										
CCI 6.5" x 1.25" Plate	A	No	Surface Af (CaAa)	52.083 - 2.000	1	1	0.450 0.500	6.500	15.500	0.000
CCI 6.5" x 1.25" Plate	B	No	Surface Af (CaAa)	52.083 - 2.000	1	1	0.450 0.500	6.500	15.500	0.000

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
CCI 6.5" x 1.25" Plate	C	No	Surface Af (CaAa)	52.083 - 2.000	1	1	0.450 0.500	6.500	15.500	0.000
*										
CCI 6" x 1" Plate	A	No	Surface Af (CaAa)	115.000 - 85.000	1	1	0.350 0.400	6.000	14.000	0.000
CCI 6" x 1" Plate	B	No	Surface Af (CaAa)	115.000 - 85.000	1	1	0.350 0.400	6.000	14.000	0.000
CCI 6" x 1" Plate	C	No	Surface Af (CaAa)	115.000 - 85.000	1	1	0.350 0.400	6.000	14.000	0.000
*										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight klf
HB158-21U6S24-xx M_TMO(1-5/8)	A	No	No	Inside Pole	180.000 - 0.000	3	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.003 0.003 0.003
*									
HB158-U12S24-XX X-LI(1-5/8)	B	No	No	Inside Pole	168.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.003 0.003 0.003
*									
LDF6-50A(1-1/4)	B	No	No	Inside Pole	160.000 - 0.000	12	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
*									
FB-L98B-002-75000 (3/8)	B	No	No	Inside Pole	158.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
WR-VG122ST-BRD A(7/16)	B	No	No	Inside Pole	158.000 - 0.000	2	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
2" Rigid Conduit	B	No	No	Inside Pole	158.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.003 0.003 0.003
*									
LDF4-50A(1/2)	A	No	No	Inside Pole	78.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.000 0.000 0.000
*									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	180.500-175.500	A	0.000	0.000	0.000	0.000	0.034
		B	0.000	0.000	0.000	0.000	0.000

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C	0.000	0.000	0.188	0.000	0.001
L2	175.500-170.500	A	0.000	0.000	0.000	0.000	0.037
		B	0.000	0.000	0.000	0.000	0.000
		C	0.000	0.000	0.188	0.000	0.001
L3	170.500-165.500	A	0.000	0.000	0.000	0.000	0.037
		B	0.000	0.000	0.000	0.000	0.008
		C	0.000	0.000	0.188	0.000	0.001
L4	165.500-160.500	A	0.000	0.000	0.000	0.000	0.037
		B	0.000	0.000	0.000	0.000	0.016
		C	0.000	0.000	0.188	0.000	0.001
L5	160.500-155.500	A	0.000	0.000	0.000	0.000	0.037
		B	0.000	0.000	0.000	0.000	0.056
		C	0.000	0.000	0.188	0.000	0.001
L6	155.500-150.500	A	0.000	0.000	0.000	0.000	0.037
		B	0.000	0.000	0.000	0.000	0.068
		C	0.000	0.000	0.188	0.000	0.001
L7	150.500-145.500	A	0.000	0.000	0.000	0.000	0.037
		B	0.000	0.000	0.000	0.000	0.068
		C	0.000	0.000	0.188	0.000	0.001
L8	145.500-140.500	A	0.000	0.000	0.080	0.000	0.039
		B	0.000	0.000	0.000	0.000	0.068
		C	0.000	0.000	0.188	0.000	0.001
L9	140.500-134.500	A	0.000	0.000	0.960	0.000	0.059
		B	0.000	0.000	0.000	0.000	0.081
		C	0.000	0.000	0.225	0.000	0.001
L10	134.500-132.794	A	0.000	0.000	0.273	0.000	0.017
		B	0.000	0.000	0.000	0.000	0.023
		C	0.000	0.000	0.064	0.000	0.000
L11	132.794-127.794	A	0.000	0.000	0.800	0.000	0.049
		B	0.000	0.000	0.000	0.000	0.068
		C	0.000	0.000	0.188	0.000	0.001
L12	127.794-122.794	A	0.000	0.000	0.800	0.000	0.049
		B	0.000	0.000	0.000	0.000	0.068
		C	0.000	0.000	0.188	0.000	0.001
L13	122.794-120.583	A	0.000	0.000	1.143	0.000	0.022
		B	0.000	0.000	0.790	0.000	0.030
		C	0.000	0.000	0.873	0.000	0.000
L14	120.583-120.333	A	0.000	0.000	0.209	0.000	0.002
		B	0.000	0.000	0.169	0.000	0.003
		C	0.000	0.000	0.179	0.000	0.000
L15	120.333-115.333	A	0.000	0.000	4.183	0.000	0.049
		B	0.000	0.000	3.383	0.000	0.068
		C	0.000	0.000	3.571	0.000	0.001
L16	115.333-112.500	A	0.000	0.000	4.870	0.000	0.028
		B	0.000	0.000	4.417	0.000	0.038
		C	0.000	0.000	4.523	0.000	0.001
L17	112.500-112.250	A	0.000	0.000	0.459	0.000	0.002
		B	0.000	0.000	0.419	0.000	0.003
		C	0.000	0.000	0.429	0.000	0.000
L18	112.250-107.817	A	0.000	0.000	9.284	0.000	0.044
		B	0.000	0.000	8.574	0.000	0.060
		C	0.000	0.000	8.741	0.000	0.001
L19	107.817-107.567	A	0.000	0.000	0.658	0.000	0.002
		B	0.000	0.000	0.618	0.000	0.003
		C	0.000	0.000	0.628	0.000	0.000
L20	107.567-102.567	A	0.000	0.000	10.336	0.000	0.049
		B	0.000	0.000	9.536	0.000	0.068
		C	0.000	0.000	9.724	0.000	0.001
L21	102.567-97.567	A	0.000	0.000	9.783	0.000	0.049
		B	0.000	0.000	8.983	0.000	0.068
		C	0.000	0.000	9.171	0.000	0.001

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L22	97.567-89.000	A	0.000	0.000	16.763	0.000	0.084
		B	0.000	0.000	15.392	0.000	0.116
		C	0.000	0.000	15.713	0.000	0.002
L23	89.000-88.311	A	0.000	0.000	1.348	0.000	0.007
		B	0.000	0.000	1.238	0.000	0.009
		C	0.000	0.000	1.264	0.000	0.000
L24	88.311-87.500	A	0.000	0.000	1.587	0.000	0.008
		B	0.000	0.000	1.457	0.000	0.011
		C	0.000	0.000	1.488	0.000	0.000
L25	87.500-87.250	A	0.000	0.000	0.489	0.000	0.002
		B	0.000	0.000	0.449	0.000	0.003
		C	0.000	0.000	0.459	0.000	0.000
L26	87.250-82.250	A	0.000	0.000	7.033	0.000	0.049
		B	0.000	0.000	6.233	0.000	0.068
		C	0.000	0.000	6.421	0.000	0.001
L27	82.250-80.833	A	0.000	0.000	2.484	0.000	0.014
		B	0.000	0.000	2.258	0.000	0.019
		C	0.000	0.000	2.311	0.000	0.000
L28	80.833-80.583	A	0.000	0.000	0.438	0.000	0.002
		B	0.000	0.000	0.398	0.000	0.003
		C	0.000	0.000	0.408	0.000	0.000
L29	80.583-75.583	A	0.000	0.000	5.845	0.000	0.050
		B	0.000	0.000	5.045	0.000	0.068
		C	0.000	0.000	5.233	0.000	0.001
L30	75.583-70.583	A	0.000	0.000	4.783	0.000	0.050
		B	0.000	0.000	3.983	0.000	0.068
		C	0.000	0.000	4.171	0.000	0.001
L31	70.583-65.583	A	0.000	0.000	4.783	0.000	0.050
		B	0.000	0.000	3.983	0.000	0.068
		C	0.000	0.000	4.171	0.000	0.001
L32	65.583-60.583	A	0.000	0.000	4.783	0.000	0.050
		B	0.000	0.000	3.983	0.000	0.068
		C	0.000	0.000	4.171	0.000	0.001
L33	60.583-55.583	A	0.000	0.000	5.154	0.000	0.050
		B	0.000	0.000	4.354	0.000	0.068
		C	0.000	0.000	4.541	0.000	0.001
L34	55.583-53.567	A	0.000	0.000	3.720	0.000	0.020
		B	0.000	0.000	3.397	0.000	0.027
		C	0.000	0.000	3.473	0.000	0.000
L35	53.567-53.317	A	0.000	0.000	0.461	0.000	0.003
		B	0.000	0.000	0.421	0.000	0.003
		C	0.000	0.000	0.431	0.000	0.000
L36	53.317-43.800	A	0.000	0.000	19.800	0.000	0.095
		B	0.000	0.000	18.278	0.000	0.129
		C	0.000	0.000	18.634	0.000	0.002
L37	43.800-42.800	A	0.000	0.000	2.132	0.000	0.010
		B	0.000	0.000	1.972	0.000	0.014
		C	0.000	0.000	2.009	0.000	0.000
L38	42.800-38.417	A	0.000	0.000	11.193	0.000	0.044
		B	0.000	0.000	10.492	0.000	0.059
		C	0.000	0.000	10.657	0.000	0.001
L39	38.417-38.067	A	0.000	0.000	1.057	0.000	0.004
		B	0.000	0.000	1.001	0.000	0.005
		C	0.000	0.000	1.014	0.000	0.000
L40	38.067-37.833	A	0.000	0.000	0.707	0.000	0.002
		B	0.000	0.000	0.669	0.000	0.003
		C	0.000	0.000	0.678	0.000	0.000
L41	37.833-32.833	A	0.000	0.000	12.287	0.000	0.050
		B	0.000	0.000	11.487	0.000	0.068
		C	0.000	0.000	11.674	0.000	0.001
L42	32.833-27.833	A	0.000	0.000	10.658	0.000	0.050

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B	0.000	0.000	9.858	0.000	0.068
		C	0.000	0.000	10.046	0.000	0.001
L43	27.833-23.500	A	0.000	0.000	9.237	0.000	0.043
		B	0.000	0.000	8.543	0.000	0.059
		C	0.000	0.000	8.706	0.000	0.001
L44	23.500-23.250	A	0.000	0.000	0.533	0.000	0.003
		B	0.000	0.000	0.493	0.000	0.003
		C	0.000	0.000	0.502	0.000	0.000
L45	23.250-18.250	A	0.000	0.000	10.658	0.000	0.050
		B	0.000	0.000	9.858	0.000	0.068
		C	0.000	0.000	10.046	0.000	0.001
L46	18.250-13.250	A	0.000	0.000	10.658	0.000	0.050
		B	0.000	0.000	9.858	0.000	0.068
		C	0.000	0.000	10.046	0.000	0.001
L47	13.250-8.250	A	0.000	0.000	10.658	0.000	0.050
		B	0.000	0.000	9.858	0.000	0.068
		C	0.000	0.000	10.046	0.000	0.001
L48	8.250-7.917	A	0.000	0.000	0.710	0.000	0.003
		B	0.000	0.000	0.657	0.000	0.005
		C	0.000	0.000	0.669	0.000	0.000
L49	7.917-7.667	A	0.000	0.000	0.533	0.000	0.003
		B	0.000	0.000	0.493	0.000	0.003
		C	0.000	0.000	0.502	0.000	0.000
L50	7.667-5.500	A	0.000	0.000	4.619	0.000	0.022
		B	0.000	0.000	4.273	0.000	0.029
		C	0.000	0.000	4.354	0.000	0.000
L51	5.500-5.250	A	0.000	0.000	0.533	0.000	0.003
		B	0.000	0.000	0.271	0.000	0.003
		C	0.000	0.000	0.502	0.000	0.000
L52	5.250-3.000	A	0.000	0.000	4.796	0.000	0.022
		B	0.000	0.000	2.438	0.000	0.030
		C	0.000	0.000	4.521	0.000	0.000
L53	3.000-2.750	A	0.000	0.000	0.533	0.000	0.003
		B	0.000	0.000	0.271	0.000	0.003
		C	0.000	0.000	0.502	0.000	0.000
L54	2.750-0.000	A	0.000	0.000	3.178	0.000	0.028
		B	0.000	0.000	0.813	0.000	0.037
		C	0.000	0.000	2.841	0.000	0.001

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	180.500-175.500	A	1.006	0.000	0.000	0.000	0.000	0.034
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	1.194	0.000	0.010
L2	175.500-170.500	A	1.003	0.000	0.000	0.000	0.000	0.037
		B		0.000	0.000	0.000	0.000	0.000
		C		0.000	0.000	1.191	0.000	0.010
L3	170.500-165.500	A	1.000	0.000	0.000	0.000	0.000	0.037
		B		0.000	0.000	0.000	0.000	0.008
		C		0.000	0.000	1.188	0.000	0.010
L4	165.500-160.500	A	0.997	0.000	0.000	0.000	0.000	0.037
		B		0.000	0.000	0.000	0.000	0.016
		C		0.000	0.000	1.185	0.000	0.009
L5	160.500-155.500	A	0.994	0.000	0.000	0.000	0.000	0.037
		B		0.000	0.000	0.000	0.000	0.056

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		C		0.000	0.000	1.182	0.000	0.009
L6	155.500-150.500	A	0.991	0.000	0.000	0.000	0.000	0.037
		B		0.000	0.000	0.000	0.000	0.068
		C		0.000	0.000	1.178	0.000	0.009
L7	150.500-145.500	A	0.988	0.000	0.000	0.000	0.000	0.037
		B		0.000	0.000	0.000	0.000	0.068
		C		0.000	0.000	1.175	0.000	0.009
L8	145.500-140.500	A	0.984	0.000	0.000	0.178	0.000	0.040
		B		0.000	0.000	0.000	0.000	0.068
		C		0.000	0.000	1.172	0.000	0.009
L9	140.500-134.500	A	0.980	0.000	0.000	2.136	0.000	0.078
		B		0.000	0.000	0.000	0.000	0.081
		C		0.000	0.000	1.401	0.000	0.011
L10	134.500-132.794	A	0.978	0.000	0.000	0.607	0.000	0.022
		B		0.000	0.000	0.000	0.000	0.023
		C		0.000	0.000	0.398	0.000	0.003
L11	132.794-127.794	A	0.975	0.000	0.000	1.775	0.000	0.065
		B		0.000	0.000	0.000	0.000	0.068
		C		0.000	0.000	1.163	0.000	0.009
L12	127.794-122.794	A	0.971	0.000	0.000	1.771	0.000	0.065
		B		0.000	0.000	0.000	0.000	0.068
		C		0.000	0.000	1.159	0.000	0.009
L13	122.794-120.583	A	0.968	0.000	0.000	1.798	0.000	0.035
		B		0.000	0.000	1.016	0.000	0.036
		C		0.000	0.000	1.527	0.000	0.011
L14	120.583-120.333	A	0.968	0.000	0.000	0.306	0.000	0.005
		B		0.000	0.000	0.218	0.000	0.005
		C		0.000	0.000	0.275	0.000	0.002
L15	120.333-115.333	A	0.965	0.000	0.000	6.114	0.000	0.092
		B		0.000	0.000	4.349	0.000	0.096
		C		0.000	0.000	5.502	0.000	0.037
L16	115.333-112.500	A	0.962	0.000	0.000	6.442	0.000	0.069
		B		0.000	0.000	5.443	0.000	0.071
		C		0.000	0.000	6.095	0.000	0.037
L17	112.500-112.250	A	0.961	0.000	0.000	0.603	0.000	0.006
		B		0.000	0.000	0.515	0.000	0.006
		C		0.000	0.000	0.573	0.000	0.003
L18	112.250-107.817	A	0.959	0.000	0.000	12.108	0.000	0.119
		B		0.000	0.000	10.549	0.000	0.123
		C		0.000	0.000	11.565	0.000	0.070
L19	107.817-107.567	A	0.957	0.000	0.000	0.850	0.000	0.008
		B		0.000	0.000	0.762	0.000	0.008
		C		0.000	0.000	0.819	0.000	0.005
L20	107.567-102.567	A	0.954	0.000	0.000	13.355	0.000	0.132
		B		0.000	0.000	11.601	0.000	0.135
		C		0.000	0.000	12.743	0.000	0.076
L21	102.567-97.567	A	0.950	0.000	0.000	12.632	0.000	0.127
		B		0.000	0.000	10.883	0.000	0.130
		C		0.000	0.000	12.020	0.000	0.072
L22	97.567-89.000	A	0.943	0.000	0.000	21.610	0.000	0.216
		B		0.000	0.000	18.624	0.000	0.223
		C		0.000	0.000	20.561	0.000	0.121
L23	89.000-88.311	A	0.938	0.000	0.000	1.738	0.000	0.017
		B		0.000	0.000	1.498	0.000	0.018
		C		0.000	0.000	1.654	0.000	0.010
L24	88.311-87.500	A	0.937	0.000	0.000	2.043	0.000	0.020
		B		0.000	0.000	1.761	0.000	0.021
		C		0.000	0.000	1.944	0.000	0.011
L25	87.500-87.250	A	0.937	0.000	0.000	0.630	0.000	0.006
		B		0.000	0.000	0.543	0.000	0.006
		C		0.000	0.000	0.599	0.000	0.004

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L26	87.250-82.250	A	0.934	0.000	0.000	9.322	0.000	0.108
		B		0.000	0.000	7.588	0.000	0.112
		C		0.000	0.000	8.709	0.000	0.053
L27	82.250-80.833	A	0.930	0.000	0.000	3.276	0.000	0.035
		B		0.000	0.000	2.785	0.000	0.036
		C		0.000	0.000	3.102	0.000	0.019
L28	80.833-80.583	A	0.930	0.000	0.000	0.578	0.000	0.006
		B		0.000	0.000	0.491	0.000	0.006
		C		0.000	0.000	0.547	0.000	0.003
L29	80.583-75.583	A	0.926	0.000	0.000	7.945	0.000	0.101
		B		0.000	0.000	6.219	0.000	0.105
		C		0.000	0.000	7.333	0.000	0.046
L30	75.583-70.583	A	0.920	0.000	0.000	6.624	0.000	0.093
		B		0.000	0.000	4.904	0.000	0.097
		C		0.000	0.000	6.011	0.000	0.037
L31	70.583-65.583	A	0.914	0.000	0.000	6.611	0.000	0.093
		B		0.000	0.000	4.897	0.000	0.097
		C		0.000	0.000	5.998	0.000	0.037
L32	65.583-60.583	A	0.907	0.000	0.000	6.597	0.000	0.092
		B		0.000	0.000	4.890	0.000	0.096
		C		0.000	0.000	5.985	0.000	0.037
L33	60.583-55.583	A	0.899	0.000	0.000	7.028	0.000	0.095
		B		0.000	0.000	5.328	0.000	0.099
		C		0.000	0.000	6.415	0.000	0.039
L34	55.583-53.567	A	0.894	0.000	0.000	4.801	0.000	0.050
		B		0.000	0.000	4.118	0.000	0.051
		C		0.000	0.000	4.554	0.000	0.027
L35	53.567-53.317	A	0.892	0.000	0.000	0.595	0.000	0.006
		B		0.000	0.000	0.510	0.000	0.006
		C		0.000	0.000	0.564	0.000	0.003
L36	53.317-43.800	A	0.883	0.000	0.000	24.815	0.000	0.240
		B		0.000	0.000	21.611	0.000	0.248
		C		0.000	0.000	23.649	0.000	0.134
L37	43.800-42.800	A	0.873	0.000	0.000	2.662	0.000	0.025
		B		0.000	0.000	2.325	0.000	0.026
		C		0.000	0.000	2.539	0.000	0.014
L38	42.800-38.417	A	0.868	0.000	0.000	13.837	0.000	0.123
		B		0.000	0.000	12.375	0.000	0.127
		C		0.000	0.000	13.300	0.000	0.074
L39	38.417-38.067	A	0.863	0.000	0.000	1.299	0.000	0.011
		B		0.000	0.000	1.182	0.000	0.011
		C		0.000	0.000	1.256	0.000	0.007
L40	38.067-37.833	A	0.862	0.000	0.000	0.868	0.000	0.007
		B		0.000	0.000	0.790	0.000	0.007
		C		0.000	0.000	0.839	0.000	0.005
L41	37.833-32.833	A	0.856	0.000	0.000	15.168	0.000	0.135
		B		0.000	0.000	13.512	0.000	0.140
		C		0.000	0.000	14.555	0.000	0.080
L42	32.833-27.833	A	0.843	0.000	0.000	13.187	0.000	0.123
		B		0.000	0.000	11.544	0.000	0.128
		C		0.000	0.000	12.574	0.000	0.068
L43	27.833-23.500	A	0.829	0.000	0.000	11.391	0.000	0.105
		B		0.000	0.000	9.980	0.000	0.110
		C		0.000	0.000	10.861	0.000	0.057
L44	23.500-23.250	A	0.821	0.000	0.000	0.656	0.000	0.006
		B		0.000	0.000	0.575	0.000	0.006
		C		0.000	0.000	0.625	0.000	0.003
L45	23.250-18.250	A	0.811	0.000	0.000	13.093	0.000	0.120
		B		0.000	0.000	11.481	0.000	0.125
		C		0.000	0.000	12.480	0.000	0.065
L46	18.250-13.250	A	0.789	0.000	0.000	13.026	0.000	0.117

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	11.437	0.000	0.123
		C		0.000	0.000	12.414	0.000	0.062
L47	13.250-8.250	A	0.760	0.000	0.000	12.938	0.000	0.114
		B		0.000	0.000	11.378	0.000	0.121
		C		0.000	0.000	12.325	0.000	0.060
L48	8.250-7.917	A	0.738	0.000	0.000	0.857	0.000	0.007
		B		0.000	0.000	0.755	0.000	0.008
		C		0.000	0.000	0.817	0.000	0.004
L49	7.917-7.667	A	0.736	0.000	0.000	0.643	0.000	0.006
		B		0.000	0.000	0.566	0.000	0.006
		C		0.000	0.000	0.613	0.000	0.003
L50	7.667-5.500	A	0.723	0.000	0.000	5.560	0.000	0.048
		B		0.000	0.000	4.900	0.000	0.051
		C		0.000	0.000	5.294	0.000	0.024
L51	5.500-5.250	A	0.709	0.000	0.000	0.639	0.000	0.005
		B		0.000	0.000	0.306	0.000	0.005
		C		0.000	0.000	0.609	0.000	0.003
L52	5.250-3.000	A	0.690	0.000	0.000	5.728	0.000	0.048
		B		0.000	0.000	2.748	0.000	0.041
		C		0.000	0.000	5.453	0.000	0.024
L53	3.000-2.750	A	0.666	0.000	0.000	0.633	0.000	0.005
		B		0.000	0.000	0.304	0.000	0.005
		C		0.000	0.000	0.602	0.000	0.003
L54	2.750-0.000	A	0.618	0.000	0.000	3.878	0.000	0.044
		B		0.000	0.000	0.905	0.000	0.040
		C		0.000	0.000	3.542	0.000	0.015

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	180.500-175.500	-0.125	0.273	-0.404	0.882
L2	175.500-170.500	-0.125	0.273	-0.406	0.888
L3	170.500-165.500	-0.125	0.273	-0.409	0.893
L4	165.500-160.500	-0.125	0.273	-0.411	0.897
L5	160.500-155.500	-0.125	0.274	-0.413	0.901
L6	155.500-150.500	-0.125	0.274	-0.414	0.905
L7	150.500-145.500	-0.125	0.274	-0.416	0.908
L8	145.500-140.500	-0.239	0.200	-0.548	0.815
L9	140.500-134.500	-1.156	-0.396	-1.593	0.061
L10	134.500-132.794	-1.157	-0.396	-1.596	0.062
L11	132.794-127.794	-1.158	-0.397	-1.599	0.061
L12	127.794-122.794	-1.160	-0.397	-1.606	0.062
L13	122.794-120.583	-0.749	-0.256	-1.169	0.045
L14	120.583-120.333	-0.570	-0.195	-0.942	0.036
L15	120.333-115.333	-0.575	-0.197	-0.949	0.037
L16	115.333-112.500	-0.353	-0.120	-0.642	0.025
L17	112.500-112.250	-0.338	-0.115	-0.619	0.024
L18	112.250-107.817	-0.308	-0.105	-0.570	0.022
L19	107.817-107.567	-0.258	-0.088	-0.487	0.019
L20	107.567-102.567	-0.318	-0.108	-0.590	0.023
L21	102.567-97.567	-0.338	-0.115	-0.625	0.024
L22	97.567-89.000	-0.348	-0.118	-0.638	0.024
L23	89.000-88.311	-0.350	-0.119	-0.642	0.025
L24	88.311-87.500	-0.351	-0.119	-0.642	0.024
L25	87.500-87.250	-0.351	-0.119	-0.642	0.024

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L26	87.250-82.250	-0.451	-0.153	-0.791	0.029
L27	82.250-80.833	-0.389	-0.132	-0.692	0.026
L28	80.833-80.583	-0.391	-0.133	-0.694	0.026
L29	80.583-75.583	-0.521	-0.177	-0.885	0.032
L30	75.583-70.583	-0.598	-0.203	-0.988	0.036
L31	70.583-65.583	-0.605	-0.205	-0.997	0.035
L32	65.583-60.583	-0.613	-0.208	-1.004	0.035
L33	60.583-55.583	-0.594	-0.201	-0.978	0.033
L34	55.583-53.567	-0.410	-0.139	-0.719	0.024
L35	53.567-53.317	-0.411	-0.139	-0.721	0.024
L36	53.317-43.800	-0.383	-0.130	-0.684	0.022
L37	43.800-42.800	-0.377	-0.128	-0.678	0.021
L38	42.800-38.417	-0.332	-0.112	-0.601	0.018
L39	38.417-38.067	-0.294	-0.099	-0.537	0.015
L40	38.067-37.833	-0.294	-0.099	-0.537	0.015
L41	37.833-32.833	-0.348	-0.118	-0.622	0.017
L42	32.833-27.833	-0.392	-0.133	-0.686	0.017
L43	27.833-23.500	-0.397	-0.134	-0.689	0.016
L44	23.500-23.250	-0.400	-0.135	-0.690	0.015
L45	23.250-18.250	-0.403	-0.136	-0.691	0.014
L46	18.250-13.250	-0.408	-0.138	-0.691	0.011
L47	13.250-8.250	-0.413	-0.140	-0.687	0.007
L48	8.250-7.917	-0.416	-0.140	-0.682	0.004
L49	7.917-7.667	-0.416	-0.141	-0.682	0.004
L50	7.667-5.500	-0.418	-0.141	-0.678	0.002
L51	5.500-5.250	-3.292	-0.082	-3.123	0.063
L52	5.250-3.000	-3.301	-0.082	-3.120	0.060
L53	3.000-2.750	-3.311	-0.082	-3.114	0.056
L54	2.750-0.000	-4.056	-0.148	-3.551	0.048

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

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L1	20	Safety Line 3/8	175.50 - 180.50	1.0000	1.0000
L2	20	Safety Line 3/8	170.50 - 175.50	1.0000	1.0000
L3	20	Safety Line 3/8	165.50 - 170.50	1.0000	1.0000
L4	20	Safety Line 3/8	160.50 - 165.50	1.0000	1.0000
L5	20	Safety Line 3/8	155.50 - 160.50	1.0000	1.0000
L6	20	Safety Line 3/8	150.50 - 155.50	1.0000	1.0000
L7	20	Safety Line 3/8	145.50 - 150.50	1.0000	1.0000
L8	16	CU12PSM9P6XXX(1-1/2)	140.50 - 141.00	1.0000	1.0000
L8	20	Safety Line 3/8	140.50 - 145.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L9	16	CU12PSM9P6XXX(1-1/2)	134.50 - 140.50	1.0000	1.0000
L9	20	Safety Line 3/8	134.50 - 140.50	1.0000	1.0000
L10	16	CU12PSM9P6XXX(1-1/2)	132.79 - 134.50	1.0000	1.0000
L10	20	Safety Line 3/8	132.79 - 134.50	1.0000	1.0000
L11	16	CU12PSM9P6XXX(1-1/2)	127.79 - 132.79	1.0000	1.0000
L11	20	Safety Line 3/8	127.79 - 132.79	1.0000	1.0000
L12	16	CU12PSM9P6XXX(1-1/2)	122.79 - 127.79	1.0000	1.0000
L12	20	Safety Line 3/8	122.79 - 127.79	1.0000	1.0000
L13	16	CU12PSM9P6XXX(1-1/2)	120.58 - 122.79	1.0000	1.0000
L13	20	Safety Line 3/8	120.58 - 122.79	1.0000	1.0000
L13	38	MP3-03	120.58 - 121.75	1.0000	1.0000
L13	39	MP3-03	120.58 - 121.75	1.0000	1.0000
L13	40	MP3-03	120.58 - 121.75	1.0000	1.0000
L14	16	CU12PSM9P6XXX(1-1/2)	120.33 - 120.58	1.0000	1.0000
L14	20	Safety Line 3/8	120.33 - 120.58	1.0000	1.0000
L14	38	MP3-03	120.33 - 120.58	1.0000	1.0000
L14	39	MP3-03	120.33 - 120.58	1.0000	1.0000
L14	40	MP3-03	120.33 - 120.58	1.0000	1.0000
L15	16	CU12PSM9P6XXX(1-1/2)	115.33 - 120.33	1.0000	1.0000
L15	20	Safety Line 3/8	115.33 - 120.33	1.0000	1.0000
L15	38	MP3-03	115.33 - 120.33	1.0000	1.0000
L15	39	MP3-03	115.33 - 120.33	1.0000	1.0000
L15	40	MP3-03	115.33 - 120.33	1.0000	1.0000
L16	16	CU12PSM9P6XXX(1-1/2)	112.50 - 115.33	1.0000	1.0000
L16	20	Safety Line 3/8	112.50 - 115.33	1.0000	1.0000
L16	38	MP3-03	112.50 - 115.33	1.0000	1.0000
L16	39	MP3-03	112.50 - 115.33	1.0000	1.0000
L16	40	MP3-03	112.50 - 115.33	1.0000	1.0000
L16	46	CCI 6" x 1" Plate	112.50 - 115.00	1.0000	1.0000
L16	47	CCI 6" x 1" Plate	112.50 - 115.00	1.0000	1.0000
L16	48	CCI 6" x 1" Plate	112.50 - 115.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L17	16	CU12PSM9P6XXX(1-1/2)	112.25 - 112.50	1.0000	1.0000
L17	20	Safety Line 3/8	112.25 - 112.50	1.0000	1.0000
L17	38	MP3-03	112.25 - 112.50	1.0000	1.0000
L17	39	MP3-03	112.25 - 112.50	1.0000	1.0000
L17	40	MP3-03	112.25 - 112.50	1.0000	1.0000
L17	46	CCI 6" x 1" Plate	112.25 - 112.50	1.0000	1.0000
L17	47	CCI 6" x 1" Plate	112.25 - 112.50	1.0000	1.0000
L17	48	CCI 6" x 1" Plate	112.25 - 112.50	1.0000	1.0000
L18	16	CU12PSM9P6XXX(1-1/2)	107.82 - 112.25	1.0000	1.0000
L18	20	Safety Line 3/8	107.82 - 112.25	1.0000	1.0000
L18	34	MP3-04	107.82 - 109.25	1.0000	1.0000
L18	35	MP3-04	107.82 - 109.25	1.0000	1.0000
L18	36	MP3-04	107.82 - 109.25	1.0000	1.0000
L18	38	MP3-03	107.82 - 112.25	1.0000	1.0000
L18	39	MP3-03	107.82 - 112.25	1.0000	1.0000
L18	40	MP3-03	107.82 - 112.25	1.0000	1.0000
L18	46	CCI 6" x 1" Plate	107.82 - 112.25	1.0000	1.0000
L18	47	CCI 6" x 1" Plate	107.82 - 112.25	1.0000	1.0000
L18	48	CCI 6" x 1" Plate	107.82 - 112.25	1.0000	1.0000
L19	16	CU12PSM9P6XXX(1-1/2)	107.57 - 107.82	1.0000	1.0000
L19	20	Safety Line 3/8	107.57 - 107.82	1.0000	1.0000
L19	34	MP3-04	107.57 - 107.82	1.0000	1.0000
L19	35	MP3-04	107.57 - 107.82	1.0000	1.0000
L19	36	MP3-04	107.57 - 107.82	1.0000	1.0000
L19	38	MP3-03	107.57 - 107.82	1.0000	1.0000
L19	39	MP3-03	107.57 - 107.82	1.0000	1.0000
L19	40	MP3-03	107.57 - 107.82	1.0000	1.0000
L19	46	CCI 6" x 1" Plate	107.57 - 107.82	1.0000	1.0000
L19	47	CCI 6" x 1" Plate	107.57 - 107.82	1.0000	1.0000
L19	48	CCI 6" x 1" Plate	107.57 - 107.82	1.0000	1.0000
L20	16	CU12PSM9P6XXX(1-1/2)	102.57 - 107.57	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L20	20	Safety Line 3/8	102.57 - 107.57	1.0000	1.0000
L20	34	MP3-04	102.57 - 107.57	1.0000	1.0000
L20	35	MP3-04	102.57 - 107.57	1.0000	1.0000
L20	36	MP3-04	102.57 - 107.57	1.0000	1.0000
L20	38	MP3-03	106.75 - 107.57	1.0000	1.0000
L20	39	MP3-03	106.75 - 107.57	1.0000	1.0000
L20	40	MP3-03	106.75 - 107.57	1.0000	1.0000
L20	46	CCI 6" x 1" Plate	102.57 - 107.57	1.0000	1.0000
L20	47	CCI 6" x 1" Plate	102.57 - 107.57	1.0000	1.0000
L20	48	CCI 6" x 1" Plate	102.57 - 107.57	1.0000	1.0000
L21	16	CU12PSM9P6XXX(1-1/2)	97.57 - 102.57	1.0000	1.0000
L21	20	Safety Line 3/8	97.57 - 102.57	1.0000	1.0000
L21	34	MP3-04	97.57 - 102.57	1.0000	1.0000
L21	35	MP3-04	97.57 - 102.57	1.0000	1.0000
L21	36	MP3-04	97.57 - 102.57	1.0000	1.0000
L21	46	CCI 6" x 1" Plate	97.57 - 102.57	1.0000	1.0000
L21	47	CCI 6" x 1" Plate	97.57 - 102.57	1.0000	1.0000
L21	48	CCI 6" x 1" Plate	97.57 - 102.57	1.0000	1.0000
L22	16	CU12PSM9P6XXX(1-1/2)	89.00 - 97.57	1.0000	1.0000
L22	20	Safety Line 3/8	89.00 - 97.57	1.0000	1.0000
L22	34	MP3-04	89.00 - 97.57	1.0000	1.0000
L22	35	MP3-04	89.00 - 97.57	1.0000	1.0000
L22	36	MP3-04	89.00 - 97.57	1.0000	1.0000
L22	46	CCI 6" x 1" Plate	89.00 - 97.57	1.0000	1.0000
L22	47	CCI 6" x 1" Plate	89.00 - 97.57	1.0000	1.0000
L22	48	CCI 6" x 1" Plate	89.00 - 97.57	1.0000	1.0000
L23	16	CU12PSM9P6XXX(1-1/2)	88.31 - 89.00	1.0000	1.0000
L23	20	Safety Line 3/8	88.31 - 89.00	1.0000	1.0000
L23	34	MP3-04	88.31 - 89.00	1.0000	1.0000
L23	35	MP3-04	88.31 - 89.00	1.0000	1.0000
L23	36	MP3-04	88.31 - 89.00	1.0000	1.0000
L23	46	CCI 6" x 1" Plate	88.31 - 89.00	1.0000	1.0000
L23	47	CCI 6" x 1" Plate	88.31 - 89.00	1.0000	1.0000
L23	48	CCI 6" x 1" Plate	88.31 - 89.00	1.0000	1.0000
L24	16	CU12PSM9P6XXX(1-1/2)	87.50 - 88.31	1.0000	1.0000
L24	20	Safety Line 3/8	87.50 - 88.31	1.0000	1.0000
L24	34	MP3-04	87.50 - 88.31	1.0000	1.0000
L24	35	MP3-04	87.50 - 88.31	1.0000	1.0000
L24	36	MP3-04	87.50 - 88.31	1.0000	1.0000
L24	46	CCI 6" x 1" Plate	87.50 - 88.31	1.0000	1.0000
L24	47	CCI 6" x 1" Plate	87.50 - 88.31	1.0000	1.0000
L24	48	CCI 6" x 1" Plate	87.50 - 88.31	1.0000	1.0000
L25	16	CU12PSM9P6XXX(1-1/2)	87.25 - 87.50	1.0000	1.0000
L25	20	Safety Line 3/8	87.25 - 87.50	1.0000	1.0000
L25	34	MP3-04	87.25 - 87.50	1.0000	1.0000
L25	35	MP3-04	87.25 - 87.50	1.0000	1.0000
L25	36	MP3-04	87.25 - 87.50	1.0000	1.0000
L25	46	CCI 6" x 1" Plate	87.25 - 87.50	1.0000	1.0000
L25	47	CCI 6" x 1" Plate	87.25 - 87.50	1.0000	1.0000
L25	48	CCI 6" x 1" Plate	87.25 - 87.50	1.0000	1.0000
L26	16	CU12PSM9P6XXX(1-1/2)	82.25 - 87.25	1.0000	1.0000
L26	20	Safety Line 3/8	82.25 - 87.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L26	34	MP3-04	82.25 - 87.25	1.0000	1.0000
L26	35	MP3-04	82.25 - 87.25	1.0000	1.0000
L26	36	MP3-04	82.25 - 87.25	1.0000	1.0000
L26	46	CCI 6" x 1" Plate	85.00 - 87.25	1.0000	1.0000
L26	47	CCI 6" x 1" Plate	85.00 - 87.25	1.0000	1.0000
L26	48	CCI 6" x 1" Plate	85.00 - 87.25	1.0000	1.0000
L27	16	CU12PSM9P6XXX(1-1/2)	80.83 - 82.25	1.0000	1.0000
L27	20	Safety Line 3/8	80.83 - 82.25	1.0000	1.0000
L27	30	MP3-04	80.83 - 82.25	1.0000	1.0000
L27	31	MP3-04	80.83 - 82.25	1.0000	1.0000
L27	32	MP3-04	80.83 - 82.25	1.0000	1.0000
L27	34	MP3-04	80.83 - 82.25	1.0000	1.0000
L27	35	MP3-04	80.83 - 82.25	1.0000	1.0000
L27	36	MP3-04	80.83 - 82.25	1.0000	1.0000
L28	16	CU12PSM9P6XXX(1-1/2)	80.58 - 80.83	1.0000	1.0000
L28	20	Safety Line 3/8	80.58 - 80.83	1.0000	1.0000
L28	30	MP3-04	80.58 - 80.83	1.0000	1.0000
L28	31	MP3-04	80.58 - 80.83	1.0000	1.0000
L28	32	MP3-04	80.58 - 80.83	1.0000	1.0000
L28	34	MP3-04	80.58 - 80.83	1.0000	1.0000
L28	35	MP3-04	80.58 - 80.83	1.0000	1.0000
L28	36	MP3-04	80.58 - 80.83	1.0000	1.0000
L29	16	CU12PSM9P6XXX(1-1/2)	75.58 - 80.58	1.0000	1.0000
L29	20	Safety Line 3/8	75.58 - 80.58	1.0000	1.0000
L29	30	MP3-04	75.58 - 80.58	1.0000	1.0000
L29	31	MP3-04	75.58 - 80.58	1.0000	1.0000
L29	32	MP3-04	75.58 - 80.58	1.0000	1.0000
L29	34	MP3-04	79.25 - 80.58	1.0000	1.0000
L29	35	MP3-04	79.25 - 80.58	1.0000	1.0000
L29	36	MP3-04	79.25 - 80.58	1.0000	1.0000
L30	16	CU12PSM9P6XXX(1-1/2)	70.58 - 75.58	1.0000	1.0000
L30	20	Safety Line 3/8	70.58 - 75.58	1.0000	1.0000
L30	30	MP3-04	70.58 - 75.58	1.0000	1.0000
L30	31	MP3-04	70.58 - 75.58	1.0000	1.0000
L30	32	MP3-04	70.58 - 75.58	1.0000	1.0000
L31	16	CU12PSM9P6XXX(1-1/2)	65.58 - 70.58	1.0000	1.0000
L31	20	Safety Line 3/8	65.58 - 70.58	1.0000	1.0000
L31	30	MP3-04	65.58 - 70.58	1.0000	1.0000
L31	31	MP3-04	65.58 - 70.58	1.0000	1.0000
L31	32	MP3-04	65.58 - 70.58	1.0000	1.0000
L32	16	CU12PSM9P6XXX(1-1/2)	60.58 - 65.58	1.0000	1.0000
L32	20	Safety Line 3/8	60.58 - 65.58	1.0000	1.0000
L32	30	MP3-04	60.58 - 65.58	1.0000	1.0000
L32	31	MP3-04	60.58 - 65.58	1.0000	1.0000
L32	32	MP3-04	60.58 - 65.58	1.0000	1.0000
L33	16	CU12PSM9P6XXX(1-1/2)	55.58 - 60.58	1.0000	1.0000
L33	20	Safety Line 3/8	55.58 - 60.58	1.0000	1.0000
L33	26	MP3-05	55.58 - 56.00	1.0000	1.0000
L33	27	MP3-05	55.58 - 56.00	1.0000	1.0000
L33	28	MP3-05	55.58 - 56.00	1.0000	1.0000
L33	30	MP3-04	55.58 - 60.58	1.0000	1.0000
L33	31	MP3-04	55.58 - 60.58	1.0000	1.0000
L33	32	MP3-04	55.58 - 60.58	1.0000	1.0000
L34	16	CU12PSM9P6XXX(1-1/2)	53.57 - 55.58	1.0000	1.0000
L34	20	Safety Line 3/8	53.57 - 55.58	1.0000	1.0000
L34	26	MP3-05	53.57 - 55.58	1.0000	1.0000
L34	27	MP3-05	53.57 - 55.58	1.0000	1.0000
L34	28	MP3-05	53.57 - 55.58	1.0000	1.0000
L34	30	MP3-04	53.57 - 55.58	1.0000	1.0000
L34	31	MP3-04	53.57 - 55.58	1.0000	1.0000
L34	32	MP3-04	53.57 - 55.58	1.0000	1.0000
L35	16	CU12PSM9P6XXX(1-1/2)	53.32 - 53.57	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L35	20	Safety Line 3/8	53.32 - 53.57	1.0000	1.0000
L35	26	MP3-05	53.32 - 53.57	1.0000	1.0000
L35	27	MP3-05	53.32 - 53.57	1.0000	1.0000
L35	28	MP3-05	53.32 - 53.57	1.0000	1.0000
L35	30	MP3-04	53.32 - 53.57	1.0000	1.0000
L35	31	MP3-04	53.32 - 53.57	1.0000	1.0000
L35	32	MP3-04	53.32 - 53.57	1.0000	1.0000
L36	16	CU12PSM9P6XXX(1-1/2)	43.80 - 53.32	1.0000	1.0000
L36	20	Safety Line 3/8	43.80 - 53.32	1.0000	1.0000
L36	26	MP3-05	43.80 - 53.32	1.0000	1.0000
L36	27	MP3-05	43.80 - 53.32	1.0000	1.0000
L36	28	MP3-05	43.80 - 53.32	1.0000	1.0000
L36	30	MP3-04	52.25 - 53.32	1.0000	1.0000
L36	31	MP3-04	52.25 - 53.32	1.0000	1.0000
L36	32	MP3-04	52.25 - 53.32	1.0000	1.0000
L36	42	CCI 6.5" x 1.25" Plate	43.80 - 52.08	1.0000	1.0000
L36	43	CCI 6.5" x 1.25" Plate	43.80 - 52.08	1.0000	1.0000
L36	44	CCI 6.5" x 1.25" Plate	43.80 - 52.08	1.0000	1.0000
L37	16	CU12PSM9P6XXX(1-1/2)	42.80 - 43.80	1.0000	1.0000
L37	20	Safety Line 3/8	42.80 - 43.80	1.0000	1.0000
L37	26	MP3-05	42.80 - 43.80	1.0000	1.0000
L37	27	MP3-05	42.80 - 43.80	1.0000	1.0000
L37	28	MP3-05	42.80 - 43.80	1.0000	1.0000
L37	42	CCI 6.5" x 1.25" Plate	42.80 - 43.80	1.0000	1.0000
L37	43	CCI 6.5" x 1.25" Plate	42.80 - 43.80	1.0000	1.0000
L37	44	CCI 6.5" x 1.25" Plate	42.80 - 43.80	1.0000	1.0000
L38	16	CU12PSM9P6XXX(1-1/2)	38.42 - 42.80	1.0000	1.0000
L38	20	Safety Line 3/8	38.42 - 42.80	1.0000	1.0000
L38	22	MP3-05	38.42 - 40.50	1.0000	1.0000
L38	23	MP3-05	38.42 - 40.50	1.0000	1.0000
L38	24	MP3-05	38.42 - 40.50	1.0000	1.0000
L38	26	MP3-05	38.42 - 42.80	1.0000	1.0000
L38	27	MP3-05	38.42 - 42.80	1.0000	1.0000
L38	28	MP3-05	38.42 - 42.80	1.0000	1.0000
L38	42	CCI 6.5" x 1.25" Plate	38.42 - 42.80	1.0000	1.0000
L38	43	CCI 6.5" x 1.25" Plate	38.42 - 42.80	1.0000	1.0000
L38	44	CCI 6.5" x 1.25" Plate	38.42 - 42.80	1.0000	1.0000
L39	16	CU12PSM9P6XXX(1-1/2)	38.07 - 38.42	1.0000	1.0000
L39	20	Safety Line 3/8	38.07 - 38.42	1.0000	1.0000
L39	22	MP3-05	38.07 - 38.42	1.0000	1.0000
L39	23	MP3-05	38.07 - 38.42	1.0000	1.0000
L39	24	MP3-05	38.07 - 38.42	1.0000	1.0000
L39	26	MP3-05	38.07 - 38.42	1.0000	1.0000
L39	27	MP3-05	38.07 - 38.42	1.0000	1.0000
L39	28	MP3-05	38.07 - 38.42	1.0000	1.0000
L39	42	CCI 6.5" x 1.25" Plate	38.07 - 38.42	1.0000	1.0000
L39	43	CCI 6.5" x 1.25" Plate	38.07 - 38.42	1.0000	1.0000
L39	44	CCI 6.5" x 1.25" Plate	38.07 - 38.42	1.0000	1.0000
L40	16	CU12PSM9P6XXX(1-1/2)	37.83 - 38.07	1.0000	1.0000
L40	20	Safety Line 3/8	37.83 - 38.07	1.0000	1.0000
L40	22	MP3-05	37.83 - 38.07	1.0000	1.0000
L40	23	MP3-05	37.83 - 38.07	1.0000	1.0000
L40	24	MP3-05	37.83 - 38.07	1.0000	1.0000
L40	26	MP3-05	37.83 - 38.07	1.0000	1.0000
L40	27	MP3-05	37.83 - 38.07	1.0000	1.0000
L40	28	MP3-05	37.83 - 38.07	1.0000	1.0000
L40	42	CCI 6.5" x 1.25" Plate	37.83 - 38.07	1.0000	1.0000
L40	43	CCI 6.5" x 1.25" Plate	37.83 - 38.07	1.0000	1.0000
L40	44	CCI 6.5" x 1.25" Plate	37.83 - 38.07	1.0000	1.0000
L41	16	CU12PSM9P6XXX(1-1/2)	32.83 - 37.83	1.0000	1.0000
L41	20	Safety Line 3/8	32.83 - 37.83	1.0000	1.0000
L41	22	MP3-05	32.83 - 37.83	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L41	23	MP3-05	32.83 - 37.83	1.0000	1.0000
L41	24	MP3-05	32.83 - 37.83	1.0000	1.0000
L41	26	MP3-05	36.00 - 37.83	1.0000	1.0000
L41	27	MP3-05	36.00 - 37.83	1.0000	1.0000
L41	28	MP3-05	36.00 - 37.83	1.0000	1.0000
L41	42	CCI 6.5" x 1.25" Plate	32.83 - 37.83	1.0000	1.0000
L41	43	CCI 6.5" x 1.25" Plate	32.83 - 37.83	1.0000	1.0000
L41	44	CCI 6.5" x 1.25" Plate	32.83 - 37.83	1.0000	1.0000
L42	16	CU12PSM9P6XXX(1-1/2)	27.83 - 32.83	1.0000	1.0000
L42	20	Safety Line 3/8	27.83 - 32.83	1.0000	1.0000
L42	22	MP3-05	27.83 - 32.83	1.0000	1.0000
L42	23	MP3-05	27.83 - 32.83	1.0000	1.0000
L42	24	MP3-05	27.83 - 32.83	1.0000	1.0000
L42	42	CCI 6.5" x 1.25" Plate	27.83 - 32.83	1.0000	1.0000
L42	43	CCI 6.5" x 1.25" Plate	27.83 - 32.83	1.0000	1.0000
L42	44	CCI 6.5" x 1.25" Plate	27.83 - 32.83	1.0000	1.0000
L43	16	CU12PSM9P6XXX(1-1/2)	23.50 - 27.83	1.0000	1.0000
L43	20	Safety Line 3/8	23.50 - 27.83	1.0000	1.0000
L43	22	MP3-05	23.50 - 27.83	1.0000	1.0000
L43	23	MP3-05	23.50 - 27.83	1.0000	1.0000
L43	24	MP3-05	23.50 - 27.83	1.0000	1.0000
L43	42	CCI 6.5" x 1.25" Plate	23.50 - 27.83	1.0000	1.0000
L43	43	CCI 6.5" x 1.25" Plate	23.50 - 27.83	1.0000	1.0000
L43	44	CCI 6.5" x 1.25" Plate	23.50 - 27.83	1.0000	1.0000
L44	16	CU12PSM9P6XXX(1-1/2)	23.25 - 23.50	1.0000	1.0000
L44	20	Safety Line 3/8	23.25 - 23.50	1.0000	1.0000
L44	22	MP3-05	23.25 - 23.50	1.0000	1.0000
L44	23	MP3-05	23.25 - 23.50	1.0000	1.0000
L44	24	MP3-05	23.25 - 23.50	1.0000	1.0000
L44	42	CCI 6.5" x 1.25" Plate	23.25 - 23.50	1.0000	1.0000
L44	43	CCI 6.5" x 1.25" Plate	23.25 - 23.50	1.0000	1.0000
L44	44	CCI 6.5" x 1.25" Plate	23.25 - 23.50	1.0000	1.0000
L45	16	CU12PSM9P6XXX(1-1/2)	18.25 - 23.25	1.0000	1.0000
L45	20	Safety Line 3/8	18.25 - 23.25	1.0000	1.0000
L45	22	MP3-05	18.25 - 23.25	1.0000	1.0000
L45	23	MP3-05	18.25 - 23.25	1.0000	1.0000
L45	24	MP3-05	18.25 - 23.25	1.0000	1.0000
L45	42	CCI 6.5" x 1.25" Plate	18.25 - 23.25	1.0000	1.0000
L45	43	CCI 6.5" x 1.25" Plate	18.25 - 23.25	1.0000	1.0000
L45	44	CCI 6.5" x 1.25" Plate	18.25 - 23.25	1.0000	1.0000
L46	16	CU12PSM9P6XXX(1-1/2)	13.25 - 18.25	1.0000	1.0000
L46	20	Safety Line 3/8	13.25 - 18.25	1.0000	1.0000
L46	22	MP3-05	13.25 - 18.25	1.0000	1.0000
L46	23	MP3-05	13.25 - 18.25	1.0000	1.0000
L46	24	MP3-05	13.25 - 18.25	1.0000	1.0000
L46	42	CCI 6.5" x 1.25" Plate	13.25 - 18.25	1.0000	1.0000
L46	43	CCI 6.5" x 1.25" Plate	13.25 - 18.25	1.0000	1.0000
L46	44	CCI 6.5" x 1.25" Plate	13.25 - 18.25	1.0000	1.0000
L47	16	CU12PSM9P6XXX(1-1/2)	8.25 - 13.25	1.0000	1.0000
L47	20	Safety Line 3/8	8.25 - 13.25	1.0000	1.0000
L47	22	MP3-05	8.25 - 13.25	1.0000	1.0000
L47	23	MP3-05	8.25 - 13.25	1.0000	1.0000
L47	24	MP3-05	8.25 - 13.25	1.0000	1.0000
L47	42	CCI 6.5" x 1.25" Plate	8.25 - 13.25	1.0000	1.0000
L47	43	CCI 6.5" x 1.25" Plate	8.25 - 13.25	1.0000	1.0000
L47	44	CCI 6.5" x 1.25" Plate	8.25 - 13.25	1.0000	1.0000
L48	16	CU12PSM9P6XXX(1-1/2)	7.92 - 8.25	1.0000	1.0000
L48	20	Safety Line 3/8	7.92 - 8.25	1.0000	1.0000
L48	22	MP3-05	7.92 - 8.25	1.0000	1.0000
L48	23	MP3-05	7.92 - 8.25	1.0000	1.0000
L48	24	MP3-05	7.92 - 8.25	1.0000	1.0000
L48	42	CCI 6.5" x 1.25" Plate	7.92 - 8.25	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L48	43	CCI 6.5" x 1.25" Plate	7.92 - 8.25	1.0000	1.0000
L48	44	CCI 6.5" x 1.25" Plate	7.92 - 8.25	1.0000	1.0000
L49	16	CU12PSM9P6XXX(1-1/2)	7.67 - 7.92	1.0000	1.0000
L49	20	Safety Line 3/8	7.67 - 7.92	1.0000	1.0000
L49	22	MP3-05	7.67 - 7.92	1.0000	1.0000
L49	23	MP3-05	7.67 - 7.92	1.0000	1.0000
L49	24	MP3-05	7.67 - 7.92	1.0000	1.0000
L49	42	CCI 6.5" x 1.25" Plate	7.67 - 7.92	1.0000	1.0000
L49	43	CCI 6.5" x 1.25" Plate	7.67 - 7.92	1.0000	1.0000
L49	44	CCI 6.5" x 1.25" Plate	7.67 - 7.92	1.0000	1.0000
L50	16	CU12PSM9P6XXX(1-1/2)	5.50 - 7.67	1.0000	1.0000
L50	20	Safety Line 3/8	5.50 - 7.67	1.0000	1.0000
L50	22	MP3-05	5.50 - 7.67	1.0000	1.0000
L50	23	MP3-05	5.50 - 7.67	1.0000	1.0000
L50	24	MP3-05	5.50 - 7.67	1.0000	1.0000
L50	42	CCI 6.5" x 1.25" Plate	5.50 - 7.67	1.0000	1.0000
L50	43	CCI 6.5" x 1.25" Plate	5.50 - 7.67	1.0000	1.0000
L50	44	CCI 6.5" x 1.25" Plate	5.50 - 7.67	1.0000	1.0000
L51	16	CU12PSM9P6XXX(1-1/2)	5.25 - 5.50	1.0000	1.0000
L51	20	Safety Line 3/8	5.25 - 5.50	1.0000	1.0000
L51	22	MP3-05	5.25 - 5.50	1.0000	1.0000
L51	24	MP3-05	5.25 - 5.50	1.0000	1.0000
L51	42	CCI 6.5" x 1.25" Plate	5.25 - 5.50	1.0000	1.0000
L51	43	CCI 6.5" x 1.25" Plate	5.25 - 5.50	1.0000	1.0000
L51	44	CCI 6.5" x 1.25" Plate	5.25 - 5.50	1.0000	1.0000
L52	16	CU12PSM9P6XXX(1-1/2)	3.00 - 5.25	1.0000	1.0000
L52	20	Safety Line 3/8	3.00 - 5.25	1.0000	1.0000
L52	22	MP3-05	3.00 - 5.25	1.0000	1.0000
L52	24	MP3-05	3.00 - 5.25	1.0000	1.0000
L52	42	CCI 6.5" x 1.25" Plate	3.00 - 5.25	1.0000	1.0000
L52	43	CCI 6.5" x 1.25" Plate	3.00 - 5.25	1.0000	1.0000
L52	44	CCI 6.5" x 1.25" Plate	3.00 - 5.25	1.0000	1.0000
L53	16	CU12PSM9P6XXX(1-1/2)	2.75 - 3.00	1.0000	1.0000
L53	20	Safety Line 3/8	2.75 - 3.00	1.0000	1.0000
L53	22	MP3-05	2.75 - 3.00	1.0000	1.0000
L53	24	MP3-05	2.75 - 3.00	1.0000	1.0000
L53	42	CCI 6.5" x 1.25" Plate	2.75 - 3.00	1.0000	1.0000
L53	43	CCI 6.5" x 1.25" Plate	2.75 - 3.00	1.0000	1.0000
L53	44	CCI 6.5" x 1.25" Plate	2.75 - 3.00	1.0000	1.0000
L54	16	CU12PSM9P6XXX(1-1/2)	0.00 - 2.75	1.0000	1.0000
L54	20	Safety Line 3/8	0.00 - 2.75	1.0000	1.0000
L54	22	MP3-05	0.58 - 2.75	1.0000	1.0000
L54	24	MP3-05	0.58 - 2.75	1.0000	1.0000
L54	42	CCI 6.5" x 1.25" Plate	2.00 - 2.75	1.0000	1.0000
L54	43	CCI 6.5" x 1.25" Plate	2.00 - 2.75	1.0000	1.0000
L54	44	CCI 6.5" x 1.25" Plate	2.00 - 2.75	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L13	38	MP3-03	120.58 - 121.75	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L13	39	MP3-03	120.58 - 121.75	Auto	0.0000
L13	40	MP3-03	120.58 - 121.75	Auto	0.0000
L14	38	MP3-03	120.33 - 120.58	Auto	0.0000
L14	39	MP3-03	120.33 - 120.58	Auto	0.0000
L14	40	MP3-03	120.33 - 120.58	Auto	0.0000
L15	38	MP3-03	115.33 - 120.33	Auto	0.0000
L15	39	MP3-03	115.33 - 120.33	Auto	0.0000
L15	40	MP3-03	115.33 - 120.33	Auto	0.0000
L16	38	MP3-03	112.50 - 115.33	Auto	0.0000
L16	39	MP3-03	112.50 - 115.33	Auto	0.0000
L16	40	MP3-03	112.50 - 115.33	Auto	0.0000
L16	46	CCI 6" x 1" Plate	112.50 - 115.00	Auto	0.2179
L16	47	CCI 6" x 1" Plate	112.50 - 115.00	Auto	0.2179
L16	48	CCI 6" x 1" Plate	112.50 - 115.00	Auto	0.2179
L17	38	MP3-03	112.25 - 112.50	Auto	0.0000
L17	39	MP3-03	112.25 - 112.50	Auto	0.0000
L17	40	MP3-03	112.25 - 112.50	Auto	0.0000
L17	46	CCI 6" x 1" Plate	112.25 - 112.50	Auto	0.3056
L17	47	CCI 6" x 1" Plate	112.25 - 112.50	Auto	0.3056
L17	48	CCI 6" x 1" Plate	112.25 - 112.50	Auto	0.3056
L18	34	MP3-04	107.82 - 109.25	Auto	0.1153
L18	35	MP3-04	107.82 - 109.25	Auto	0.1153
L18	36	MP3-04	107.82 - 109.25	Auto	0.1153
L18	38	MP3-03	107.82 - 112.25	Auto	0.0000
L18	39	MP3-03	107.82 - 112.25	Auto	0.0000
L18	40	MP3-03	107.82 - 112.25	Auto	0.0000
L18	46	CCI 6" x 1" Plate	107.82 - 112.25	Auto	0.3035
L18	47	CCI 6" x 1" Plate	107.82 - 112.25	Auto	0.3035
L18	48	CCI 6" x 1" Plate	107.82 - 112.25	Auto	0.3035
L19	34	MP3-04	107.57 - 107.82	Auto	0.1094
L19	35	MP3-04	107.57 -	Auto	0.1094

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
			107.82		
L19	36	MP3-04	107.57 - 107.82	Auto	0.1094
L19	38	MP3-03	107.57 - 107.82	Auto	0.0000
L19	39	MP3-03	107.57 - 107.82	Auto	0.0000
L19	40	MP3-03	107.57 - 107.82	Auto	0.0000
L19	46	CCI 6" x 1" Plate	107.57 - 107.82	Auto	0.2905
L19	47	CCI 6" x 1" Plate	107.57 - 107.82	Auto	0.2905
L19	48	CCI 6" x 1" Plate	107.57 - 107.82	Auto	0.2905
L20	34	MP3-04	102.57 - 107.57	Auto	0.0865
L20	35	MP3-04	102.57 - 107.57	Auto	0.0865
L20	36	MP3-04	102.57 - 107.57	Auto	0.0865
L20	38	MP3-03	106.75 - 107.57	Auto	0.0000
L20	39	MP3-03	106.75 - 107.57	Auto	0.0000
L20	40	MP3-03	106.75 - 107.57	Auto	0.0000
L20	46	CCI 6" x 1" Plate	102.57 - 107.57	Auto	0.2722
L20	47	CCI 6" x 1" Plate	102.57 - 107.57	Auto	0.2722
L20	48	CCI 6" x 1" Plate	102.57 - 107.57	Auto	0.2722
L21	34	MP3-04	97.57 - 102.57	Auto	0.0469
L21	35	MP3-04	97.57 - 102.57	Auto	0.0469
L21	36	MP3-04	97.57 - 102.57	Auto	0.0469
L21	46	CCI 6" x 1" Plate	97.57 - 102.57	Auto	0.2407
L21	47	CCI 6" x 1" Plate	97.57 - 102.57	Auto	0.2407
L21	48	CCI 6" x 1" Plate	97.57 - 102.57	Auto	0.2407
L22	34	MP3-04	89.00 - 97.57	Auto	0.0052
L22	35	MP3-04	89.00 - 97.57	Auto	0.0052
L22	36	MP3-04	89.00 - 97.57	Auto	0.0052
L22	46	CCI 6" x 1" Plate	89.00 - 97.57	Auto	0.1993
L22	47	CCI 6" x 1" Plate	89.00 - 97.57	Auto	0.1993
L22	48	CCI 6" x 1" Plate	89.00 - 97.57	Auto	0.1993
L23	34	MP3-04	88.31 - 89.00	Auto	0.0086
L23	35	MP3-04	88.31 - 89.00	Auto	0.0086
L23	36	MP3-04	88.31 - 89.00	Auto	0.0086
L23	46	CCI 6" x 1" Plate	88.31 - 89.00	Auto	0.2102
L23	47	CCI 6" x 1" Plate	88.31 - 89.00	Auto	0.2102
L23	48	CCI 6" x 1" Plate	88.31 - 89.00	Auto	0.2102
L24	34	MP3-04	87.50 - 88.31	Auto	0.0034
L24	35	MP3-04	87.50 - 88.31	Auto	0.0034
L24	36	MP3-04	87.50 - 88.31	Auto	0.0034
L24	46	CCI 6" x 1" Plate	87.50 - 88.31	Auto	0.2060
L24	47	CCI 6" x 1" Plate	87.50 - 88.31	Auto	0.2060
L24	48	CCI 6" x 1" Plate	87.50 - 88.31	Auto	0.2060
L25	34	MP3-04	87.25 - 87.50	Auto	0.0000
L25	35	MP3-04	87.25 - 87.50	Auto	0.0000
L25	36	MP3-04	87.25 - 87.50	Auto	0.0000
L25	46	CCI 6" x 1" Plate	87.25 - 87.50	Auto	0.1077

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L25	47	CCI 6" x 1" Plate	87.25 - 87.50	Auto	0.1077
L25	48	CCI 6" x 1" Plate	87.25 - 87.50	Auto	0.1077
L26	34	MP3-04	82.25 - 87.25	Auto	0.0000
L26	35	MP3-04	82.25 - 87.25	Auto	0.0000
L26	36	MP3-04	82.25 - 87.25	Auto	0.0000
L26	46	CCI 6" x 1" Plate	85.00 - 87.25	Auto	0.1008
L26	47	CCI 6" x 1" Plate	85.00 - 87.25	Auto	0.1008
L26	48	CCI 6" x 1" Plate	85.00 - 87.25	Auto	0.1008
L27	30	MP3-04	80.83 - 82.25	Auto	0.0000
L27	31	MP3-04	80.83 - 82.25	Auto	0.0000
L27	32	MP3-04	80.83 - 82.25	Auto	0.0000
L27	34	MP3-04	80.83 - 82.25	Auto	0.0000
L27	35	MP3-04	80.83 - 82.25	Auto	0.0000
L27	36	MP3-04	80.83 - 82.25	Auto	0.0000
L28	30	MP3-04	80.58 - 80.83	Auto	0.0000
L28	31	MP3-04	80.58 - 80.83	Auto	0.0000
L28	32	MP3-04	80.58 - 80.83	Auto	0.0000
L28	34	MP3-04	80.58 - 80.83	Auto	0.0000
L28	35	MP3-04	80.58 - 80.83	Auto	0.0000
L28	36	MP3-04	80.58 - 80.83	Auto	0.0000
L29	30	MP3-04	75.58 - 80.58	Auto	0.0000
L29	31	MP3-04	75.58 - 80.58	Auto	0.0000
L29	32	MP3-04	75.58 - 80.58	Auto	0.0000
L29	34	MP3-04	79.25 - 80.58	Auto	0.0000
L29	35	MP3-04	79.25 - 80.58	Auto	0.0000
L29	36	MP3-04	79.25 - 80.58	Auto	0.0000
L30	30	MP3-04	70.58 - 75.58	Auto	0.0000
L30	31	MP3-04	70.58 - 75.58	Auto	0.0000
L30	32	MP3-04	70.58 - 75.58	Auto	0.0000
L31	30	MP3-04	65.58 - 70.58	Auto	0.0000
L31	31	MP3-04	65.58 - 70.58	Auto	0.0000
L31	32	MP3-04	65.58 - 70.58	Auto	0.0000
L32	30	MP3-04	60.58 - 65.58	Auto	0.0000
L32	31	MP3-04	60.58 - 65.58	Auto	0.0000
L32	32	MP3-04	60.58 - 65.58	Auto	0.0000
L33	26	MP3-05	55.58 - 56.00	Auto	0.0000
L33	27	MP3-05	55.58 - 56.00	Auto	0.0000
L33	28	MP3-05	55.58 - 56.00	Auto	0.0000
L33	30	MP3-04	55.58 - 60.58	Auto	0.0000
L33	31	MP3-04	55.58 - 60.58	Auto	0.0000
L33	32	MP3-04	55.58 - 60.58	Auto	0.0000
L34	26	MP3-05	53.57 - 55.58	Auto	0.0000
L34	27	MP3-05	53.57 - 55.58	Auto	0.0000
L34	28	MP3-05	53.57 - 55.58	Auto	0.0000
L34	30	MP3-04	53.57 - 55.58	Auto	0.0000
L34	31	MP3-04	53.57 - 55.58	Auto	0.0000
L34	32	MP3-04	53.57 - 55.58	Auto	0.0000
L35	26	MP3-05	53.32 - 53.57	Auto	0.0000
L35	27	MP3-05	53.32 - 53.57	Auto	0.0000
L35	28	MP3-05	53.32 - 53.57	Auto	0.0000
L35	30	MP3-04	53.32 - 53.57	Auto	0.0000
L35	31	MP3-04	53.32 - 53.57	Auto	0.0000
L35	32	MP3-04	53.32 - 53.57	Auto	0.0000
L36	26	MP3-05	43.80 - 53.32	Auto	0.0000
L36	27	MP3-05	43.80 - 53.32	Auto	0.0000
L36	28	MP3-05	43.80 - 53.32	Auto	0.0000
L36	30	MP3-04	52.25 - 53.32	Auto	0.0000
L36	31	MP3-04	52.25 - 53.32	Auto	0.0000
L36	32	MP3-04	52.25 - 53.32	Auto	0.0000
L36	42	CCI 6.5" x 1.25" Plate	43.80 - 52.08	Auto	0.0000
L36	43	CCI 6.5" x 1.25" Plate	43.80 - 52.08	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L36	44	CCI 6.5" x 1.25" Plate	43.80 - 52.08	Auto	0.0000
L37	26	MP3-05	42.80 - 43.80	Auto	0.0000
L37	27	MP3-05	42.80 - 43.80	Auto	0.0000
L37	28	MP3-05	42.80 - 43.80	Auto	0.0000
L37	42	CCI 6.5" x 1.25" Plate	42.80 - 43.80	Auto	0.0582
L37	43	CCI 6.5" x 1.25" Plate	42.80 - 43.80	Auto	0.0582
L37	44	CCI 6.5" x 1.25" Plate	42.80 - 43.80	Auto	0.0582
L38	22	MP3-05	38.42 - 40.50	Auto	0.0000
L38	23	MP3-05	38.42 - 40.50	Auto	0.0000
L38	24	MP3-05	38.42 - 40.50	Auto	0.0000
L38	26	MP3-05	38.42 - 42.80	Auto	0.0000
L38	27	MP3-05	38.42 - 42.80	Auto	0.0000
L38	28	MP3-05	38.42 - 42.80	Auto	0.0000
L38	42	CCI 6.5" x 1.25" Plate	38.42 - 42.80	Auto	0.0410
L38	43	CCI 6.5" x 1.25" Plate	38.42 - 42.80	Auto	0.0410
L38	44	CCI 6.5" x 1.25" Plate	38.42 - 42.80	Auto	0.0410
L39	22	MP3-05	38.07 - 38.42	Auto	0.0000
L39	23	MP3-05	38.07 - 38.42	Auto	0.0000
L39	24	MP3-05	38.07 - 38.42	Auto	0.0000
L39	26	MP3-05	38.07 - 38.42	Auto	0.0000
L39	27	MP3-05	38.07 - 38.42	Auto	0.0000
L39	28	MP3-05	38.07 - 38.42	Auto	0.0000
L39	42	CCI 6.5" x 1.25" Plate	38.07 - 38.42	Auto	0.0288
L39	43	CCI 6.5" x 1.25" Plate	38.07 - 38.42	Auto	0.0288
L39	44	CCI 6.5" x 1.25" Plate	38.07 - 38.42	Auto	0.0288
L40	22	MP3-05	37.83 - 38.07	Auto	0.0000
L40	23	MP3-05	37.83 - 38.07	Auto	0.0000
L40	24	MP3-05	37.83 - 38.07	Auto	0.0000
L40	26	MP3-05	37.83 - 38.07	Auto	0.0000
L40	27	MP3-05	37.83 - 38.07	Auto	0.0000
L40	28	MP3-05	37.83 - 38.07	Auto	0.0000
L40	42	CCI 6.5" x 1.25" Plate	37.83 - 38.07	Auto	0.0273
L40	43	CCI 6.5" x 1.25" Plate	37.83 - 38.07	Auto	0.0273
L40	44	CCI 6.5" x 1.25" Plate	37.83 - 38.07	Auto	0.0273
L41	22	MP3-05	32.83 - 37.83	Auto	0.0000
L41	23	MP3-05	32.83 - 37.83	Auto	0.0000
L41	24	MP3-05	32.83 - 37.83	Auto	0.0000
L41	26	MP3-05	36.00 - 37.83	Auto	0.0000
L41	27	MP3-05	36.00 - 37.83	Auto	0.0000
L41	28	MP3-05	36.00 - 37.83	Auto	0.0000
L41	42	CCI 6.5" x 1.25" Plate	32.83 - 37.83	Auto	0.0106
L41	43	CCI 6.5" x 1.25" Plate	32.83 - 37.83	Auto	0.0106
L41	44	CCI 6.5" x 1.25" Plate	32.83 - 37.83	Auto	0.0106
L42	22	MP3-05	27.83 - 32.83	Auto	0.0000
L42	23	MP3-05	27.83 - 32.83	Auto	0.0000
L42	24	MP3-05	27.83 - 32.83	Auto	0.0000
L42	42	CCI 6.5" x 1.25" Plate	27.83 - 32.83	Auto	0.0000
L42	43	CCI 6.5" x 1.25" Plate	27.83 - 32.83	Auto	0.0000
L42	44	CCI 6.5" x 1.25" Plate	27.83 - 32.83	Auto	0.0000
L43	22	MP3-05	23.50 - 27.83	Auto	0.0000
L43	23	MP3-05	23.50 - 27.83	Auto	0.0000
L43	24	MP3-05	23.50 - 27.83	Auto	0.0000
L43	42	CCI 6.5" x 1.25" Plate	23.50 - 27.83	Auto	0.0000
L43	43	CCI 6.5" x 1.25" Plate	23.50 - 27.83	Auto	0.0000
L43	44	CCI 6.5" x 1.25" Plate	23.50 - 27.83	Auto	0.0000
L44	22	MP3-05	23.25 - 23.50	Auto	0.0000
L44	23	MP3-05	23.25 - 23.50	Auto	0.0000
L44	24	MP3-05	23.25 - 23.50	Auto	0.0000
L44	42	CCI 6.5" x 1.25" Plate	23.25 - 23.50	Auto	0.0000
L44	43	CCI 6.5" x 1.25" Plate	23.25 - 23.50	Auto	0.0000
L44	44	CCI 6.5" x 1.25" Plate	23.25 - 23.50	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L45	22	MP3-05	18.25 - 23.25	Auto	0.0000
L45	23	MP3-05	18.25 - 23.25	Auto	0.0000
L45	24	MP3-05	18.25 - 23.25	Auto	0.0000
L45	42	CCI 6.5" x 1.25" Plate	18.25 - 23.25	Auto	0.0000
L45	43	CCI 6.5" x 1.25" Plate	18.25 - 23.25	Auto	0.0000
L45	44	CCI 6.5" x 1.25" Plate	18.25 - 23.25	Auto	0.0000
L46	22	MP3-05	13.25 - 18.25	Auto	0.0000
L46	23	MP3-05	13.25 - 18.25	Auto	0.0000
L46	24	MP3-05	13.25 - 18.25	Auto	0.0000
L46	42	CCI 6.5" x 1.25" Plate	13.25 - 18.25	Auto	0.0000
L46	43	CCI 6.5" x 1.25" Plate	13.25 - 18.25	Auto	0.0000
L46	44	CCI 6.5" x 1.25" Plate	13.25 - 18.25	Auto	0.0000
L47	22	MP3-05	8.25 - 13.25	Auto	0.0000
L47	23	MP3-05	8.25 - 13.25	Auto	0.0000
L47	24	MP3-05	8.25 - 13.25	Auto	0.0000
L47	42	CCI 6.5" x 1.25" Plate	8.25 - 13.25	Auto	0.0000
L47	43	CCI 6.5" x 1.25" Plate	8.25 - 13.25	Auto	0.0000
L47	44	CCI 6.5" x 1.25" Plate	8.25 - 13.25	Auto	0.0000
L48	22	MP3-05	7.92 - 8.25	Auto	0.0000
L48	23	MP3-05	7.92 - 8.25	Auto	0.0000
L48	24	MP3-05	7.92 - 8.25	Auto	0.0000
L48	42	CCI 6.5" x 1.25" Plate	7.92 - 8.25	Auto	0.0000
L48	43	CCI 6.5" x 1.25" Plate	7.92 - 8.25	Auto	0.0000
L48	44	CCI 6.5" x 1.25" Plate	7.92 - 8.25	Auto	0.0000
L49	22	MP3-05	7.67 - 7.92	Auto	0.0000
L49	23	MP3-05	7.67 - 7.92	Auto	0.0000
L49	24	MP3-05	7.67 - 7.92	Auto	0.0000
L49	42	CCI 6.5" x 1.25" Plate	7.67 - 7.92	Auto	0.0000
L49	43	CCI 6.5" x 1.25" Plate	7.67 - 7.92	Auto	0.0000
L49	44	CCI 6.5" x 1.25" Plate	7.67 - 7.92	Auto	0.0000
L50	22	MP3-05	5.50 - 7.67	Auto	0.0000
L50	23	MP3-05	5.50 - 7.67	Auto	0.0000
L50	24	MP3-05	5.50 - 7.67	Auto	0.0000
L50	42	CCI 6.5" x 1.25" Plate	5.50 - 7.67	Auto	0.0000
L50	43	CCI 6.5" x 1.25" Plate	5.50 - 7.67	Auto	0.0000
L50	44	CCI 6.5" x 1.25" Plate	5.50 - 7.67	Auto	0.0000
L51	22	MP3-05	5.25 - 5.50	Auto	0.0000
L51	24	MP3-05	5.25 - 5.50	Auto	0.0000
L51	42	CCI 6.5" x 1.25" Plate	5.25 - 5.50	Auto	0.0000
L51	43	CCI 6.5" x 1.25" Plate	5.25 - 5.50	Auto	0.0000
L51	44	CCI 6.5" x 1.25" Plate	5.25 - 5.50	Auto	0.0000
L52	22	MP3-05	3.00 - 5.25	Auto	0.0000
L52	24	MP3-05	3.00 - 5.25	Auto	0.0000
L52	42	CCI 6.5" x 1.25" Plate	3.00 - 5.25	Auto	0.0000
L52	43	CCI 6.5" x 1.25" Plate	3.00 - 5.25	Auto	0.0000
L52	44	CCI 6.5" x 1.25" Plate	3.00 - 5.25	Auto	0.0000
L53	22	MP3-05	2.75 - 3.00	Auto	0.0000
L53	24	MP3-05	2.75 - 3.00	Auto	0.0000
L53	42	CCI 6.5" x 1.25" Plate	2.75 - 3.00	Auto	0.0000
L53	43	CCI 6.5" x 1.25" Plate	2.75 - 3.00	Auto	0.0000
L53	44	CCI 6.5" x 1.25" Plate	2.75 - 3.00	Auto	0.0000
L54	22	MP3-05	0.58 - 2.75	Auto	0.0000
L54	24	MP3-05	0.58 - 2.75	Auto	0.0000
L54	42	CCI 6.5" x 1.25" Plate	2.00 - 2.75	Auto	0.0000
L54	43	CCI 6.5" x 1.25" Plate	2.00 - 2.75	Auto	0.0000
L54	44	CCI 6.5" x 1.25" Plate	2.00 - 2.75	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	A	From Leg	4.000 0.000 3.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	14.690 15.460 16.230	6.870 7.550 8.250	0.183 0.311 0.453
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	B	From Leg	4.000 0.000 3.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	14.690 15.460 16.230	6.870 7.550 8.250	0.183 0.311 0.453
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	C	From Leg	4.000 0.000 3.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	14.690 15.460 16.230	6.870 7.550 8.250	0.183 0.311 0.453
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From Leg	4.000 0.000 3.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	5.190 5.590 6.020	2.710 3.040 3.380	0.128 0.174 0.227
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From Leg	4.000 0.000 3.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	5.190 5.590 6.020	2.710 3.040 3.380	0.128 0.174 0.227
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From Leg	4.000 0.000 3.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	5.190 5.590 6.020	2.710 3.040 3.380	0.128 0.174 0.227
Radio 4480_TMOV2	A	From Leg	4.000 0.000 3.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	2.878 3.091 3.312	1.397 1.558 1.727	0.081 0.103 0.128
Radio 4480_TMOV2	B	From Leg	4.000 0.000 3.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	2.878 3.091 3.312	1.397 1.558 1.727	0.081 0.103 0.128
Radio 4480_TMOV2	C	From Leg	4.000 0.000 3.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	2.878 3.091 3.312	1.397 1.558 1.727	0.081 0.103 0.128
RADIO 4460 B2/B25 B66_TMO	A	From Leg	4.000 0.000 3.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	2.139 2.321 2.511	1.686 1.850 2.022	0.109 0.131 0.156
RADIO 4460 B2/B25 B66_TMO	B	From Leg	4.000 0.000 3.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	2.139 2.321 2.511	1.686 1.850 2.022	0.109 0.131 0.156
RADIO 4460 B2/B25 B66_TMO	C	From Leg	4.000 0.000 3.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	2.139 2.321 2.511	1.686 1.850 2.022	0.109 0.131 0.156
(3) 10' x 2" Mount Pipe	A	From Leg	4.000 0.000 1.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	2.375 3.403 4.448	2.375 3.403 4.448	0.037 0.054 0.079
(3) 10' x 2" Mount Pipe	B	From Leg	4.000 0.000 1.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	2.375 3.403 4.448	2.375 3.403 4.448	0.037 0.054 0.079
(3) 10' x 2" Mount Pipe	C	From Leg	4.000 0.000 1.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	2.375 3.403 4.448	2.375 3.403 4.448	0.037 0.054 0.079
(2) L2.5x2.5x3/16x4.333'	A	From Leg	2.000 0.000 -3.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	1.094 1.403 1.720	0.005 0.024 0.049	0.080 0.086 0.097
(2) L2.5x2.5x3/16x4.333'	B	From Leg	2.000 0.000 -3.000	0.000	180.000	No Ice 1/2" Ice 1" Ice	1.094 1.403 1.720	0.005 0.024 0.049	0.080 0.086 0.097
(2) L2.5x2.5x3/16x4.333'	C	From Leg	2.000	0.000	180.000	No Ice	1.094	0.005	0.080

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft Vert ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1/2" Ice	1.403	0.024	0.086
			-3.000			1" Ice	1.720	0.049	0.097
Side Arm Mount [SO 102-3]	C	None		0.000	178.000	No Ice	3.600	3.600	0.075
						1/2" Ice	4.180	4.180	0.105
						1" Ice	4.750	4.750	0.135
Miscellaneous [NA 507-1]	C	None		0.000	178.000	No Ice	4.560	4.560	0.245
						1/2" Ice	6.390	6.390	0.311
						1" Ice	8.180	8.180	0.402
Platform Mount [LP 602-1]	C	None		0.000	180.000	No Ice	31.070	31.070	1.343
						1/2" Ice	34.820	34.820	1.967
						1" Ice	38.480	38.480	2.669
Transition Ladder	C	From Leg	2.000	0.000	180.000	No Ice	6.000	6.000	0.160
			0.000			1/2" Ice	8.000	8.000	0.240
			-3.000			1" Ice	10.000	10.000	0.320
*									
TMA-DB-T1-6Z-8AB-0Z	A	From Leg	1.000	0.000	170.000	No Ice	4.800	2.000	0.044
			0.000			1/2" Ice	5.070	2.193	0.080
			0.000			1" Ice	5.348	2.393	0.120
Side Arm Mount [SO 102-3]	C	None		0.000	170.000	No Ice	3.600	3.600	0.075
						1/2" Ice	4.180	4.180	0.105
						1" Ice	4.750	4.750	0.135
*									
BXA-171063-12CF-EDIN-X w/ Mount Pipe	A	From Leg	4.000	0.000	168.000	No Ice	5.029	5.289	0.041
			0.000			1/2" Ice	5.583	6.459	0.087
			2.000			1" Ice	6.103	7.348	0.140
BXA-171063-12CF-EDIN-X w/ Mount Pipe	B	From Leg	4.000	0.000	168.000	No Ice	5.029	5.289	0.041
			0.000			1/2" Ice	5.583	6.459	0.087
			2.000			1" Ice	6.103	7.348	0.140
BXA-171063-12CF-EDIN-X w/ Mount Pipe	C	From Leg	4.000	0.000	168.000	No Ice	5.029	5.289	0.041
			0.000			1/2" Ice	5.583	6.459	0.087
			2.000			1" Ice	6.103	7.348	0.140
(2) NHH-65B-R2B w/ Mount Pipe	A	From Leg	4.000	0.000	168.000	No Ice	4.090	3.290	0.069
			0.000			1/2" Ice	4.480	3.670	0.132
			2.000			1" Ice	4.880	4.060	0.205
(2) NHH-65B-R2B w/ Mount Pipe	B	From Leg	4.000	0.000	168.000	No Ice	4.090	3.290	0.069
			0.000			1/2" Ice	4.480	3.670	0.132
			2.000			1" Ice	4.880	4.060	0.205
(2) NHH-65B-R2B w/ Mount Pipe	C	From Leg	4.000	0.000	168.000	No Ice	4.090	3.290	0.069
			0.000			1/2" Ice	4.480	3.670	0.132
			2.000			1" Ice	4.880	4.060	0.205
MT6407-77A	A	From Leg	4.000	0.000	168.000	No Ice	4.692	1.840	0.082
			0.000			1/2" Ice	4.980	2.063	0.111
			2.000			1" Ice	5.275	2.292	0.144
MT6407-77A	B	From Leg	4.000	0.000	168.000	No Ice	4.692	1.840	0.082
			0.000			1/2" Ice	4.980	2.063	0.111
			2.000			1" Ice	5.275	2.292	0.144
MT6407-77A	C	From Leg	4.000	0.000	168.000	No Ice	4.692	1.840	0.082
			0.000			1/2" Ice	4.980	2.063	0.111
			2.000			1" Ice	5.275	2.292	0.144
RF4440D-13A	A	From Leg	4.000	0.000	168.000	No Ice	1.865	1.129	0.073
			0.000			1/2" Ice	2.035	1.267	0.090
			2.000			1" Ice	2.212	1.411	0.110
RF4440D-13A	B	From Leg	4.000	0.000	168.000	No Ice	1.865	1.129	0.073
			0.000			1/2" Ice	2.035	1.267	0.090
			2.000			1" Ice	2.212	1.411	0.110
RF4440D-13A	C	From Leg	4.000	0.000	168.000	No Ice	1.865	1.129	0.073
			0.000			1/2" Ice	2.035	1.267	0.090

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			2.000			1" Ice	2.212	1.411	0.110
RF4439D-25A	A	From Leg	4.000	0.000	168.000	No Ice	1.865	1.252	0.075
			0.000			1/2" Ice	2.035	1.394	0.093
			2.000			1" Ice	2.212	1.544	0.114
RF4439D-25A	B	From Leg	4.000	0.000	168.000	No Ice	1.865	1.252	0.075
			0.000			1/2" Ice	2.035	1.394	0.093
			2.000			1" Ice	2.212	1.544	0.114
RF4439D-25A	C	From Leg	4.000	0.000	168.000	No Ice	1.865	1.252	0.075
			0.000			1/2" Ice	2.035	1.394	0.093
			2.000			1" Ice	2.212	1.544	0.114
RVZDC-6627-PF-48_CCIV2	A	From Leg	2.000	0.000	168.000	No Ice	4.056	3.098	0.032
			0.000			1/2" Ice	4.316	3.335	0.068
			2.000			1" Ice	4.582	3.580	0.109
3' x 2" Pipe Mount	A	From Leg	2.000	0.000	168.000	No Ice	0.583	0.583	0.011
			0.000			1/2" Ice	0.770	0.770	0.017
			0.000			1" Ice	0.967	0.967	0.024
7'x2 1/2" Pipe Mount	A	From Leg	4.000	0.000	168.000	No Ice	2.013	2.013	0.041
			0.000			1/2" Ice	2.589	2.589	0.055
			0.000			1" Ice	3.018	3.018	0.075
7'x2 1/2" Pipe Mount	B	From Leg	4.000	0.000	168.000	No Ice	2.013	2.013	0.041
			0.000			1/2" Ice	2.589	2.589	0.055
			0.000			1" Ice	3.018	3.018	0.075
7'x2 1/2" Pipe Mount	C	From Leg	4.000	0.000	168.000	No Ice	2.013	2.013	0.041
			0.000			1/2" Ice	2.589	2.589	0.055
			0.000			1" Ice	3.018	3.018	0.075
Platform Mount [LP 303-1_HR-1]	C	None		0.000	168.000	No Ice	17.090	17.090	1.495
						1/2" Ice	21.470	21.470	1.881
						1" Ice	25.720	25.720	2.346
*									
AM-X-CD-17-65-00T-RET w/ Mount Pipe	A	From Leg	4.000	0.000	160.000	No Ice	6.090	4.310	0.092
			0.000			1/2" Ice	6.660	4.860	0.170
			1.000			1" Ice	7.240	5.420	0.261
AM-X-CD-17-65-00T-RET w/ Mount Pipe	B	From Leg	4.000	0.000	160.000	No Ice	6.090	4.310	0.092
			0.000			1/2" Ice	6.660	4.860	0.170
			1.000			1" Ice	7.240	5.420	0.261
AM-X-CD-17-65-00T-RET w/ Mount Pipe	C	From Leg	4.000	0.000	160.000	No Ice	6.090	4.310	0.092
			0.000			1/2" Ice	6.660	4.860	0.170
			1.000			1" Ice	7.240	5.420	0.261
(2) 7770.00 w/ Mount Pipe	A	From Leg	4.000	0.000	160.000	No Ice	5.746	4.254	0.055
			0.000			1/2" Ice	6.179	5.014	0.103
			1.000			1" Ice	6.607	5.711	0.157
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.000	0.000	160.000	No Ice	5.746	4.254	0.055
			0.000			1/2" Ice	6.179	5.014	0.103
			1.000			1" Ice	6.607	5.711	0.157
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.000	0.000	160.000	No Ice	5.746	4.254	0.055
			0.000			1/2" Ice	6.179	5.014	0.103
			1.000			1" Ice	6.607	5.711	0.157
(2) LGP21401	A	From Leg	4.000	0.000	160.000	No Ice	1.104	0.207	0.014
			0.000			1/2" Ice	1.239	0.274	0.021
			1.000			1" Ice	1.381	0.348	0.030
(2) LGP21401	B	From Leg	4.000	0.000	160.000	No Ice	1.104	0.207	0.014
			0.000			1/2" Ice	1.239	0.274	0.021
			1.000			1" Ice	1.381	0.348	0.030
(2) LGP21401	C	From Leg	4.000	0.000	160.000	No Ice	1.104	0.207	0.014
			0.000			1/2" Ice	1.239	0.274	0.021
			1.000			1" Ice	1.381	0.348	0.030
(2) LGP21901	A	From Leg	4.000	0.000	160.000	No Ice	0.231	0.158	0.006

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1/2" Ice	0.294	0.213	0.008
			1.000			1" Ice	0.365	0.276	0.011
(2) LGP21901	B	From Leg	4.000	0.000	160.000	No Ice	0.231	0.158	0.006
			0.000			1/2" Ice	0.294	0.213	0.008
			1.000			1" Ice	0.365	0.276	0.011
(2) LGP21901	C	From Leg	4.000	0.000	160.000	No Ice	0.231	0.158	0.006
			0.000			1/2" Ice	0.294	0.213	0.008
			1.000			1" Ice	0.365	0.276	0.011
Platform Mount [LP 303-1]	C	None		0.000	160.000	No Ice	14.690	14.690	1.250
						1/2" Ice	18.010	18.010	1.569
						1" Ice	21.340	21.340	1.942
*									
RRUS 11 B12	A	From Leg	2.000	0.000	158.000	No Ice	2.833	1.182	0.051
			0.000			1/2" Ice	3.043	1.330	0.072
			2.000			1" Ice	3.259	1.485	0.095
RRUS 11 B12	B	From Leg	2.000	0.000	158.000	No Ice	2.833	1.182	0.051
			0.000			1/2" Ice	3.043	1.330	0.072
			2.000			1" Ice	3.259	1.485	0.095
RRUS 11 B12	C	From Leg	2.000	0.000	158.000	No Ice	2.833	1.182	0.051
			0.000			1/2" Ice	3.043	1.330	0.072
			2.000			1" Ice	3.259	1.485	0.095
DC6-48-60-18-8F	B	From Leg	2.000	0.000	158.000	No Ice	1.212	1.212	0.033
			0.000			1/2" Ice	1.892	1.892	0.055
			0.000			1" Ice	2.105	2.105	0.080
6' x 2" Mount Pipe	A	From Leg	2.000	0.000	158.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			1.000			1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	B	From Leg	2.000	0.000	158.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			1.000			1" Ice	2.294	2.294	0.048
6' x 2" Mount Pipe	C	From Leg	2.000	0.000	158.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			1.000			1" Ice	2.294	2.294	0.048
Side Arm Mount [SO 104-3]	C	None		0.000	158.000	No Ice	2.620	2.620	0.288
						1/2" Ice	3.300	3.300	0.408
						1" Ice	3.980	3.980	0.528
*									
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.000	0.000	141.000	No Ice	8.010	4.230	0.108
			0.000			1/2" Ice	8.520	4.690	0.194
			0.000			1" Ice	9.040	5.160	0.292
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.000	0.000	141.000	No Ice	8.010	4.230	0.108
			0.000			1/2" Ice	8.520	4.690	0.194
			0.000			1" Ice	9.040	5.160	0.292
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.000	0.000	141.000	No Ice	8.010	4.230	0.108
			0.000			1/2" Ice	8.520	4.690	0.194
			0.000			1" Ice	9.040	5.160	0.292
TA08025-B604	A	From Leg	4.000	0.000	141.000	No Ice	1.964	0.981	0.064
			0.000			1/2" Ice	2.138	1.112	0.081
			0.000			1" Ice	2.320	1.250	0.100
TA08025-B604	B	From Leg	4.000	0.000	141.000	No Ice	1.964	0.981	0.064
			0.000			1/2" Ice	2.138	1.112	0.081
			0.000			1" Ice	2.320	1.250	0.100
TA08025-B604	C	From Leg	4.000	0.000	141.000	No Ice	1.964	0.981	0.064
			0.000			1/2" Ice	2.138	1.112	0.081
			0.000			1" Ice	2.320	1.250	0.100
TA08025-B605	A	From Leg	4.000	0.000	141.000	No Ice	1.964	1.129	0.075
			0.000			1/2" Ice	2.138	1.267	0.093

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.000			1" Ice	2.320	1.411	0.114
TA08025-B605	B	From Leg	4.000	0.000	141.000	No Ice	1.964	1.129	0.075
			0.000			1/2" Ice	2.138	1.267	0.093
			0.000			1" Ice	2.320	1.411	0.114
TA08025-B605	C	From Leg	4.000	0.000	141.000	No Ice	1.964	1.129	0.075
			0.000			1/2" Ice	2.138	1.267	0.093
			0.000			1" Ice	2.320	1.411	0.114
RDIDC-9181-PF-48	A	From Leg	4.000	0.000	141.000	No Ice	2.012	1.168	0.022
			0.000			1/2" Ice	2.189	1.311	0.040
			0.000			1" Ice	2.373	1.461	0.060
(2) 8' x 2" Mount Pipe	A	From Leg	2.000	0.000	141.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
(2) 8' x 2" Mount Pipe	B	From Leg	2.000	0.000	141.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
(2) 8' x 2" Mount Pipe	C	From Leg	2.000	0.000	141.000	No Ice	1.900	1.900	0.029
			0.000			1/2" Ice	2.728	2.728	0.044
			0.000			1" Ice	3.401	3.401	0.063
Commscope MC-PK8-DSH	C	None		0.000	141.000	No Ice	34.240	34.240	1.749
						1/2" Ice	62.950	62.950	2.099
						1" Ice	91.660	91.660	2.450
*									
8225	C	From Leg	2.000	0.000	78.000	No Ice	0.894	0.894	0.001
			0.000			1/2" Ice	1.060	1.060	0.009
			1.000			1" Ice	1.230	1.230	0.018
Side Arm Mount [SO 701-1]	C	From Leg	1.000	0.000	78.000	No Ice	0.850	1.670	0.065
			0.000			1/2" Ice	1.140	2.340	0.079
			0.000			1" Ice	1.430	3.010	0.093
*									

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

Comb. No.	Description
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	180.5 - 175.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-9.026	0.848	-0.490
			Max. Mx	20	-4.210	36.152	-0.202
			Max. My	14	-4.202	0.358	-35.985
			Max. Vy	20	-6.661	36.152	-0.202
			Max. Vx	14	6.666	0.358	-35.985
			Max. Torque	13			-0.685
L2	175.5 - 170.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-9.509	0.859	-0.497
			Max. Mx	20	-4.524	70.213	-0.202
			Max. My	14	-4.515	0.365	-70.076
			Max. Vy	20	-6.967	70.213	-0.202
			Max. Vx	14	6.973	0.365	-70.076
			Max. Torque	13			-0.685
L3	170.5 - 165.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-16.342	0.873	0.135
			Max. Mx	20	-7.876	120.023	-0.040
			Max. My	14	-7.839	0.375	-120.273
			Max. Vy	20	-11.129	120.023	-0.040

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-11.269	0.377	120.226
			Max. Torque	13			-0.684
L4	165.5 - 160.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-16.886	0.888	0.129
			Max. Mx	20	-8.270	176.423	-0.039
			Max. My	14	-8.233	0.384	-177.374
			Max. Vy	20	-11.438	176.423	-0.039
			Max. Vx	2	-11.578	0.387	177.325
			Max. Torque	3			0.591
L5	160.5 - 155.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-22.942	0.689	-0.001
			Max. Mx	20	-11.264	250.321	-0.085
			Max. My	14	-11.223	0.311	-252.143
			Max. Vy	20	-15.081	250.321	-0.085
			Max. Vx	2	-15.225	0.316	251.979
			Max. Torque	3			0.590
L6	155.5 - 150.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-23.589	0.707	-0.006
			Max. Mx	20	-11.797	326.444	-0.084
			Max. My	14	-11.758	0.321	-328.988
			Max. Vy	20	-15.383	326.444	-0.084
			Max. Vx	2	-15.527	0.327	328.822
			Max. Torque	3			0.493
L7	150.5 - 145.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-24.257	0.723	-0.012
			Max. Mx	20	-12.361	404.059	-0.082
			Max. My	14	-12.323	0.329	-407.327
			Max. Vy	20	-15.680	404.059	-0.082
			Max. Vx	2	-15.825	0.337	407.159
			Max. Torque	3			0.492
L8	145.5 - 140.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-29.862	0.741	0.306
			Max. Mx	20	-15.764	484.734	0.028
			Max. My	2	-15.720	0.348	488.702
			Max. Vy	20	-19.139	484.734	0.028
			Max. Vx	2	-19.315	0.348	488.702
			Max. Torque	5			0.556
L9	140.5 - 134.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-30.260	0.765	0.312
			Max. Mx	20	-16.111	536.697	0.033
			Max. My	2	-16.068	0.361	541.135
			Max. Vy	20	-19.290	536.697	0.033
			Max. Vx	2	-19.466	0.361	541.135
			Max. Torque	5			0.556
L10	134.5 - 132.794	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-31.484	0.811	0.323
			Max. Mx	20	-17.083	634.058	0.043
			Max. My	2	-17.042	0.385	639.368
			Max. Vy	20	-19.660	634.058	0.043
			Max. Vx	2	-19.836	0.385	639.368
			Max. Torque	5			0.555
L11	132.794 - 127.794	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-32.349	0.851	0.333
			Max. Mx	20	-17.867	732.981	0.053
			Max. My	2	-17.828	0.409	739.162
			Max. Vy	20	-19.938	732.981	0.053
			Max. Vx	2	-20.114	0.409	739.162
			Max. Torque	5			0.555
L12	127.794 -	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
	122.794						
			Max. Compression	26	-33.237	0.882	0.340
			Max. Mx	20	-18.669	833.318	0.063
			Max. My	2	-18.632	0.433	840.370
			Max. Vy	20	-20.219	833.318	0.063
			Max. Vx	2	-20.395	0.433	840.370
			Max. Torque	5			0.554
L13	122.794 - 120.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.658	0.896	0.343
			Max. Mx	20	-19.030	878.133	0.067
			Max. My	2	-18.994	0.444	885.570
			Max. Vy	20	-20.344	878.133	0.067
			Max. Vx	2	-20.519	0.444	885.570
			Max. Torque	5			0.553
L14	120.583 - 120.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.707	0.899	0.344
			Max. Mx	20	-19.085	883.218	0.068
			Max. My	2	-19.049	0.445	890.698
			Max. Vy	20	-20.348	883.218	0.068
			Max. Vx	2	-20.523	0.445	890.698
			Max. Torque	5			0.553
L15	120.333 - 115.333	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-34.716	0.930	0.351
			Max. Mx	20	-19.915	985.626	0.077
			Max. My	2	-19.881	0.468	993.973
			Max. Vy	20	-20.631	985.626	0.077
			Max. Vx	2	-20.806	0.468	993.973
			Max. Torque	5			0.553
L16	115.333 - 112.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-35.347	0.948	0.355
			Max. Mx	20	-20.396	1044.256	0.083
			Max. My	2	-20.363	0.482	1053.094
			Max. Vy	20	-20.792	1044.256	0.083
			Max. Vx	2	-20.967	0.482	1053.094
			Max. Torque	5			0.552
L17	112.5 - 112.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-35.431	0.953	0.356
			Max. Mx	20	-20.483	1049.452	0.084
			Max. My	2	-20.451	0.484	1058.333
			Max. Vy	20	-20.794	1049.452	0.084
			Max. Vx	2	-20.968	0.484	1058.333
			Max. Torque	5			0.552
L18	112.25 - 107.817	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.014	0.980	0.362
			Max. Mx	20	-21.720	1142.433	0.093
			Max. My	2	-21.689	0.505	1152.082
			Max. Vy	20	-21.164	1142.433	0.093
			Max. Vx	2	-21.339	0.505	1152.082
			Max. Torque	5			0.552
L19	107.817 - 107.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-37.107	0.985	0.363
			Max. Mx	20	-21.798	1147.725	0.093
			Max. My	2	-21.767	0.507	1157.417
			Max. Vy	20	-21.180	1147.725	0.093
			Max. Vx	2	-21.355	0.507	1157.417

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	5			0.552
L20	107.567 - 102.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-38.906	1.016	0.370
			Max. Mx	20	-23.217	1254.635	0.104
			Max. My	2	-23.187	0.531	1265.195
			Max. Vy	20	-21.592	1254.635	0.104
			Max. Vx	2	-21.768	0.531	1265.195
			Max. Torque	5			0.552
L21	102.567 - 97.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-40.715	1.052	0.379
			Max. Mx	20	-24.665	1363.577	0.114
			Max. My	2	-24.636	0.556	1375.005
			Max. Vy	20	-21.997	1363.577	0.114
			Max. Vx	2	-22.173	0.556	1375.005
			Max. Torque	5			0.551
L22	97.567 - 89	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.274	1.083	0.386
			Max. Mx	20	-25.917	1457.887	0.123
			Max. My	2	-25.889	0.578	1470.056
			Max. Vy	20	-22.336	1457.887	0.123
			Max. Vx	2	-22.512	0.578	1470.056
			Max. Torque	5			0.551
L23	89 - 88.311	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.548	1.120	0.394
			Max. Mx	20	-28.619	1570.945	0.135
			Max. My	2	-28.591	0.604	1583.988
			Max. Vy	20	-22.879	1570.945	0.135
			Max. Vx	2	-23.056	0.604	1583.988
			Max. Torque	5			0.550
L24	88.311 - 87.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.871	1.126	0.396
			Max. Mx	20	-28.882	1589.522	0.136
			Max. My	2	-28.854	0.608	1602.708
			Max. Vy	20	-22.945	1589.522	0.136
			Max. Vx	2	-23.122	0.608	1602.708
			Max. Torque	5			0.550
L25	87.5 - 87.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.940	1.129	0.397
			Max. Mx	20	-28.940	1595.259	0.137
			Max. My	2	-28.912	0.610	1608.488
			Max. Vy	20	-22.957	1595.259	0.137
			Max. Vx	2	-23.134	0.610	1608.488
			Max. Torque	5			0.550
L26	87.25 - 82.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.274	1.164	0.405
			Max. Mx	20	-30.027	1710.662	0.148
			Max. My	2	-30.001	0.636	1724.765
			Max. Vy	20	-23.226	1710.662	0.148
			Max. Vx	2	-23.402	0.636	1724.765
			Max. Torque	5			0.550
L27	82.25 - 80.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-47.669	1.175	0.407
			Max. Mx	20	-30.336	1743.600	0.151
			Max. My	2	-30.311	0.643	1757.951
			Max. Vy	20	-23.307	1743.600	0.151
			Max. Vx	2	-23.483	0.643	1757.951
			Max. Torque	5			0.550
L28	80.833 - 80.583	Pole	Max Tension	1	0.000	0.000	0.000

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-47.740	1.179	0.408
			Max. Mx	20	-30.410	1749.423	0.152
			Max. My	2	-30.385	0.645	1763.817
			Max. Vy	20	-23.299	1749.423	0.152
			Max. Vx	2	-23.476	0.645	1763.817
			Max. Torque	5			0.550
L29	80.583 - 75.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.211	1.493	0.257
			Max. Mx	20	-31.606	1866.898	0.102
			Max. My	2	-31.582	0.858	1881.923
			Max. Vy	20	-23.634	1866.898	0.102
			Max. Vx	2	-23.824	0.858	1881.923
			Max. Torque	15			-0.701
L30	75.583 - 70.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.564	1.532	0.266
			Max. Mx	20	-32.765	1985.590	0.175
			Max. My	2	-32.743	0.946	2001.549
			Max. Vy	20	-23.877	1985.590	0.175
			Max. Vx	2	-24.066	0.946	2001.549
			Max. Torque	15			-0.701
L31	70.583 - 65.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-51.943	1.572	0.276
			Max. Mx	20	-33.948	2105.476	0.249
			Max. My	2	-33.929	1.034	2122.363
			Max. Vy	20	-24.113	2105.476	0.249
			Max. Vx	2	-24.300	1.034	2122.363
			Max. Torque	15			-0.700
L32	65.583 - 60.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-53.348	1.612	0.286
			Max. Mx	20	-35.157	2226.518	0.323
			Max. My	2	-35.140	1.121	2244.328
			Max. Vy	20	-24.340	2226.518	0.323
			Max. Vx	2	-24.526	1.121	2244.328
			Max. Torque	15			-0.700
L33	60.583 - 55.583	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-54.786	1.654	0.296
			Max. Mx	20	-36.389	2348.675	0.397
			Max. My	2	-36.375	1.209	2367.400
			Max. Vy	20	-24.559	2348.675	0.397
			Max. Vx	2	-24.744	1.209	2367.400
			Max. Torque	15			-0.699
L34	55.583 - 53.567	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.408	1.671	0.300
			Max. Mx	20	-36.893	2398.234	0.427
			Max. My	2	-36.879	1.244	2417.326
			Max. Vy	20	-24.644	2398.234	0.427
			Max. Vx	2	-24.829	1.244	2417.326
			Max. Torque	15			-0.699
L35	53.567 - 53.317	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.485	1.674	0.300
			Max. Mx	20	-36.967	2404.392	0.430
			Max. My	2	-36.954	1.248	2423.530
			Max. Vy	20	-24.640	2404.392	0.430
			Max. Vx	2	-24.824	1.248	2423.530

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Torque	15			-0.699
L36	53.317 - 43.8	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-56.807	1.709	0.309
			Max. Mx	20	-38.022	2508.512	0.493
			Max. My	2	-38.010	1.322	2528.412
			Max. Vy	20	-24.823	2508.512	0.493
			Max. Vx	2	-25.006	1.322	2528.412
			Max. Torque	15			-0.699
L37	43.8 - 42.8	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-61.158	1.763	0.322
			Max. Mx	20	-41.640	2666.478	0.586
			Max. My	2	-41.630	1.433	2687.517
			Max. Vy	20	-25.296	2666.478	0.586
			Max. Vx	2	-25.479	1.433	2687.517
			Max. Torque	15			-0.699
L38	42.8 - 38.417	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.330	1.801	0.332
			Max. Mx	20	-43.456	2777.859	0.651
			Max. My	2	-43.446	1.510	2799.686
			Max. Vy	20	-25.549	2777.859	0.651
			Max. Vx	2	-25.732	1.510	2799.686
			Max. Torque	15			-0.699
L39	38.417 - 38.067	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.508	1.805	0.333
			Max. Mx	20	-43.609	2786.800	0.657
			Max. My	2	-43.599	1.516	2808.690
			Max. Vy	20	-25.559	2786.800	0.657
			Max. Vx	2	-25.741	1.516	2808.690
			Max. Torque	15			-0.698
L40	38.067 - 37.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.628	1.807	0.334
			Max. Mx	20	-43.708	2792.782	0.660
			Max. My	2	-43.698	1.520	2814.714
			Max. Vy	20	-25.572	2792.782	0.660
			Max. Vx	2	-25.754	1.520	2814.714
			Max. Torque	15			-0.698
L41	37.833 - 32.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-66.117	1.850	0.344
			Max. Mx	20	-45.799	2921.304	0.734
			Max. My	2	-45.790	1.608	2944.132
			Max. Vy	20	-25.849	2921.304	0.734
			Max. Vx	2	-26.030	1.608	2944.132
			Max. Torque	15			-0.698
L42	32.833 - 27.833	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-68.594	1.894	0.356
			Max. Mx	20	-47.920	3051.121	0.809
			Max. My	2	-47.913	1.696	3074.839
			Max. Vy	20	-26.099	3051.121	0.809
			Max. Vx	2	-26.279	1.696	3074.839
			Max. Torque	15			-0.698
L43	27.833 - 23.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-70.758	1.932	0.366
			Max. Mx	20	-49.779	3164.617	0.873
			Max. My	2	-49.773	1.773	3189.104
			Max. Vy	20	-26.312	3164.617	0.873
			Max. Vx	2	-26.491	1.773	3189.104
			Max. Torque	15			-0.698

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L44	23.5 - 23.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-70.883	1.935	0.367
			Max. Mx	20	-49.894	3171.194	0.877
			Max. My	2	-49.889	1.777	3195.725
			Max. Vy	20	-26.312	3171.194	0.877
			Max. Vx	2	-26.492	1.777	3195.725
			Max. Torque	15			-0.698
L45	23.25 - 18.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-73.396	1.979	0.378
			Max. Mx	20	-52.056	3303.354	0.952
			Max. My	2	-52.051	1.865	3328.766
			Max. Vy	20	-26.564	3303.354	0.952
			Max. Vx	2	-26.743	1.865	3328.766
			Max. Torque	15			-0.698
L46	18.25 - 13.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-75.924	2.024	0.390
			Max. Mx	20	-54.249	3436.708	1.026
			Max. My	2	-54.245	1.953	3462.996
			Max. Vy	20	-26.801	3436.708	1.026
			Max. Vx	2	-26.979	1.953	3462.996
			Max. Torque	15			-0.698
L47	13.25 - 8.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.463	2.069	0.403
			Max. Mx	20	-56.465	3571.240	1.101
			Max. My	2	-56.462	2.041	3598.397
			Max. Vy	20	-27.036	3571.240	1.101
			Max. Vx	2	-27.212	2.041	3598.397
			Max. Torque	15			-0.698
L48	8.25 - 7.917	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.633	2.072	0.404
			Max. Mx	20	-56.619	3580.241	1.106
			Max. My	2	-56.617	2.047	3607.456
			Max. Vy	20	-27.040	3580.241	1.106
			Max. Vx	2	-27.216	2.047	3607.456
			Max. Torque	15			-0.698
L49	7.917 - 7.667	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-78.766	2.074	0.405
			Max. Mx	20	-56.738	3587.002	1.109
			Max. My	2	-56.736	2.051	3614.261
			Max. Vy	20	-27.051	3587.002	1.109
			Max. Vx	2	-27.227	2.051	3614.261
			Max. Torque	15			-0.698
L50	7.667 - 5.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-79.920	2.093	0.410
			Max. Mx	20	-57.750	3645.738	1.142
			Max. My	2	-57.748	2.090	3673.371
			Max. Vy	20	-27.170	3645.738	1.142
			Max. Vx	2	-27.346	2.090	3673.371
			Max. Torque	15			-0.698
L51	5.5 - 5.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-80.016	2.098	0.410
			Max. Mx	20	-57.840	3652.528	1.145
			Max. My	2	-57.838	2.094	3680.204
			Max. Vy	20	-27.166	3652.528	1.145
			Max. Vx	2	-27.342	2.094	3680.204
			Max. Torque	15			-0.698
L52	5.25 - 3	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-80.874	2.140	0.409
			Max. Mx	20	-58.587	3713.718	1.179
			Max. My	2	-58.586	2.133	3741.781
			Max. Vy	20	-27.252	3713.718	1.179

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Vx	2	-27.427	2.133	3741.781
			Max. Torque	15			-0.698
L53	3 - 2.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-80.995	2.144	0.409
			Max. Mx	20	-58.708	3720.526	1.183
			Max. My	2	-58.707	2.138	3748.632
			Max. Vy	20	-27.238	3720.526	1.183
			Max. Vx	2	-27.412	2.138	3748.632
			Max. Torque	15			-0.698
L54	2.75 - 0	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-82.280	2.186	0.411
			Max. Mx	20	-59.890	3795.600	1.224
			Max. My	2	-59.890	2.186	3824.176
			Max. Vy	20	-27.381	3795.600	1.224
			Max. Vx	2	-27.555	2.186	3824.176
			Max. Torque	15			-0.698

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	82.280	0.004	7.235
	Max. H_x	21	44.926	27.356	0.012
	Max. H_z	2	59.901	0.012	27.529
	Max. M_x	2	3824.176	0.012	27.529
	Max. M_z	8	3793.222	-27.356	-0.012
	Max. Torsion	3	0.698	0.012	27.529
	Min. Vert	19	44.926	23.684	-13.754
	Min. H_x	9	44.926	-27.356	-0.012
	Min. H_z	14	59.901	-0.012	-27.529
	Min. M_x	14	-3823.730	-0.012	-27.529
	Min. M_z	20	-3795.600	27.356	0.012
	Min. Torsion	15	-0.698	-0.012	-27.529

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	49.918	0.000	0.000	-0.175	0.910	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	59.901	-0.012	-27.529	-3824.176	2.186	-0.687
0.9 Dead+1.0 Wind 0 deg - No Ice	44.926	-0.012	-27.529	-3742.705	1.856	-0.698
1.2 Dead+1.0 Wind 30 deg - No Ice	59.901	13.724	-23.934	-3319.185	-1899.545	-0.662
0.9 Dead+1.0 Wind 30 deg - No Ice	44.926	13.724	-23.934	-3248.527	-1859.448	-0.671
1.2 Dead+1.0 Wind 60 deg - No Ice	59.901	23.684	-13.754	-1911.420	-3284.313	-0.458
0.9 Dead+1.0 Wind 60 deg - No Ice	44.926	23.684	-13.754	-1870.654	-3214.703	-0.464

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
1.2 Dead+1.0 Wind 90 deg - No Ice	59.901	27.356	0.012	0.789	-3793.222	-0.130
0.9 Dead+1.0 Wind 90 deg - No Ice	44.926	27.356	0.012	0.835	-3712.779	-0.130
1.2 Dead+1.0 Wind 120 deg - No Ice	59.901	23.697	13.775	1912.745	-3285.350	0.234
0.9 Dead+1.0 Wind 120 deg - No Ice	44.926	23.697	13.775	1872.076	-3215.730	0.239
1.2 Dead+1.0 Wind 150 deg - No Ice	59.901	13.689	23.847	3311.979	-1896.797	0.532
0.9 Dead+1.0 Wind 150 deg - No Ice	44.926	13.689	23.847	3241.520	-1856.738	0.542
1.2 Dead+1.0 Wind 180 deg - No Ice	59.901	0.012	27.529	3823.730	0.174	0.687
0.9 Dead+1.0 Wind 180 deg - No Ice	44.926	0.012	27.529	3742.376	-0.136	0.698
1.2 Dead+1.0 Wind 210 deg - No Ice	59.901	-13.724	23.934	3318.749	1901.904	0.657
0.9 Dead+1.0 Wind 210 deg - No Ice	44.926	-13.724	23.934	3248.206	1861.169	0.667
1.2 Dead+1.0 Wind 240 deg - No Ice	59.901	-23.684	13.754	1910.989	3286.681	0.454
0.9 Dead+1.0 Wind 240 deg - No Ice	44.926	-23.684	13.754	1870.337	3216.431	0.459
1.2 Dead+1.0 Wind 270 deg - No Ice	59.901	-27.356	-0.012	-1.224	3795.600	0.129
0.9 Dead+1.0 Wind 270 deg - No Ice	44.926	-27.356	-0.012	-1.156	3714.514	0.130
1.2 Dead+1.0 Wind 300 deg - No Ice	59.901	-23.697	-13.775	-1913.190	3287.728	-0.229
0.9 Dead+1.0 Wind 300 deg - No Ice	44.926	-23.697	-13.775	-1872.405	3217.465	-0.235
1.2 Dead+1.0 Wind 330 deg - No Ice	59.901	-13.689	-23.847	-3312.430	1899.166	-0.528
0.9 Dead+1.0 Wind 330 deg - No Ice	44.926	-13.689	-23.847	-3241.853	1858.466	-0.537
1.2 Dead+1.0 Ice+1.0 Temp	82.280	-0.000	-0.000	-0.411	2.186	-0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	82.280	-0.004	-7.235	-1026.293	2.745	-0.184
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	82.280	3.598	-6.263	-888.703	-507.370	-0.151
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	82.280	6.235	-3.614	-513.107	-880.886	-0.078
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	82.280	7.202	0.004	-0.148	-1017.716	0.016
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	82.280	6.239	3.621	512.728	-881.203	0.106
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	82.280	3.604	6.267	888.092	-507.919	0.167
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	82.280	0.004	7.235	1025.366	2.112	0.184
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	82.280	-3.598	6.263	887.776	512.227	0.151
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	82.280	-6.235	3.614	512.180	885.744	0.078
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	82.280	-7.202	-0.004	-0.781	1022.574	-0.016
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	82.280	-6.239	-3.621	-513.656	886.060	-0.106
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	82.280	-3.604	-6.267	-889.020	512.775	-0.167

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead+Wind 0 deg - Service	49.918	-0.003	-6.171	-848.191	1.216	-0.157
Dead+Wind 30 deg - Service	49.918	3.076	-5.365	-736.206	-420.519	-0.150
Dead+Wind 60 deg - Service	49.918	5.309	-3.083	-423.996	-727.577	-0.103
Dead+Wind 90 deg - Service	49.918	6.132	0.003	0.039	-840.415	-0.028
Dead+Wind 120 deg - Service	49.918	5.312	3.088	424.020	-727.810	0.054
Dead+Wind 150 deg - Service	49.918	3.068	5.346	734.326	-419.906	0.121
Dead+Wind 180 deg - Service	49.918	0.003	6.171	847.821	0.768	0.157
Dead+Wind 210 deg - Service	49.918	-3.076	5.365	735.836	422.503	0.150
Dead+Wind 240 deg - Service	49.918	-5.309	3.083	423.627	729.561	0.103
Dead+Wind 270 deg - Service	49.918	-6.132	-0.003	-0.409	842.399	0.028
Dead+Wind 300 deg - Service	49.918	-5.312	-3.088	-424.390	729.794	-0.054
Dead+Wind 330 deg - Service	49.918	-3.068	-5.346	-734.696	421.890	-0.121

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.000	-49.918	0.000	0.000	49.918	0.000	0.000%
2	-0.012	-59.901	-27.529	0.012	59.901	27.529	0.000%
3	-0.012	-44.926	-27.529	0.012	44.926	27.529	0.000%
4	13.724	-59.901	-23.934	-13.724	59.901	23.934	0.000%
5	13.724	-44.926	-23.934	-13.724	44.926	23.934	0.000%
6	23.684	-59.901	-13.754	-23.684	59.901	13.754	0.000%
7	23.684	-44.926	-13.754	-23.684	44.926	13.754	0.000%
8	27.356	-59.901	0.012	-27.356	59.901	-0.012	0.000%
9	27.356	-44.926	0.012	-27.356	44.926	-0.012	0.000%
10	23.697	-59.901	13.775	-23.697	59.901	-13.775	0.000%
11	23.697	-44.926	13.775	-23.697	44.926	-13.775	0.000%
12	13.689	-59.901	23.847	-13.689	59.901	-23.847	0.000%
13	13.689	-44.926	23.847	-13.689	44.926	-23.847	0.000%
14	0.012	-59.901	27.529	-0.012	59.901	-27.529	0.000%
15	0.012	-44.926	27.529	-0.012	44.926	-27.529	0.000%
16	-13.724	-59.901	23.934	13.724	59.901	-23.934	0.000%
17	-13.724	-44.926	23.934	13.724	44.926	-23.934	0.000%
18	-23.684	-59.901	13.754	23.684	59.901	-13.754	0.000%
19	-23.684	-44.926	13.754	23.684	44.926	-13.754	0.000%
20	-27.356	-59.901	-0.012	27.356	59.901	0.012	0.000%
21	-27.356	-44.926	-0.012	27.356	44.926	0.012	0.000%
22	-23.697	-59.901	-13.775	23.697	59.901	13.775	0.000%
23	-23.697	-44.926	-13.775	23.697	44.926	13.775	0.000%
24	-13.689	-59.901	-23.847	13.689	59.901	23.847	0.000%
25	-13.689	-44.926	-23.847	13.689	44.926	23.847	0.000%
26	0.000	-82.280	0.000	0.000	82.280	0.000	0.000%
27	-0.004	-82.280	-7.235	0.004	82.280	7.235	0.000%
28	3.598	-82.280	-6.263	-3.598	82.280	6.263	0.000%
29	6.235	-82.280	-3.614	-6.235	82.280	3.614	0.000%
30	7.202	-82.280	0.004	-7.202	82.280	-0.004	0.000%
31	6.239	-82.280	3.621	-6.239	82.280	-3.621	0.000%
32	3.604	-82.280	6.267	-3.604	82.280	-6.267	0.000%
33	0.004	-82.280	7.235	-0.004	82.280	-7.235	0.000%
34	-3.598	-82.280	6.263	3.598	82.280	-6.263	0.000%
35	-6.235	-82.280	3.614	6.235	82.280	-3.614	0.000%
36	-7.202	-82.280	-0.004	7.202	82.280	0.004	0.000%
37	-6.239	-82.280	-3.621	6.239	82.280	3.621	0.000%
38	-3.604	-82.280	-6.267	3.604	82.280	6.267	0.000%
39	-0.003	-49.918	-6.171	0.003	49.918	6.171	0.000%
40	3.076	-49.918	-5.365	-3.076	49.918	5.365	0.000%

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
41	5.309	-49.918	-3.083	-5.309	49.918	3.083	0.000%
42	6.132	-49.918	0.003	-6.132	49.918	-0.003	0.000%
43	5.312	-49.918	3.088	-5.312	49.918	-3.088	0.000%
44	3.068	-49.918	5.346	-3.068	49.918	-5.346	0.000%
45	0.003	-49.918	6.171	-0.003	49.918	-6.171	0.000%
46	-3.076	-49.918	5.365	3.076	49.918	-5.365	0.000%
47	-5.309	-49.918	3.083	5.309	49.918	-3.083	0.000%
48	-6.132	-49.918	-0.003	6.132	49.918	0.003	0.000%
49	-5.312	-49.918	-3.088	5.312	49.918	3.088	0.000%
50	-3.068	-49.918	-5.346	3.068	49.918	5.346	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	6	0.00000001	0.00033124
3	Yes	6	0.00000001	0.00010976
4	Yes	8	0.00000001	0.00021641
5	Yes	7	0.00000001	0.00052229
6	Yes	8	0.00000001	0.00021892
7	Yes	7	0.00000001	0.00052964
8	Yes	6	0.00000001	0.00016737
9	Yes	5	0.00000001	0.00066015
10	Yes	8	0.00000001	0.00021811
11	Yes	7	0.00000001	0.00052746
12	Yes	8	0.00000001	0.00021659
13	Yes	7	0.00000001	0.00052306
14	Yes	6	0.00000001	0.00031288
15	Yes	6	0.00000001	0.00010330
16	Yes	8	0.00000001	0.00021981
17	Yes	7	0.00000001	0.00053140
18	Yes	8	0.00000001	0.00021636
19	Yes	7	0.00000001	0.00052279
20	Yes	6	0.00000001	0.00017691
21	Yes	5	0.00000001	0.00071626
22	Yes	8	0.00000001	0.00021732
23	Yes	7	0.00000001	0.00052525
24	Yes	8	0.00000001	0.00021907
25	Yes	7	0.00000001	0.00052965
26	Yes	4	0.00000001	0.00038012
27	Yes	7	0.00000001	0.00092917
28	Yes	8	0.00000001	0.00026057
29	Yes	8	0.00000001	0.00026152
30	Yes	7	0.00000001	0.00091975
31	Yes	8	0.00000001	0.00026116
32	Yes	8	0.00000001	0.00026025
33	Yes	7	0.00000001	0.00092782
34	Yes	8	0.00000001	0.00026395
35	Yes	8	0.00000001	0.00026212
36	Yes	7	0.00000001	0.00092577
37	Yes	8	0.00000001	0.00026275
38	Yes	8	0.00000001	0.00026454
39	Yes	5	0.00000001	0.00034812
40	Yes	6	0.00000001	0.00031487
41	Yes	6	0.00000001	0.00032345

42	Yes	5	0.00000001	0.00031243
43	Yes	6	0.00000001	0.00032031
44	Yes	6	0.00000001	0.00031543
45	Yes	5	0.00000001	0.00034695
46	Yes	6	0.00000001	0.00032940
47	Yes	6	0.00000001	0.00031606
48	Yes	5	0.00000001	0.00031378
49	Yes	6	0.00000001	0.00031948
50	Yes	6	0.00000001	0.00032685

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	180.5 - 175.5	40.084	39	2.229	0.003
L2	175.5 - 170.5	37.757	39	2.218	0.002
L3	170.5 - 165.5	35.448	39	2.192	0.002
L4	165.5 - 160.5	33.171	39	2.155	0.002
L5	160.5 - 155.5	30.941	39	2.102	0.002
L6	155.5 - 150.5	28.774	39	2.036	0.001
L7	150.5 - 145.5	26.683	39	1.957	0.001
L8	145.5 - 140.5	24.679	39	1.868	0.001
L9	140.5 - 134.5	22.773	39	1.773	0.001
L10	137.794 - 132.794	21.783	39	1.718	0.001
L11	132.794 - 127.794	20.012	39	1.655	0.001
L12	127.794 - 122.794	18.328	39	1.560	0.001
L13	122.794 - 120.583	16.745	39	1.463	0.001
L14	120.583 - 120.333	16.078	39	1.419	0.001
L15	120.333 - 115.333	16.004	39	1.414	0.001
L16	115.333 - 112.5	14.575	39	1.314	0.001
L17	112.5 - 112.25	13.813	39	1.257	0.000
L18	112.25 - 107.817	13.747	39	1.255	0.000
L19	107.817 - 107.567	12.602	39	1.212	0.000
L20	107.567 - 102.567	12.539	39	1.209	0.000
L21	102.567 - 97.567	11.298	39	1.160	0.000
L22	97.567 - 89	10.110	39	1.110	0.000
L23	93.311 - 88.311	9.139	39	1.067	0.000
L24	88.311 - 87.5	8.035	39	1.039	0.000
L25	87.5 - 87.25	7.859	39	1.032	0.000
L26	87.25 - 82.25	7.805	39	1.027	0.000
L27	82.25 - 80.833	6.774	39	0.941	0.000
L28	80.833 - 80.583	6.499	39	0.917	0.000
L29	80.583 - 75.583	6.451	39	0.913	0.000
L30	75.583 - 70.583	5.539	39	0.828	0.000
L31	70.583 - 65.583	4.716	46	0.745	0.000
L32	65.583 - 60.583	3.980	46	0.663	0.000
L33	60.583 - 55.583	3.328	46	0.582	0.000
L34	55.583 - 53.567	2.760	46	0.503	0.000
L35	53.567 - 53.317	2.555	46	0.471	0.000
L36	53.317 - 43.8	2.530	46	0.468	0.000
L37	49.105 - 42.8	2.146	46	0.403	0.000
L38	42.8 - 38.417	1.638	46	0.365	0.000
L39	38.417 - 38.067	1.321	46	0.326	0.000
L40	38.067 - 37.833	1.297	46	0.323	0.000
L41	37.833 - 32.833	1.281	46	0.321	0.000
L42	32.833 - 27.833	0.967	46	0.278	0.000
L43	27.833 - 23.5	0.698	46	0.236	0.000
L44	23.5 - 23.25	0.500	46	0.199	0.000
L45	23.25 - 18.25	0.490	46	0.197	0.000

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L46	18.25 - 13.25	0.305	46	0.156	0.000
L47	13.25 - 8.25	0.164	46	0.115	0.000
L48	8.25 - 7.917	0.065	46	0.074	0.000
L49	7.917 - 7.667	0.060	46	0.072	0.000
L50	7.667 - 5.5	0.056	46	0.070	0.000
L51	5.5 - 5.25	0.028	46	0.054	0.000
L52	5.25 - 3	0.025	46	0.051	0.000
L53	3 - 2.75	0.008	46	0.024	0.000
L54	2.75 - 0	0.006	46	0.022	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.000	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	39	39.851	2.228	0.003	15062
178.000	Side Arm Mount [SO 102-3]	39	38.919	2.225	0.003	15062
170.000	TMA-DB-T1-6Z-8AB-0Z	39	35.218	2.189	0.002	8686
168.000	BXA-171063-12CF-EDIN-X w/ Mount Pipe	39	34.304	2.175	0.002	7439
160.000	AM-X-CD-17-65-00T-RET w/ Mount Pipe	39	30.721	2.096	0.002	4713
158.000	RRUS 11 B12	39	29.849	2.071	0.001	4323
141.000	MX08FRO665-21 w/ Mount Pipe	39	22.959	1.783	0.001	3075
78.000	8225	39	5.969	0.869	0.000	3386

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	180.5 - 175.5	180.726	2	10.070	0.013
L2	175.5 - 170.5	170.254	2	10.023	0.011
L3	170.5 - 165.5	159.866	2	9.910	0.009
L4	165.5 - 160.5	149.620	2	9.741	0.008
L5	160.5 - 155.5	139.586	2	9.503	0.007
L6	155.5 - 150.5	129.829	2	9.204	0.006
L7	150.5 - 145.5	120.412	2	8.848	0.006
L8	145.5 - 140.5	111.387	2	8.448	0.005
L9	140.5 - 134.5	102.794	2	8.016	0.004
L10	137.794 - 132.794	98.334	2	7.770	0.004
L11	132.794 - 127.794	90.347	2	7.484	0.004
L12	127.794 - 122.794	82.753	2	7.056	0.003
L13	122.794 - 120.583	75.611	2	6.615	0.003
L14	120.583 - 120.333	72.600	2	6.417	0.003
L15	120.333 - 115.333	72.265	2	6.394	0.003
L16	115.333 - 112.5	65.818	2	5.942	0.002
L17	112.5 - 112.25	62.375	2	5.684	0.002
L18	112.25 - 107.817	62.078	2	5.673	0.002
L19	107.817 - 107.567	56.909	2	5.479	0.002
L20	107.567 - 102.567	56.623	2	5.468	0.002

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L21	102.567 - 97.567	51.022	2	5.245	0.002
L22	97.567 - 89	45.655	2	5.020	0.002
L23	93.311 - 88.311	41.272	2	4.826	0.002
L24	88.311 - 87.5	36.283	2	4.700	0.002
L25	87.5 - 87.25	35.489	2	4.665	0.002
L26	87.25 - 82.25	35.245	2	4.645	0.002
L27	82.25 - 80.833	30.591	2	4.254	0.002
L28	80.833 - 80.583	29.345	2	4.146	0.001
L29	80.583 - 75.583	29.129	2	4.127	0.001
L30	75.583 - 70.583	25.012	2	3.743	0.001
L31	70.583 - 65.583	21.293	2	3.365	0.001
L32	65.583 - 60.583	17.965	2	2.994	0.001
L33	60.583 - 55.583	15.023	2	2.630	0.001
L34	55.583 - 53.567	12.458	2	2.272	0.001
L35	53.567 - 53.317	11.529	2	2.129	0.001
L36	53.317 - 43.8	11.418	2	2.112	0.001
L37	49.105 - 42.8	9.685	2	1.818	0.001
L38	42.8 - 38.417	7.389	2	1.646	0.000
L39	38.417 - 38.067	5.958	2	1.474	0.000
L40	38.067 - 37.833	5.850	16	1.460	0.000
L41	37.833 - 32.833	5.779	16	1.451	0.000
L42	32.833 - 27.833	4.362	16	1.256	0.000
L43	27.833 - 23.5	3.148	16	1.064	0.000
L44	23.5 - 23.25	2.257	16	0.899	0.000
L45	23.25 - 18.25	2.210	16	0.890	0.000
L46	18.25 - 13.25	1.377	16	0.703	0.000
L47	13.25 - 8.25	0.738	16	0.517	0.000
L48	8.25 - 7.917	0.292	16	0.335	0.000
L49	7.917 - 7.667	0.269	16	0.323	0.000
L50	7.667 - 5.5	0.253	16	0.315	0.000
L51	5.5 - 5.25	0.126	16	0.243	0.000
L52	5.25 - 3	0.114	16	0.229	0.000
L53	3 - 2.75	0.034	16	0.109	0.000
L54	2.75 - 0	0.029	16	0.100	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
180.000	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	2	179.677	10.067	0.013	3705
178.000	Side Arm Mount [SO 102-3]	2	175.484	10.052	0.012	3705
170.000	TMA-DB-T1-6Z-8AB-0Z	2	158.834	9.896	0.009	2078
168.000	BXA-171063-12CF-EDIN-X w/ Mount Pipe	2	154.721	9.833	0.009	1769
160.000	AM-X-CD-17-65-00T-RET w/ Mount Pipe	2	138.597	9.476	0.007	1103
158.000	RRUS 11 B12	2	134.669	9.361	0.007	1010
141.000	MX08FRO665-21 w/ Mount Pipe	2	103.632	8.063	0.005	707
78.000	8225	2	26.952	3.928	0.001	755

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	180.5 - 175.5 (1)	TP18.569x17.62x0.25	5.000	0.000	0.0	14.536	-4.208	850.359	0.005
L2	175.5 - 170.5 (2)	TP19.518x18.569x0.25	5.000	0.000	0.0	15.289	-4.522	894.408	0.005
L3	170.5 - 165.5 (3)	TP20.467x19.518x0.25	5.000	0.000	0.0	16.042	-7.846	938.456	0.008
L4	165.5 - 160.5 (4)	TP21.416x20.467x0.25	5.000	0.000	0.0	16.795	-8.233	982.504	0.008
L5	160.5 - 155.5 (5)	TP22.365x21.416x0.25	5.000	0.000	0.0	17.548	-11.223	1026.550	0.011
L6	155.5 - 150.5 (6)	TP23.313x22.365x0.25	5.000	0.000	0.0	18.301	-11.758	1070.600	0.011
L7	150.5 - 145.5 (7)	TP24.262x23.313x0.25	5.000	0.000	0.0	19.054	-12.323	1114.650	0.011
L8	145.5 - 140.5 (8)	TP25.211x24.262x0.25	5.000	0.000	0.0	19.807	-15.720	1158.700	0.014
L9	140.5 - 134.5 (9)	TP26.35x25.211x0.25	6.000	0.000	0.0	20.214	-16.068	1182.540	0.014
L10	134.5 - 132.794 (10)	TP26.174x25.225x0.313	5.000	0.000	0.0	25.651	-17.042	1500.590	0.011
L11	132.794 - 127.794 (11)	TP27.123x26.174x0.313	5.000	0.000	0.0	26.592	-17.828	1555.650	0.011
L12	127.794 - 122.794 (12)	TP28.072x27.123x0.313	5.000	0.000	0.0	27.534	-18.632	1610.710	0.012
L13	122.794 - 120.583 (13)	TP28.491x28.072x0.313	2.211	0.000	0.0	27.950	-18.994	1635.060	0.012
L14	120.583 - 120.333 (14)	TP28.539x28.491x0.313	0.250	0.000	0.0	27.997	-19.049	1637.810	0.012
L15	120.333 - 115.333 (15)	TP29.488x28.539x0.313	5.000	0.000	0.0	28.938	-19.881	1692.870	0.012
L16	115.333 - 112.5 (16)	TP30.025x29.488x0.313	2.833	0.000	0.0	29.471	-20.363	1724.070	0.012
L17	112.5 - 112.25 (17)	TP30.073x30.025x0.638	0.250	0.000	0.0	59.560	-20.451	3484.240	0.006
L18	112.25 - 107.817 (18)	TP30.914x30.073x0.675	4.433	0.000	0.0	64.785	-21.689	3789.940	0.006
L19	107.817 - 107.567 (19)	TP30.961x30.914x0.675	0.250	0.000	0.0	64.887	-21.767	3795.890	0.006
L20	107.567 - 102.567 (20)	TP31.91x30.961x0.663	5.000	0.000	0.0	65.707	-23.187	3843.860	0.006
L21	102.567 - 97.567 (21)	TP32.859x31.91x0.65	5.000	0.000	0.0	66.451	-24.636	3887.370	0.006
L22	97.567 - 89 (22)	TP34.485x32.859x0.638	8.567	0.000	0.0	66.832	-25.889	3909.700	0.007
L23	89 - 88.311 (23)	TP33.991x33.042x0.7	5.000	0.000	0.0	73.965	-28.591	4326.980	0.007
L24	88.311 - 87.5 (24)	TP34.145x33.991x0.7	0.811	0.000	0.0	74.307	-28.855	4346.980	0.007
L25	87.5 - 87.25 (25)	TP34.192x34.145x0.375	0.250	0.000	0.0	40.251	-28.912	2354.670	0.012
L26	87.25 - 82.25 (26)	TP35.141x34.192x0.375	5.000	0.000	0.0	41.380	-30.001	2420.740	0.012
L27	82.25 - 80.833 (27)	TP35.41x35.141x0.375	1.417	0.000	0.0	41.700	-30.311	2439.470	0.012
L28	80.833 -	TP35.457x35.41x0.375	0.250	0.000	0.0	41.757	-30.385	2442.770	0.012

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
	80.583 (28)								
L29	80.583 - 75.583 (29)	TP36.406x35.457x0.375	5.000	0.000	0.0	42.886	-31.582	2508.840	0.013
L30	75.583 - 70.583 (30)	TP37.355x36.406x0.375	5.000	0.000	0.0	44.016	-32.743	2574.910	0.013
L31	70.583 - 65.583 (31)	TP38.304x37.355x0.375	5.000	0.000	0.0	45.145	-33.929	2640.990	0.013
L32	65.583 - 60.583 (32)	TP39.253x38.304x0.375	5.000	0.000	0.0	46.275	-35.140	2707.060	0.013
L33	60.583 - 55.583 (33)	TP40.202x39.253x0.375	5.000	0.000	0.0	47.404	-36.375	2773.130	0.013
L34	55.583 - 53.567 (34)	TP40.584x40.202x0.375	2.016	0.000	0.0	47.859	-36.879	2799.770	0.013
L35	53.567 - 53.317 (35)	TP40.632x40.584x0.375	0.250	0.000	0.0	47.916	-36.954	2803.070	0.013
L36	53.317 - 43.8 (36)	TP42.438x40.632x0.375	9.517	0.000	0.0	48.867	-38.010	2858.730	0.013
L37	43.8 - 42.8 (37)	TP41.878x40.681x0.7	6.305	0.000	0.0	91.489	-41.630	5352.090	0.008
L38	42.8 - 38.417 (38)	TP42.71x41.878x0.688	4.383	0.000	0.0	91.697	-43.446	5364.290	0.008
L39	38.417 - 38.067 (39)	TP42.776x42.71x0.688	0.350	0.000	0.0	91.842	-43.599	5372.770	0.008
L40	38.067 - 37.833 (40)	TP42.82x42.776x0.688	0.234	0.000	0.0	91.939	-43.698	5378.440	0.008
L41	37.833 - 32.833 (41)	TP43.769x42.82x0.675	5.000	0.000	0.0	92.327	-45.790	5401.140	0.008
L42	32.833 - 27.833 (42)	TP44.718x43.769x0.675	5.000	0.000	0.0	93.140	-46.652	5448.710	0.009
L43	27.833 - 23.5 (43)	TP45.54x44.718x0.663	4.333	0.000	0.0	92.639	-47.931	5419.380	0.009
L44	23.5 - 23.25 (44)	TP45.588x45.54x0.663	0.250	0.000	0.0	94.368	-49.785	5520.530	0.009
L45	23.25 - 18.25 (45)	TP46.537x45.588x0.663	5.000	0.000	0.0	94.468	-49.900	5526.370	0.009
L46	18.25 - 13.25 (46)	TP47.486x46.537x0.65	5.000	0.000	0.0	94.669	-52.069	5538.120	0.009
L47	13.25 - 8.25 (47)	TP48.434x47.486x0.65	5.000	0.000	0.0	96.626	-54.262	5652.640	0.010
L48	8.25 - 7.917 (48)	TP48.498x48.434x0.65	0.333	0.000	0.0	98.584	-56.473	5767.160	0.010
L49	7.917 - 7.667 (49)	TP48.545x48.498x0.7	0.250	0.000	0.0	106.197	-56.622	6212.500	0.009
L50	7.667 - 5.5 (50)	TP48.956x48.545x0.7	2.167	0.000	0.0	106.302	-56.746	6218.670	0.009
L51	5.5 - 5.25 (51)	TP49.004x48.956x0.413	0.250	0.000	0.0	63.619	-57.838	3721.730	0.016
L52	5.25 - 3 (52)	TP49.431x49.004x0.425	2.250	0.000	0.0	66.106	-58.586	3867.210	0.015
L53	3 - 2.75 (53)	TP49.478x49.431x0.625	0.250	0.000	0.0	96.818	-58.603	5663.870	0.010
L54	2.75 - 0 (54)	TP50x49.478x0.625	2.750	0.000	0.0	96.912	-58.721	5669.370	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	180.5 - 175.5 (1)	TP18.569x17.62x0.25	36.227	404.493	0.090	0.000	404.493	0.000
L2	175.5 - 170.5	TP19.518x18.569x0.25	70.296	447.781	0.157	0.000	447.781	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L3	170.5 - 165.5 (2)	TP20.467x19.518x0.25	120.334	493.269	0.244	0.000	493.269	0.000
L4	165.5 - 160.5 (3)	TP21.416x20.467x0.25	177.374	540.957	0.328	0.000	540.957	0.000
L5	160.5 - 155.5 (4)	TP22.365x21.416x0.25	252.143	590.845	0.427	0.000	590.845	0.000
L6	155.5 - 150.5 (5)	TP23.313x22.365x0.25	328.988	642.934	0.512	0.000	642.934	0.000
L7	150.5 - 145.5 (6)	TP24.262x23.313x0.25	407.327	695.496	0.586	0.000	695.496	0.000
L8	145.5 - 140.5 (7)	TP25.211x24.262x0.25	488.702	744.672	0.656	0.000	744.672	0.000
L9	140.5 - 134.5 (8)	TP26.35x25.211x0.25	541.136	771.739	0.701	0.000	771.739	0.000
L10	134.5 - 132.794 (9)	TP26.174x25.225x0.313	639.367	1009.233	0.634	0.000	1009.233	0.000
L11	132.794 - 127.794 (10)	TP27.123x26.174x0.313	739.163	1085.117	0.681	0.000	1085.117	0.000
L12	127.794 - 122.794 (11)	TP28.072x27.123x0.313	840.367	1163.742	0.722	0.000	1163.742	0.000
L13	122.794 - 120.583 (12)	TP28.491x28.072x0.313	885.567	1199.392	0.738	0.000	1199.392	0.000
L14	120.583 - 120.333 (13)	TP28.539x28.491x0.313	890.700	1203.450	0.740	0.000	1203.450	0.000
L15	120.333 - 115.333 (14)	TP29.488x28.539x0.313	993.975	1286.183	0.773	0.000	1286.183	0.000
L16	115.333 - 112.5 (15)	TP30.025x29.488x0.313	1053.092	1334.283	0.789	0.000	1334.283	0.000
L17	112.5 - 112.25 (16)	TP30.073x30.025x0.638	1058.333	2642.192	0.401	0.000	2642.192	0.000
L18	112.25 - 107.817 (17)	TP30.914x30.073x0.675	1152.083	2950.575	0.390	0.000	2950.575	0.000
L19	107.817 - 107.567 (18)	TP30.961x30.914x0.675	1157.417	2959.942	0.391	0.000	2959.942	0.000
L20	107.567 - 102.567 (19)	TP31.91x30.961x0.663	1265.192	3095.783	0.409	0.000	3095.783	0.000
L21	102.567 - 97.567 (20)	TP32.859x31.91x0.65	1375.008	3230.383	0.426	0.000	3230.383	0.000
L22	97.567 - 89 (21)	TP34.485x32.859x0.638	1470.058	3334.550	0.441	0.000	3334.550	0.000
L23	89 - 88.311 (22)	TP33.991x33.042x0.7	1583.992	3713.358	0.427	0.000	3713.358	0.000
L24	88.311 - 87.5 (23)	TP34.145x33.991x0.7	1602.708	3748.133	0.428	0.000	3748.133	0.000
L25	87.5 - 87.25 (24)	TP34.192x34.145x0.375	1608.492	2072.875	0.776	0.000	2072.875	0.000
L26	87.25 - 82.25 (25)	TP35.141x34.192x0.375	1724.767	2191.492	0.787	0.000	2191.492	0.000
L27	82.25 - 80.833 (26)	TP35.41x35.141x0.375	1757.950	2225.708	0.790	0.000	2225.708	0.000
L28	80.833 - 80.583 (27)	TP35.457x35.41x0.375	1763.817	2231.775	0.790	0.000	2231.775	0.000
L29	80.583 - 75.583 (28)	TP36.406x35.457x0.375	1881.925	2348.758	0.801	0.000	2348.758	0.000
L30	75.583 - 70.583 (29)	TP37.355x36.406x0.375	2001.550	2459.008	0.814	0.000	2459.008	0.000
L31	70.583 - 65.583 (30)	TP38.304x37.355x0.375	2122.367	2570.908	0.826	0.000	2570.908	0.000
L32	65.583 - (31)	TP39.253x38.304x0.375	2244.325	2684.392	0.836	0.000	2684.392	0.000

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L33	60.583 (32) 60.583 - 55.583 (33)	TP40.202x39.253x0.375	2367.400	2799.392	0.846	0.000	2799.392	0.000
L34	55.583 - 53.567 (34)	TP40.584x40.202x0.375	2417.325	2846.175	0.849	0.000	2846.175	0.000
L35	53.567 - 53.317 (35)	TP40.632x40.584x0.375	2423.533	2852.000	0.850	0.000	2852.000	0.000
L36	53.317 - 43.8 (36)	TP42.438x40.632x0.375	2528.417	2950.550	0.857	0.000	2950.550	0.000
L37	43.8 - 42.8 (37)	TP41.878x40.681x0.7	2687.517	5703.758	0.471	0.000	5703.758	0.000
L38	42.8 - 38.417 (38)	TP42.71x41.878x0.688	2799.683	5837.641	0.480	0.000	5837.641	0.000
L39	38.417 - 38.067 (39)	TP42.776x42.71x0.688	2808.692	5856.258	0.480	0.000	5856.258	0.000
L40	38.067 - 37.833 (40)	TP42.82x42.776x0.688	2814.717	5868.725	0.480	0.000	5868.725	0.000
L41	37.833 - 32.833 (41)	TP43.769x42.82x0.675	2944.133	6031.850	0.488	0.000	6031.850	0.000
L42	32.833 - 27.833 (42)	TP44.718x43.769x0.675	2996.267	6139.391	0.488	0.000	6139.391	0.000
L43	27.833 - 23.5 (43)	TP45.54x44.718x0.663	3074.842	6191.050	0.497	0.000	6191.050	0.000
L44	23.5 - 23.25 (44)	TP45.588x45.54x0.663	3189.108	6426.058	0.496	0.000	6426.058	0.000
L45	23.25 - 18.25 (45)	TP46.537x45.588x0.663	3195.725	6439.750	0.496	0.000	6439.750	0.000
L46	18.25 - 13.25 (46)	TP47.486x46.537x0.65	3328.767	6595.325	0.505	0.000	6595.325	0.000
L47	13.25 - 8.25 (47)	TP48.434x47.486x0.65	3463.133	6872.850	0.504	0.000	6872.850	0.000
L48	8.25 - 7.917 (48)	TP48.498x48.434x0.65	3598.825	7156.100	0.503	0.000	7156.100	0.000
L49	7.917 - 7.667 (49)	TP48.545x48.498x0.7	3607.908	7702.908	0.468	0.000	7702.908	0.000
L50	7.667 - 5.5 (50)	TP48.956x48.545x0.7	3614.725	7718.317	0.468	0.000	7718.317	0.000
L51	5.5 - 5.25 (51)	TP49.004x48.956x0.413	3680.808	4450.758	0.827	0.000	4450.758	0.000
L52	5.25 - 3 (52)	TP49.431x49.004x0.425	3742.525	4694.217	0.797	0.000	4694.217	0.000
L53	3 - 2.75 (53)	TP49.478x49.431x0.625	3742.525	7183.791	0.521	0.000	7183.791	0.000
L54	2.75 - 0 (54)	TP50x49.478x0.625	3749.383	7197.850	0.521	0.000	7197.850	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	180.5 - 175.5 (1)	TP18.569x17.62x0.25	6.662	255.108	0.026	0.002	409.264	0.000
L2	175.5 - 170.5 (2)	TP19.518x18.569x0.25	6.969	268.322	0.026	0.002	452.762	0.000
L3	170.5 - 165.5 (3)	TP20.467x19.518x0.25	11.236	281.537	0.040	0.565	498.455	0.001
L4	165.5 - 160.5 (4)	TP21.416x20.467x0.25	11.578	294.751	0.039	0.579	546.346	0.001
L5	160.5 - 155.5 (5)	TP22.365x21.416x0.25	15.225	307.966	0.049	0.483	596.432	0.001
L6	155.5 - 150.5	TP23.313x22.365x0.25	15.527	321.180	0.048	0.483	648.715	0.001

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	(6)							
L7	150.5 - 145.5	TP24.262x23.313x0.25	15.825	334.395	0.047	0.482	703.193	0.001
	(7)							
L8	145.5 - 140.5	TP25.211x24.262x0.25	19.315	347.609	0.056	0.482	759.869	0.001
	(8)							
L9	140.5 - 134.5	TP26.35x25.211x0.25	19.466	354.761	0.055	0.481	791.457	0.001
	(9)							
L10	134.5 - 132.794	TP26.174x25.225x0.313	19.836	450.177	0.044	0.481	1019.558	0.000
	(10)							
L11	132.794 - 127.794	TP27.123x26.174x0.313	20.114	466.695	0.043	0.480	1095.750	0.000
	(11)							
L12	127.794 - 122.794	TP28.072x27.123x0.313	20.395	483.213	0.042	0.479	1174.692	0.000
	(12)							
L13	122.794 - 120.583	TP28.491x28.072x0.313	20.520	490.518	0.042	0.479	1210.475	0.000
	(13)							
L14	120.583 - 120.333	TP28.539x28.491x0.313	20.523	491.343	0.042	0.479	1214.550	0.000
	(14)							
L15	120.333 - 115.333	TP29.488x28.539x0.313	20.806	507.861	0.041	0.478	1297.583	0.000
	(15)							
L16	115.333 - 112.5	TP30.025x29.488x0.313	20.967	517.220	0.041	0.478	1345.850	0.000
	(16)							
L17	112.5 - 112.25	TP30.073x30.025x0.638	20.968	1045.270	0.020	0.478	2694.483	0.000
	(17)							
L18	112.25 - 107.817	TP30.914x30.073x0.675	21.339	1136.980	0.019	0.478	3010.925	0.000
	(18)							
L19	107.817 - 107.567	TP30.961x30.914x0.675	21.355	1138.770	0.019	0.477	3020.383	0.000
	(19)							
L20	107.567 - 102.567	TP31.91x30.961x0.663	21.768	1153.160	0.019	0.477	3155.642	0.000
	(20)							
L21	102.567 - 97.567	TP32.859x31.91x0.65	22.173	1166.210	0.019	0.477	3289.550	0.000
	(21)							
L22	97.567 - 89	TP34.485x32.859x0.638	22.512	1172.910	0.019	0.476	3392.692	0.000
	(22)							
L23	89 - 88.311	TP33.991x33.042x0.7	23.056	1298.090	0.018	0.476	3784.508	0.000
	(23)							
L24	88.311 - 87.5	TP34.145x33.991x0.7	23.122	1304.090	0.018	0.476	3819.583	0.000
	(24)							
L25	87.5 - 87.25	TP34.192x34.145x0.375	23.134	706.402	0.033	0.476	2092.033	0.000
	(25)							
L26	87.25 - 82.25	TP35.141x34.192x0.375	23.402	726.223	0.032	0.476	2211.083	0.000
	(26)							
L27	82.25 - 80.833	TP35.41x35.141x0.375	23.483	731.840	0.032	0.475	2245.417	0.000
	(27)							
L28	80.833 - 80.583	TP35.457x35.41x0.375	23.476	732.832	0.032	0.475	2251.508	0.000
	(28)							
L29	80.583 - 75.583	TP36.406x35.457x0.375	23.824	752.653	0.032	0.690	2374.950	0.000
	(29)							
L30	75.583 - 70.583	TP37.355x36.406x0.375	24.066	772.474	0.031	0.690	2501.683	0.000
	(30)							
L31	70.583 - 65.583	TP38.304x37.355x0.375	24.300	792.296	0.031	0.689	2631.717	0.000
	(31)							
L32	65.583 - 60.583	TP39.253x38.304x0.375	24.526	812.117	0.030	0.688	2765.042	0.000
	(32)							
L33	60.583 - 55.583	TP40.202x39.253x0.375	24.744	831.938	0.030	0.688	2901.667	0.000
	(33)							
L34	55.583 - 53.567	TP40.584x40.202x0.375	24.829	839.930	0.030	0.688	2957.683	0.000
	(34)							
L35	53.567 - 53.317	TP40.632x40.584x0.375	24.824	840.921	0.030	0.688	2964.667	0.000
	(35)							
L36	53.317 - 43.8	TP42.438x40.632x0.375	25.006	857.619	0.029	0.688	3083.567	0.000

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
	(36)							
L37	43.8 - 42.8 (37)	TP41.878x40.681x0.7	25.479	1605.630	0.016	0.687	5790.117	0.000
L38	42.8 - 38.417 (38)	TP42.71x41.878x0.688	25.732	1609.290	0.016	0.687	5922.300	0.000
L39	38.417 - 38.067 (39)	TP42.776x42.71x0.688	25.741	1611.830	0.016	0.687	5941.033	0.000
L40	38.067 - 37.833 (40)	TP42.82x42.776x0.688	25.754	1613.530	0.016	0.687	5953.583	0.000
L41	37.833 - 32.833 (41)	TP43.769x42.82x0.675	26.030	1620.340	0.016	0.687	6115.125	0.000
L42	32.833 - 27.833 (42)	TP44.718x43.769x0.675	26.180	1641.750	0.016	0.687	6223.317	0.000
L43	27.833 - 23.5 (43)	TP45.54x44.718x0.663	26.334	1633.400	0.016	0.687	6272.658	0.000
L44	23.5 - 23.25 (44)	TP45.588x45.54x0.663	26.491	1657.910	0.016	0.687	6508.991	0.000
L45	23.25 - 18.25 (45)	TP46.537x45.588x0.663	26.551	1664.910	0.016	0.687	6522.767	0.000
L46	18.25 - 13.25 (46)	TP47.486x46.537x0.65	26.790	1668.310	0.016	0.687	6676.517	0.000
L47	13.25 - 8.25 (47)	TP48.434x47.486x0.65	27.086	1702.660	0.016	0.658	6955.491	0.000
L48	8.25 - 7.917 (48)	TP48.498x48.434x0.65	27.276	1732.440	0.016	0.657	7240.175	0.000
L49	7.917 - 7.667 (49)	TP48.545x48.498x0.7	27.287	1865.600	0.015	0.657	7801.425	0.000
L50	7.667 - 5.5 (50)	TP48.956x48.545x0.7	27.354	1873.620	0.015	0.657	7816.917	0.000
L51	5.5 - 5.25 (51)	TP49.004x48.956x0.413	27.402	1116.520	0.025	0.657	4751.200	0.000
L52	5.25 - 3 (52)	TP49.431x49.004x0.425	27.487	1160.160	0.024	0.657	4979.042	0.000
L53	3 - 2.75 (53)	TP49.478x49.431x0.625	27.473	1700.810	0.016	0.657	7262.475	0.000
L54	2.75 - 0 (54)	TP50x49.478x0.625	27.555	1709.900	0.016	0.657	7276.608	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	180.5 - 175.5 (1)	0.005	0.090	0.000	0.026	0.000	0.095 ✔	1.050	4.8.2 ✔
L2	175.5 - 170.5 (2)	0.005	0.157	0.000	0.026	0.000	0.163 ✔	1.050	4.8.2 ✔
L3	170.5 - 165.5 (3)	0.008	0.244	0.000	0.040	0.001	0.254 ✔	1.050	4.8.2 ✔
L4	165.5 - 160.5 (4)	0.008	0.328	0.000	0.039	0.001	0.338 ✔	1.050	4.8.2 ✔
L5	160.5 - 155.5 (5)	0.011	0.427	0.000	0.049	0.001	0.440 ✔	1.050	4.8.2 ✔
L6	155.5 - 150.5 (6)	0.011	0.512	0.000	0.048	0.001	0.525 ✔	1.050	4.8.2 ✔
L7	150.5 - 145.5 (7)	0.011	0.586	0.000	0.047	0.001	0.599 ✔	1.050	4.8.2 ✔
L8	145.5 - 140.5 (8)	0.014	0.656	0.000	0.056	0.001	0.673	1.050	4.8.2 ✔

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L9	140.5 - 134.5 (9)	0.014	0.701	0.000	0.055	0.001	0.718	1.050	4.8.2
L10	134.5 - 132.794 (10)	0.011	0.634	0.000	0.044	0.000	0.647	1.050	4.8.2
L11	132.794 - 127.794 (11)	0.011	0.681	0.000	0.043	0.000	0.695	1.050	4.8.2
L12	127.794 - 122.794 (12)	0.012	0.722	0.000	0.042	0.000	0.736	1.050	4.8.2
L13	122.794 - 120.583 (13)	0.012	0.738	0.000	0.042	0.000	0.752	1.050	4.8.2
L14	120.583 - 120.333 (14)	0.012	0.740	0.000	0.042	0.000	0.754	1.050	4.8.2
L15	120.333 - 115.333 (15)	0.012	0.773	0.000	0.041	0.000	0.786	1.050	4.8.2
L16	115.333 - 112.5 (16)	0.012	0.789	0.000	0.041	0.000	0.803	1.050	4.8.2
L17	112.5 - 112.25 (17)	0.006	0.401	0.000	0.020	0.000	0.407	1.050	4.8.2
L18	112.25 - 107.817 (18)	0.006	0.390	0.000	0.019	0.000	0.397	1.050	4.8.2
L19	107.817 - 107.567 (19)	0.006	0.391	0.000	0.019	0.000	0.397	1.050	4.8.2
L20	107.567 - 102.567 (20)	0.006	0.409	0.000	0.019	0.000	0.415	1.050	4.8.2
L21	102.567 - 97.567 (21)	0.006	0.426	0.000	0.019	0.000	0.432	1.050	4.8.2
L22	97.567 - 89 (22)	0.007	0.441	0.000	0.019	0.000	0.448	1.050	4.8.2
L23	89 - 88.311 (23)	0.007	0.427	0.000	0.018	0.000	0.433	1.050	4.8.2
L24	88.311 - 87.5 (24)	0.007	0.428	0.000	0.018	0.000	0.435	1.050	4.8.2
L25	87.5 - 87.25 (25)	0.012	0.776	0.000	0.033	0.000	0.789	1.050	4.8.2
L26	87.25 - 82.25 (26)	0.012	0.787	0.000	0.032	0.000	0.800	1.050	4.8.2
L27	82.25 - 80.833 (27)	0.012	0.790	0.000	0.032	0.000	0.803	1.050	4.8.2
L28	80.833 - 80.583 (28)	0.012	0.790	0.000	0.032	0.000	0.804	1.050	4.8.2
L29	80.583 - 75.583 (29)	0.013	0.801	0.000	0.032	0.000	0.815	1.050	4.8.2
L30	75.583 - 70.583 (30)	0.013	0.814	0.000	0.031	0.000	0.828	1.050	4.8.2
L31	70.583 - 65.583 (31)	0.013	0.826	0.000	0.031	0.000	0.839	1.050	4.8.2
L32	65.583 - 60.583 (32)	0.013	0.836	0.000	0.030	0.000	0.850	1.050	4.8.2
L33	60.583 - 55.583 (33)	0.013	0.846	0.000	0.030	0.000	0.860	1.050	4.8.2
L34	55.583 -	0.013	0.849	0.000	0.030	0.000	0.863	1.050	4.8.2

Section No.	Elevation ft	Ratio P_u / ϕP_n	Ratio M_{ux} / ϕM_{nx}	Ratio M_{uy} / ϕM_{ny}	Ratio V_u / ϕV_n	Ratio T_u / ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
	53.567 (34)						✔		
L35	53.567 - 53.317 (35)	0.013	0.850	0.000	0.030	0.000	0.864 ✔	1.050	4.8.2 ✔
L36	53.317 - 43.8 (36)	0.013	0.857	0.000	0.029	0.000	0.871 ✔	1.050	4.8.2 ✔
L37	43.8 - 42.8 (37)	0.008	0.471	0.000	0.016	0.000	0.479 ✔	1.050	4.8.2 ✔
L38	42.8 - 38.417 (38)	0.008	0.480	0.000	0.016	0.000	0.488 ✔	1.050	4.8.2 ✔
L39	38.417 - 38.067 (39)	0.008	0.480	0.000	0.016	0.000	0.488 ✔	1.050	4.8.2 ✔
L40	38.067 - 37.833 (40)	0.008	0.480	0.000	0.016	0.000	0.488 ✔	1.050	4.8.2 ✔
L41	37.833 - 32.833 (41)	0.008	0.488	0.000	0.016	0.000	0.497 ✔	1.050	4.8.2 ✔
L42	32.833 - 27.833 (42)	0.009	0.488	0.000	0.016	0.000	0.497 ✔	1.050	4.8.2 ✔
L43	27.833 - 23.5 (43)	0.009	0.497	0.000	0.016	0.000	0.506 ✔	1.050	4.8.2 ✔
L44	23.5 - 23.25 (44)	0.009	0.496	0.000	0.016	0.000	0.506 ✔	1.050	4.8.2 ✔
L45	23.25 - 18.25 (45)	0.009	0.496	0.000	0.016	0.000	0.506 ✔	1.050	4.8.2 ✔
L46	18.25 - 13.25 (46)	0.009	0.505	0.000	0.016	0.000	0.514 ✔	1.050	4.8.2 ✔
L47	13.25 - 8.25 (47)	0.010	0.504	0.000	0.016	0.000	0.514 ✔	1.050	4.8.2 ✔
L48	8.25 - 7.917 (48)	0.010	0.503	0.000	0.016	0.000	0.513 ✔	1.050	4.8.2 ✔
L49	7.917 - 7.667 (49)	0.009	0.468	0.000	0.015	0.000	0.478 ✔	1.050	4.8.2 ✔
L50	7.667 - 5.5 (50)	0.009	0.468	0.000	0.015	0.000	0.478 ✔	1.050	4.8.2 ✔
L51	5.5 - 5.25 (51)	0.016	0.827	0.000	0.025	0.000	0.843 ✔	1.050	4.8.2 ✔
L52	5.25 - 3 (52)	0.015	0.797	0.000	0.024	0.000	0.813 ✔	1.050	4.8.2 ✔
L53	3 - 2.75 (53)	0.010	0.521	0.000	0.016	0.000	0.532 ✔	1.050	4.8.2 ✔
L54	2.75 - 0 (54)	0.010	0.521	0.000	0.016	0.000	0.532 ✔	1.050	4.8.2 ✔

Section Capacity Table

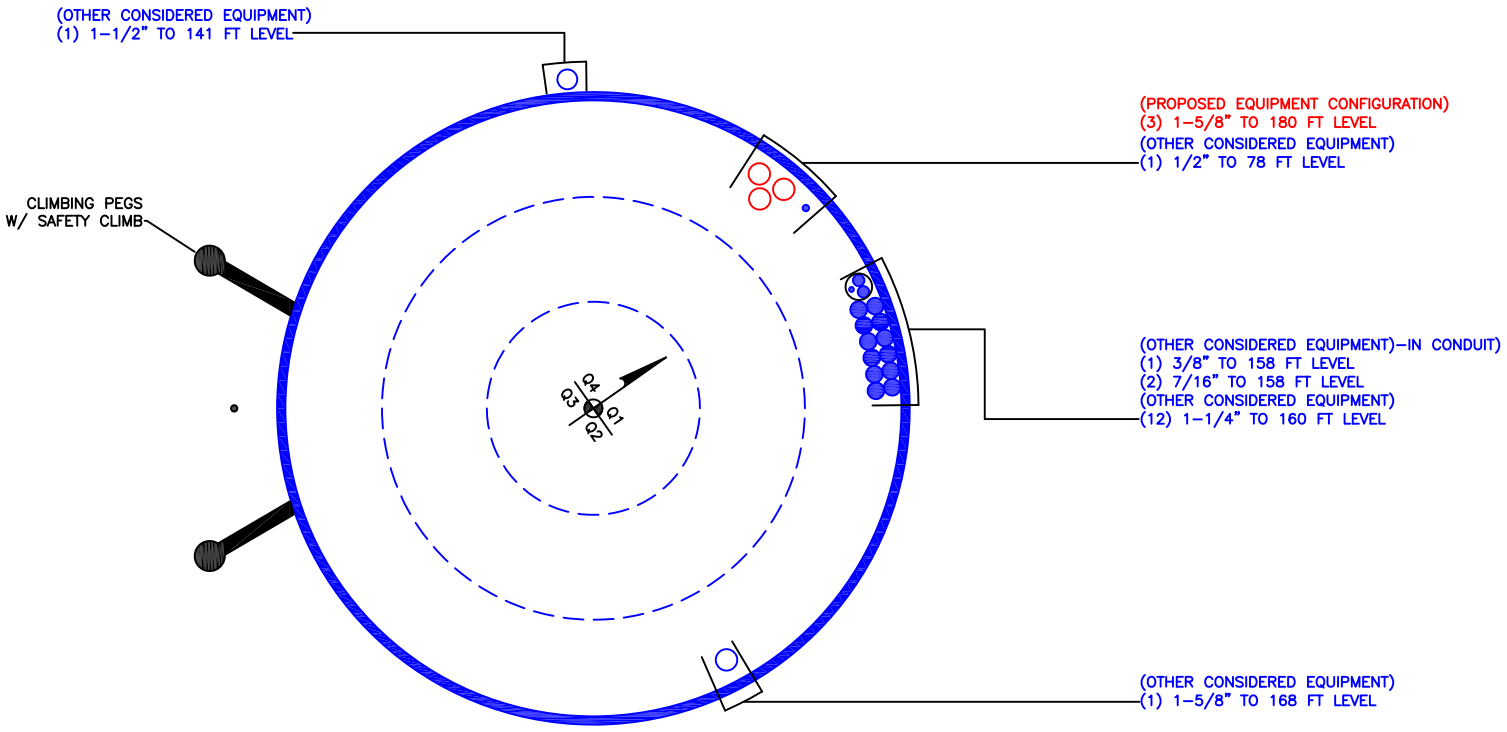
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	180.5 - 175.5	Pole	TP18.569x17.62x0.25	1	-4.208	892.877	**	**
L2	175.5 - 170.5	Pole	TP19.518x18.569x0.25	2	-4.522	939.128	**	**
L3	170.5 - 165.5	Pole	TP20.467x19.518x0.25	3	-7.846	985.379	**	**
L4	165.5 - 160.5	Pole	TP21.416x20.467x0.25	4	-8.233	1031.629	**	**
L5	160.5 - 155.5	Pole	TP22.365x21.416x0.25	5	-11.223	1077.877	**	**

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L6	155.5 - 150.5	Pole	TP23.313x22.365x0.25	6	-11.758	1124.130	**	**
L7	150.5 - 145.5	Pole	TP24.262x23.313x0.25	7	-12.323	1170.382	**	**
L8	145.5 - 140.5	Pole	TP25.211x24.262x0.25	8	-15.720	1216.635	**	**
L9	140.5 - 134.5	Pole	TP26.35x25.211x0.25	9	-16.068	1241.667	**	**
L10	134.5 - 132.794	Pole	TP26.174x25.225x0.313	10	-17.042	1575.619	**	**
L11	132.794 - 127.794	Pole	TP27.123x26.174x0.313	11	-17.828	1633.432	**	**
L12	127.794 - 122.794	Pole	TP28.072x27.123x0.313	12	-18.632	1691.245	**	**
L13	122.794 - 120.583	Pole	TP28.491x28.072x0.313	13	-18.994	1716.813	**	**
L14	120.583 - 120.333	Pole	TP28.539x28.491x0.313	14	-19.049	1719.700	**	**
L15	120.333 - 115.333	Pole	TP29.488x28.539x0.313	15	-19.881	1777.513	**	**
L16	115.333 - 112.5	Pole	TP30.025x29.488x0.313	16	-20.363	1810.273	**	**
L17	112.5 - 112.25	Pole	TP30.073x30.025x0.638	17	-20.451	3658.452	**	**
L18	112.25 - 107.817	Pole	TP30.914x30.073x0.675	18	-21.689	3979.437	**	**
L19	107.817 - 107.567	Pole	TP30.961x30.914x0.675	19	-21.767	3985.684	**	**
L20	107.567 - 102.567	Pole	TP31.91x30.961x0.663	20	-23.187	4036.053	**	**
L21	102.567 - 97.567	Pole	TP32.859x31.91x0.65	21	-24.636	4081.738	**	**
L22	97.567 - 89	Pole	TP34.485x32.859x0.638	22	-25.889	4105.185	**	**
L23	89 - 88.311	Pole	TP33.991x33.042x0.7	23	-28.591	4543.329	**	**
L24	88.311 - 87.5	Pole	TP34.145x33.991x0.7	24	-28.855	4564.329	**	**
L25	87.5 - 87.25	Pole	TP34.192x34.145x0.375	25	-28.912	2472.403	**	**
L26	87.25 - 82.25	Pole	TP35.141x34.192x0.375	26	-30.001	2541.777	**	**
L27	82.25 - 80.833	Pole	TP35.41x35.141x0.375	27	-30.311	2561.443	**	**
L28	80.833 - 80.583	Pole	TP35.457x35.41x0.375	28	-30.385	2564.908	**	**
L29	80.583 - 75.583	Pole	TP36.406x35.457x0.375	29	-31.582	2634.282	**	**
L30	75.583 - 70.583	Pole	TP37.355x36.406x0.375	30	-32.743	2703.655	**	**
L31	70.583 - 65.583	Pole	TP38.304x37.355x0.375	31	-33.929	2773.039	**	**
L32	65.583 - 60.583	Pole	TP39.253x38.304x0.375	32	-35.140	2842.413	**	**
L33	60.583 - 55.583	Pole	TP40.202x39.253x0.375	33	-36.375	2911.786	**	**
L34	55.583 - 53.567	Pole	TP40.584x40.202x0.375	34	-36.879	2939.758	**	**
L35	53.567 - 53.317	Pole	TP40.632x40.584x0.375	35	-36.954	2943.223	**	**
L36	53.317 - 43.8	Pole	TP42.438x40.632x0.375	36	-38.010	3001.666	**	**
L37	43.8 - 42.8	Pole	TP41.878x40.681x0.7	37	-41.630	5619.694	**	**
L38	42.8 - 38.417	Pole	TP42.71x41.878x0.688	38	-43.446	5632.504	**	**
L39	38.417 - 38.067	Pole	TP42.776x42.71x0.688	39	-43.599	5641.408	**	**
L40	38.067 - 37.833	Pole	TP42.82x42.776x0.688	40	-43.698	5647.362	**	**
L41	37.833 - 32.833	Pole	TP43.769x42.82x0.675	41	-45.790	5671.197	**	**
L42	32.833 - 27.833	Pole	TP44.718x43.769x0.675	42	-46.652	5721.145	**	**
L43	27.833 - 23.5	Pole	TP45.54x44.718x0.663	43	-47.931	5690.349	**	**
L44	23.5 - 23.25	Pole	TP45.588x45.54x0.663	44	-49.785	5796.556	**	**
L45	23.25 - 18.25	Pole	TP46.537x45.588x0.663	45	-49.900	5802.688	**	**
L46	18.25 - 13.25	Pole	TP47.486x46.537x0.65	46	-52.069	5815.026	**	**
L47	13.25 - 8.25	Pole	TP48.434x47.486x0.65	47	-54.262	5935.272	**	**
L48	8.25 - 7.917	Pole	TP48.498x48.434x0.65	48	-56.473	6055.518	**	**
L49	7.917 - 7.667	Pole	TP48.545x48.498x0.7	49	-56.622	6523.125	**	**
L50	7.667 - 5.5	Pole	TP48.956x48.545x0.7	50	-56.746	6529.603	**	**
L51	5.5 - 5.25	Pole	TP49.004x48.956x0.413	51	-57.838	3907.816	**	**
L52	5.25 - 3	Pole	TP49.431x49.004x0.425	52	-58.586	4060.570	**	**
L53	3 - 2.75	Pole	TP49.478x49.431x0.625	53	-58.603	5947.063	**	**
L54	2.75 - 0	Pole	TP50x49.478x0.625	54	-58.721	5952.838	**	**
							Summary	
						Pole (L36)	**	**
						RATING =	**	**

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

APPENDIX B

BASE LEVEL DRAWING



BUSINESS UNIT: 876375

APPENDIX C

ADDITIONAL CALCULATIONS

CCIpole

per TIA-222- H

Site BU: 876375

Work Order: 2018258

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	180.5	46	3.294	18	17.62	26.35	0.25	Auto	A572-65
2	137.794	48.794	4.311	18	25.22	34.485	0.3125	Auto	A572-65
3	93.311	49.511	5.305	18	33.04	42.438	0.375	Auto	A572-65
4	49.105	49.105	0	18	40.68	50	0.375	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	3	38.083	channel	MP3-05 (1.1875in)	2			E2												E2			
2	7.917	38.083	channel	MP3-05 (1.1875in)	1									E2									
3	38.417	53.583	channel	MP3-05 (1.1875in)	3					E2						E2						E2	
4	53.667	80.833	channel	MP3-04 (1.1875in)	3			E2						E2						E2			
5	80.833	107.833	channel	MP3-04 (1.1875in)	3					E2						E2						E2	
6	107.917	120.583	channel	MP3-03 (1.1875in)	3			E2						E2						E2			
7	5.5	23.5	plate	CCI-AFP-065125	3	E3					E3						E3						
8	23.5	48.583	plate	CCI-AFP-065125	3	E3					E3						E3						
9	87.5	112.5	plate	CCI-AFP-060100	3		E3						E3						E3				
10	0	3	plate	TS1-5x1.25	4		-4		4										-4		3		
11	0	7.917	plate	TS2-4.5625x1.25	2							-2			3								
12																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in^2)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in2)	Bolt Hole Size (in)	Reinforcement Material
1	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
2	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
3	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	5.025	1.1875	A572-65
4	4.78	1.61	4.13	0.61	PC 8.8 - M20 (100)	17	PC 8.8 - M20 (100)	17.000	18.000	3.593	1.1875	A572-65
5	4.78	1.61	4.13	0.61	PC 8.8 - M20 (100)	17	PC 8.8 - M20 (100)	17.000	18.000	3.593	1.1875	A572-65
6	4.06	1.57	2.92	0.59	PC 8.8 - M20 (100)	14	PC 8.8 - M20 (100)	14.000	18.000	2.545	1.1875	A572-65
7	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	42	PC 8.8 - M20 (100)	42.000	19.000	6.563	1.1875	A572-65
8	6.5	1.25	8.125	0.625	PC 8.8 - M20 (100)	42	PC 8.8 - M20 (100)	42.000	19.000	6.563	1.1875	A572-65
9	6	1	6	0.5	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	16.000	4.750	1.1875	A572-65
10	1.25	5	6.25	2.5	Welded	n/a	Welded	n/a	0.750	6.250	0.0000	A572-65
11	1.25	4.5625	5.70313	2.28125	Welded	n/a	Welded	n/a	0.750	5.703	0.0000	A572-65

Connection Details for Custom Reinforcements

Reinforcement	End	# Bolts	N or X	Bolt Spacing (in)	Edge Dist (in)	Weld Grade (ksi)	Transverse (Horiz.) Weld Type	Horiz. Weld Length (in)	Horiz. Groove Depth (in)	Horiz. Groove Angle (deg)	Horiz. Fillet Size (in)	Vertical Weld Length (in)	Vertical Fillet Size (in)	Rev H Connection Capacity (kip)
TS1-5x1.25	Top	-	-	-	-	70	None	-	-	-	-	44.25	0.375	-
	Bottom	-	-	-	-	70	CJP Groove	10	0.625	45	0.625	-	-	-
TS2-4.5625x1.25	Top	-	-	-	-	70	None	-	-	-	-	107.25	0.375	-
	Bottom	-	-	-	-	70	CJP Groove	9.125	0.625	45	0.625	-	-	-

TNX Geometry Input

Increment (ft): 5 Export to TNX

	Section Height (ft)	Section Length (ft)	Lap Splice Length (ft)	Number of Sides	Top Diameter (in)	Bottom Diameter (in)	Wall Thickness (in)	Tapered Pole Grade	Weight Multiplier
1	180.5 - 175.5	5		18	17.620	18.569	0.25	A572-65	1.000
2	175.5 - 170.5	5		18	18.569	19.518	0.25	A572-65	1.000
3	170.5 - 165.5	5		18	19.518	20.467	0.25	A572-65	1.000
4	165.5 - 160.5	5		18	20.467	21.416	0.25	A572-65	1.000
5	160.5 - 155.5	5		18	21.416	22.365	0.25	A572-65	1.000
6	155.5 - 150.5	5		18	22.365	23.313	0.25	A572-65	1.000
7	150.5 - 145.5	5		18	23.313	24.262	0.25	A572-65	1.000
8	145.5 - 140.5	5		18	24.262	25.211	0.25	A572-65	1.000
9	140.5 - 137.794	6	3.294	18	25.211	26.350	0.25	A572-65	1.000
10	137.794 - 132.794	5		18	25.225	26.174	0.3125	A572-65	1.000
11	132.794 - 127.794	5		18	26.174	27.123	0.3125	A572-65	1.000
12	127.794 - 122.794	5		18	27.123	28.072	0.3125	A572-65	1.000
13	122.794 - 120.583	2.211		18	28.072	28.491	0.3125	A572-65	1.000
14	120.583 - 120.333	0.25		18	28.491	28.539	0.3125	A572-65	1.000
15	120.333 - 115.333	5		18	28.539	29.488	0.3125	A572-65	1.000
16	115.333 - 112.5	2.833		18	29.488	30.025	0.3125	A572-65	1.000
17	112.5 - 112.25	0.25		18	30.025	30.073	0.6375	A572-65	0.945
18	112.25 - 107.817	4.433		18	30.073	30.914	0.675	A572-65	0.938
19	107.817 - 107.567	0.25		18	30.914	30.961	0.675	A572-65	0.937
20	107.567 - 102.567	5		18	30.961	31.910	0.6625	A572-65	0.940
21	102.567 - 97.567	5		18	31.910	32.859	0.65	A572-65	0.943
22	97.567 - 93.311	8.567	4.311	18	32.859	34.485	0.6375	A572-65	0.950
23	93.311 - 88.311	5		18	33.042	33.991	0.7	A572-65	0.952
24	88.311 - 87.5	0.811		18	33.991	34.145	0.7	A572-65	0.950
25	87.5 - 87.25	0.25		18	34.145	34.192	0.375	A572-65	1.000
26	87.25 - 82.25	5		18	34.192	35.141	0.375	A572-65	1.000
27	82.25 - 80.833	1.417		18	35.141	35.410	0.375	A572-65	1.000
28	80.833 - 80.583	0.25		18	35.410	35.457	0.375	A572-65	1.000
29	80.583 - 75.583	5		18	35.457	36.406	0.375	A572-65	1.000
30	75.583 - 70.583	5		18	36.406	37.355	0.375	A572-65	1.000
31	70.583 - 65.583	5		18	37.355	38.304	0.375	A572-65	1.000
32	65.583 - 60.583	5		18	38.304	39.253	0.375	A572-65	1.000
33	60.583 - 55.583	5		18	39.253	40.202	0.375	A572-65	1.000
34	55.583 - 53.567	2.016		18	40.202	40.584	0.375	A572-65	1.000
35	53.567 - 53.317	0.25		18	40.584	40.632	0.375	A572-65	1.000
36	53.317 - 49.105	9.517	5.305	18	40.632	42.438	0.375	A572-65	1.000
37	49.105 - 42.8	6.305		18	40.681	41.878	0.7	A572-65	0.992
38	42.8 - 38.417	4.383		18	41.878	42.710	0.6875	A572-65	1.000
39	38.417 - 38.067	0.35		18	42.710	42.776	0.6875	A572-65	0.999
40	38.067 - 37.833	0.234		18	42.776	42.820	0.6875	A572-65	0.999
41	37.833 - 32.833	5		18	42.820	43.769	0.675	A572-65	1.007
42	32.833 - 27.833	5		18	43.769	44.718	0.675	A572-65	0.997
43	27.833 - 23.5	4.333		18	44.718	45.540	0.6625	A572-65	1.008
44	23.5 - 23.25	0.25		18	45.540	45.588	0.6625	A572-65	1.007
45	23.25 - 18.25	5		18	45.588	46.537	0.6625	A572-65	0.998
46	18.25 - 13.25	5		18	46.537	47.486	0.65	A572-65	1.008
47	13.25 - 8.25	5		18	47.486	48.434	0.65	A572-65	0.999
48	8.25 - 7.917	0.333		18	48.434	48.498	0.65	A572-65	0.999
49	7.917 - 7.667	0.25		18	48.498	48.545	0.7	A572-65	0.982
50	7.667 - 5.5	2.167		18	48.545	48.956	0.7	A572-65	0.978
51	5.5 - 5.25	0.25		18	48.956	49.004	0.4125	A572-65	1.089
52	5.25 - 3	2.25		18	49.004	49.431	0.425	A572-65	1.056
53	3 - 2.75	0.25		18	49.431	49.478	0.625	A572-65	0.979
54	2.75 - 0	2.75		18	49.478	50.000	0.625	A572-65	0.975

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	180.5 - 175.5	4.21	36.23	6.66
2	175.5 - 170.5	4.52	70.30	6.97
3	170.5 - 165.5	7.85	120.33	11.24
4	165.5 - 160.5	8.23	177.37	11.58
5	160.5 - 155.5	11.22	252.14	15.22
6	155.5 - 150.5	11.76	328.99	15.53
7	150.5 - 145.5	12.32	407.33	15.82
8	145.5 - 140.5	15.72	488.70	19.31
9	140.5 - 137.794	16.07	541.14	19.47
10	137.794 - 132.794	17.04	639.37	19.84
11	132.794 - 127.794	17.83	739.16	20.11
12	127.794 - 122.794	18.63	840.37	20.39
13	122.794 - 120.583	18.99	885.57	20.52
14	120.583 - 120.333	19.05	890.70	20.52
15	120.333 - 115.333	19.88	993.97	20.81
16	115.333 - 112.5	20.36	1053.09	20.97
17	112.5 - 112.25	20.45	1058.33	20.97
18	112.25 - 107.817	21.69	1152.08	21.34
19	107.817 - 107.567	21.77	1157.42	21.35
20	107.567 - 102.567	23.19	1265.20	21.77
21	102.567 - 97.567	24.64	1375.01	22.17
22	97.567 - 93.311	25.89	1470.06	22.51
23	93.311 - 88.311	28.59	1583.99	23.06
24	88.311 - 87.5	28.85	1602.71	23.12
25	87.5 - 87.25	28.91	1608.49	23.13
26	87.25 - 82.25	30.00	1724.77	23.40
27	82.25 - 80.833	30.31	1757.95	23.48
28	80.833 - 80.583	30.39	1763.82	23.48
29	80.583 - 75.583	31.58	1881.92	23.82
30	75.583 - 70.583	32.74	2001.55	24.07
31	70.583 - 65.583	33.93	2122.36	24.30
32	65.583 - 60.583	35.14	2244.33	24.53
33	60.583 - 55.583	36.37	2367.40	24.74
34	55.583 - 53.567	36.88	2417.33	24.83
35	53.567 - 53.317	36.95	2423.53	24.82
36	53.317 - 49.105	38.01	2528.41	25.01
37	49.105 - 42.8	41.63	2687.52	25.48
38	42.8 - 38.417	43.45	2799.69	25.73
39	38.417 - 38.067	43.60	2808.69	25.74
40	38.067 - 37.833	43.70	2814.71	25.75
41	37.833 - 32.833	45.79	2944.13	26.03
42	32.833 - 27.833	47.91	3074.84	26.28
43	27.833 - 23.5	49.77	3189.10	26.49
44	23.5 - 23.25	49.89	3195.73	26.49
45	23.25 - 18.25	52.05	3328.77	26.74
46	18.25 - 13.25	54.24	3463.13	27.04
47	13.25 - 8.25	56.46	3598.83	27.27
48	8.25 - 7.917	56.62	3607.91	27.28
49	7.917 - 7.667	56.74	3614.73	27.29
50	7.667 - 5.5	57.75	3673.96	27.41
51	5.5 - 5.25	57.84	3680.81	27.40
52	5.25 - 3	58.59	3742.52	27.49
53	3 - 2.75	58.71	3749.39	27.47
54	2.75 - 0	59.89	3825.09	27.62

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
180.5 - 175.5	Pole	TP18.569x17.62x0.25	Pole	9.1%	Pass
175.5 - 170.5	Pole	TP19.518x18.569x0.25	Pole	15.5%	Pass
170.5 - 165.5	Pole	TP20.467x19.518x0.25	Pole	24.2%	Pass
165.5 - 160.5	Pole	TP21.416x20.467x0.25	Pole	32.2%	Pass
160.5 - 155.5	Pole	TP22.365x21.416x0.25	Pole	41.9%	Pass
155.5 - 150.5	Pole	TP23.313x22.365x0.25	Pole	50.0%	Pass
150.5 - 145.5	Pole	TP24.262x23.313x0.25	Pole	57.0%	Pass
145.5 - 140.5	Pole	TP25.211x24.262x0.25	Pole	64.1%	Pass
140.5 - 137.79	Pole	TP26.35x25.211x0.25	Pole	68.4%	Pass
137.79 - 132.79	Pole	TP26.174x25.225x0.3125	Pole	61.6%	Pass
132.79 - 127.79	Pole	TP27.123x26.174x0.3125	Pole	66.1%	Pass
127.79 - 122.79	Pole	TP28.072x27.123x0.3125	Pole	70.0%	Pass
122.79 - 120.58	Pole	TP28.491x28.072x0.3125	Pole	71.6%	Pass
120.58 - 120.33	Pole	TP28.539x28.491x0.3125	Pole	71.7%	Pass
120.33 - 115.33	Pole	TP29.488x28.539x0.3125	Pole	74.8%	Pass
115.33 - 112.5	Pole	TP30.025x29.488x0.3125	Pole	76.4%	Pass
112.5 - 112.25	Pole + Reinf.	TP30.073x30.025x0.6375	Reinf. 9 Tension Rupture	60.8%	Pass
112.25 - 107.82	Pole + Reinf.	TP30.914x30.073x0.675	Reinf. 9 Tension Rupture	59.5%	Pass
107.82 - 107.57	Pole + Reinf.	TP30.961x30.914x0.675	Reinf. 9 Tension Rupture	59.6%	Pass
107.57 - 102.57	Pole + Reinf.	TP31.91x30.961x0.6625	Reinf. 9 Tension Rupture	62.3%	Pass
102.57 - 97.57	Pole + Reinf.	TP32.859x31.91x0.65	Reinf. 9 Tension Rupture	64.9%	Pass
97.57 - 93.31	Pole + Reinf.	TP34.485x32.859x0.6375	Reinf. 9 Tension Rupture	66.9%	Pass
93.31 - 88.31	Pole + Reinf.	TP33.991x33.042x0.7	Reinf. 9 Tension Rupture	64.7%	Pass
88.31 - 87.5	Pole + Reinf.	TP34.145x33.991x0.7	Reinf. 9 Tension Rupture	65.0%	Pass
87.5 - 87.25	Pole	TP34.192x34.145x0.375	Pole	75.1%	Pass
87.25 - 82.25	Pole	TP35.141x34.192x0.375	Pole	76.2%	Pass
82.25 - 80.83	Pole	TP35.41x35.141x0.375	Pole	76.5%	Pass
80.83 - 80.58	Pole	TP35.457x35.41x0.375	Pole	76.5%	Pass
80.58 - 75.58	Pole	TP36.406x35.457x0.375	Pole	77.6%	Pass
75.58 - 70.58	Pole	TP37.355x36.406x0.375	Pole	78.8%	Pass
70.58 - 65.58	Pole	TP38.304x37.355x0.375	Pole	79.9%	Pass
65.58 - 60.58	Pole	TP39.253x38.304x0.375	Pole	80.9%	Pass
60.58 - 55.58	Pole	TP40.202x39.253x0.375	Pole	81.9%	Pass
55.58 - 53.57	Pole	TP40.584x40.202x0.375	Pole	82.2%	Pass
53.57 - 53.32	Pole	TP40.632x40.584x0.375	Pole	82.3%	Pass
53.32 - 49.11	Pole	TP42.438x40.632x0.375	Pole	83.0%	Pass
49.11 - 42.8	Pole + Reinf.	TP41.878x40.681x0.7	Reinf. 8 Tension Rupture	68.8%	Pass
42.8 - 38.42	Pole + Reinf.	TP42.71x41.878x0.6875	Reinf. 8 Tension Rupture	69.5%	Pass
38.42 - 38.07	Pole + Reinf.	TP42.776x42.71x0.6875	Reinf. 8 Tension Rupture	69.6%	Pass
38.07 - 37.83	Pole + Reinf.	TP42.82x42.776x0.6875	Reinf. 8 Tension Rupture	69.6%	Pass
37.83 - 32.83	Pole + Reinf.	TP43.769x42.82x0.675	Reinf. 8 Tension Rupture	70.4%	Pass
32.83 - 27.83	Pole + Reinf.	TP44.718x43.769x0.675	Reinf. 8 Tension Rupture	71.1%	Pass
27.83 - 23.5	Pole + Reinf.	TP45.54x44.718x0.6625	Reinf. 8 Tension Rupture	71.7%	Pass
23.5 - 23.25	Pole + Reinf.	TP45.588x45.54x0.6625	Reinf. 7 Tension Rupture	71.8%	Pass
23.25 - 18.25	Pole + Reinf.	TP46.537x45.588x0.6625	Reinf. 7 Tension Rupture	72.4%	Pass
18.25 - 13.25	Pole + Reinf.	TP47.486x46.537x0.65	Reinf. 7 Tension Rupture	73.0%	Pass
13.25 - 8.25	Pole + Reinf.	TP48.434x47.486x0.65	Reinf. 7 Tension Rupture	73.5%	Pass
8.25 - 7.92	Pole + Reinf.	TP48.498x48.434x0.65	Reinf. 7 Tension Rupture	73.5%	Pass
7.92 - 7.67	Pole + Reinf.	TP48.545x48.498x0.7	Reinf. 1 Tension Rupture	69.5%	Pass
7.67 - 5.5	Pole + Reinf.	TP48.956x48.545x0.7	Reinf. 1 Tension Rupture	69.7%	Pass
5.5 - 5.25	Pole + Reinf.	TP49.004x48.956x0.4125	Pole	85.7%	Pass
5.25 - 3	Pole + Reinf.	TP49.431x49.004x0.425	Pole	85.9%	Pass
3 - 2.75	Pole + Reinf.	TP49.478x49.431x0.625	Reinf. 11 Compression	70.6%	Pass
2.75 - 0	Pole + Reinf.	TP50x49.478x0.625	Reinf. 11 Compression	70.8%	Pass
				Summary	
			Pole	85.9%	Pass
			Reinforcement	79.1%	Pass
			Overall	85.9%	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
180.5 - 175.5	616	n/a	616	14.54	n/a	14.54	9.1%											
175.5 - 170.5	717	n/a	717	15.29	n/a	15.29	15.5%											
170.5 - 165.5	828	n/a	828	16.04	n/a	16.04	24.2%											
165.5 - 160.5	950	n/a	950	16.79	n/a	16.79	32.2%											
160.5 - 155.5	1084	n/a	1084	17.55	n/a	17.55	41.9%											
155.5 - 150.5	1229	n/a	1229	18.30	n/a	18.30	50.0%											
150.5 - 145.5	1388	n/a	1388	19.05	n/a	19.05	57.0%											
145.5 - 140.5	1559	n/a	1559	19.81	n/a	19.81	64.1%											
140.5 - 137.79	1657	n/a	1657	20.21	n/a	20.21	68.4%											
137.79 - 132.79	2167	n/a	2167	25.65	n/a	25.65	61.6%											
132.79 - 127.79	2414	n/a	2414	26.59	n/a	26.59	66.1%											
127.79 - 122.79	2680	n/a	2680	27.53	n/a	27.53	70.0%											
122.79 - 120.58	2803	n/a	2803	27.95	n/a	27.95	71.6%											
120.58 - 120.33	2817	n/a	2817	28.00	n/a	28.00	71.7%											
120.33 - 115.33	3111	n/a	3111	28.94	n/a	28.94	74.8%											
115.33 - 112.5	3286	n/a	3286	29.47	n/a	29.47	76.4%											
112.5 - 112.25	3302	3272	6574	29.52	26.76	56.28	37.9%						58.5%			60.8%		
112.25 - 107.82	3590	3925	7515	30.35	30.39	60.74	37.4%					56.9%				59.5%		
107.82 - 107.57	3607	3937	7543	30.40	30.39	60.79	37.5%					57.0%				59.6%		
107.57 - 102.57	3952	4171	8123	31.34	30.39	61.73	39.5%					59.6%				62.3%		
102.57 - 97.57	4319	4413	8731	32.28	30.39	62.67	41.5%					62.0%				64.9%		
97.57 - 93.31	4648	4623	9272	33.08	30.39	63.47	43.0%					63.9%				66.9%		
93.31 - 88.31	5710	4709	10420	40.01	30.39	70.40	40.5%					61.8%				64.7%		
88.31 - 87.5	5789	4750	10540	40.19	30.39	70.58	40.7%					62.1%				65.0%		
87.5 - 87.25	5813	n/a	5813	40.25	n/a	40.25	75.1%											
87.25 - 82.25	6317	n/a	6317	41.38	n/a	41.38	76.2%											
82.25 - 80.83	6464	n/a	6464	41.70	n/a	41.70	76.5%											
80.83 - 80.58	6491	n/a	6491	41.76	n/a	41.76	76.5%											
80.58 - 75.58	7032	n/a	7032	42.88	n/a	42.88	77.6%											
75.58 - 70.58	7602	n/a	7602	44.01	n/a	44.01	78.8%											
70.58 - 65.58	8202	n/a	8202	45.14	n/a	45.14	79.9%											
65.58 - 60.58	8834	n/a	8834	46.27	n/a	46.27	80.9%											
60.58 - 55.58	9496	n/a	9496	47.40	n/a	47.40	81.9%											
55.58 - 53.57	9773	n/a	9773	47.86	n/a	47.86	82.2%											
53.57 - 53.32	9807	n/a	9807	47.91	n/a	47.91	82.3%											
53.32 - 49.11	10403	n/a	10403	48.87	n/a	48.87	83.0%											
49.11 - 42.8	10764	8689	19454	49.40	41.33	90.72	49.0%			68.7%					68.8%			
42.8 - 38.42	11424	9025	20449	50.39	41.33	91.71	49.8%			69.3%					69.5%			
38.42 - 38.07	11478	9052	20530	50.47	41.33	91.79	49.9%	69.4%	65.8%						69.6%			
38.07 - 37.83	11514	9070	20584	50.52	41.33	91.84	49.9%	69.4%	65.8%						69.6%			
37.83 - 32.83	12303	9461	21764	51.65	41.33	92.97	50.8%	70.1%	66.5%						70.4%			
32.83 - 27.83	13127	9860	22988	52.78	41.33	94.10	51.7%	70.8%	67.2%						71.1%			
27.83 - 23.5	13871	10213	24084	53.76	41.33	95.08	52.4%	71.3%	67.7%						71.7%			
23.5 - 23.25	13915	10234	24149	53.81	41.33	95.14	52.5%	71.3%	67.8%					71.8%				
23.25 - 18.25	14809	10649	25458	54.94	41.33	96.27	53.3%	71.9%	68.4%					72.4%				
18.25 - 13.25	15740	11073	26813	56.07	41.33	97.40	54.1%	72.4%	68.9%					73.0%				
13.25 - 8.25	16710	11505	28215	57.20	41.33	98.53	54.8%	72.9%	69.4%					73.5%				
8.25 - 7.92	16776	11534	28310	57.28	41.33	98.60	54.9%	72.9%	69.4%					73.5%				
7.92 - 7.67	16966	14172	31138	57.33	47.08	104.41	51.6%	69.5%						69.0%				57.3%
7.67 - 5.5	17402	14404	31806	57.82	47.08	104.90	51.9%	69.7%						69.3%				57.5%
5.5 - 5.25	17357	1694	19052	57.88	11.41	69.28	85.7%											79.0%
5.25 - 3	17968	2273	20241	58.39	11.41	69.79	85.9%											79.1%
3 - 2.75	17836	11654	29491	58.44	36.41	94.85	56.6%										65.1%	70.6%
2.75 - 0	18410	11877	30287	59.06	36.41	95.47	57.0%										65.3%	70.8%

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

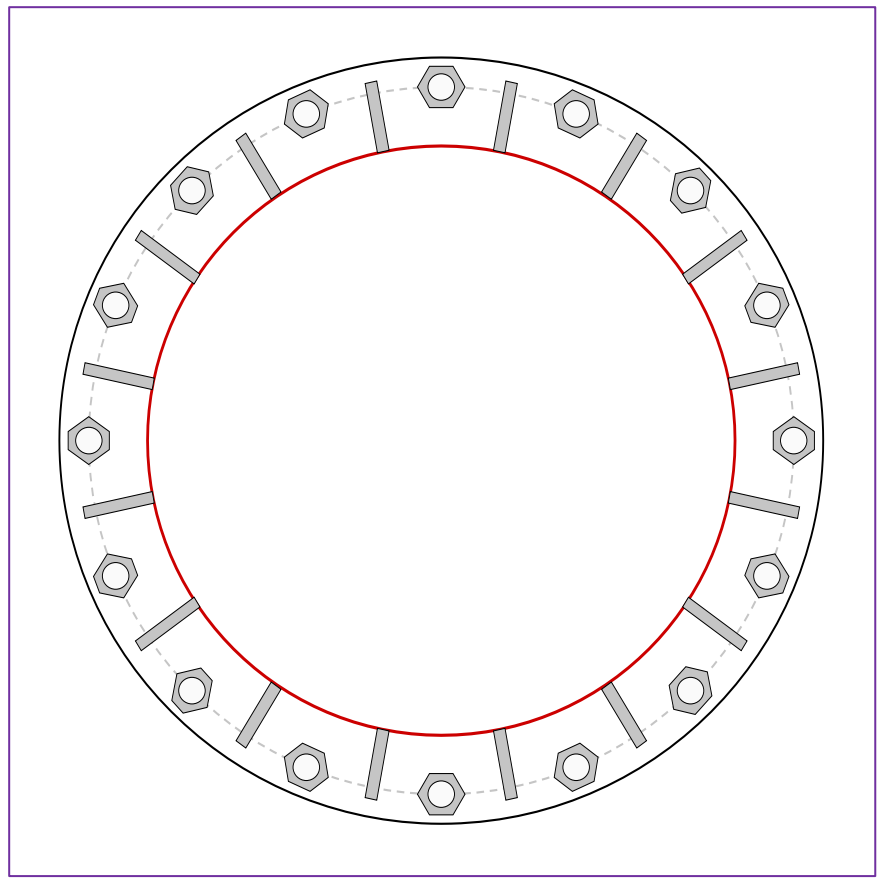
Monopole Base Plate Connection

Site Info	
BU #	876375
Site Name	ANTERBURY / LEMIRE,
Order #	584633, Rev. 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	1.625

Applied Loads	
Moment (kip-ft)	3825.09
Axial Force (kips)	59.89
Shear Force (kips)	27.62

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

(16) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 60" BC

Base Plate Data

65" OD x 2" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Stiffener Data

(16) 18"H x 6"W x 1"T, Notch: 0.75"
plate: Fy= 50 ksi ; weld: Fy= 70 ksi
horiz. weld: 0.5" groove, 45° dbl bevel, 0.5" fillet
vert. weld: 0.375" fillet

Pole Data

50" x 0.375" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary		*(units of kips, kip-in)*
Pu_t = 187.4	ϕPn_t = 243.75	**Stress Rating**
Vu = 1.73	ϕVn = 149.1	**73.2%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary		
Max Stress (ksi):	33.05	(Roark's Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**69.9%**	**Pass**

Stiffener Summary		
Horizontal Weld:	**58.5%**	**Pass**
Vertical Weld:	**49.9%**	**Pass**
Plate Flexure+Shear:	**15.1%**	**Pass**
Plate Tension+Shear:	**59.0%**	**Pass**
Plate Compression:	**59.5%**	**Pass**

Pole Summary		
Punching Shear:	**13.5%**	**Pass**

Pier and Pad Foundation

BU # :	876375
Site Name:	CANTERBURY / LE
App. Number:	584633, Rev. 0

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions

Compression, P_{comp}:	59.9	kips
Base Shear, Vu_comp:	27.59	kips
Moment, M_u:	3825.09	ft-kips
Tower Height, **H**:	180.5	ft
BP Dist. Above Fdn, bp_{dist}:	3.875	in

Pier Properties

Pier Shape:	Square	
Pier Diameter, **dpier**:	6.5	ft
Ext. Above Grade, **E**:	1	ft
Pier Rebar Size, **Sc**:	8	
Pier Rebar Quantity, **mc**:	39	
Pier Tie/Spiral Size, **St**:	4	
Pier Tie/Spiral Quantity, **mt**:	4	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties

Depth, **D**:	5	ft
Pad Width, W_1:	24.5	ft
Pad Thickness, **T**:	3	ft
Pad Rebar Size (Top dir.2), Sp_{top2}:	8	
Pad Rebar Quantity (Top dir. 2), mp_{top2}:	28	
Pad Rebar Size (Bottom dir. 2), Sp_2:	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	42	
Pad Clear Cover, cc_{pad}:	3	in

Material Properties

Rebar Grade, **Fy**:	60	ksi
Concrete Compressive Strength, **F'c**:	4	ksi
Dry Concrete Density, δ**c**:	150	pcf

Soil Properties

Total Soil Unit Weight, γ:	113	pcf
Ultimate Net Bearing, Qnet:	30.000	ksf
Cohesion, **Cu**:	0.000	ksf
Friction Angle, φ:	31	degrees
SPT Blow Count, N_{blows}:		
Base Friction, μ:	0.45	
Neglected Depth, **N**:	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, **gw**:	N/A	ft

<--Toggle between Gross and Net

Foundation Analysis Checks

	Capacity	Demand	Rating*	Check
Lateral (Sliding) (kips)	186.41	27.59	**14.1%**	**Pass**
Bearing Pressure (ksf)	22.92	3.28	**14.3%**	**Pass**
*Overturning (kip*ft)*	5098.32	3999.54	**78.4%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	4667.86	3907.86	**79.7%**	**Pass**
Pier Compression (kip)	26891.28	82.72	**0.3%**	**Pass**
*Pad Flexure (kip*ft)*	4554.58	2035.29	**42.6%**	**Pass**
Pad Shear - 1-way (kips)	878.58	304.82	**33.0%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.190	0.000	**0.0%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	4800.18	2344.72	**46.5%**	**Pass**

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

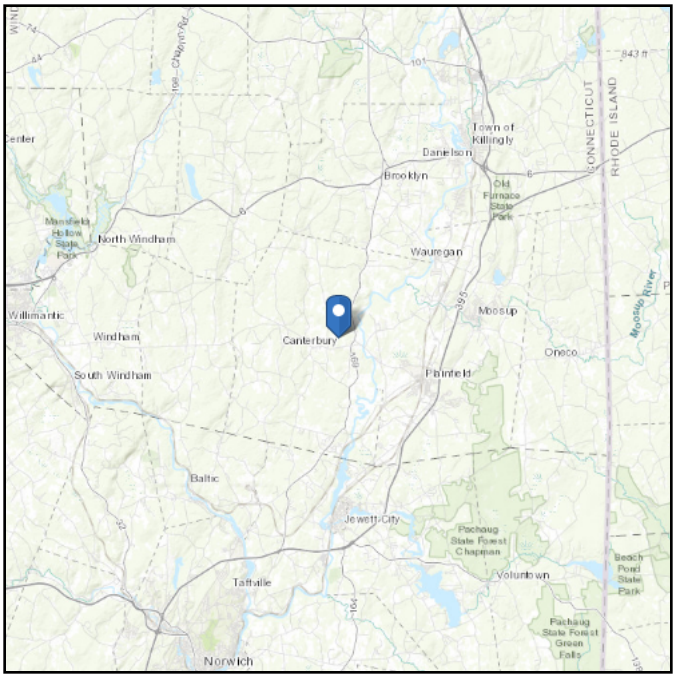
Structural Rating*:	**79.7%**
Soil Rating*:	**78.4%**

Version 4.1.1

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Elevation:**	338.74 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.701986
Soil Class:	D - Default (see Section 11.4.3)	**Longitude:**	-71.980586



Wind

Results:

Wind Speed:	123 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	95 Vmph
100-year MRI	100 Vmph

Data Source:	ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed:	Wed Sep 15 2021

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

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

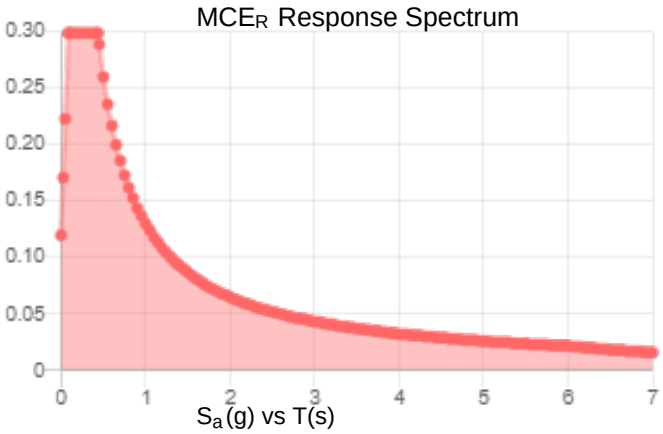
Seismic

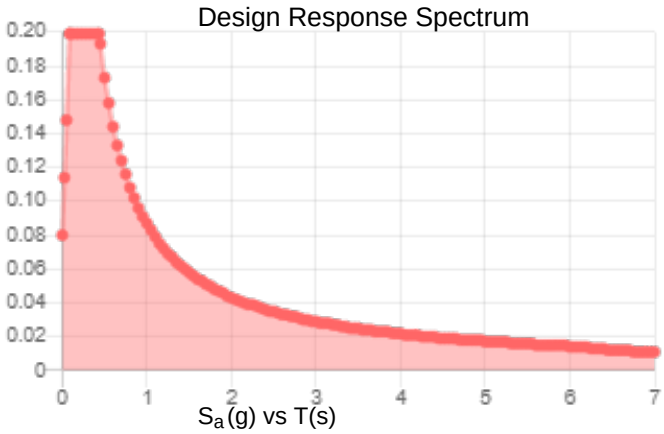
Site Soil Class: D - Default (see Section 11.4.3)

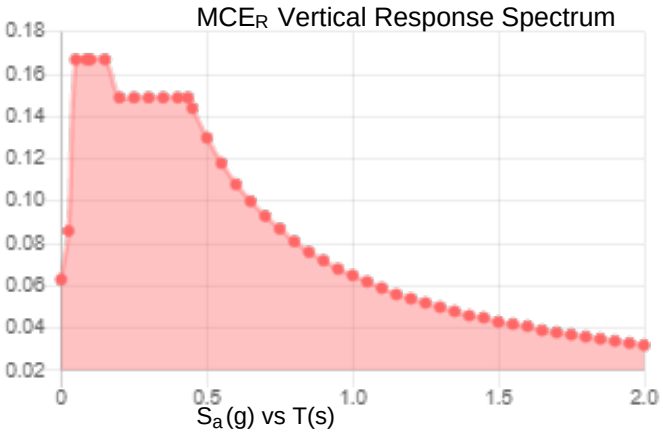
Results:

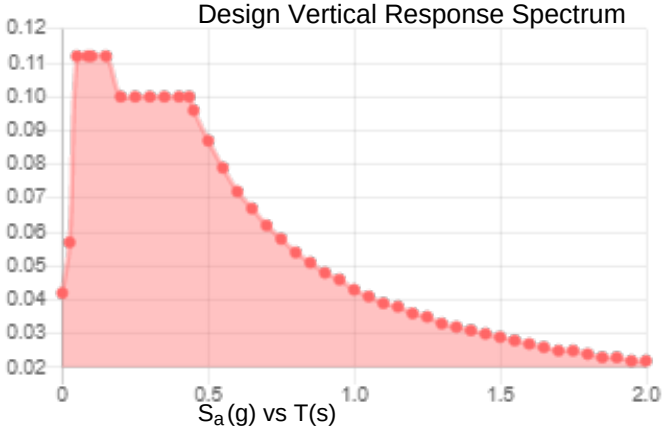
S_S :	0.187	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.101
F_v :	2.4	PGA_M :	0.162
S_{MS} :	0.299	F_{PGA} :	1.597
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.199	C_v :	0.7

Seismic Design Category B









Data Accessed: Wed Sep 15 2021

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Wed Sep 15 2021

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

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

Date: **September 8, 2021**

GPD Engineering and Architecture
Professional Corporation
520 South Main Street, Suite 2531
Akron, Ohio 44311
(216) 927-8663
CrownMA@gpdgroup.com

Subject:	**Mount Analysis – Conditional Passing Report**	
Carrier Designation:	***T-Mobile* Equipment Change-Out**	
	Carrier Site Number:	CTNL154A
	Carrier Site Name:	ctnl154a_crown_876375_canterbury_lemire
Crown Castle Designation:	**BU Number:**	876375
	Site Name:	CANTERBURY / LEMIRE
	JDE Job Number:	684638
	Order Number:	584633 Rev. 0
Engineering Firm Designation:	**GPD Report Designation:**	2021777.876375.02
Site Data:	**53 Westminster Rd., Canterbury, Windham County, CT 6331** **Latitude 41° 42' 7.15" Longitude -71° 58' 50.11"**	
Structure Information:	**Tower Height & Type:**	**180.0 ft Monopole Tower**
	Mount Elevation:	**180.0 ft**
	Mount Type:	**10.7 ft Platform Mount**

GPD is pleased to submit this **"Mount Analysis – Conditional Passing Report"** to determine the structural integrity of T-Mobile'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:

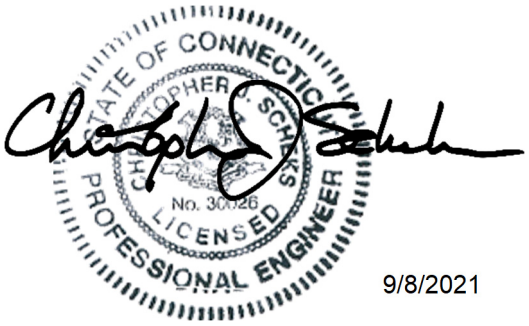
Platform Mount **Sufficient – 83.5%***

***The mount has sufficient capacity once the loading changes, as described in Section 4.1 Recommendations of this report, are completed.**

This analysis utilizes an ultimate 3-second gust wind speed of 130 mph as required by the 2015 International Building Code. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Mount analysis prepared by: Eric Nieto

Respectfully Submitted by:



Christopher J. Scheks, P.E.
Connecticut #: 0030026

9/8/2021

TABLE OF CONTENTS

1) INTRODUCTION

This is an existing 3-sector 10.7' Platform Mount. Mount geometry was obtained from a previous mount analysis by Hudson Design Group, LLC (Project #: 3876279 Rev. 1, dated 6/15/2018), site photos, and experience with similar mounts.

The mount has been modified per the mount analysis prepared by Hudson Design Group, LLC (Project #: 3876279 Rev. 1, dated 6/15/2018). Reinforcement consists of adding a support rail kit below the lower face horizontal and a v-style reinforcement kit between the new support rail and tower shaft.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	130 mph
Exposure Category:	B
Topographic Factor at Base:	1
Topographic Factor at Mount:	1
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lb
Man Live Load at Mount Pipes:	500 lb

Table 1 - Proposed Equipment Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Mount / Modification Details
180.0	183.0	3	Ericsson	AIR6449 B41_T-MOBILE	10.7 ft. Platform Mount
		3	RFS/Celwave	APXVAALL24_43-U-NA20_TMO	
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO	
		3	Ericsson	Radio 4480_TMOV2	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
CCI Application	Crown Order Number 584633 Rev. 0	-	CCI
RF Data Sheet	Site ID #: CTNL154A, Draft v.1, updated 7/9/2021	-	CCI
Mount Analysis	Hudson Design Group, LLC Project #: 3876279 Rev. 1, dated 6/15/2018	7615478	CCI
Previous Mount Analysis	GPD Project #: 2021777.876375.01, dated 2/4/2021	9566991	CCI

3.1) Analysis Method

RISA-3D Edition (Version 17.0.2), 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.

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

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

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Table 1 and the referenced drawings.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) This analysis assumes all information reference in Table 2 is current and correct.
5) The analysis will be required to be revised if the existing conditions in the field differ from those shown in the above-referenced documents or assumed in this analysis. No allowance was made for any damaged, missing, or rusted members.
6) Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
7) Portions of the mount were modeled from site photos. Member information and dimensions not provided have been assumed based on previous experience with similar mounts. No guarantee can be made as to the accuracy of these assumptions without a complete mount mapping.
8) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle	ASTM A36 (GR 36)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

This analysis may be affected if any assumptions are not valid or have been made in error. GPD should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 3 - Mount Component Stresses vs. Capacity (Platform Mount)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,3	Platform Channel	M83	180.0	44.0	Pass
	Platform Inner Bracing	M2		32.0	Pass
	Support Rail	M37		28.5	Pass
	Support Rail Corner Pipe	M39		29.0	Pass
	Pipe Mount	B3		83.5	Pass
	Ladder Support Bracing	M2		32.0	Pass
	Mod Support Rail	M43		26.1	Pass
	Mod Support Rail Corner Pipe	M52A		5.4	Pass
	Mod V-Kit	M48		9.8	Pass
2,3	Mount to Tower Connection	-		18.4	Pass
	Mod V-Kit to Tower Connection	-		3.2	Pass

Structure Rating (max from all components) =	**83.5%[3]**

Notes:
1) See additional documentation in "Appendix C - Software Analysis Output" for calculations supporting the % capacity consumed.
2) See additional documentation in "Appendix D - Additional Calculations" for calculations supporting the % capacity consumed.
3) Ratings per TIA-222-H section 15.5.

4.1) Recommendations

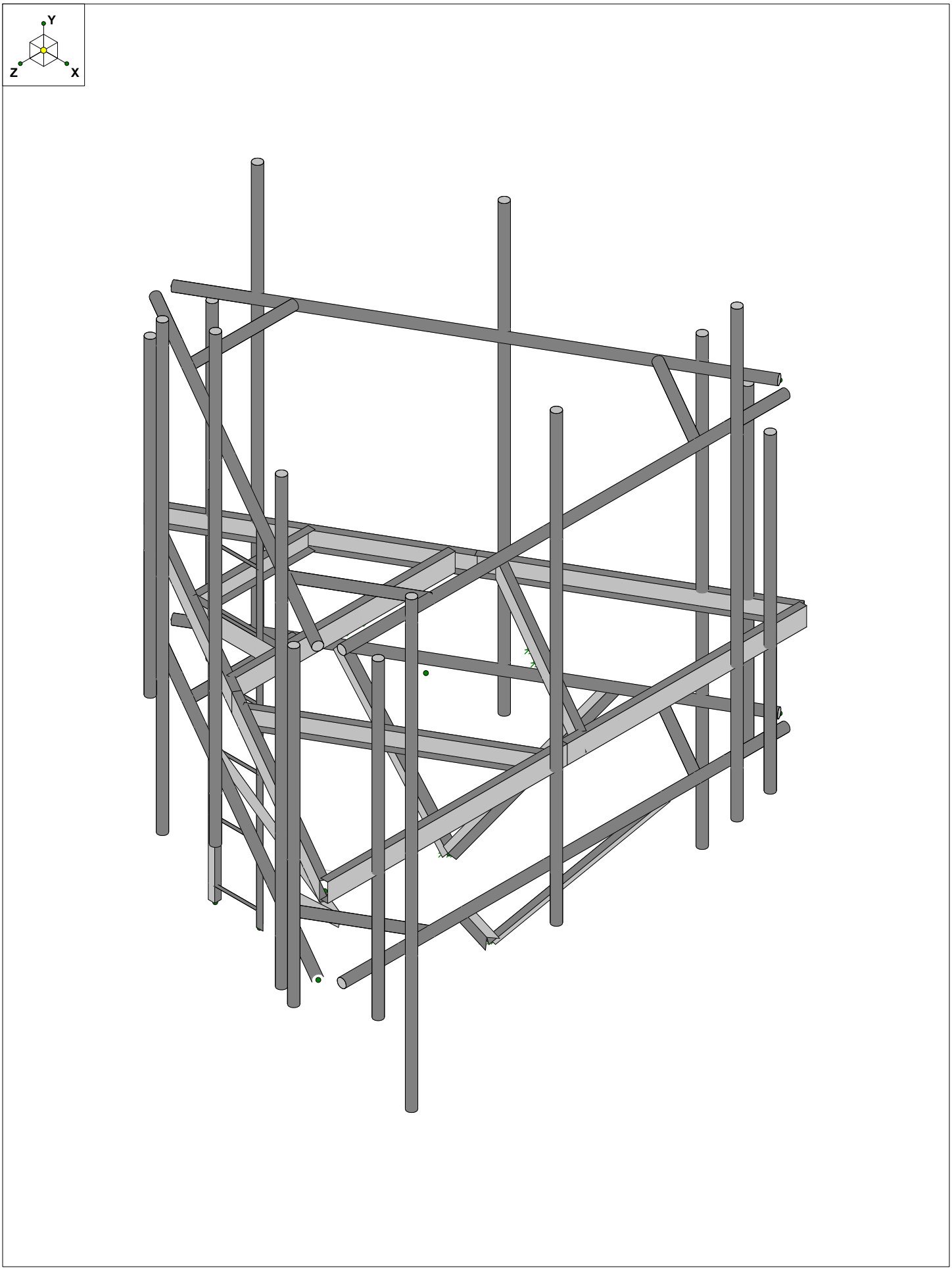
The mount has sufficient capacity to carry the proposed loading configuration. In order for the results of the analysis to be considered valid, the loading modifications listed below must be completed.

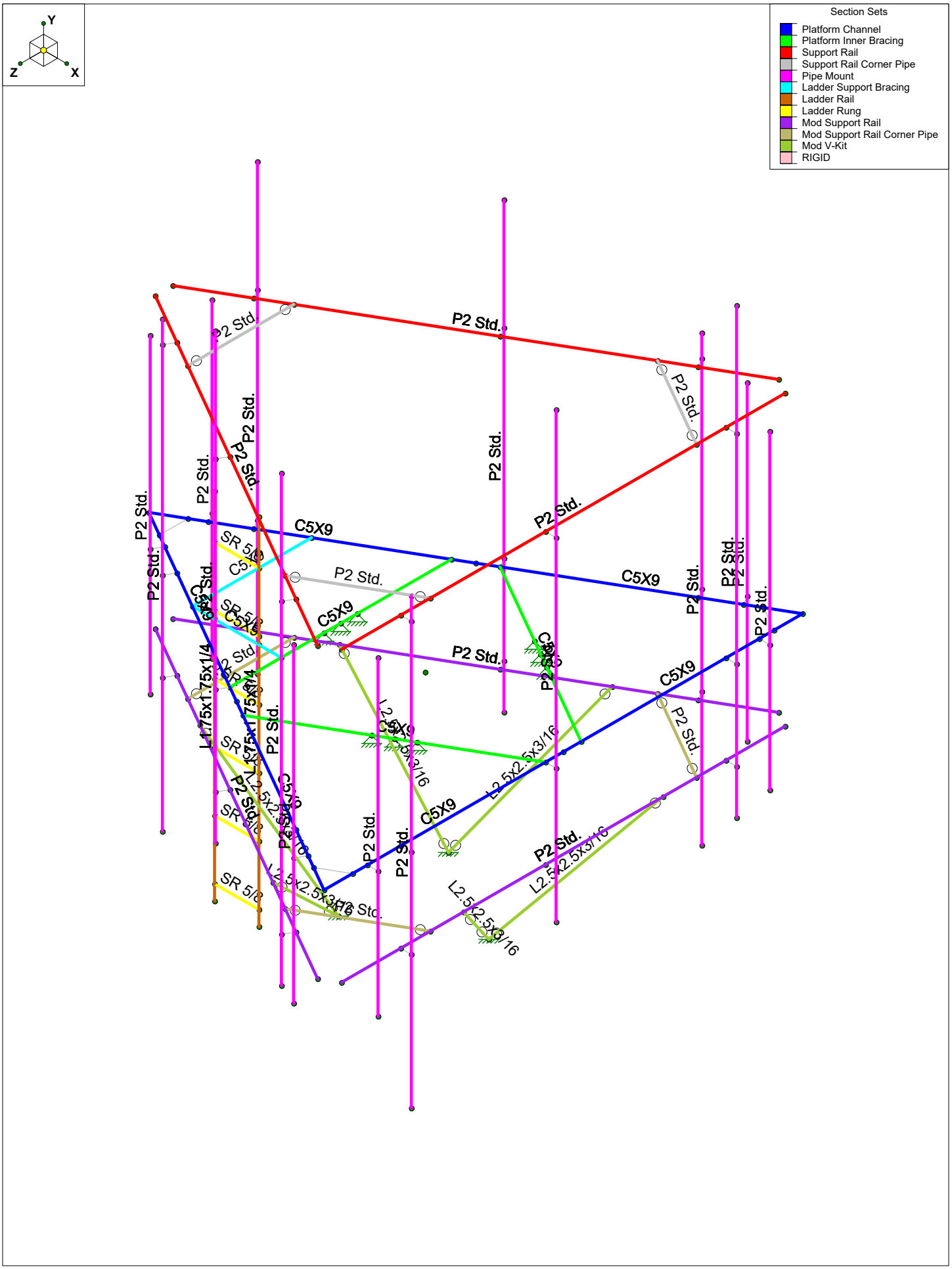
1. Due to antenna elevations, relocate existing 10’-0”± mount pipes in positions 2 and 3 vertically so that the distance from the top of the pipe to the support rail is 2’-6”. Typical for all sectors.
2. Replace existing hardware as required for mount pipe relocation.

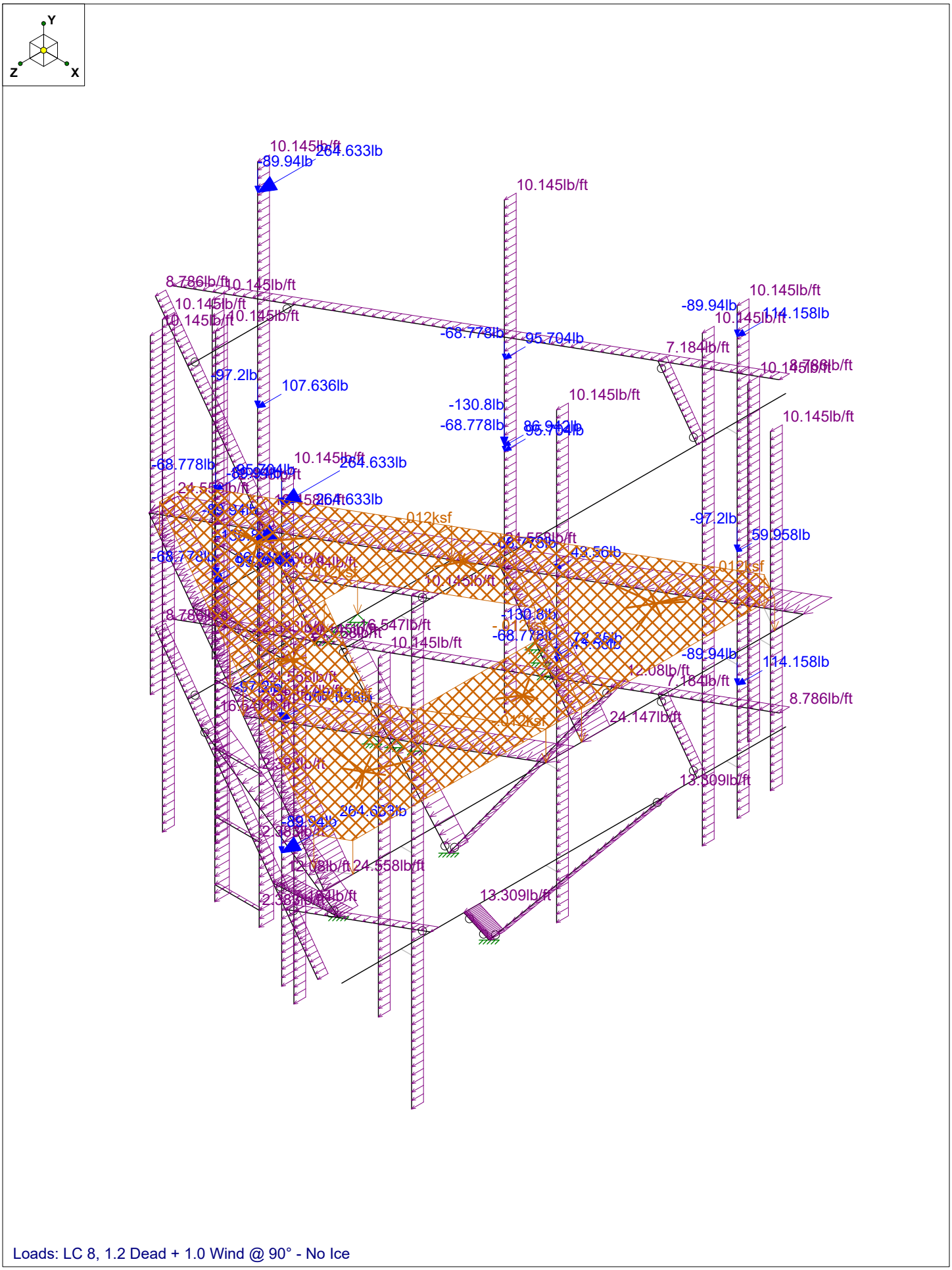
No structural modifications are required at this time, provided that the above-listed changes are implemented.

APPENDIX A

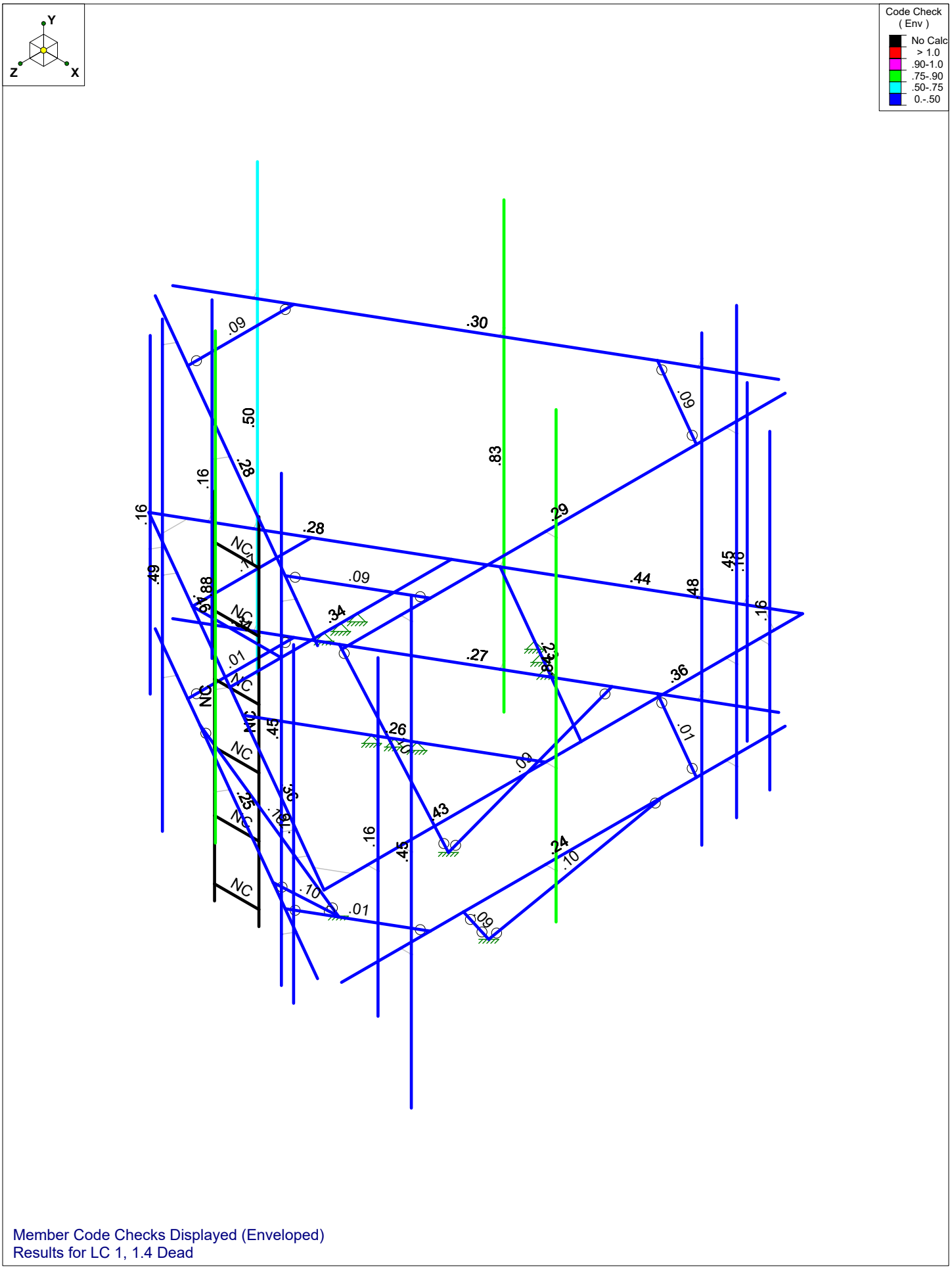
WIRE FRAME AND RENDERED MODELS


Y
Z
X

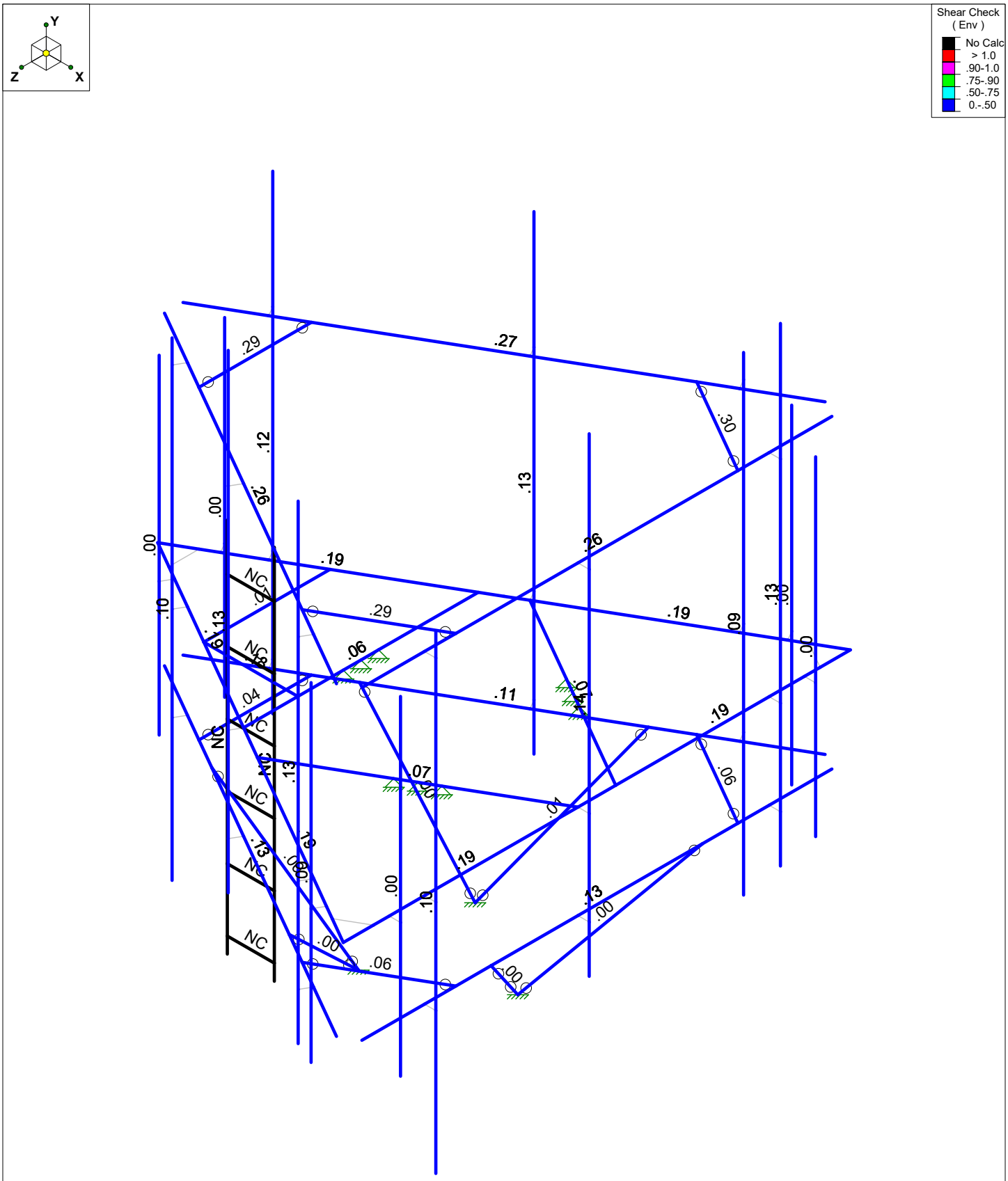

Y
Z
X
Section Sets
Platform Channel
Platform Inner Bracing
Support Rail
Support Rail Corner Pipe
Pipe Mount
Ladder Support Bracing
Ladder Rail
Ladder Rung
Mod Support Rail
Mod Support Rail Corner Pipe
Mod V-Kit
RIGID
P2 Std.
C5X9
SR 5/8
L2.5x2.5x3/16
L1.75x1.75x1/4



Loads: LC 8, 1.2 Dead + 1.0 Wind @ 90° - No Ice



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



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

APPENDIX B

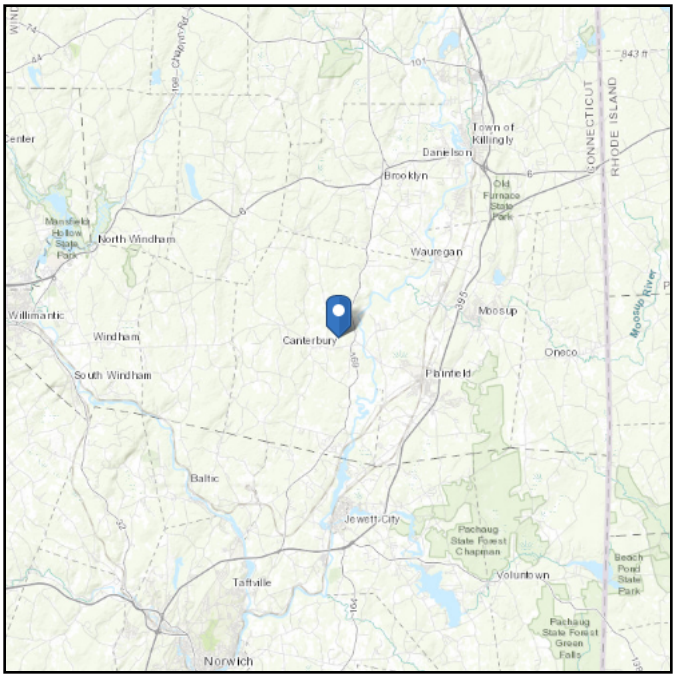
SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 338.74 ft (NAVD 88)
Latitude: 41.701986
Longitude: -71.980586



Wind

Results:

Wind Speed:	130 Vmph
10-year MRI	79 Vmph
25-year MRI	89 Vmph
50-year MRI	97 Vmph
100-year MRI	106 Vmph

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

Date Accessed: Wed Sep 08 2021

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.

Ice

Results:

Ice Thickness:	0.75 in.
Concurrent Temperature:	15 F
Gust Speed:	50 mph
Data Source:	Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8
Date Accessed:	Wed Sep 08 2021

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.

TIA-222-H: Mount Analysis Wind Loading
876375 - CANTERBURY / LEMIRE
2021777.876375.02

Structure Information		
Structure Type:	Monopole	
Structure Height:	180	ft
z (Mount Centerline) =	180	ft
Gh (Mount Gust Effect Factor) =	1.00	
Risk Category:	II	

Code Specifications		
TIA/EIA Code:	H	
Ultimate Wind Speed (No Ice) =	130	mph (3-s gust)
Ultimate Wind Speed (With Ice) =	50	mph (3-s gust)
Ice Thickness	1.5	in
Exposure Category	B	
Tower Base Elevation (AMSL)	338	ft

Topographic Inputs	
Topographic Feature:	N/A

Section Sets										No Ice	Ice Output	
Mount Components	Member Type	Length (in)	Side (Longest seeing wind) (in)	Other Side (in)	Calculated Dc, for ice weight (in)	Dc, for ice weight (in)	Area Type (Round or Flat)	K_a	User's Wind Multiplier	Normal Wind Force (lb/ft)*	Normal Ice Wind Force (lb/ft)*	Ice Weight (lb/ft)*
Platform Channel	Square/Rect.	64.000	5	1.89		5.35	Flat	0.90	1.00	31.51	5.83	15.47
Platform Inner Bracing	Square/Rect.	60.000	5	1.89		5.35	Flat	0.90	1.00	30.98	5.76	15.47
Support Rail	Pipe	120.000	2.375	2.375		2.38	Round	0.90	1.00	11.27	3.80	9.02
Support Rail Corner Pipe	Pipe	36.000	2.375	2.375		2.38	Round	0.90	1.00	9.22	2.70	9.02
Pipe Mount	Pipe	120.000	2.375	2.375		2.38	Round	0.90	1.00	11.27	3.80	9.02
Ladder Support Bracing	Square/Rect.	34.000	5	1.89		5.35	Flat	0.90	1.00	27.51	5.23	15.47
Ladder Rail	Angle	96.000	1.75	1.75		2.47	Flat	0.90	1.00	13.84	3.99	9.23
Ladder Rung	Pipe	12.000	0.625	0.625		0.63	Round	0.90	1.00	2.65	1.73	5.22
Mod Support Rail	Pipe	120.000	2.375	2.375		2.38	Round	0.90	1.00	11.27	3.80	9.02
Mod Support Rail Corner Pipe	Pipe	36.000	2.375	2.375		2.38	Round	0.90	1.00	9.22	2.70	9.02
Mod V-Kit	Angle	52.500	2.5	2.5		3.54	Flat	0.90	1.00	18.46	3.87	11.54

*All forces are unfactored.

Appurtenances							Shielding			No Ice		Ice Output	
Appurtenance Model	Loading Elevation (ft)	Height (in)	Front Width (in)	Side Depth (in)	Wt (lbs)	Type for Area	Front Shielding (%)	Side Shielding (%)	K_a and/or block shielding	Normal Wind Force (lbs)*	Wt (lbs) (no ice)*	Normal Wind Force (lbs) (w/ ice)*	Wt (lbs) (only ice)*
(3) AIR6449 B41_T-MOBILE	183	33.11	20.51	8.54	114.63	CFD	0%	0%	0.90	226.17	114.63	43.52	159.46
(3) APXVAALL24_43-U-NA20_TMO	183	95.9	24	8.5	149.9	CFD	0%	0%	0.90	629.58	149.90	110.81	439.58
(3) RADIO 4460 B2/B25 B66_TMO	183	17	15.1	11.9	109	Flat	0%	0%	0.90	91.81	109.00	17.50	93.24
(3) Radio 4480_TMOV2	183	22	15.7	7.5	81	Flat	0%	0%	0.90	123.53	81.00	22.81	92.51

*All forces are unfactored.

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (\1E5 F)	Density[k/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rules	A [in...	Iyy [i...	Izz [i...	J [in4]
1	Platform Channel	C5X9	None	None	A36 Gr.36	Typical	2.64	.624	8.89	.109
2	Platform Inner Bracing	C5X9	None	None	A36 Gr.36	Typical	2.64	.624	8.89	.109
3	Support Rail	P2 Std.	None	None	A53 Gr.B	Typical	1.077	.67	.67	1.34
4	Support Rail Corner Pipe	P2 Std.	None	None	A53 Gr.B	Typical	1.077	.67	.67	1.34
5	Pipe Mount	P2 Std.	None	None	A53 Gr.B	Typical	1.077	.67	.67	1.34
6	Ladder Support Bracing	C5X9	None	None	A36 Gr.36	Typical	2.64	.624	8.89	.109
7	Ladder Rail	L1.75x1.75x1/4	None	None	A36 Gr.36	Typical	.813	.227	.227	.015
8	Ladder Rung	SR 5/8	None	None	A36 Gr.36	Typical	.307	.007	.007	.015
9	Mod Support Rail	P2 Std.	None	None	A53 Gr.B	Typical	1.077	.67	.67	1.34
10	Mod Support Rail Corner Pipe	P2 Std.	None	None	A53 Gr.B	Typical	1.077	.67	.67	1.34
11	Mod V-Kit	L2.5x2.5x3/16	None	None	A36 Gr.36	Typical	.902	.547	.547	.01

Basic Load Cases

	BLC Description	Category	X Gra...	Y Gra...	Z Grav...	Joint	Point	Distrib...	Area(Member)	Surface(Plate/W...
1	Dead	DL		-1			24		6	
2	No Ice Wind 0 deg	None					24	45		
3	No Ice Wind 30 deg	None					48	90		
4	No Ice Wind 60 deg	None					48	104		
5	No Ice Wind 90 deg	None					24	44		
6	No Ice Wind 120 deg	None					48	104		
7	No Ice Wind 150 deg	None					48	90		
8	No Ice Wind 180 deg	None					24	45		
9	No Ice Wind 210 deg	None					48	90		
10	No Ice Wind 240 deg	None					48	104		
11	No Ice Wind 270 deg	None					24	44		
12	No Ice Wind 300 deg	None					48	104		
13	No Ice Wind 330 deg	None					48	90		
14	Ice Weight	None					24	52	6	
15	Ice Wind 0 deg	None					24	45		
16	Ice Wind 30 deg	None					48	90		
17	Ice Wind 60 deg	None					48	104		
18	Ice Wind 90 deg	None					24	44		
19	Ice Wind 120 deg	None					48	104		
20	Ice Wind 150 deg	None					48	90		
21	Ice Wind 180 deg	None					24	45		
22	Ice Wind 210 deg	None					48	90		
23	Ice Wind 240 deg	None					48	104		
24	Ice Wind 270 deg	None					24	44		
25	Ice Wind 300 deg	None					48	104		
26	Ice Wind 330 deg	None					48	90		
27	Live Load - A1	None					1			
28	Live Load - A2	None					1			
29	Live Load - A3	None					1			

Basic Load Cases (Continued)

	BLC Description	Category	X Gra...	Y Gra...	Z Grav...	Joint	Point	Distrib...	Area(Member)	Surface(Plate/W...
30	Live Load - A4	None					1			
31	Live Load - A5	None					1			
32	Live Load - B1	None					1			
33	Live Load - B2	None					1			
34	Live Load - B3	None					1			
35	Live Load - B4	None					1			
36	Live Load - B5	None					1			
37	Live Load - C1	None					1			
38	Live Load - C2	None					1			
39	Live Load - C3	None					1			
40	Live Load - C4	None					1			
41	Live Load - C5	None					1			
42	Live Load - M1 (Start)	None					1			
43	Live Load - M1 (Middle)	None					1			
44	Live Load - M1 (End)	None					1			
45	Live Load - M2 (Start)	None					1			
46	Live Load - M2 (Middle)	None					1			
47	Live Load - M2 (End)	None					1			
48	Live Load - M21 (Start)	None					1			
49	Live Load - M21 (Middle)	None					1			
50	Live Load - M21 (End)	None					1			
51	Live Load - M32 (Start)	None					1			
52	Live Load - M32 (Middle)	None					1			
53	Live Load - M32 (End)	None					1			
54	Live Load - M33 (Start)	None					1			
55	Live Load - M33 (Middle)	None					1			
56	Live Load - M33 (End)	None					1			
57	Live Load - M41 (Start)	None					1			
58	Live Load - M41 (Middle)	None					1			
59	Live Load - M41 (End)	None					1			
60	Live Load - M42 (Start)	None					1			
61	Live Load - M42 (Middle)	None					1			
62	Live Load - M42 (End)	None					1			
63	Live Load - M43 (Start)	None					1			
64	Live Load - M43 (Middle)	None					1			
65	Live Load - M43 (End)	None					1			
66	Live Load - M52 (Start)	None					1			
67	Live Load - M52 (Middle)	None					1			
68	Live Load - M52 (End)	None					1			
69	Live Load - M63 (Start)	None					1			
70	Live Load - M63 (Middle)	None					1			
71	Live Load - M63 (End)	None					1			
72	Live Load - M64 (Start)	None					1			
73	Live Load - M64 (Middle)	None					1			
74	Live Load - M64 (End)	None					1			
75	Live Load - M83 (Start)	None					1			
76	Live Load - M83 (Middle)	None					1			
77	Live Load - M83 (End)	None					1			
78	Live Load - M94 (Start)	None					1			
79	Live Load - M94 (Middle)	None					1			
80	Live Load - M94 (End)	None					1			
81	Live Load - M95 (Start)	None					1			
82	Live Load - M95 (Middle)	None					1			
83	Live Load - M95 (End)	None					1			
84	BLC 1 Transient Area Loads	None						83		
85	BLC 14 Transient Area Loads	None						83		

Load Combinations

	Description	S...	PDel...	SRSS	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4 Dead	Y...	Y		1	1.4	0		0		0		0		0		0							
2	1.2 Dead + 1.0 Wind @ 0° - No Ice	Y...	Y		1	1.2	2	1	0		0		0		0		0							
3	0.9 Dead + 1.0 Wind @ 0° - No Ice	Y...	Y		1	.9	2	1	0		0		0		0		0							
4	1.2 Dead + 1.0 Wind @ 30° - No Ice	Y...	Y		1	1.2	3	1	0		0		0		0		0							
5	0.9 Dead + 1.0 Wind @ 30° - No Ice	Y...	Y		1	.9	3	1	0		0		0		0		0							
6	1.2 Dead + 1.0 Wind @ 60° - No Ice	Y...	Y		1	1.2	4	1	0		0		0		0		0							
7	0.9 Dead + 1.0 Wind @ 60° - No Ice	Y...	Y		1	.9	4	1	0		0		0		0		0							
8	1.2 Dead + 1.0 Wind @ 90° - No Ice	Y...	Y		1	1.2	5	1	0		0		0		0		0							
9	0.9 Dead + 1.0 Wind @ 90° - No Ice	Y...	Y		1	.9	5	1	0		0		0		0		0							
10	1.2 Dead + 1.0 Wind @ 120° - No I...	Y...	Y		1	1.2	6	1	0		0		0		0		0							
11	0.9 Dead + 1.0 Wind @ 120° - No I...	Y...	Y		1	.9	6	1	0		0		0		0		0							
12	1.2 Dead + 1.0 Wind @ 150° - No I...	Y...	Y		1	1.2	7	1	0		0		0		0		0							
13	0.9 Dead + 1.0 Wind @ 150° - No I...	Y...	Y		1	.9	7	1	0		0		0		0		0							
14	1.2 Dead + 1.0 Wind @ 180° - No I...	Y...	Y		1	1.2	8	1	0		0		0		0		0							
15	0.9 Dead + 1.0 Wind @ 180° - No I...	Y...	Y		1	.9	8	1	0		0		0		0		0							
16	1.2 Dead + 1.0 Wind @ 210° - No I...	Y...	Y		1	1.2	9	1	0		0		0		0		0							
17	0.9 Dead + 1.0 Wind @ 210° - No I...	Y...	Y		1	.9	9	1	0		0		0		0		0							
18	1.2 Dead + 1.0 Wind @ 240° - No I...	Y...	Y		1	1.2	10	1	0		0		0		0		0							
19	0.9 Dead + 1.0 Wind @ 240° - No I...	Y...	Y		1	.9	10	1	0		0		0		0		0							
20	1.2 Dead + 1.0 Wind @ 270° - No I...	Y...	Y		1	1.2	11	1	0		0		0		0		0							
21	0.9 Dead + 1.0 Wind @ 270° - No I...	Y...	Y		1	.9	11	1	0		0		0		0		0							
22	1.2 Dead + 1.0 Wind @ 300° - No I...	Y...	Y		1	1.2	12	1	0		0		0		0		0							
23	0.9 Dead + 1.0 Wind @ 300° - No I...	Y...	Y		1	.9	12	1	0		0		0		0		0							
24	1.2 Dead + 1.0 Wind @ 330° - No I...	Y...	Y		1	1.2	13	1	0		0		0		0		0							
25	0.9 Dead + 1.0 Wind @ 330° - No I...	Y...	Y		1	.9	13	1	0		0		0		0		0							
26	1.2 Dead + 1.0 Ice Wind @ 0°+ 1.0...	Y...	Y		1	1.2	15	1	14	1		1	0		0		0							
27	1.2 Dead + 1.0 Ice Wind @ 30°+ 1...	Y...	Y		1	1.2	16	1	14	1		1	0		0		0							
28	1.2 Dead + 1.0 Ice Wind @ 60°+ 1...	Y...	Y		1	1.2	17	1	14	1		1	0		0		0							
29	1.2 Dead + 1.0 Ice Wind @ 90°+ 1...	Y...	Y		1	1.2	18	1	14	1		1	0		0		0							
30	1.2 Dead + 1.0 Ice Wind @ 120°+ ...	Y...	Y		1	1.2	19	1	14	1		1	0		0		0							
31	1.2 Dead + 1.0 Ice Wind @ 150°+ ...	Y...	Y		1	1.2	20	1	14	1		1	0		0		0							
32	1.2 Dead + 1.0 Ice Wind @ 180°+ ...	Y...	Y		1	1.2	21	1	14	1		1	0		0		0							
33	1.2 Dead + 1.0 Ice Wind @ 210°+ ...	Y...	Y		1	1.2	22	1	14	1		1	0		0		0							
34	1.2 Dead + 1.0 Ice Wind @ 240°+ ...	Y...	Y		1	1.2	23	1	14	1		1	0		0		0							
35	1.2 Dead + 1.0 Ice Wind @ 270°+ ...	Y...	Y		1	1.2	24	1	14	1		1	0		0		0							
36	1.2 Dead + 1.0 Ice Wind @ 300°+ ...	Y...	Y		1	1.2	25	1	14	1		1	0		0		0							
37	1.2 Dead + 1.0 Ice Wind @ 330°+ ...	Y...	Y		1	1.2	26	1	14	1		1	0		0		0							
38	1.2 Dead + 1.5 Live_M - A1 + 1.0 ...	Y...	Y		1	1.2	27	1.5	2	.053	0		0		0		0							
39	1.2 Dead + 1.5 Live_M - A1 + 1.0 ...	Y...	Y		1	1.2	27	1.5	3	.053	0		0		0		0							
40	1.2 Dead + 1.5 Live_M - A1 + 1.0 ...	Y...	Y		1	1.2	27	1.5	4	.053	0		0		0		0							
41	1.2 Dead + 1.5 Live_M - A1 + 1.0 ...	Y...	Y		1	1.2	27	1.5	5	.053	0		0		0		0							
42	1.2 Dead + 1.5 Live_M - A1 + 1.0 ...	Y...	Y		1	1.2	27	1.5	6	.053	0		0		0		0							
43	1.2 Dead + 1.5 Live_M - A1 + 1.0 ...	Y...	Y		1	1.2	27	1.5	7	.053	0		0		0		0							
44	1.2 Dead + 1.5 Live_M - A1 + 1.0 ...	Y...	Y		1	1.2	27	1.5	8	.053	0		0		0		0							
45	1.2 Dead + 1.5 Live_M - A1 + 1.0 ...	Y...	Y		1	1.2	27	1.5	9	.053	0		0		0		0							
46	1.2 Dead + 1.5 Live_M - A1 + 1.0 ...	Y...	Y		1	1.2	27	1.5	10	.053	0		0		0		0							
47	1.2 Dead + 1.5 Live_M - A1 + 1.0 ...	Y...	Y		1	1.2	27	1.5	11	.053	0		0		0		0							
48	1.2 Dead + 1.5 Live_M - A1 + 1.0 ...	Y...	Y		1	1.2	27	1.5	12	.053	0		0		0		0							
49	1.2 Dead + 1.5 Live_M - A1 + 1.0 ...	Y...	Y		1	1.2	27	1.5	13	.053	0		0		0		0							
50	1.2 Dead + 1.5 Live_M - A2 + 1.0 ...	Y...	Y		1	1.2	28	1.5	2	.053	0		0		0		0							
51	1.2 Dead + 1.5 Live_M - A2 + 1.0 ...	Y...	Y		1	1.2	28	1.5	3	.053	0		0		0		0							
52	1.2 Dead + 1.5 Live_M - A2 + 1.0 ...	Y...	Y		1	1.2	28	1.5	4	.053	0		0		0		0							
53	1.2 Dead + 1.5 Live_M - A2 + 1.0 ...	Y...	Y		1	1.2	28	1.5	5	.053	0		0		0		0							
54	1.2 Dead + 1.5 Live_M - A2 + 1.0 ...	Y...	Y		1	1.2	28	1.5	6	.053	0		0		0		0							
55	1.2 Dead + 1.5 Live_M - A2 + 1.0 ...	Y...	Y		1	1.2	28	1.5	7	.053	0		0		0		0							
56	1.2 Dead + 1.5 Live_M - A2 + 1.0 ...	Y...	Y		1	1.2	28	1.5	8	.053	0		0		0		0							

Load Combinations (Continued)

	Description	S...	PDel...	SRSS	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
57	1.2 Dead + 1.5 Live_M - A2 + 1.0 ...	Y...	Y		1	1.2	28	1.5	9	.053	0		0		0		0					
58	1.2 Dead + 1.5 Live_M - A2 + 1.0 ...	Y...	Y		1	1.2	28	1.5	10	.053	0		0		0		0					
59	1.2 Dead + 1.5 Live_M - A2 + 1.0 ...	Y...	Y		1	1.2	28	1.5	11	.053	0		0		0		0					
60	1.2 Dead + 1.5 Live_M - A2 + 1.0 ...	Y...	Y		1	1.2	28	1.5	12	.053	0		0		0		0					
61	1.2 Dead + 1.5 Live_M - A2 + 1.0 ...	Y...	Y		1	1.2	28	1.5	13	.053	0		0		0		0					
62	1.2 Dead + 1.5 Live_M - A3 + 1.0 ...	Y...	Y		1	1.2	29	1.5	2	.053	0		0		0		0					
63	1.2 Dead + 1.5 Live_M - A3 + 1.0 ...	Y...	Y		1	1.2	29	1.5	3	.053	0		0		0		0					
64	1.2 Dead + 1.5 Live_M - A3 + 1.0 ...	Y...	Y		1	1.2	29	1.5	4	.053	0		0		0		0					
65	1.2 Dead + 1.5 Live_M - A3 + 1.0 ...	Y...	Y		1	1.2	29	1.5	5	.053	0		0		0		0					
66	1.2 Dead + 1.5 Live_M - A3 + 1.0 ...	Y...	Y		1	1.2	29	1.5	6	.053	0		0		0		0					
67	1.2 Dead + 1.5 Live_M - A3 + 1.0 ...	Y...	Y		1	1.2	29	1.5	7	.053	0		0		0		0					
68	1.2 Dead + 1.5 Live_M - A3 + 1.0 ...	Y...	Y		1	1.2	29	1.5	8	.053	0		0		0		0					
69	1.2 Dead + 1.5 Live_M - A3 + 1.0 ...	Y...	Y		1	1.2	29	1.5	9	.053	0		0		0		0					
70	1.2 Dead + 1.5 Live_M - A3 + 1.0 ...	Y...	Y		1	1.2	29	1.5	10	.053	0		0		0		0					
71	1.2 Dead + 1.5 Live_M - A3 + 1.0 ...	Y...	Y		1	1.2	29	1.5	11	.053	0		0		0		0					
72	1.2 Dead + 1.5 Live_M - A3 + 1.0 ...	Y...	Y		1	1.2	29	1.5	12	.053	0		0		0		0					
73	1.2 Dead + 1.5 Live_M - A3 + 1.0 ...	Y...	Y		1	1.2	29	1.5	13	.053	0		0		0		0					
74	1.2 Dead + 1.5 Live_M - A4 + 1.0 ...	Y...	Y		1	1.2	30	1.5	2	.053	0		0		0		0					
75	1.2 Dead + 1.5 Live_M - A4 + 1.0 ...	Y...	Y		1	1.2	30	1.5	3	.053	0		0		0		0					
76	1.2 Dead + 1.5 Live_M - A4 + 1.0 ...	Y...	Y		1	1.2	30	1.5	4	.053	0		0		0		0					
77	1.2 Dead + 1.5 Live_M - A4 + 1.0 ...	Y...	Y		1	1.2	30	1.5	5	.053	0		0		0		0					
78	1.2 Dead + 1.5 Live_M - A4 + 1.0 ...	Y...	Y		1	1.2	30	1.5	6	.053	0		0		0		0					
79	1.2 Dead + 1.5 Live_M - A4 + 1.0 ...	Y...	Y		1	1.2	30	1.5	7	.053	0		0		0		0					
80	1.2 Dead + 1.5 Live_M - A4 + 1.0 ...	Y...	Y		1	1.2	30	1.5	8	.053	0		0		0		0					
81	1.2 Dead + 1.5 Live_M - A4 + 1.0 ...	Y...	Y		1	1.2	30	1.5	9	.053	0		0		0		0					
82	1.2 Dead + 1.5 Live_M - A4 + 1.0 ...	Y...	Y		1	1.2	30	1.5	10	.053	0		0		0		0					
83	1.2 Dead + 1.5 Live_M - A4 + 1.0 ...	Y...	Y		1	1.2	30	1.5	11	.053	0		0		0		0					
84	1.2 Dead + 1.5 Live_M - A4 + 1.0 ...	Y...	Y		1	1.2	30	1.5	12	.053	0		0		0		0					
85	1.2 Dead + 1.5 Live_M - A4 + 1.0 ...	Y...	Y		1	1.2	30	1.5	13	.053	0		0		0		0					
86	1.2 Dead + 1.5 Live_M - A5 + 1.0 ...	Y...	Y		1	1.2	31	1.5	2	.053	0		0		0		0					
87	1.2 Dead + 1.5 Live_M - A5 + 1.0 ...	Y...	Y		1	1.2	31	1.5	3	.053	0		0		0		0					
88	1.2 Dead + 1.5 Live_M - A5 + 1.0 ...	Y...	Y		1	1.2	31	1.5	4	.053	0		0		0		0					
89	1.2 Dead + 1.5 Live_M - A5 + 1.0 ...	Y...	Y		1	1.2	31	1.5	5	.053	0		0		0		0					
90	1.2 Dead + 1.5 Live_M - A5 + 1.0 ...	Y...	Y		1	1.2	31	1.5	6	.053	0		0		0		0					
91	1.2 Dead + 1.5 Live_M - A5 + 1.0 ...	Y...	Y		1	1.2	31	1.5	7	.053	0		0		0		0					
92	1.2 Dead + 1.5 Live_M - A5 + 1.0 ...	Y...	Y		1	1.2	31	1.5	8	.053	0		0		0		0					
93	1.2 Dead + 1.5 Live_M - A5 + 1.0 ...	Y...	Y		1	1.2	31	1.5	9	.053	0		0		0		0					
94	1.2 Dead + 1.5 Live_M - A5 + 1.0 ...	Y...	Y		1	1.2	31	1.5	10	.053	0		0		0		0					
95	1.2 Dead + 1.5 Live_M - A5 + 1.0 ...	Y...	Y		1	1.2	31	1.5	11	.053	0		0		0		0					
96	1.2 Dead + 1.5 Live_M - A5 + 1.0 ...	Y...	Y		1	1.2	31	1.5	12	.053	0		0		0		0					
97	1.2 Dead + 1.5 Live_M - A5 + 1.0 ...	Y...	Y		1	1.2	31	1.5	13	.053	0		0		0		0					
98	1.2 Dead + 1.5 Live_M - B1 + 1.0 ...	Y...	Y		1	1.2	32	1.5	2	.053	0		0		0		0					
99	1.2 Dead + 1.5 Live_M - B1 + 1.0 ...	Y...	Y		1	1.2	32	1.5	3	.053	0		0		0		0					
100	1.2 Dead + 1.5 Live_M - B1 + 1.0 ...	Y...	Y		1	1.2	32	1.5	4	.053	0		0		0		0					
101	1.2 Dead + 1.5 Live_M - B1 + 1.0 ...	Y...	Y		1	1.2	32	1.5	5	.053	0		0		0		0					
102	1.2 Dead + 1.5 Live_M - B1 + 1.0 ...	Y...	Y		1	1.2	32	1.5	6	.053	0		0		0		0					
103	1.2 Dead + 1.5 Live_M - B1 + 1.0 ...	Y...	Y		1	1.2	32	1.5	7	.053	0		0		0		0					
104	1.2 Dead + 1.5 Live_M - B1 + 1.0 ...	Y...	Y		1	1.2	32	1.5	8	.053	0		0		0		0					
105	1.2 Dead + 1.5 Live_M - B1 + 1.0 ...	Y...	Y		1	1.2	32	1.5	9	.053	0		0		0		0					
106	1.2 Dead + 1.5 Live_M - B1 + 1.0 ...	Y...	Y		1	1.2	32	1.5	10	.053	0		0		0		0					
107	1.2 Dead + 1.5 Live_M - B1 + 1.0 ...	Y...	Y		1	1.2	32	1.5	11	.053	0		0		0		0					
108	1.2 Dead + 1.5 Live_M - B1 + 1.0 ...	Y...	Y		1	1.2	32	1.5	12	.053	0		0		0		0					
109	1.2 Dead + 1.5 Live_M - B1 + 1.0 ...	Y...	Y		1	1.2	32	1.5	13	.053	0		0		0		0					
110	1.2 Dead + 1.5 Live_M - B2 + 1.0 ...	Y...	Y		1	1.2	33	1.5	2	.053	0		0		0		0					
111	1.2 Dead + 1.5 Live_M - B2 + 1.0 ...	Y...	Y		1	1.2	33	1.5	3	.053	0		0		0		0					
112	1.2 Dead + 1.5 Live_M - B2 + 1.0 ...	Y...	Y		1	1.2	33	1.5	4	.053	0		0		0		0					
113	1.2 Dead + 1.5 Live_M - B2 + 1.0 ...	Y...	Y		1	1.2	33	1.5	5	.053	0		0		0		0					

Load Combinations (Continued)

	Description	S...	PDel...	SRSS	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
114	1.2 Dead + 1.5 Live_M - B2 + 1.0 ...	Y...	Y		1	1.2	33	1.5	6	.053	0		0		0		0					
115	1.2 Dead + 1.5 Live_M - B2 + 1.0 ...	Y...	Y		1	1.2	33	1.5	7	.053	0		0		0		0					
116	1.2 Dead + 1.5 Live_M - B2 + 1.0 ...	Y...	Y		1	1.2	33	1.5	8	.053	0		0		0		0					
117	1.2 Dead + 1.5 Live_M - B2 + 1.0 ...	Y...	Y		1	1.2	33	1.5	9	.053	0		0		0		0					
118	1.2 Dead + 1.5 Live_M - B2 + 1.0 ...	Y...	Y		1	1.2	33	1.5	10	.053	0		0		0		0					
119	1.2 Dead + 1.5 Live_M - B2 + 1.0 ...	Y...	Y		1	1.2	33	1.5	11	.053	0		0		0		0					
120	1.2 Dead + 1.5 Live_M - B2 + 1.0 ...	Y...	Y		1	1.2	33	1.5	12	.053	0		0		0		0					
121	1.2 Dead + 1.5 Live_M - B2 + 1.0 ...	Y...	Y		1	1.2	33	1.5	13	.053	0		0		0		0					
122	1.2 Dead + 1.5 Live_M - B3 + 1.0 ...	Y...	Y		1	1.2	34	1.5	2	.053	0		0		0		0					
123	1.2 Dead + 1.5 Live_M - B3 + 1.0 ...	Y...	Y		1	1.2	34	1.5	3	.053	0		0		0		0					
124	1.2 Dead + 1.5 Live_M - B3 + 1.0 ...	Y...	Y		1	1.2	34	1.5	4	.053	0		0		0		0					
125	1.2 Dead + 1.5 Live_M - B3 + 1.0 ...	Y...	Y		1	1.2	34	1.5	5	.053	0		0		0		0					
126	1.2 Dead + 1.5 Live_M - B3 + 1.0 ...	Y...	Y		1	1.2	34	1.5	6	.053	0		0		0		0					
127	1.2 Dead + 1.5 Live_M - B3 + 1.0 ...	Y...	Y		1	1.2	34	1.5	7	.053	0		0		0		0					
128	1.2 Dead + 1.5 Live_M - B3 + 1.0 ...	Y...	Y		1	1.2	34	1.5	8	.053	0		0		0		0					
129	1.2 Dead + 1.5 Live_M - B3 + 1.0 ...	Y...	Y		1	1.2	34	1.5	9	.053	0		0		0		0					
130	1.2 Dead + 1.5 Live_M - B3 + 1.0 ...	Y...	Y		1	1.2	34	1.5	10	.053	0		0		0		0					
131	1.2 Dead + 1.5 Live_M - B3 + 1.0 ...	Y...	Y		1	1.2	34	1.5	11	.053	0		0		0		0					
132	1.2 Dead + 1.5 Live_M - B3 + 1.0 ...	Y...	Y		1	1.2	34	1.5	12	.053	0		0		0		0					
133	1.2 Dead + 1.5 Live_M - B3 + 1.0 ...	Y...	Y		1	1.2	34	1.5	13	.053	0		0		0		0					
134	1.2 Dead + 1.5 Live_M - B4 + 1.0 ...	Y...	Y		1	1.2	35	1.5	2	.053	0		0		0		0					
135	1.2 Dead + 1.5 Live_M - B4 + 1.0 ...	Y...	Y		1	1.2	35	1.5	3	.053	0		0		0		0					
136	1.2 Dead + 1.5 Live_M - B4 + 1.0 ...	Y...	Y		1	1.2	35	1.5	4	.053	0		0		0		0					
137	1.2 Dead + 1.5 Live_M - B4 + 1.0 ...	Y...	Y		1	1.2	35	1.5	5	.053	0		0		0		0					
138	1.2 Dead + 1.5 Live_M - B4 + 1.0 ...	Y...	Y		1	1.2	35	1.5	6	.053	0		0		0		0					
139	1.2 Dead + 1.5 Live_M - B4 + 1.0 ...	Y...	Y		1	1.2	35	1.5	7	.053	0		0		0		0					
140	1.2 Dead + 1.5 Live_M - B4 + 1.0 ...	Y...	Y		1	1.2	35	1.5	8	.053	0		0		0		0					
141	1.2 Dead + 1.5 Live_M - B4 + 1.0 ...	Y...	Y		1	1.2	35	1.5	9	.053	0		0		0		0					
142	1.2 Dead + 1.5 Live_M - B4 + 1.0 ...	Y...	Y		1	1.2	35	1.5	10	.053	0		0		0		0					
143	1.2 Dead + 1.5 Live_M - B4 + 1.0 ...	Y...	Y		1	1.2	35	1.5	11	.053	0		0		0		0					
144	1.2 Dead + 1.5 Live_M - B4 + 1.0 ...	Y...	Y		1	1.2	35	1.5	12	.053	0		0		0		0					
145	1.2 Dead + 1.5 Live_M - B4 + 1.0 ...	Y...	Y		1	1.2	35	1.5	13	.053	0		0		0		0					
146	1.2 Dead + 1.5 Live_M - B5 + 1.0 ...	Y...	Y		1	1.2	36	1.5	2	.053	0		0		0		0					
147	1.2 Dead + 1.5 Live_M - B5 + 1.0 ...	Y...	Y		1	1.2	36	1.5	3	.053	0		0		0		0					
148	1.2 Dead + 1.5 Live_M - B5 + 1.0 ...	Y...	Y		1	1.2	36	1.5	4	.053	0		0		0		0					
149	1.2 Dead + 1.5 Live_M - B5 + 1.0 ...	Y...	Y		1	1.2	36	1.5	5	.053	0		0		0		0					
150	1.2 Dead + 1.5 Live_M - B5 + 1.0 ...	Y...	Y		1	1.2	36	1.5	6	.053	0		0		0		0					
151	1.2 Dead + 1.5 Live_M - B5 + 1.0 ...	Y...	Y		1	1.2	36	1.5	7	.053	0		0		0		0					
152	1.2 Dead + 1.5 Live_M - B5 + 1.0 ...	Y...	Y		1	1.2	36	1.5	8	.053	0		0		0		0					
153	1.2 Dead + 1.5 Live_M - B5 + 1.0 ...	Y...	Y		1	1.2	36	1.5	9	.053	0		0		0		0					
154	1.2 Dead + 1.5 Live_M - B5 + 1.0 ...	Y...	Y		1	1.2	36	1.5	10	.053	0		0		0		0					
155	1.2 Dead + 1.5 Live_M - B5 + 1.0 ...	Y...	Y		1	1.2	36	1.5	11	.053	0		0		0		0					
156	1.2 Dead + 1.5 Live_M - B5 + 1.0 ...	Y...	Y		1	1.2	36	1.5	12	.053	0		0		0		0					
157	1.2 Dead + 1.5 Live_M - B5 + 1.0 ...	Y...	Y		1	1.2	36	1.5	13	.053	0		0		0		0					
158	1.2 Dead + 1.5 Live_M - C1 + 1.0 ...	Y...	Y		1	1.2	37	1.5	2	.053	0		0		0		0					
159	1.2 Dead + 1.5 Live_M - C1 + 1.0 ...	Y...	Y		1	1.2	37	1.5	3	.053	0		0		0		0					
160	1.2 Dead + 1.5 Live_M - C1 + 1.0 ...	Y...	Y		1	1.2	37	1.5	4	.053	0		0		0		0					
161	1.2 Dead + 1.5 Live_M - C1 + 1.0 ...	Y...	Y		1	1.2	37	1.5	5	.053	0		0		0		0					
162	1.2 Dead + 1.5 Live_M - C1 + 1.0 ...	Y...	Y		1	1.2	37	1.5	6	.053	0		0		0		0					
163	1.2 Dead + 1.5 Live_M - C1 + 1.0 ...	Y...	Y		1	1.2	37	1.5	7	.053	0		0		0		0					
164	1.2 Dead + 1.5 Live_M - C1 + 1.0 ...	Y...	Y		1	1.2	37	1.5	8	.053	0		0		0		0					
165	1.2 Dead + 1.5 Live_M - C1 + 1.0 ...	Y...	Y		1	1.2	37	1.5	9	.053	0		0		0		0					
166	1.2 Dead + 1.5 Live_M - C1 + 1.0 ...	Y...	Y		1	1.2	37	1.5	10	.053	0		0		0		0					
167	1.2 Dead + 1.5 Live_M - C1 + 1.0 ...	Y...	Y		1	1.2	37	1.5	11	.053	0		0		0		0					
168	1.2 Dead + 1.5 Live_M - C1 + 1.0 ...	Y...	Y		1	1.2	37	1.5	12	.053	0		0		0		0					
169	1.2 Dead + 1.5 Live_M - C1 + 1.0 ...	Y...	Y		1	1.2	37	1.5	13	.053	0		0		0		0					
170	1.2 Dead + 1.5 Live_M - C2 + 1.0 ...	Y...	Y		1	1.2	38	1.5	2	.053	0		0		0		0					

Load Combinations (Continued)

	Description	S...	PDel...	SRSS	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
171	1.2 Dead + 1.5 Live_M - C2 + 1.0 ...	Y...	Y		1	1.2	38	1.5	3	.053	0		0		0		0		0			
172	1.2 Dead + 1.5 Live_M - C2 + 1.0 ...	Y...	Y		1	1.2	38	1.5	4	.053	0		0		0		0		0			
173	1.2 Dead + 1.5 Live_M - C2 + 1.0 ...	Y...	Y		1	1.2	38	1.5	5	.053	0		0		0		0		0			
174	1.2 Dead + 1.5 Live_M - C2 + 1.0 ...	Y...	Y		1	1.2	38	1.5	6	.053	0		0		0		0		0			
175	1.2 Dead + 1.5 Live_M - C2 + 1.0 ...	Y...	Y		1	1.2	38	1.5	7	.053	0		0		0		0		0			
176	1.2 Dead + 1.5 Live_M - C2 + 1.0 ...	Y...	Y		1	1.2	38	1.5	8	.053	0		0		0		0		0			
177	1.2 Dead + 1.5 Live_M - C2 + 1.0 ...	Y...	Y		1	1.2	38	1.5	9	.053	0		0		0		0		0			
178	1.2 Dead + 1.5 Live_M - C2 + 1.0 ...	Y...	Y		1	1.2	38	1.5	10	.053	0		0		0		0		0			
179	1.2 Dead + 1.5 Live_M - C2 + 1.0 ...	Y...	Y		1	1.2	38	1.5	11	.053	0		0		0		0		0			
180	1.2 Dead + 1.5 Live_M - C2 + 1.0 ...	Y...	Y		1	1.2	38	1.5	12	.053	0		0		0		0		0			
181	1.2 Dead + 1.5 Live_M - C2 + 1.0 ...	Y...	Y		1	1.2	38	1.5	13	.053	0		0		0		0		0			
182	1.2 Dead + 1.5 Live_M - C3 + 1.0 ...	Y...	Y		1	1.2	39	1.5	2	.053	0		0		0		0		0			
183	1.2 Dead + 1.5 Live_M - C3 + 1.0 ...	Y...	Y		1	1.2	39	1.5	3	.053	0		0		0		0		0			
184	1.2 Dead + 1.5 Live_M - C3 + 1.0 ...	Y...	Y		1	1.2	39	1.5	4	.053	0		0		0		0		0			
185	1.2 Dead + 1.5 Live_M - C3 + 1.0 ...	Y...	Y		1	1.2	39	1.5	5	.053	0		0		0		0		0			
186	1.2 Dead + 1.5 Live_M - C3 + 1.0 ...	Y...	Y		1	1.2	39	1.5	6	.053	0		0		0		0		0			
187	1.2 Dead + 1.5 Live_M - C3 + 1.0 ...	Y...	Y		1	1.2	39	1.5	7	.053	0		0		0		0		0			
188	1.2 Dead + 1.5 Live_M - C3 + 1.0 ...	Y...	Y		1	1.2	39	1.5	8	.053	0		0		0		0		0			
189	1.2 Dead + 1.5 Live_M - C3 + 1.0 ...	Y...	Y		1	1.2	39	1.5	9	.053	0		0		0		0		0			
190	1.2 Dead + 1.5 Live_M - C3 + 1.0 ...	Y...	Y		1	1.2	39	1.5	10	.053	0		0		0		0		0			
191	1.2 Dead + 1.5 Live_M - C3 + 1.0 ...	Y...	Y		1	1.2	39	1.5	11	.053	0		0		0		0		0			
192	1.2 Dead + 1.5 Live_M - C3 + 1.0 ...	Y...	Y		1	1.2	39	1.5	12	.053	0		0		0		0		0			
193	1.2 Dead + 1.5 Live_M - C3 + 1.0 ...	Y...	Y		1	1.2	39	1.5	13	.053	0		0		0		0		0			
194	1.2 Dead + 1.5 Live_M - C4 + 1.0 ...	Y...	Y		1	1.2	40	1.5	2	.053	0		0		0		0		0			
195	1.2 Dead + 1.5 Live_M - C4 + 1.0 ...	Y...	Y		1	1.2	40	1.5	3	.053	0		0		0		0		0			
196	1.2 Dead + 1.5 Live_M - C4 + 1.0 ...	Y...	Y		1	1.2	40	1.5	4	.053	0		0		0		0		0			
197	1.2 Dead + 1.5 Live_M - C4 + 1.0 ...	Y...	Y		1	1.2	40	1.5	5	.053	0		0		0		0		0			
198	1.2 Dead + 1.5 Live_M - C4 + 1.0 ...	Y...	Y		1	1.2	40	1.5	6	.053	0		0		0		0		0			
199	1.2 Dead + 1.5 Live_M - C4 + 1.0 ...	Y...	Y		1	1.2	40	1.5	7	.053	0		0		0		0		0			
200	1.2 Dead + 1.5 Live_M - C4 + 1.0 ...	Y...	Y		1	1.2	40	1.5	8	.053	0		0		0		0		0			
201	1.2 Dead + 1.5 Live_M - C4 + 1.0 ...	Y...	Y		1	1.2	40	1.5	9	.053	0		0		0		0		0			
202	1.2 Dead + 1.5 Live_M - C4 + 1.0 ...	Y...	Y		1	1.2	40	1.5	10	.053	0		0		0		0		0			
203	1.2 Dead + 1.5 Live_M - C4 + 1.0 ...	Y...	Y		1	1.2	40	1.5	11	.053	0		0		0		0		0			
204	1.2 Dead + 1.5 Live_M - C4 + 1.0 ...	Y...	Y		1	1.2	40	1.5	12	.053	0		0		0		0		0			
205	1.2 Dead + 1.5 Live_M - C4 + 1.0 ...	Y...	Y		1	1.2	40	1.5	13	.053	0		0		0		0		0			
206	1.2 Dead + 1.5 Live_M - C5 + 1.0 ...	Y...	Y		1	1.2	41	1.5	2	.053	0		0		0		0		0			
207	1.2 Dead + 1.5 Live_M - C5 + 1.0 ...	Y...	Y		1	1.2	41	1.5	3	.053	0		0		0		0		0			
208	1.2 Dead + 1.5 Live_M - C5 + 1.0 ...	Y...	Y		1	1.2	41	1.5	4	.053	0		0		0		0		0			
209	1.2 Dead + 1.5 Live_M - C5 + 1.0 ...	Y...	Y		1	1.2	41	1.5	5	.053	0		0		0		0		0			
210	1.2 Dead + 1.5 Live_M - C5 + 1.0 ...	Y...	Y		1	1.2	41	1.5	6	.053	0		0		0		0		0			
211	1.2 Dead + 1.5 Live_M - C5 + 1.0 ...	Y...	Y		1	1.2	41	1.5	7	.053	0		0		0		0		0			
212	1.2 Dead + 1.5 Live_M - C5 + 1.0 ...	Y...	Y		1	1.2	41	1.5	8	.053	0		0		0		0		0			
213	1.2 Dead + 1.5 Live_M - C5 + 1.0 ...	Y...	Y		1	1.2	41	1.5	9	.053	0		0		0		0		0			
214	1.2 Dead + 1.5 Live_M - C5 + 1.0 ...	Y...	Y		1	1.2	41	1.5	10	.053	0		0		0		0		0			
215	1.2 Dead + 1.5 Live_M - C5 + 1.0 ...	Y...	Y		1	1.2	41	1.5	11	.053	0		0		0		0		0			
216	1.2 Dead + 1.5 Live_M - C5 + 1.0 ...	Y...	Y		1	1.2	41	1.5	12	.053	0		0		0		0		0			
217	1.2 Dead + 1.5 Live_M - C5 + 1.0 ...	Y...	Y		1	1.2	41	1.5	13	.053	0		0		0		0		0			
218	1.2 Dead + 1.5 Live_V - M1 (Start)	Y...	Y		1	1.2	42	1.5	0		0		0		0		0		0			
219	1.2 Dead + 1.5 Live_V - M1 (Middle)	Y...	Y		1	1.2	43	1.5	0		0		0		0		0		0			
220	1.2 Dead + 1.5 Live_V - M1 (End)	Y...	Y		1	1.2	44	1.5	0		0		0		0		0		0			
221	1.2 Dead + 1.5 Live_V - M2 (Start)	Y...	Y		1	1.2	45	1.5	0		0		0		0		0		0			
222	1.2 Dead + 1.5 Live_V - M2 (Middle)	Y...	Y		1	1.2	46	1.5	0		0		0		0		0		0			
223	1.2 Dead + 1.5 Live_V - M2 (End)	Y...	Y		1	1.2	47	1.5	0		0		0		0		0		0			
224	1.2 Dead + 1.5 Live_V - M21 (Start)	Y...	Y		1	1.2	48	1.5	0		0		0		0		0		0			
225	1.2 Dead + 1.5 Live_V - M21 (Midd...	Y...	Y		1	1.2	49	1.5	0		0		0		0		0		0			
226	1.2 Dead + 1.5 Live_V - M21 (End)	Y...	Y		1	1.2	50	1.5	0		0		0		0		0		0			
227	1.2 Dead + 1.5 Live_V - M32 (Start)	Y...	Y		1	1.2	51	1.5	0		0		0		0		0		0			

Load Combinations (Continued)

	Description	S...	PDel...	SRSS	B...	Fa...	B...	Fa...	BLC	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
228	1.2 Dead + 1.5 Live_V - M32 (Midd...	Y...	Y		1	1.2	52	1.5	0		0		0		0		0							
229	1.2 Dead + 1.5 Live_V - M32 (End)	Y...	Y		1	1.2	53	1.5	0		0		0		0		0							
230	1.2 Dead + 1.5 Live_V - M33 (Start)	Y...	Y		1	1.2	54	1.5	0		0		0		0		0							
231	1.2 Dead + 1.5 Live_V - M33 (Midd...	Y...	Y		1	1.2	55	1.5	0		0		0		0		0							
232	1.2 Dead + 1.5 Live_V - M33 (End)	Y...	Y		1	1.2	56	1.5	0		0		0		0		0							
233	1.2 Dead + 1.5 Live_V - M41 (Start)	Y...	Y		1	1.2	57	1.5	0		0		0		0		0							
234	1.2 Dead + 1.5 Live_V - M41 (Midd...	Y...	Y		1	1.2	58	1.5	0		0		0		0		0							
235	1.2 Dead + 1.5 Live_V - M41 (End)	Y...	Y		1	1.2	59	1.5	0		0		0		0		0							
236	1.2 Dead + 1.5 Live_V - M42 (Start)	Y...	Y		1	1.2	60	1.5	0		0		0		0		0							
237	1.2 Dead + 1.5 Live_V - M42 (Midd...	Y...	Y		1	1.2	61	1.5	0		0		0		0		0							
238	1.2 Dead + 1.5 Live_V - M42 (End)	Y...	Y		1	1.2	62	1.5	0		0		0		0		0							
239	1.2 Dead + 1.5 Live_V - M43 (Start)	Y...	Y		1	1.2	63	1.5	0		0		0		0		0							
240	1.2 Dead + 1.5 Live_V - M43 (Midd...	Y...	Y		1	1.2	64	1.5	0		0		0		0		0							
241	1.2 Dead + 1.5 Live_V - M43 (End)	Y...	Y		1	1.2	65	1.5	0		0		0		0		0							
242	1.2 Dead + 1.5 Live_V - M52 (Start)	Y...	Y		1	1.2	66	1.5	0		0		0		0		0							
243	1.2 Dead + 1.5 Live_V - M52 (Midd...	Y...	Y		1	1.2	67	1.5	0		0		0		0		0							
244	1.2 Dead + 1.5 Live_V - M52 (End)	Y...	Y		1	1.2	68	1.5	0		0		0		0		0							
245	1.2 Dead + 1.5 Live_V - M63 (Start)	Y...	Y		1	1.2	69	1.5	0		0		0		0		0							
246	1.2 Dead + 1.5 Live_V - M63 (Midd...	Y...	Y		1	1.2	70	1.5	0		0		0		0		0							
247	1.2 Dead + 1.5 Live_V - M63 (End)	Y...	Y		1	1.2	71	1.5	0		0		0		0		0							
248	1.2 Dead + 1.5 Live_V - M64 (Start)	Y...	Y		1	1.2	72	1.5	0		0		0		0		0							
249	1.2 Dead + 1.5 Live_V - M64 (Midd...	Y...	Y		1	1.2	73	1.5	0		0		0		0		0							
250	1.2 Dead + 1.5 Live_V - M64 (End)	Y...	Y		1	1.2	74	1.5	0		0		0		0		0							
251	1.2 Dead + 1.5 Live_V - M83 (Start)	Y...	Y		1	1.2	75	1.5	0		0		0		0		0							
252	1.2 Dead + 1.5 Live_V - M83 (Midd...	Y...	Y		1	1.2	76	1.5	0		0		0		0		0							
253	1.2 Dead + 1.5 Live_V - M83 (End)	Y...	Y		1	1.2	77	1.5	0		0		0		0		0							
254	1.2 Dead + 1.5 Live_V - M94 (Start)	Y...	Y		1	1.2	78	1.5	0		0		0		0		0							
255	1.2 Dead + 1.5 Live_V - M94 (Midd...	Y...	Y		1	1.2	79	1.5	0		0		0		0		0							
256	1.2 Dead + 1.5 Live_V - M94 (End)	Y...	Y		1	1.2	80	1.5	0		0		0		0		0							
257	1.2 Dead + 1.5 Live_V - M95 (Start)	Y...	Y		1	1.2	81	1.5	0		0		0		0		0							
258	1.2 Dead + 1.5 Live_V - M95 (Midd...	Y...	Y		1	1.2	82	1.5	0		0		0		0		0							
259	1.2 Dead + 1.5 Live_V - M95 (End)	Y...	Y		1	1.2	83	1.5	0		0		0		0		0							

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
1	N7	m...	1076.753	15	2674.658	33	1886.121	2	0	259	0	259	0	259
2		min	-1100.4...	2	-743.56	5	-1837.893	15	0	1	0	1	0	1
3	N6	m...	1570.83	3	221.03	3	3.921	23	0	259	0	259	0	259
4		min	-1567.3...	14	-3840.171	32	-3.921	6	0	1	0	1	0	1
5	N5	m...	1284.613	12	3103.134	32	2801.559	19	0	259	0	259	0	259
6		min	-1268.3...	25	521.084	3	-2874.057	6	0	1	0	1	0	1
7	N62	m...	2572.266	14	2465.435	35	878.362	16	0	259	0	259	0	259
8		min	-2438.6...	3	344.969	9	-770.696	5	0	1	0	1	0	1
9	N63	m...	656.676	22	202.393	11	1128.916	11	0	259	0	259	0	259
10		min	-653.693	11	-3553.041	36	-1134.082	22	0	1	0	1	0	1
11	N64	m...	1167.318	19	2813.45	37	1791.537	21	0	259	0	259	0	259
12		min	-1257.6...	6	-829.682	13	-1854.989	8	0	1	0	1	0	1
13	N119	m...	1661.01	11	2492.351	26	1726.456	20	0	259	0	259	0	259
14		min	-1789.4...	22	319.371	15	-1687.756	9	0	1	0	1	0	1
15	N120	m...	743.453	6	96.76	19	1284.384	6	0	259	0	259	0	259
16		min	-742.195	19	-3599.938	28	-1282.205	19	0	1	0	1	0	1
17	N121	m...	2307.994	14	2855.468	29	584.509	23	0	259	0	259	0	259
18		min	-2171.06	3	-644.18	21	-639.092	10	0	1	0	1	0	1
19	N64B	m...	1156.524	37	1787.066	37	289.354	89	0	20	0	20	0	24
20		min	-143.218	13	-262.846	13	-310.494	47	0	9	0	9	0	13

Envelope Joint Reactions (Continued)

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC
21	N82	m...	18.126	21	1863.356	29	1053.531	29	0	17	0	5	0	23
22		min	-601.916	149	-272.781	21	-155.409	21	0	4	0	16	0	10
23	N86	m...	182.624	5	1835.422	33	76.118	5	0	16	0	12	0	25
24		min	-701.874	33	-277.983	7	-969.842	33	0	5	0	25	0	12
25	Totals:	m...	5463.936	15	9928.655	35	5387.131	20						
26		min	-5463.9...	3	2815.342	9	-5387.132	9						

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code Che...	Loc[in]	LC	Shear Che...	Loc[in]	Dir	LC	phi*...	phi*...	phi*...	phi*...	...	Eqn
1	B3	P2 Std.	.877	83.75	8	.130	83.75		12	2383..	3392..	2.006	2.006	...	H1-...
2	A3	P2 Std.	.844	83.75	24	.135	83.75		8	2383..	3392..	2.006	2.006	...	H1-...
3	C3	P2 Std.	.832	83.75	16	.126	83.75		24	2383..	3392..	2.006	2.006	...	H1-...
4	C2	P2 Std.	.503	83.75	8	.120	85		18	2383..	3392..	2.006	2.006	...	H1-...
5	B4	P2 Std.	.490	60	21	.099	60		12	2383..	3392..	2.006	2.006	...	H1-...
6	C4	P2 Std.	.480	60	3	.090	60		24	2383..	3392..	2.006	2.006	...	H1-...
7	M83	C5X9	.462	4.72	18	.190	53.269	z	149	3363..	85536	1.909	11.8...	...	H1-...
8	B2	P2 Std.	.452	83.75	24	.134	30		10	2383..	3392..	2.006	2.006	...	H1-...
9	A4	P2 Std.	.448	60	11	.097	60		8	2383..	3392..	2.006	2.006	...	H1-...
10	A2	P2 Std.	.446	83.75	56	.129	30		2	2383..	3392..	2.006	2.006	...	H1-...
11	M21	C5X9	.443	4.72	2	.191	53.269	z	212	3363..	85536	1.909	11.8...	...	H1-...
12	M52	C5X9	.427	4.72	8	.191	53.269	z	97	3363..	85536	1.909	11.8...	...	H1-...
13	M32	C5X9	.360	20.229	14	.192	11.463	z	38	3363..	85536	1.909	11.8...	...	H1-...
14	M63	C5X9	.357	60.012	14	.191	11.463	z	102	3363..	85536	1.909	11.8...	...	H1-...
15	M2	C5X9	.336	59.911	20	.064	34.324	y	29	3845..	85536	1.909	11.8...	...	H1-...
16	M94	C5X9	.336	0	8	.176	6	z	8	7523..	85536	1.909	11.8...	...	H1-...
17	M37	P2 Std.	.299	25	14	.269	96.25		20	1051..	3392..	2.006	2.006	...	H1-...
18	M35	P2 Std.	.286	25	22	.262	96.25		15	1051..	3392..	2.006	2.006	...	H1-...
19	M1	C5X9	.285	60.012	20	.189	11.463	z	167	3363..	85536	1.909	11.8...	...	H1-...
20	M36	P2 Std.	.281	25	6	.261	96.25		12	1051..	3392..	2.006	2.006	...	H1-...
21	M43	P2 Std.	.274	103.75	33	.110	96.25		16	1051..	3392..	2.006	2.006	...	H1-...
22	M64	C5X9	.258	0	9	.070	25.587	y	29	3845..	85536	1.909	11.8...	...	H1-...
23	M42	P2 Std.	.246	103.75	29	.132	96.25		8	1051..	3392..	2.006	2.006	...	H1-...
24	M41	P2 Std.	.244	103.75	37	.128	96.25		2	1051..	3392..	2.006	2.006	...	H1-...
25	M33	C5X9	.232	24.963	22	.069	25.587	y	37	3845..	85536	1.909	11.8...	...	H1-...
26	M95	C5X9	.174	0	6	.015	16.099	z	8	6790..	85536	1.909	11.8...	...	H1-...
27	A5	P2 Std.	.158	49.875	97	.004	49.875		2	4864..	3392..	2.006	2.006	...	H1-...
28	C1	P2 Std.	.158	49.875	169	.004	49.875		14	4864..	3392..	2.006	2.006	...	H1-...
29	C5	P2 Std.	.158	49.875	217	.004	49.875		20	4864..	3392..	2.006	2.006	...	H1-...
30	A1	P2 Std.	.158	49.875	49	.004	49.875		2	4864..	3392..	2.006	2.006	...	H1-...
31	B1	P2 Std.	.158	49.875	109	.004	49.875		8	4864..	3392..	2.006	2.006	...	H1-...
32	B5	P2 Std.	.158	49.875	157	.004	49.875		14	4864..	3392..	2.006	2.006	...	H1-...
33	M48	L2.5x2.5x3/16	.103	23.031	33	.005	0	z	20	1887..	2923..	.911	1.766	...	H2-1
34	M47	L2.5x2.5x3/16	.101	23.031	29	.005	45.122	z	12	1887..	2923..	.911	1.766	...	H2-1
35	M45A	L2.5x2.5x3/16	.099	23.031	26	.005	0	z	2	1887..	2923..	.911	1.766	...	H2-1
36	M46	L2.5x2.5x3/16	.098	23.031	29	.004	0	y	8	1887..	2923..	.911	1.766	...	H2-1
37	M44	L2.5x2.5x3/16	.094	23.031	26	.005	0	y	22	1887..	2923..	.911	1.766	...	H2-1
38	M49	L2.5x2.5x3/16	.094	23.031	35	.005	0	y	14	1887..	2923..	.911	1.766	...	H2-1
39	M39	P2 Std.	.093	12.57	14	.304	0		14	3169..	3392..	2.006	2.006	...	H3-6
40	M38	P2 Std.	.087	12.571	6	.293	0		6	3169..	3392..	2.006	2.006	...	H3-6
41	M40	P2 Std.	.085	16.162	22	.288	28.732		22	3169..	3392..	2.006	2.006	...	H3-6
42	M50	P2 Std.	.012	14.366	32	.043	0		16	3169..	3392..	2.006	2.006	...	H1-...
43	M51A	P2 Std.	.012	14.366	35	.055	28.732		2	3169..	3392..	2.006	2.006	...	H1-...
44	M52A	P2 Std.	.012	14.366	27	.057	28.732		10	3169..	3392..	2.006	2.006	...	H1-...

Envelope AISC 15th(360-16): LRFD Steel Code Checks

	Member	Shape	Code Check Actual	Code Check Allowable	Ratio (Act./Allow.)	Loc[in]	LC	Shear Check	Shear Check Allowable	Ratio (Act./Allow.)	Loc[in]	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [k-ft]	phi*Mn z-z [k-ft]	Cb	Eqn
1	B3	P2 Std.	0.877	1.05	0.835*	83.75	8	0.13	1.05	0.124*	83.75	2383.491	33925.5	2.006	2.006	1.576	H1-1a
2	A3	P2 Std.	0.844	1.05	0.804*	83.75	24	0.135	1.05	0.129*	83.75	2383.491	33925.5	2.006	2.006	2.548	H1-1a
3	C3	P2 Std.	0.832	1.05	0.792*	83.75	16	0.126	1.05	0.12*	83.75	2383.491	33925.5	2.006	2.006	2.48	H1-1a
4	C2	P2 Std.	0.503	1.05	0.479*	83.75	8	0.12	1.05	0.114*	85	2383.491	33925.5	2.006	2.006	1.837	H1-1b
5	B4	P2 Std.	0.49	1.05	0.467*	60	21	0.099	1.05	0.094*	60	2383.491	33925.5	2.006	2.006	2.083	H1-1b
6	C4	P2 Std.	0.48	1.05	0.457*	60	3	0.09	1.05	0.086*	60	2383.491	33925.5	2.006	2.006	1.791	H1-1b
7	M83	C5X9	0.462	1.05	0.44*	4.72	18	0.19	1.05	0.181*	53.27	33638.136	85536	1.909	11.853	2.397	H1-1b
8	B2	P2 Std.	0.452	1.05	0.43*	83.75	24	0.134	1.05	0.128*	30	2383.491	33925.5	2.006	2.006	1.689	H1-1b
9	A4	P2 Std.	0.448	1.05	0.427*	60	11	0.097	1.05	0.092*	60	2383.491	33925.5	2.006	2.006	1.708	H1-1b
10	A2	P2 Std.	0.446	1.05	0.425*	83.75	56	0.129	1.05	0.123*	30	2383.491	33925.5	2.006	2.006	1.651	H1-1a
11	M21	C5X9	0.443	1.05	0.422*	4.72	2	0.191	1.05	0.182*	53.27	33638.135	85536	1.909	11.853	2.29	H1-1b
12	M52	C5X9	0.427	1.05	0.407*	4.72	8	0.191	1.05	0.182*	53.27	33638.135	85536	1.909	11.853	2.485	H1-1b
13	M32	C5X9	0.36	1.05	0.343*	20.23	14	0.192	1.05	0.183*	11.46	33638.136	85536	1.909	11.853	1.397	H1-1b
14	M63	C5X9	0.357	1.05	0.34*	60.01	14	0.191	1.05	0.182*	11.46	33638.135	85536	1.909	11.853	2.532	H1-1b
15	M2	C5X9	0.336	1.05	0.32*	59.91	20	0.064	1.05	0.061*	34.32	38455.723	85536	1.909	11.853	2.527	H1-1b
16	M94	C5X9	0.336	1.05	0.32*	0	8	0.176	1.05	0.168*	6	75237.284	85536	1.909	11.853	1.278	H1-1b
17	M37	P2 Std.	0.299	1.05	0.285*	25	14	0.269	1.05	0.256*	96.25	10511.197	33925.5	2.006	2.006	1.931	H1-1b
18	M35	P2 Std.	0.286	1.05	0.272*	25	22	0.262	1.05	0.25*	96.25	10511.197	33925.5	2.006	2.006	1.908	H1-1b
19	M1	C5X9	0.285	1.05	0.271*	60.01	20	0.189	1.05	0.18*	11.46	33638.135	85536	1.909	11.853	1.635	H1-1b
20	M36	P2 Std.	0.281	1.05	0.268*	25	6	0.261	1.05	0.249*	96.25	10511.197	33925.5	2.006	2.006	2.021	H1-1b
21	M43	P2 Std.	0.274	1.05	0.261*	103.8	33	0.11	1.05	0.105*	96.25	10511.197	33925.5	2.006	2.006	1.907	H1-1b
22	M64	C5X9	0.258	1.05	0.246*	0	9	0.07	1.05	0.067*	25.59	38455.723	85536	1.909	11.853	2.065	H1-1b
23	M42	P2 Std.	0.246	1.05	0.234*	103.8	29	0.132	1.05	0.126*	96.25	10511.197	33925.5	2.006	2.006	1.762	H1-1b
24	M41	P2 Std.	0.244	1.05	0.232*	103.8	37	0.128	1.05	0.122*	96.25	10511.197	33925.5	2.006	2.006	1.798	H1-1b
25	M33	C5X9	0.232	1.05	0.221*	24.96	22	0.069	1.05	0.066*	25.59	38455.722	85536	1.909	11.853	1.764	H1-1b
26	M95	C5X9	0.174	1.05	0.166*	0	6	0.015	1.05	0.014*	16.1	67900.01	85536	1.909	11.853	2.453	H1-1b
27	A5	P2 Std.	0.158	1.05	0.15*	49.88	97	0.004	1.05	0.004*	49.88	4864.268	33925.5	2.006	2.006	1.801	H1-1b*
28	C1	P2 Std.	0.158	1.05	0.15*	49.88	169	0.004	1.05	0.004*	49.88	4864.268	33925.5	2.006	2.006	1.328	H1-1b*
29	C5	P2 Std.	0.158	1.05	0.15*	49.88	217	0.004	1.05	0.004*	49.88	4864.268	33925.5	2.006	2.006	2.251	H1-1b*
30	A1	P2 Std.	0.158	1.05	0.15*	49.88	49	0.004	1.05	0.004*	49.88	4864.268	33925.5	2.006	2.006	1.797	H1-1b*
31	B1	P2 Std.	0.158	1.05	0.15*	49.88	109	0.004	1.05	0.004*	49.88	4864.268	33925.5	2.006	2.006	1.917	H1-1b*
32	B5	P2 Std.	0.158	1.05	0.15*	49.88	157	0.004	1.05	0.004*	49.88	4864.268	33925.5	2.006	2.006	1.317	H1-1b*
33	M48	L2.5x2.5x3/16	0.103	1.05	0.098*	23.03	33	0.005	1.05	0.005*	0	18873.471	29235.938	0.911	1.766	1.136	H2-1
34	M47	L2.5x2.5x3/16	0.101	1.05	0.096*	23.03	29	0.005	1.05	0.005*	45.12	18873.414	29235.938	0.911	1.766	1.136	H2-1
35	M45A	L2.5x2.5x3/16	0.099	1.05	0.094*	23.03	26	0.005	1.05	0.005*	0	18873.632	29235.938	0.911	1.766	1.136	H2-1
36	M46	L2.5x2.5x3/16	0.098	1.05	0.093*	23.03	29	0.004	1.05	0.004*	0	18873.637	29235.938	0.911	1.766	1.136	H2-1
37	M44	L2.5x2.5x3/16	0.094	1.05	0.09*	23.03	26	0.005	1.05	0.005*	0	18873.632	29235.938	0.911	1.766	1.136	H2-1
38	M49	L2.5x2.5x3/16	0.094	1.05	0.09*	23.03	35	0.005	1.05	0.005*	0	18873.83	29235.938	0.911	1.766	1.136	H2-1
39	M39	P2 Std.	0.093	1.05	0.089*	12.57	14	0.304	1.05	0.29*	0	31697.77	33925.5	2.006	2.006	1.136	H3-6
40	M38	P2 Std.	0.087	1.05	0.083*	12.57	6	0.293	1.05	0.279*	0	31697.704	33925.5	2.006	2.006	1.136	H3-6
41	M40	P2 Std.	0.085	1.05	0.081*	16.16	22	0.288	1.05	0.274*	28.73	31697.77	33925.5	2.006	2.006	1.136	H3-6
42	M50	P2 Std.	0.012	1.05	0.011*	14.37	32	0.043	1.05	0.041*	0	31697.704	33925.5	2.006	2.006	1.136	H1-1b
43	M51A	P2 Std.	0.012	1.05	0.011*	14.37	35	0.055	1.05	0.052*	28.73	31697.77	33925.5	2.006	2.006	1.136	H1-1b
44	M52A	P2 Std.	0.012	1.05	0.011*	14.37	27	0.057	1.05	0.054*	28.73	31697.77	33925.5	2.006	2.006	1.136	H1-1b

*Rating per TIA-222-H, Section 15.5

APPENDIX D

ADDITIONAL CALCULATIONS

TIA-222-H CONNECTION CHECK
Mount to Tower Connection - Typ. All Sectors
2021777.876375.02

Bolt Information		
Bolt Diameter (d)	0.75	in
Net Tensile Area (An)	0.334	in^2
# of Bolts Total (n)	1	
Bolt Grade	A325N	
Bolt Tensile Strength (F_{ub})	120	ksi

RISA 3D Reactions		
Moment (M)	0.00	k-ft
Axial (T)	-0.41	kips
Shear (V)	3.84	kips

Bolt Capacity		
Nominal Tensile Strength (R_{nt})	40.135	kips
Nominal Shear Strength (R_{nv})	26.51	kips
Bolt Tensile Force (T_{ub})	-0.41	kips
Bolt Shear Force (V_{ub})	3.840	kips
$T_{ub}/\phi R_{nt}$	-0.01299	
$V_{ub}/\phi R_{nv}$	0.18397	
$(V_{ub}/\phi R_{nv})^2+(T_{ub}/\phi R_{nt})^2$	0.03571	
Bolt Capacity =	18.4%	OK

*Rating per TIA-222-H, Section 15.5

TIA-222-H CONNECTION CHECK
Mod V-Kit to Tower Connection - Typ. All Sectors
2021777.876375.02

Bolt Information		
Bolt Diameter (d)	0.625	in
Net Tensile Area (An)	0.226	in^2
# of Bolts Total (n)	4	
Bolt Distance Up-Down	6	in
Bolt Distance Left-Right	6	in
Bolt Grade	A325N	
Bolt Tensile Strength (F_{ub})	120	ksi

RISA 3D Reactions		
Moment (M)	0.00	k-ft
Axial (T)	-1.21	kips
Shear (V)	1.86	kips

Bolt Capacity		
Nominal Tensile Strength (R_{nt})	27.120	kips
Nominal Shear Strength (R_{nv})	18.41	kips
Bolt Tensile Force (T_{ub})	-0.30	kips
Bolt Shear Force (V_{ub})	0.466	kips
$T_{ub}/\phi R_{nt}$	-0.01413	
$V_{ub}/\phi R_{nv}$	0.03214	
$(V_{ub}/\phi R_{nv})^2+(T_{ub}/\phi R_{nt})^2$	0.00129	
Bolt Capacity =	3.2%	OK

*Rating per TIA-222-H, Section 15.5

EBI Consulting

environmental | engineering | due diligence

RADIO FREQUENCY EMISSIONS ANALYSIS REPORT
EVALUATION OF HUMAN EXPOSURE POTENTIAL TO NON-IONIZING EMISSIONS

T-Mobile Existing Facility

Site ID: CTNL154A

876375
53 Westminster Road
Canterbury, Connecticut 06331

October 27, 2021

EBI Project Number: 6221006289

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**11.36%**

October 27, 2021

T-Mobile
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CTNL154A - 876375

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **53 Westminster Road** in **Canterbury, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits; therefore, it is necessary to report results and limits in terms of percent MPE rather than power density.

All results were compared to the FCC (Federal Communications Commission) radio frequency exposure rules, 47 CFR 1.1307(b)(1) – (b)(3), to determine compliance with the Maximum Permissible Exposure (MPE) limits for General Population/Uncontrolled environments as defined below.

General population/uncontrolled exposure limits apply to situations in which the general population may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general population would always be considered under this category when exposure is not employment related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Public exposure to radio frequencies is regulated and enforced in units of microwatts per square centimeter ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. Because each carrier will be using different frequency bands, and each frequency band has different exposure limits, it is necessary to report percent of MPE rather than power density.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 53 Westminster Road in Canterbury, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

For all calculations, all equipment was calculated using the following assumptions:

1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.

3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.

5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

7) 1 LTE Traffic channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 60 Watts.

8) 1 LTE Broadcast channel (LTE 1C and 2C BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 20 Watts.

9) 1 NR Traffic channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.

10) 1 NR Broadcast channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 40 Watts.

11) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.

12) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

13) The antennas used in this modeling are the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector A, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector B, the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied

specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.

14) The antenna mounting height centerline of the proposed antennas is 183 feet above ground level (AGL).

15) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.

16) All calculations were done with respect to uncontrolled / general population threshold limits.

T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz / 2100 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd / 16.45 dBd
Height (AGL):	183 feet	Height (AGL):	183 feet	Height (AGL):	183 feet
Channel Count:	13	Channel Count:	13	Channel Count:	13
Total TX Power (W):	560 Watts	Total TX Power (W):	560 Watts	Total TX Power (W):	560 Watts
ERP (W):	17,868.72	ERP (W):	17,868.72	ERP (W):	17,868.72
Antenna A1 MPE %:	**2.71%**	Antenna B1 MPE %:	**2.71%**	Antenna C1 MPE %:	**2.71%**
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz / 2500 MHz / 2500 MHz
Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd	Gain:	22.65 dBd / 17.3 dBd / 22.65 dBd / 17.3 dBd
Height (AGL):	183 feet	Height (AGL):	183 feet	Height (AGL):	183 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	36,356.09	ERP (W):	36,356.09	ERP (W):	36,356.09
Antenna A2 MPE %:	**4.17%**	Antenna B2 MPE %:	**4.17%**	Antenna C2 MPE %:	**4.17%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	6.88%
Verizon	3%
AT&T	1.48%
Site Total MPE % :	11.36%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	6.88%
T-Mobile Sector B Total:	6.88%
T-Mobile Sector C Total:	6.88%
Site Total MPE % :	11.36%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 600 MHz LTE	2	591.73	183.0	1.36	600 MHz LTE	400	0.34%
T-Mobile 600 MHz NR	1	1577.94	183.0	1.81	600 MHz NR	400	0.45%
T-Mobile 700 MHz LTE	2	695.22	183.0	1.60	700 MHz LTE	467	0.34%
T-Mobile 1900 MHz GSM	4	1052.26	183.0	4.83	1900 MHz GSM	1000	0.48%
T-Mobile 1900 MHz LTE	2	2104.51	183.0	4.83	1900 MHz LTE	1000	0.48%
T-Mobile 2100 MHz LTE	2	2649.42	183.0	6.08	2100 MHz LTE	1000	0.61%
T-Mobile 2500 MHz LTE 1C & 2C Traffic	1	11044.63	183.0	12.67	2500 MHz LTE 1C & 2C Traffic	1000	1.27%
T-Mobile 2500 MHz LTE 1C & 2C Broadcast	1	1074.06	183.0	1.23	2500 MHz LTE 1C & 2C Broadcast	1000	0.12%
T-Mobile 2500 MHz NR Traffic	1	22089.26	183.0	25.35	2500 MHz NR Traffic	1000	2.53%
T-Mobile 2500 MHz NR Broadcast	1	2148.13	183.0	2.47	2500 MHz NR Broadcast	1000	0.25%
						Total:	**6.88%**

• NOTE: Totals may vary by approximately 0.01% due to summation of remainders in calculations.

Summary

All calculations performed for this analysis yielded results that were **within** the allowable limits for general population exposure to RF Emissions.

The anticipated maximum composite contributions from the T-Mobile facility as well as the site composite emissions value with regards to compliance with FCC's allowable limits for general population exposure to RF Emissions are shown here:

T-Mobile Sector	Power Density Value (%)
Sector A:	6.88%
Sector B:	6.88%
Sector C:	6.88%
T-Mobile Maximum MPE % (Sector A):	6.88%
Site Total:	11.36%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **11.36%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

FCC guidelines state that if a site is found to be out of compliance (over allowable thresholds), that carriers over a 5% contribution to the composite value will require measures to bring the site into compliance. For this facility, the composite values calculated were well within the allowable 100% threshold standard per the federal government.

T-Mobile

T-MOBILE SITE NUMBER: CTNL154A
T-MOBILE SITE NAME: CTNL154A
SITE TYPE: MONOPOLE
TOWER HEIGHT: 180'-0"

BUSINESS UNIT #: 876375
SITE ADDRESS: 53 WESTMINSTER RD, CANTERBURY, CT 6331
COUNTY: WINDHAM
JURISDICTION: TOWN OF CANTERBURY

T-MOBILE SPRINT RETAIN SITE CONFIGURATION: 67E5998E 6160

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	CANTERBURY/LEMIRE
SITE ADDRESS:	53 WESTMINSTER RD CANTERBURY, CT 6331
COUNTY:	WINDHAM
MAP/PARCEL #:	CT-022-46-32
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.7019861°
LONGITUDE:	-71.9805861°
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	358 FT
CURRENT ZONING:	RD
JURISDICTION:	TOWN OF CANTERBURY
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	LEMIRE JOHN R 142 HANOVER VERSAILLES RD BALTIC, CT 06330
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	CONNECTICUT LIGHT AND POWER COMPANY
TELCO PROVIDER:	SOUTHERN NEW ENGLAND TELEPHONE COMPANY

PROJECT TEAM

A&E FIRM:	CROWN CASTLE USA INC. 2000 CORPORATE DRIVE CANONSBURG, PA 15317 CROWNAE.APPROVAL@CROWNCASTLE.COM
CROWN CASTLE USA INC. DISTRICT CONTACTS:	1500 CORPORATE DRIVE CANONSBURG, PA 15317

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	CODE SUMMARY
T-3	CODE SUMMARY
T-4	GENERAL NOTES
C-1.1	OVERALL SITE PLAN
C-1.2	SITE PLAN & ENLARGED SITE PLAN
C-2	FINAL ELEVATION & ANTENNA PLANS
C-3	ANTENNA & CABLE SCHEDULE
C-4	PLUMBING DIAGRAM
C-5	EQUIPMENT SPECS
E-1	AC PANEL SCHEDULES & ONE LINE DIAGRAM
G-1	ANTENNA GROUNDING DIAGRAM
G-2	GROUNDING DETAILS
G-3	GROUNDING DETAILS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 24X36. 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.

PROJECT DESCRIPTION

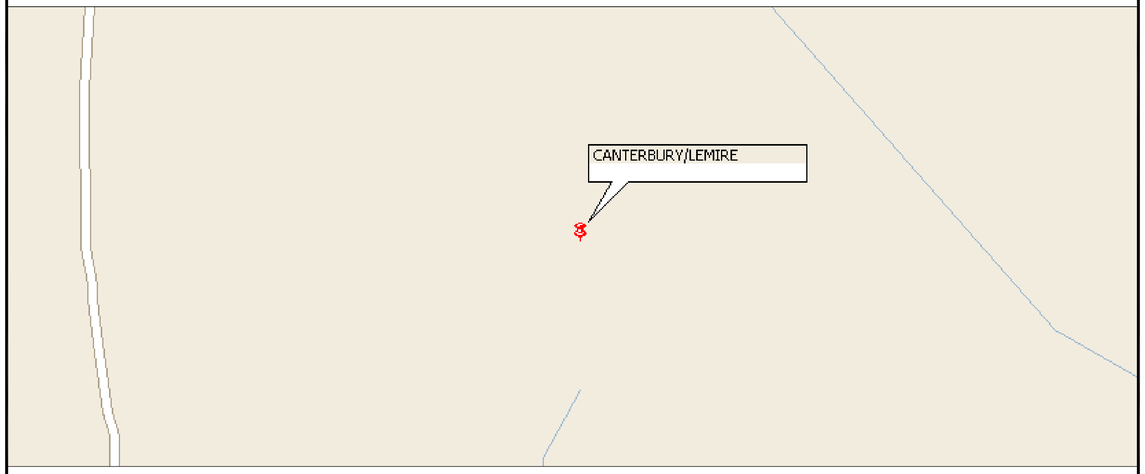
THE PURPOSE OF THIS PROJECT IS TO ENHANCE BROADBAND CONNECTIVITY AND CAPACITY TO THE EXISTING ELIGIBLE WIRELESS FACILITY.

TOWER SCOPE OF WORK:
- REMOVE (6) ANTENNAS
- REMOVE (12) RADIOS
- REMOVE (4) HYBRID CABLES
- INSTALL (6) ANTENNAS
- INSTALL (6) RRHs
- INSTALL (3) HYBRID CABLES

GROUND SCOPE OF WORK:
- REMOVE (2) SPRINT CABINETS
- INSTALL (1) 6160 SSC
- INSTALL (1) RBS 6601
- INSTALL (1) B160 BATTERY CABINET
- INSTALL (3) BB 6648s
- INSTALL (1) PSU 4813 VOLTAGE BOOSTER IN ENCLOSURE 6160 SSC CABINET
- INSTALL (1) CSR IXRE V2 IN ENCLOSURE 6160 SSC CABINET
- INSTALL (1) DUG 20 IN SSC

NOTE:
PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN NOC AT (800) 788-7011 & CROWN CONSTRUCTION MANAGER.

LOCATION MAP



NO SCALE

APPLICABLE CODES/REFERENCE DOCUMENTS

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	2015 IBC / 2018 CONNECTICUT STATE BUILDING CODE
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	B+T GROUP
DATED:	9/23/21
MOUNT ANALYSIS:	GPD ENGINEERING AND ARCH. PROF. CORP.
DATED:	9/8/21
RFDS REVISION:	1
DATED:	8/2/21
ORDER ID:	584633
REVISION:	0

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APPROVALS

APPROVAL	SIGNATURE	DATE
PROPERTY OWNER OR REP.		
LAND USE PLANNER		
T-MOBILE		
OPERATIONS		
RF		
NETWORK		
BACKHAUL		
CONSTRUCTION MANAGER		

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

T-Mobile
4 SYLVAN WAY
PARSIPPANY, NJ 07054

CROWN CASTLE
3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

T-MOBILE SITE NUMBER:
CTNL154A

BU #: **876375**
CANTERBURY/LEMIRE

53 WESTMINSTER RD
CANTERBURY, CT 6331

EXISTING
180'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	6/14/21	GEH	CONSTRUCTION	GEH
1	9/16/21	BLB	CONSTRUCTION	BLB
2	9/20/21	MEH	CONSTRUCTION	MEH
3	10/10/21	MEH	CONSTRUCTION	MEH

STATE OF CONNECTICUT
No. 23924
LICENSED
PROFESSIONAL ENGINEER
10/10/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: T-1
REVISION: 3

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
(EXCEPT 1 AND 2-FAMILY DWELLINGS AND TOWNHOUSES)
(Reproduce the following data on the building plans sheet 1 or 2)

Name of Project: Verizon Antenna Removal and Addition
Address: Street, City, State Zip Code Zip
Owner/Authorized Agent: _____ Phone # (____) ____ - ____ E-Mail _____
Owned By: ☐ City/County ☒ Private ☐ State
Code Enforcement Jurisdiction: ☐ City_____ ☒ County WINDHAM ☐ State

CONTACT: _____

DESIGNER	FIRM	NAME	LICENSE #	TELEPHONE #	E-MAIL
Architectural				(___)	
Civil	Crown Castle	Richard A. Boelter	049529	(724)416-9985	richard.boelter@crowncastle.com
Electrical	Crown Castle	Richard A. Boelter	049529	(724)416-9985	richard.boelter@crowncastle.com
Fire Alarm				(___)	
Plumbing				(___)	
Mechanical				(___)	
Sprinkler-Standpipe				(___)	
Structural	John W. Kelly P.E. Engineering, P.C.	John W/Kelly, III	042719	(918)587-4630	
Retaining Walls >5' High				(___)	
Other				(___)	

("Other" should include firms and individuals such as truss, precast, pre-engineered, interior designers, etc.)

2018 NC BUILDING CODE: ☐ New Building ☐ Addition ☐ Renovation
☐ 1st Time Interior Completion
☐ Shell/Core - Contact the local inspection jurisdiction for possible additional procedures and requirements
☐ Phased Construction - Shell/Core- Contact the local inspection jurisdiction for possible additional procedures and requirements

2018 NC EXISTING BUILDING CODE: EXISTING: ☐ Prescriptive ☐ Repair ☐ Chapter 14
Alteration: ☐ Level I ☐ Level II ☐ Level III
☐ Historic Property ☐ Change of Use

CONSTRUCTED: (date) _____ **CURRENT OCCUPANCY(S)** (Ch. 3): U
RENOVATED: (date) _____ **PROPOSED OCCUPANCY(S)** (Ch. 3): U

RISK CATEGORY (Table 1604.5): **Current:** ☐ I ☒ II ☐ III ☐ IV
Proposed: ☐ I ☒ II ☐ III ☐ IV

BASIC BUILDING DATA
Construction Type: ☐ I-A ☐ II-A ☐ III-A ☐ IV ☐ V-A
(check all that apply) ☐ I-B ☒ II-B ☐ III-B ☐ V-B
Sprinklers: ☒ No ☐ Partial ☐ Yes ☐ NFPA 13 ☐ NFPA 13R ☐ NFPA 13D
Standpipes: ☒ No ☐ Yes Class ☐ I ☐ II ☐ III ☐ Wet ☐ Dry
Fire District: ☒ No ☐ Yes **Flood Hazard Area:** ☐ No ☐ Yes
Special Inspections Required: ☒ No ☐ Yes (Contact the local inspection jurisdiction for additional procedures and requirements.)

Gross Building Area Table

FLOOR	EXISTING (SQ.FT)	NEW (SQ.FT)	SUB-TOTAL
3rd Floor			
2nd Floor			
Mezzanine			
1st Floor			
Basement			
TOTAL			

ALLOWABLE AREA

Primary Occupancy Classification(s):
Assembly ☐ A-1 ☐ A-2 ☐ A-3 ☐ A-4 ☐ A-5
Business ☐
Educational ☐
Factory ☐ F-1 Moderate ☐ F-2 Low
Hazardous ☐ H-1 Detonate ☐ H-2 Deflagrate ☐ H-3 Combust ☐ H-4 Health ☐ H-5 HPM
Institutional ☐ I-1 Condition ☐ 1 ☐ 2
☐ I-2 Condition ☐ 1 ☐ 2
☐ I-3 Condition ☐ 1 ☐ 2 ☐ 3 ☐ 4 ☐ 5
☐ I-4
Mercantile ☐
Residential ☐ R-1 ☐ R-2 ☐ R-3 ☐ R-4
Storage ☐ S-1 Moderate ☐ S-2 Low ☐ High-piled
☐ Parking Garage ☐ Open ☐ Enclosed ☐ Repair Garage
Utility and Miscellaneous ☒

Accessory Occupancy Classification(s): _____
Incidental Uses (Table 509): _____
Special Uses (Chapter 4 – List Code Sections): _____
Special Provisions: (Chapter 5 – List Code Sections): _____
Mixed Occupancy: ☒ No ☐ Yes Separation: ____ Hr. Exception: _____

☐ Non-Separated Use (508.3) - The required type of construction for the building shall be determined by applying the height and area limitations for each of the applicable occupancies to the entire building. The most restrictive type of construction, so determined, shall apply to the entire building.

☐ Separated Use (508.4) - See below for area calculations for each story, the area of the occupancy shall be such that the sum of the ratios of the actual floor area of each use divided by the allowable floor area for each use shall not exceed 1.

$$\frac{\text{Actual Area of Occupancy A}}{\text{Allowable Area of Occupancy A}} + \frac{\text{Actual Area of Occupancy B}}{\text{Allowable Area of Occupancy B}} \leq 1$$

_____ + _____ + ... = _____ ≤ 1.00

STORY NO.	DESCRIPTION AND USE	(A) BLDG AREA PER STORY (ACTUAL)	(B) TABLE 506.2[4] AREA	(C) AREA FOR FRONTAGE INCREASE[1,2]	(D) ALLOWABLE AREA PER STORY OR UNLIMITED[2,3]

[1] Frontage area increases from Section 506.3 are computed thus:
a. Perimeter which fronts a public way or open space having 20 feet minimum width = _____ (F)
b. Total Building Perimeter = _____ (P)
c. Ratio (F/P) = _____ (F/P)
d. W = Minimum width of public way = _____ (W)
e. Percent of frontage increase $I_f = 100[F/P - 0.25] \times W/30$ = _____ (%)
[2] Unlimited area applicable under conditions of Section 507.
[3] Maximum Building Area = total number of stories in the building x D (maximum3 stories) (506.2).
[4] The maximum area of open parking garages must comply with Table 406.5.4.
[5] Frontage increase is based on the unsprinklered area value in Table 506.2.

ALLOWABLE HEIGHT

	ALLOWABLE	SHOWN ON PLANS	CODE REFERENCE [1]
Building Height in Feet (Table 504.3) [2]			
Building Height in Stories (Table 504.4) [3]			

[1] Provide code reference if the "Shown on Plans" quantity is not based on Table 504.3 or 504.4.
[2] The maximum height of air traffic control towers must comply with Table 412.3.1.
[3] The maximum height of open parking garages must comply with Table 406.5.4.

FIRE PROTECTION REQUIREMENTS

BUILDING ELEMENT	FIRE SEPARATION DISTANCE (FEET)	RATING REQ'D	RATING PROVIDED (W/ * REDUCTION)	DETAIL # AND SHEET #	DESIGN # FOR RATED ASSEMBLY	SHEET # FOR RATED PENETRATION	SHEET # FOR RATED JOINTS
Structural Frame, including columns, girders, trusses							
Bearing Walls							
Exterior							
North							
East							
West							
South							
Interior							
Nonbearing Walls and Partitions Exterior walls							
North							
East							
West							
South							
Interior walls and partitions							
Floor Construction Including supporting beams and joists							
Floor Ceiling Assembly							
Columns Supporting Floors							
Roof Construction, including supporting beams and joists							
Roof Ceiling Assembly							
Columns Supporting Roof							
Shaft Enclosures - Exit							
Shaft Enclosures - Other							
Corridor Separation							
Occupancy/Fire Barrier Separation							
Party/Fire Wall Separation							
Smoke Barrier Separation							
Smoke Partition							
Tenant/Dwelling Unit/ Sleeping Unit Separation							
Incidental Use Separation							

* Indicate section number permitting reduction

PERCENTAGE OF WALL OPENING CALCULATIONS

FIRE SEPARATION DISTANCE (FEET) FROM PROPERTY LINES	DEGREE OF OPENINGS PROTECTION (TABLE 705.8)	ALLOWABLE AREA (%)	ACTUAL SHOWN ON PLANS (%)

LIFE SAFETY SYSTEM REQUIREMENTS

Emergency Lighting: ☐ No ☐ Yes
Exit Signs: ☐ No ☐ Yes
Fire Alarm: ☐ No ☐ Yes
Smoke Detection Systems: ☐ No ☐ Yes ☐ Partial _____
Carbon Monoxide Detection: ☐ No ☐ Yes

LIFE SAFETY PLAN REQUIREMENTS

Life Safety Plan Sheet #: _____

☐ Fire and/or smoke rated wall locations (Chapter 7)
☐ Assumed and real property line locations (if not on the site plan)
☐ Exterior wall opening area with respect to distance to assumed property lines (705.8)
☐ Occupancy Use for each area as it relates to occupant load calculation (Table 1004.1.2)
☐ Occupant loads for each area
☐ Exit access travel distances (1017)
☐ Common path of travel distances (Tables 1006.2.1 & 1006.3.2(1))
☐ Dead end lengths (1020.4)
☐ Clear exit widths for each exit door
☐ Maximum calculated occupant load capacity each exit door can accommodate based on egress width (1005.3)
☐ Actual occupant load for each exit door
☐ A separate schematic plan indicating where fire rated floor/ceiling and/or roof structure is provided for purposes of occupancy separation
☐ Location of doors with panic hardware (1010.1.10)
☐ Location of doors with delayed egress locks and the amount of delay (1010.1.9.7)
☐ Location of doors with electromagnetic egress locks (1010.1.9.9)
☐ Location of doors equipped with hold-open devices
☐ Location of emergency escape windows (1030)
☐ The square footage of each fire area (202)
☐ The square footage of each smoke compartment for Occupancy Classification I-2 (407.5)
☐ Note any code exceptions or table notes that may have been utilized regarding the items above

ACCESSIBLE DWELLING UNITS
(SECTION 1107)

TOTAL UNITS	ACCESSIBLE UNITS REQUIRED	ACCESSIBLE UNITS PROVIDED	TYPE A UNITS REQUIRED	TYPE A UNITS PROVIDED	TYPE B UNITS REQUIRED	TYPE B UNITS PROVIDED	TOTAL ACCESSIBLE UNITS PROVIDED

ACCESSIBLE PARKING
(SECTION 1106)

LOT OR PARKING AREA	TOTAL # OF PARKING SPACES REQUIRED	TOTAL # OF PARKING SPACES PROVIDED	# OF ACCESSIBLE SPACES PROVIDED REGULAR WITH 5' ACCESS AISLE	# OF ACCESSIBLE SPACES PROVIDED VAN SPACES WITH 132" ACCESS AISLE	# OF ACCESSIBLE SPACES PROVIDED VAN SPACES WITH 8' ACCESS AISLE	TOTAL # ACCESSIBLE PROVIDED
TOTAL						

PLUMBING FIXTURE REQUIREMENTS
(TABLE 2902.1)

USE		WATERCLOSETS MALE	WATERCLOSETS FEMALE	WATERCLOSETS UNISEX	URINALS	LAVATORIES MALE	LAVATORIES FEMALE	LAVATORIES UNISEX	SHOWERS /TUBS	DRINKING FOUNTAINS REGULAR	DRINKING FOUNTAINS ACCESSIBLE
SPACE	EXIST'G										
	NEW										
	REQ'D										

SPECIAL APPROVALS

Special approval: (Local Jurisdiction, Department of Insurance, OSC, DPI, DHHS, etc., describe below)

_____

_____

T-Mobile
4 SYLVAN WAY
PARSIPPANY, NJ 07054

CROWN CASTLE
3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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T-MOBILE SITE NUMBER:
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BU #: **876375**
CANTERBURY/LEMIRE

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180'-0" MONOPOLE

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3	10/10/21	MEH	CONSTRUCTION	MEH

STATE OF CONNECTICUT * JOHN W. KELLY III * No. 23924 LICENSED PROFESSIONAL ENGINEER
10/10/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: T-2
REVISION: 3

ENERGY SUMMARY

ENERGY REQUIREMENTS:
The following data shall be considered minimum and any special attribute required to meet the energy code shall also be provided. Each Designer shall furnish the required portions of the project information for the plan data sheet. If performance method, state the annual energy cost for the standard reference design vs annual energy cost for the proposed design.

Existing building envelope complies with code: ☐ No ☐ Yes (The remainder of this section is not applicable)

Exempt Building: ☐ No ☐ Yes (Provide code or statutory reference): _____

Climate Zone: ☐ 3A ☐ 4A ☐ 5A

Method of Compliance: Energy Code ☐ Performance ☐ Prescriptive
ASHRAE 90.1 ☐ Performance ☐ Prescriptive
(If "Other" specify source here)_____

THERMAL ENVELOPE (Prescriptive method only)

Roof/ceiling Assembly (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Skylights in each assembly: _____
U-Value of skylight: _____
total square footage of skylights in each assembly: _____

Exterior Walls (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Openings (windows or doors with glazing)
U-Value of assembly: _____
Solar heat gain coefficient: _____
projection factor: _____
Door R-Values: _____

Walls below grade (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors over unconditioned space (each assembly)
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____

Floors slab on grade
Description of assembly: _____
U-Value of total assembly: _____
R-Value of insulation: _____
Horizontal/vertical requirement: _____
slab heated: _____

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
ELECTRICAL DESIGN
(PROVIDE ON THE ELECTRICAL SHEETS IF APPLICABLE)

ELECTRICAL SUMMARY

ELECTRICAL SYSTEM AND EQUIPMENT

Method of Compliance: Energy Code ☐ Performance ☐ Prescriptive
ASHRAE 90.1 ☐ Performance ☐ Prescriptive

Lighting schedule (each fixture type)
lamp type required in fixture
number of lamps in fixture
ballast type used in the fixture
number of ballasts in fixture
total wattage per fixture
total interior wattage specified vs. allowed (whole building or space by space)
total exterior wattage specified vs. allowed

Additional Efficiency Package Options
(When using the 2018 NCECC; not required for ASHRAE 90.1)
☐ C406.2 More Efficient HVAC Equipment Performance
☐ C406.3 Reduced Lighting Power Density
☐ C406.4 Enhanced Digital Lighting Controls
☐ C406.5 On-Site Renewable Energy
☐ C406.6 Dedicated Outdoor Air System
☐ C406.7 Reduced Energy Use in Service Water Heating

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
STRUCTURAL DESIGN
(PROVIDE ON THE STRUCTURAL SHEETS IF APPLICABLE)

DESIGN LOADS:

Importance Factors: Snow (I_s) _____
Seismic (I_E) _____

Live Loads: Roof _____ psf
Mezzanine _____ psf
Floor _____ psf

Ground Snow Load: _____ psf

Wind Load: Ultimate Wind Speed _____ mph (ASCE-7)
Exposure Category _____

SEISMIC DESIGN CATEGORY: ☐ A ☐ B ☐ C ☐ D
Provide the following Seismic Design Parameters:
Risk Category (Table 1604.5) ☐ I ☐ II ☐ III ☐ IV
Spectral Response Acceleration S_S_____ %g S_1_____ %g
Site Classification (ASCE 7) ☐ A ☐ B ☐ C ☐ D ☐ E ☐ F
Data Source: ☐ Field Test ☐ Presumptive ☐ Historical Data
Basic structural system ☐ Bearing Wall ☐ Dual w/Special Moment Frame
☐ Building Frame ☐ Dual w/Intermediate R/C or Special Steel
☐ Moment Frame ☐ Inverted Pendulum
Analysis Procedure: ☐ Simplified ☐ Equivalent Lateral Force ☐ Dynamic
Architectural, Mechanical, Components anchored? ☐ Yes ☐ No

LATERAL DESIGN CONTROL: Earthquake ☐ Wind ☐

SOIL BEARING CAPACITIES:
Field Test (provide copy of test report) _____ psf
Presumptive Bearing capacity _____ psf
Pile size, type, and capacity _____

2018 APPENDIX B
BUILDING CODE SUMMARY FOR ALL COMMERCIAL PROJECTS
MECHANICAL DESIGN
(PROVIDE ON THE MECHANICAL SHEETS IF APPLICABLE)

MECHANICAL SUMMARY

MECHANICAL SYSTEMS, SERVICE SYSTEMS AND EQUIPMENT

Thermal Zone
winter dry bulb: _____
summer dry bulb: _____

Interior design conditions
winter dry bulb: _____
summer dry bulb: _____
relative humidity: _____

Building heating load: _____

Building cooling load: _____

Mechanical Spacing Conditioning System
Unitary
description of unit: _____
heating efficiency: _____
cooling efficiency: _____
size category of unit: _____
Boiler
Size category. If oversized, state reason.: _____
Chiller
Size category. If oversized, state reason.: _____

List equipment efficiencies: _____

T-Mobile
4 SYLVAN WAY
PARSIPPANY, NJ 07054

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STATE OF CONNECTICUT
MICHAEL E. HILDEBRAND
No. 23924
LICENSED
PROFESSIONAL ENGINEER
10/10/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: T-3

REVISION: 3

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

1. NOTICE TO PROCEED– NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800–788–7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.
2. "LOOK UP" – CROWN CASTLE USA INC. SAFETY CLIMB REQUIREMENT:
THE INTEGRITY OF THE SAFETY CLIMB AND ALL COMPONENTS OF THE CLIMBING FACILITY SHALL BE CONSIDERED DURING ALL STAGES OF DESIGN, INSTALLATION, AND INSPECTION. TOWER MODIFICATION, MOUNT REINFORCEMENTS, AND/OR EQUIPMENT INSTALLATIONS SHALL NOT COMPROMISE THE INTEGRITY OR FUNCTIONAL USE OF THE SAFETY CLIMB OR ANY COMPONENTS OF THE CLIMBING FACILITY ON THE STRUCTURE. THIS SHALL INCLUDE, BUT NOT BE LIMITED TO: PINCHING OF THE WIRE ROPE, BENDING OF THE WIRE ROPE FROM ITS SUPPORTS, DIRECT CONTACT OR CLOSE PROXIMITY TO THE WIRE ROPE WHICH MAY CAUSE FRICTIONAL WEAR, IMPACT TO THE ANCHORAGE POINTS IN ANY WAY, OR TO IMPEDE/BLOCK ITS INTENDED USE. ANY COMPROMISED SAFETY CLIMB, INCLUDING EXISTING CONDITIONS MUST BE TAGGED OUT AND REPORTED TO YOUR CROWN CASTLE USA INC. POC OR CALL THE NOC TO GENERATE A SAFETY CLIMB MAINTENANCE AND CONTRACTOR NOTICE TICKET.
3. PRIOR TO THE START OF CONSTRUCTION, ALL REQUIRED JURISDICTIONAL PERMITS SHALL BE OBTAINED. THIS INCLUDES, BUT IS NOT LIMITED TO, BUILDING, ELECTRICAL, MECHANICAL, FIRE, FLOOD ZONE, ENVIRONMENTAL, AND ZONING. AFTER ONSITE ACTIVITIES AND CONSTRUCTION ARE COMPLETED, ALL REQUIRED PERMITS SHALL BE SATISFIED AND CLOSED OUT ACCORDING TO LOCAL JURISDICTIONAL REQUIREMENTS.
4. ALL CONSTRUCTION MEANS AND METHODS; INCLUDING BUT NOT LIMITED TO, ERECTION PLANS, RIGGING PLANS, CLIMBING PLANS, AND RESCUE PLANS SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR RESPONSIBLE FOR THE EXECUTION OF THE WORK CONTAINED HEREIN, AND SHALL MEET ANSI/ASSE A10.48 (LATEST EDITION); FEDERAL, STATE, AND LOCAL REGULATIONS; AND ANY APPLICABLE INDUSTRY CONSENSUS STANDARDS RELATED TO THE CONSTRUCTION ACTIVITIES BEING PERFORMED. ALL RIGGING PLANS SHALL ADHERE TO ANSI/ASSE A10.48 (LATEST EDITION) AND CROWN CASTLE USA INC. STANDARD CED–STD–10253, INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION, TO CERTIFY THE SUPPORTING STRUCTURE(S) IN ACCORDANCE WITH ANSI/TIA–322 (LATEST EDITION).
5. ALL SITE WORK TO COMPLY WITH QAS–STD–10068 "INSTALLATION STANDARDS FOR CONSTRUCTION ACTIVITIES ON CROWN CASTLE USA INC. TOWER SITE," CED–STD–10294 "STANDARD FOR INSTALLATION OF MOUNTS AND APPURTENANCES," AND LATEST VERSION OF ANSI/TIA–1019–A–2012 "STANDARD FOR INSTALLATION, ALTERATION, AND MAINTENANCE OF ANTENNA SUPPORTING STRUCTURES AND ANTENNAS."
6. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY CROWN CASTLE USA INC. PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
9. THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
10. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING AND EXCAVATION E) CONSTRUCTION SAFETY PROCEDURES.
11. ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
12. CONTRACTOR SHALL KEEP THE SITE FREE FROM ACCUMULATING WASTE MATERIAL, DEBRIS, AND TRASH AT THE COMPLETION OF THE WORK. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
13. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, TOWER OWNER, CROWN CASTLE USA INC., AND/OR LOCAL UTILITIES.
14. THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE REQUIRED BY LOCAL JURISDICTION AND SIGNAGE REQUIRED ON INDIVIDUAL PIECES OF EQUIPMENT, ROOMS, AND SHELTERS.
15. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
16. THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
17. THE AREAS OF THE OWNERS PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION AS SPECIFIED ON THE CONSTRUCTION DRAWINGS AND/OR PROJECT SPECIFICATIONS.
18. CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
19. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
20. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
21. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
22. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.

GENERAL NOTES:

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
   CARRIER: T–MOBILE
   TOWER OWNER: CROWN CASTLE USA INC.
2. THESE DRAWINGS HAVE BEEN PREPARED USING STANDARDS OF PROFESSIONAL CARE AND COMPLETENESS NORMALLY EXERCISED UNDER SIMILAR CIRCUMSTANCES BY REPUTABLE ENGINEERS IN THIS OR SIMILAR LOCALITIES. IT IS ASSUMED THAT THE WORK DEPICTED WILL BE PERFORMED BY AN EXPERIENCED CONTRACTOR AND/OR WORKPEOPLE WHO HAVE A WORKING KNOWLEDGE OF THE APPLICABLE CODE STANDARDS AND REQUIREMENTS AND OF INDUSTRY ACCEPTED STANDARD GOOD PRACTICE. AS NOT EVERY CONDITION OR ELEMENT IS (OR CAN BE) EXPLICITLY SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL USE INDUSTRY ACCEPTED STANDARD GOOD PRACTICE FOR MISCELLANEOUS WORK NOT EXPLICITLY SHOWN.
3. THESE DRAWINGS REPRESENT THE FINISHED STRUCTURE. THEY DO NOT INDICATE THE MEANS OR METHODS OF CONSTRUCTION. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES, AND PROCEDURES. THE CONTRACTOR SHALL PROVIDE ALL MEASURES NECESSARY FOR PROTECTION OF LIFE AND PROPERTY DURING CONSTRUCTION. SUCH MEASURES SHALL INCLUDE, BUT NOT BE LIMITED TO, BRACING, FORMWORK, SHORING, ETC. SITE VISITS BY THE ENGINEER OR HIS REPRESENTATIVE WILL NOT INCLUDE INSPECTION OF THESE ITEMS AND IS FOR STRUCTURAL OBSERVATION OF THE FINISHED STRUCTURE ONLY.
4. NOTES AND DETAILS IN THE CONSTRUCTION DRAWINGS SHALL TAKE PRECEDENCE OVER GENERAL NOTES AND TYPICAL DETAILS. WHERE NO DETAILS ARE SHOWN, CONSTRUCTION SHALL CONFORM TO SIMILAR WORK ON THE PROJECT, AND/OR AS PROVIDED FOR IN THE CONTRACT DOCUMENTS. WHERE DISCREPANCIES OCCUR BETWEEN PLANS, DETAILS, GENERAL NOTES, AND SPECIFICATIONS, THE GREATER, MORE STRICT REQUIREMENTS, SHALL GOVERN. IF FURTHER CLARIFICATION IS REQUIRED CONTACT THE ENGINEER OF RECORD.
5. SUBSTANTIAL EFFORT HAS BEEN MADE TO PROVIDE ACCURATE DIMENSIONS AND MEASUREMENTS ON THE DRAWINGS TO ASSIST IN THE FABRICATION AND/OR PLACEMENT OF CONSTRUCTION ELEMENTS BUT IT IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR TO FIELD VERIFY THE DIMENSIONS, MEASUREMENTS, AND/OR CLEARANCES SHOWN IN THE CONSTRUCTION DRAWINGS PRIOR TO FABRICATION OR CUTTING OF ANY NEW OR EXISTING CONSTRUCTION ELEMENTS. IF IT IS DETERMINED THAT THERE ARE DISCREPANCIES AND/OR CONFLICTS WITH THE CONSTRUCTION DRAWINGS THE ENGINEER OF RECORD IS TO BE NOTIFIED AS SOON AS POSSIBLE.
6. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CROWN CASTLE.
7. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS AND ORDINANCES. CONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
8. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
9. THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
10. IF THE SPECIFIED EQUIPMENT CAN NOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY THE CARRIER AND CROWN CASTLE PRIOR TO PROCEEDING WITH ANY SUCH CHANGE OF INSTALLATION.
11. CONTRACTOR IS TO PERFORM A SITE INVESTIGATION AND IS TO DETERMINE THE BEST ROUTING OF ALL CONDUITS FOR POWER, AND TELCO AND FOR GROUNDING CABLES AS SHOWN IN THE POWER, TELCO, AND GROUNDING PLAN DRAWINGS.
12. THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF CROWN CASTLE USA INC.
13. CONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
14. CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST–IN–PLACE CONCRETE.
2. UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
3. ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH (f'c) OF 3000 psi AT 28 DAYS, UNLESS NOTED OTHERWISE. NO MORE THAN 90 MINUTES SHALL ELAPSE FROM BATCH TIME TO TIME OF PLACEMENT UNLESS APPROVED BY THE ENGINEER OF RECORD. TEMPERATURE OF CONCRETE SHALL NOT EXCEED 90°f AT TIME OF PLACEMENT.
4. CONCRETE EXPOSED TO FREEZE–THAW CYCLES SHALL CONTAIN AIR ENTRAINING ADMIXTURES. AMOUNT OF AIR ENTRAINMENT TO BE BASED ON SIZE OF AGGREGATE AND F3 CLASS EXPOSURE (VERY SEVERE). CEMENT USED TO BE TYPE II PORTLAND CEMENT WITH A MAXIMUM WATER–TO–CEMENT RATIO (W/C) OF 0.45.
5. ALL STEEL REINFORCING SHALL CONFORM TO ASTM A615. ALL WELDED WIRE FABRIC (WWF) SHALL CONFORM TO ASTM A185. ALL SPLICES SHALL BE CLASS "B" TENSION SPLICES, UNLESS NOTED OTHERWISE. ALL HOOKS SHALL BE STANDARD 90 DEGREE HOOKS, UNLESS NOTED OTHERWISE. YIELD STRENGTH (Fy) OF STANDARD DEFORMED BARS ARE AS FOLLOWS:
   #4 BARS AND SMALLER........40 ksi
   #5 BARS AND LARGER........60 ksi
6. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:
   CONCRETE CAST AGAINST AND PERMANENTLY EXPOSED TO EARTH........3"
   CONCRETE EXPOSED TO EARTH OR WEATHER:
      #6 BARS AND LARGER........2"
      #5 BARS AND SMALLER........1–1/2"
   CONCRETE NOT EXPOSED TO EARTH OR WEATHER:
      SLAB AND WALLS........3/4"
      BEAMS AND COLUMNS........1–1/2"
7. A TOOLED EDGE OR A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNLESS NOTED OTHERWISE, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.

GREENFIELD GROUNDING NOTES:

1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
2. THE CONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS, THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
3. THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT AND PROVIDE TESTING RESULTS.
4. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
5. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
6. EACH CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, #6 STRANDED COPPER OR LARGER FOR INDOOR BTS; #2 BARE SOLID TINNED COPPER FOR OUTDOOR BTS.
7. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED BACK TO BACK CONNECTIONS ON OPPOSITE SIDE OF THE GROUND BUS ARE PERMITTED.
8. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
11. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
12. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
13. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
14. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
15. APPROVED ANTIOXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
16. ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
17. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
18. BOND ALL METALLIC OBJECTS WITHIN 6 ft OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
19. GROUND CONDUCTORS USED FOR THE FACILITY GROUNDING AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON–METALLIC MATERIAL SUCH AS PVC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (i.e., NONMETALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
20. ALL GROUNDS THAT TRANSITION FROM BELOW GRADE TO ABOVE GRADE MUST BE #2 BARE SOLID TINNED COPPER IN 3/4" NON–METALLIC, FLEXIBLE CONDUIT FROM 24" BELOW GRADE TO WITHIN 3" TO 6" OF CAD–WELD TERMINATION POINT. THE EXPOSED END OF THE CONDUIT MUST BE SEALED WITH SILICONE CAULK. (ADD TRANSITIONING GROUND STANDARD DETAIL AS WELL).
21. BUILDINGS WHERE THE MAIN GROUNDING CONDUCTORS ARE REQUIRED TO BE ROUTED TO GRADE, THE CONTRACTOR SHALL ROUTE TWO GROUNDING CONDUCTORS FROM THE ROOFTOP, TOWERS, AND WATER TOWERS GROUNDING RING, TO THE EXISTING GROUNDING SYSTEM, THE GROUNDING CONDUCTORS SHALL NOT BE SMALLER THAN 2/0 COPPER. ROOFTOP GROUNDING RING SHALL BE BONDED TO THE EXISTING GROUNDING SYSTEM, THE BUILDING STEEL COLUMNS, LIGHTNING PROTECTION SYSTEM, AND BUILDING MAIN WATER LINE (FERROUS OR NONFERROUS METAL PIPING ONLY).

ELECTRICAL INSTALLATION NOTES:

1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
2. CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
3. WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
4. ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
   4.1. ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
   4.2. ALL OVERCURRENT DEVICES SHALL HAVE AN INTERRUPTING CURRENT RATING THAT SHALL BE GREATER THAN THE SHORT CIRCUIT CURRENT TO WHICH THEY ARE SUBJECTED, 22,000 AIC MINIMUM. VERYIFY AVAILABLE SHORT CIRCUIT CURRENT DOES NOT EXCEED THE RATING OF ELECTRICAL EQUIPMENT IN ACCORDANCE WITH ARTICLE 110.24 NEC OR THE MOST CURRENT ADOPTED CODE PRE THE GOVERNING JURISDICTION.
5. EACH END OF EVERY POWER PHASE CONDUCTOR, GROUNDING CONDUCTOR, AND TELCO CONDUCTOR OR CABLE SHALL BE LABELED WITH COLOR–CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2" PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC AND OSHA.
6. ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH LAMICOID TAGS SHOWING THEIR RATED VOLTAGE, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING AND BRANCH CIRCUIT ID NUMBERS (i.e. PANEL BOARD AND CIRCUIT ID'S).
7. PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
8. ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
9. ALL POWER AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE COPPER CONDUCTOR (#14 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
10. SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE COPPER CONDUCTOR (#6 OR LARGER) WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
11. POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI–CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
12. POWER AND CONTROL WIRING FOR USE IN CABLE TRAY SHALL BE MULTI–CONDUCTOR, TYPE TC CABLE (#14 OR LARGER), WITH TYPE THHW, THWN, THWN–2, XHHW, XHHW–2, THW, THW–2, RHW, OR RHW–2 INSULATION UNLESS OTHERWISE SPECIFIED.
13. ALL POWER AND GROUNDING CONNECTIONS SHALL BE CRIMP–STYLE, COMPRESSION WIRE LUGS AND WIRE NUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRE NUTS SHALL BE RATED FOR OPERATION NOT LESS THAN 75° C (90° C IF AVAILABLE).
14. RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND NEC.
15. ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
16. ELECTRICAL METALLIC TUBING (EMT) OR METAL–CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
17. SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
18. LIQUID–TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID–TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
19. CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION–TYPE AND APPROVED FOR THE LOCATION USED. SET SCREW FITTINGS ARE NOT ACCEPTABLE.
20. CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEE AND THE NEC.
21. WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREMOLD SPECMATE WIREWAY).
22. SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
23. CONDUITS SHALL BE FASTENED SECURELY IN PLACE WITH APPROVED NON–PERFORATED STRAPS AND HANGERS. EXPLOSIVE DEVICES (i.e. POWDER–ACTUATED) FOR ATTACHING HANGERS TO STRUCTURE WILL NOT BE PERMITTED. CLOSELY FOLLOW THE LINES OF THE STRUCTURE, MAINTAIN CLOSE PROXIMITY TO THE STRUCTURE AND KEEP CONDUITS IN TIGHT ENVELOPES. CHANGES IN DIRECTION TO ROUTE AROUND OBSTACLES SHALL BE MADE WITH CONDUIT OUTLET BODIES. CONDUIT SHALL BE INSTALLED IN A NEAT AND WORKMANLIKE MANNER. PARALLEL AND PERPENDICULAR TO STRUCTURE WALL AND CEILING LINES. ALL CONDUIT SHALL BE FISHED TO CLEAR OBSTRUCTIONS. ENDS OF CONDUITS SHALL BE TEMPORARILY CAPPED FLUSH TO FINISH GRADE TO PREVENT CONCRETE, PLASTER OR DIRT FROM ENTERING. CONDUITS SHALL BE RIGIDLY CLAMPED TO BOXES BY GALVANIZED MALLEABLE IRON BUSHING ON INSIDE AND GALVANIZED MALLEABLE IRON LOCKNUT ON OUTSIDE AND INSIDE.
24. EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES AND PULL BOXES SHALL BE GALVANIZED OR EPOXY–COATED SHEET STEEL. SHALL MEET OR EXCEED UL 50 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND NEMA 3R (OR BETTER) FOR EXTERIOR LOCATIONS.
25. METAL RECEPTACLE, SWITCH AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY–COATED OR NON–CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1 AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
26. NONMETALLIC RECEPTACLE, SWITCH AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2 (NEWEST REVISION) AND BE RATED NEMA 1 (OR BETTER) FOR INTERIOR LOCATIONS AND WEATHER PROTECTED (WP OR BETTER) FOR EXTERIOR LOCATIONS.
27. THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM THE CARRIER AND/OR CROWN CASTLE USA INC. BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
28. THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD LIFE AND PROPERTY.
29. INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "T–MOBILE".
30. ALL EMPTY/SPARE CONDUITS THAT ARE INSTALLED ARE TO HAVE A METERED MULE TAPE PULL CORD INSTALLED.

CONDUCTOR COLOR CODE		
SYSTEM	CONDUCTOR	COLOR
120/240V, 1Ø	A PHASE	BLACK
	B PHASE	RED
	NEUTRAL	WHITE
	GROUND	GREEN
120/208V, 3Ø	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
	GROUND	GREEN
277/480V, 3Ø	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
	GROUND	GREEN
DC VOLTAGE	POS (+)	RED**
	NEG (–)	BLACK**

* SEE NEC 210.5(C)(1) AND (2)
** POLARITY MARKED AT TERMINATION

APWA UNIFORM COLOR CODE:

WHITE	PROPOSED EXCAVATION
PINK	TEMPORARY SURVEY MARKINGS
RED	ELECTRIC POWER LINES, CABLES, CONDUIT, AND LIGHTING CABLES
YELLOW	GAS, OIL, STEAM, PETROLEUM, OR GASEOUS MATERIALS
ORANGE	COMMUNICATION, ALARM OR SIGNAL LINES, CABLES, OR CONDUIT AND TRAFFIC LOOPS
BLUE	POTABLE WATER
PURPLE	RECLAIMED WATER, IRRIGATION, AND SLURRY LINES
GREEN	SEWERS AND DRAIN LINES

ABBREVIATIONS:

ANT	ANTENNA
(E)	EXISTING
FIF	FACILITY INTERFACE FRAME
GEN	GENERATOR
GPS	GLOBAL POSITIONING SYSTEM
GSM	GLOBAL SYSTEM FOR MOBILE
LTE	LONG TERM EVOLUTION
MGB	MASTER GROUND BAR
MW	MICROWAVE
(N)	NEW
NEC	NATIONAL ELECTRIC CODE
(P)	PROPOSED
PP	POWER PLANT
QTY	QUANTITY
RECT	RECTIFIER
RBS	RADIO BASE STATION
RET	REMOTE ELECTRIC TILT
RFDS	RADIO FREQUENCY DATA SHEET
RRH	REMOTE RADIO HEAD
RRU	REMOTE RADIO UNIT
SIAD	SMART INTEGRATED DEVICE
TMA	TOWER MOUNTED AMPLIFIER
TYP	TYPICAL
UMTS	UNIVERSAL MOBILE TELECOMMUNICATIONS SYSTEM
W.P.	WORK POINT

T-Mobile
4 SYLVAN WAY
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CROWN CASTLE
3530 TORINGDON WAY, SUITE 300
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B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
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T-MOBILE SITE NUMBER:
CTNL154A

BU #: **876375**
CANTERBURY/LEMIRE

53 WESTMINSTER RD
CANTERBURY, CT 6331

EXISTING
180'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	6/14/21	GEH	CONSTRUCTION	GEH
1	9/16/21	BLB	CONSTRUCTION	BLB
2	9/20/21	MEH	CONSTRUCTION	MEH
3	10/10/21	MEH	CONSTRUCTION	MEH

No. 23924
10/10/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: T-4
REVISION: 3

1 OVERALL SITE PLAN

SCALE: 100' 50' 0 100' 1" = 100'-0" (FULL SIZE) 1" = 200'-0" (11x17)

SITE PLAN DISCLAIMER:

PROPERTY LINES AND STRUCTURES HAVE BEEN DIGITIZED FROM TAX ASSESORS DATA. CROWN CASTLE USA INC. HAS NOT COMPLETED A SITE SURVEY AND THEREFORE MAKES NO CLAIMS AS TO THE ACCURACY OF INFORMATION DEPICTED ON THIS SHEET.

T-Mobile
4 SYLVAN WAY
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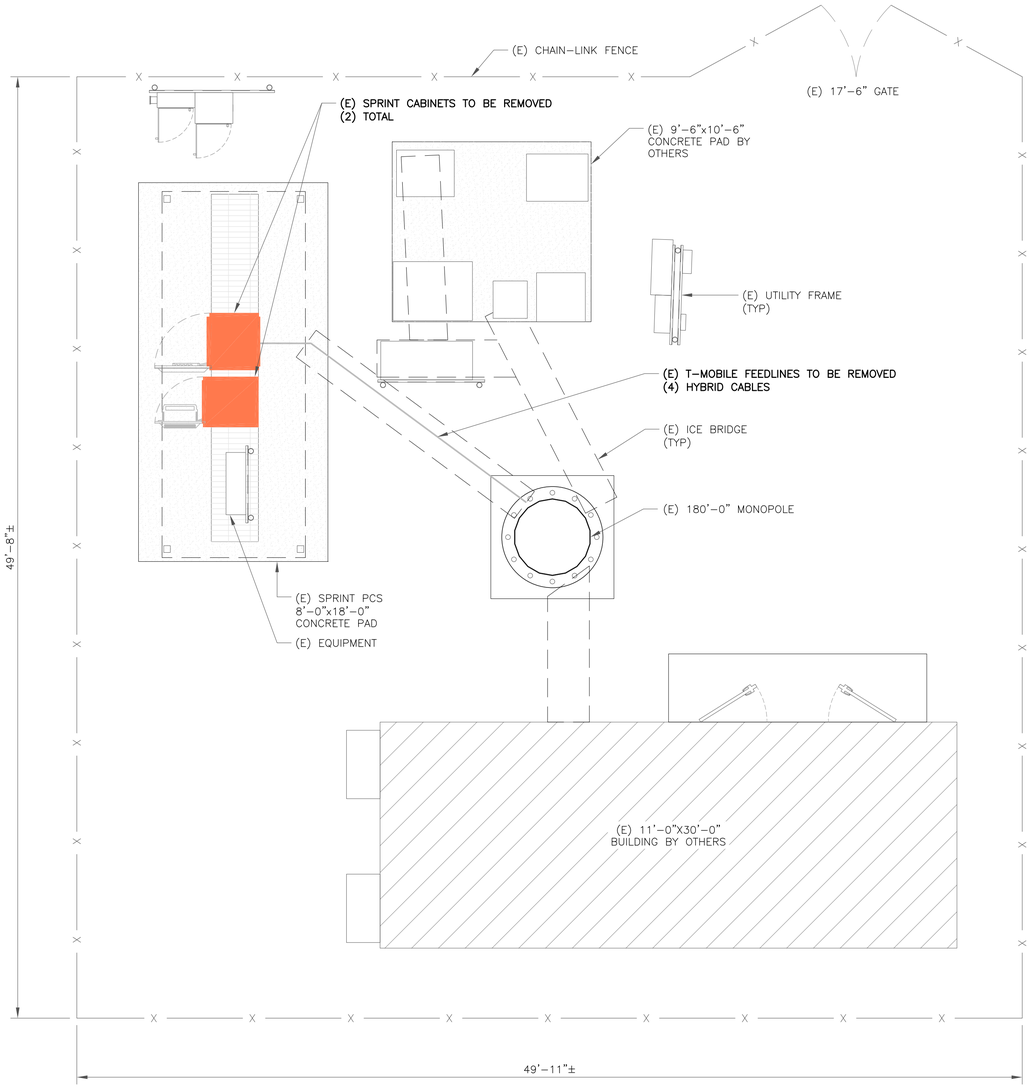
3	10/10/21	MEH	CONSTRUCTION	MEH

STATE OF CONNECTICUT
MICHAEL E. HILDEBRAND
No. 23924
LICENSED
PROFESSIONAL ENGINEER
10/10/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

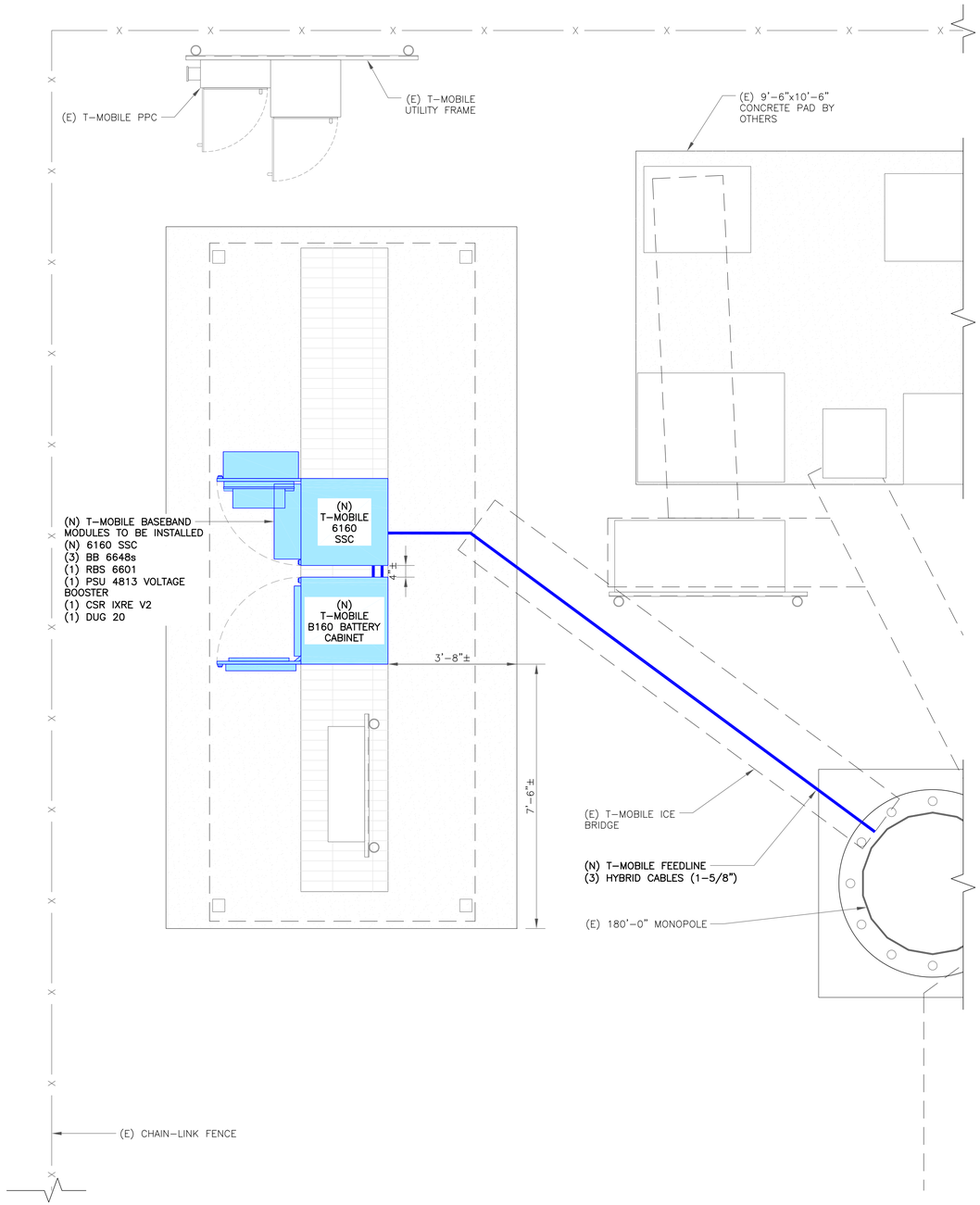
SHEET NUMBER: C-1.1

REVISION: 3



1 SITE PLAN
SCALE: 4' 3' 2' 1' 0 4'
1/4"=1'-0" (FULL SIZE)
1/8"=1'-0" (11x17)

N



2 ENLARGED SITE PLAN
SCALE: 2' 1' 0 2'
1/2"=1'-0" (FULL SIZE)
1/4"=1'-0" (11x17)

N

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4 SYLVAN WAY
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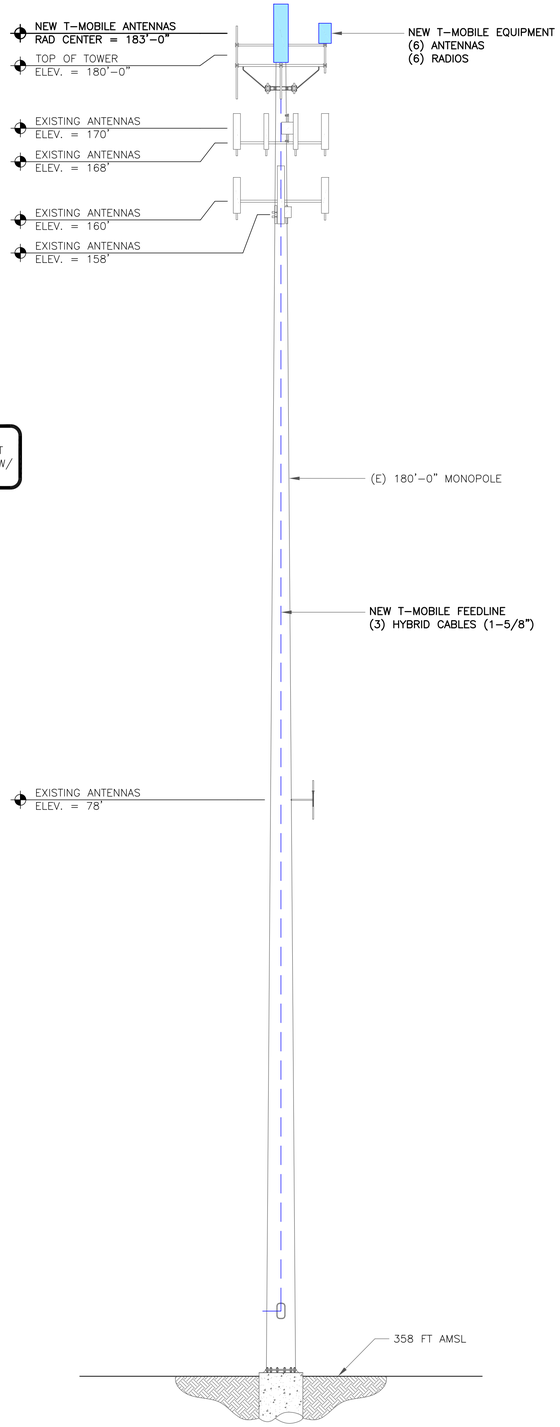
2	9/20/21	MEH	CONSTRUCTION	MEH
3	10/10/21	MEH	CONSTRUCTION	MEH

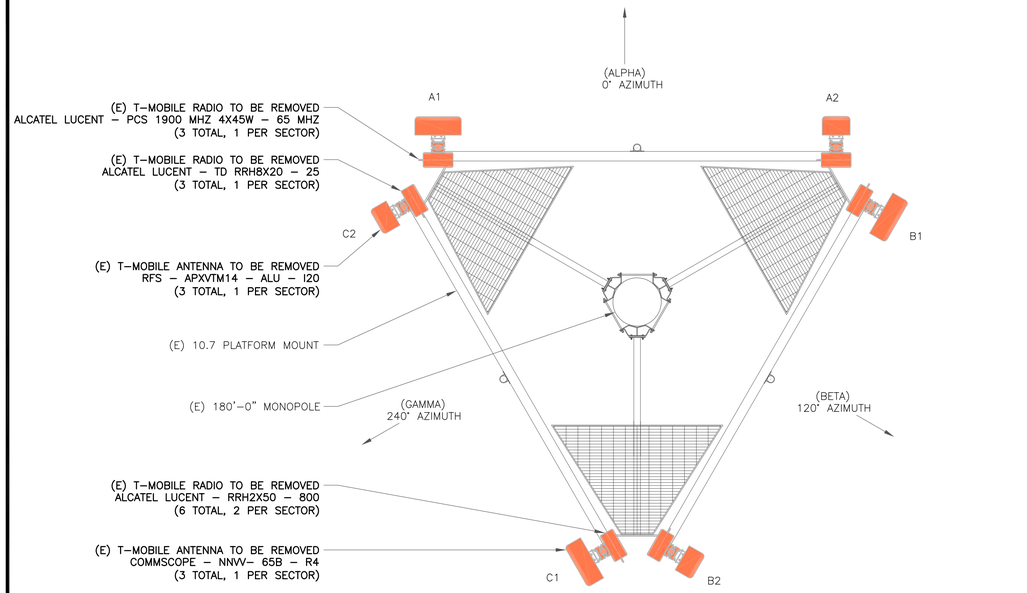
STATE OF CONNECTICUT
MARIA E. HILDEBRAND
No. 23924
LICENSED
PROFESSIONAL ENGINEER
10/10/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

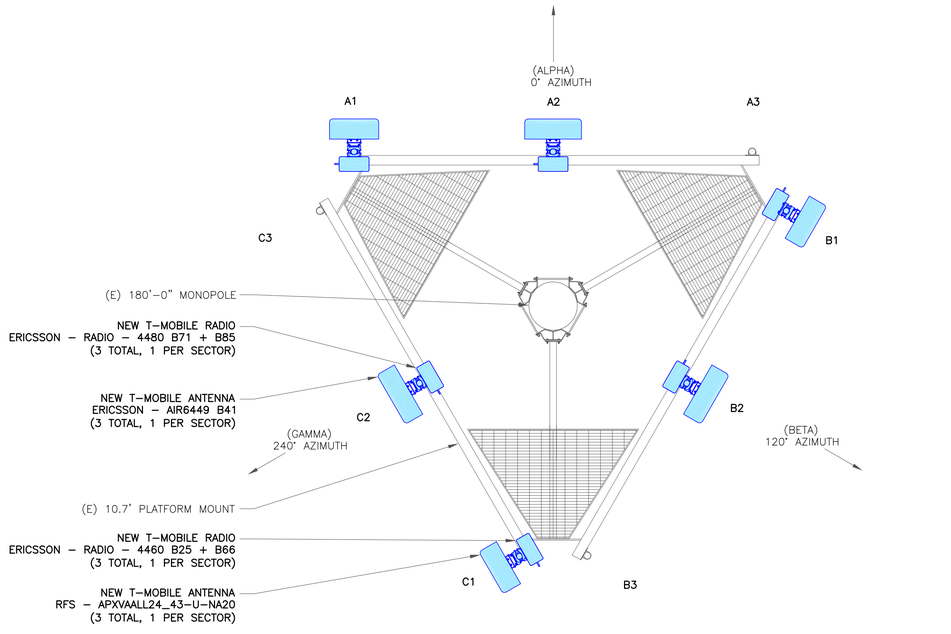
SHEET NUMBER: C-1.2
REVISION: 3



1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE



3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

T-Mobile
4 SYLVAN WAY
PARSIPPANY, NJ 07054

CROWN CASTLE
3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

T-MOBILE SITE NUMBER:
CTNL154A

BU #: **876375**
CANTERBURY/LEMIRE

53 WESTMINSTER RD
CANTERBURY, CT 6331

EXISTING
180'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	6/14/21	GEH	CONSTRUCTION	GEH
1	9/16/21	BLB	CONSTRUCTION	BLB
2	9/20/21	MEH	CONSTRUCTION	MEH
3	10/10/21	MEH	CONSTRUCTION	MEH

STATE OF CONNECTICUT
MICHAEL E. HILDEBRAND
No. 23924
LICENSED
PROFESSIONAL ENGINEER
10/10/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: C-2

REVISION: 3

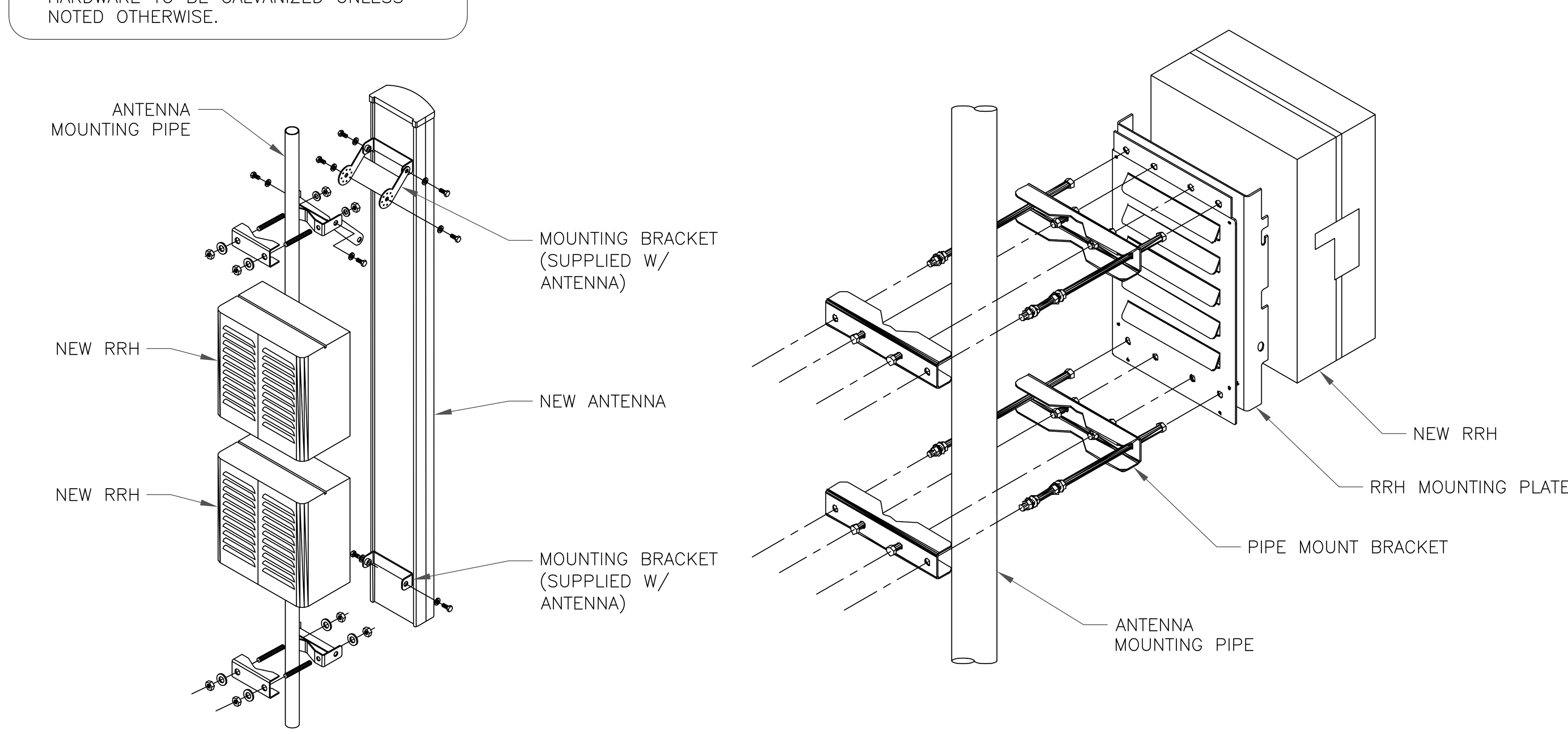
RF SYSTEM SCHEDULE

SECTOR	ANTENNA	TECH	MANUFACTURER	ANTENNA MODEL	AZIMUTH	M-TILT	E-TILT	RAD CENTER	TMA/RRU	FEEDLINE TYPE
ALPHA	A-1	L700 / L600 / N600 / L1900 / G1900 / L2100	RFS	APXVAALL24_43-U-NA20	0°	0°	–	183'-0"	(1) RADIO – 4480 B71 + B85 (1) RADIO – 4460 B25 + B66	(3) HYBRIDS
	A-2	N2500 / L2500	ERICSSON	AIR6449 B41	0°	0°	–	183'-0"	–	
BETA	B-1	L700 / L600 / N600 / L1900 / G1900 / L2100	RFS	APXVAALL24_43-U-NA20	120°	0°	–	183'-0"	(1) RADIO – 4480 B71 + B85 (1) RADIO – 4460 B25 + B66	–
	B-2	N2500 / L2500	ERICSSON	AIR6449 B41	120°	0°	–	183'-0"	–	
GAMMA	C-1	L700 / L600 / N600 / L1900 / G1900 / L2100	RFS	APXVAALL24_43-U-NA20	240°	0°	–	183'-0"	(1) RADIO – 4480 B71 + B85 (1) RADIO – 4460 B25 + B66	–
	C-2	N2500 / L2500	ERICSSON	AIR6449 B41	240°	0°	–	183'-0"	–	

1 ANTENNA AND CABLE SCHEDULE
SCALE: NOT TO SCALE

INSTALLER NOTES:

1. COMPLY WITH MANUFACTURERS INSTRUCTIONS TO ENSURE THAT ALL RRHs RECEIVE ELECTRICAL POWER WITHIN 24 HOURS OF BEING REMOVED FROM THE MANUFACTURER'S PACKAGING.
2. DO NOT OPEN RRH PACKAGES IN THE RAIN.
3. ALL PIPES, BRACKETS, AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.



2 ANTENNA WITH RRHs MOUNTING DETAIL
SCALE: NOT TO SCALE

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4 SYLVAN WAY
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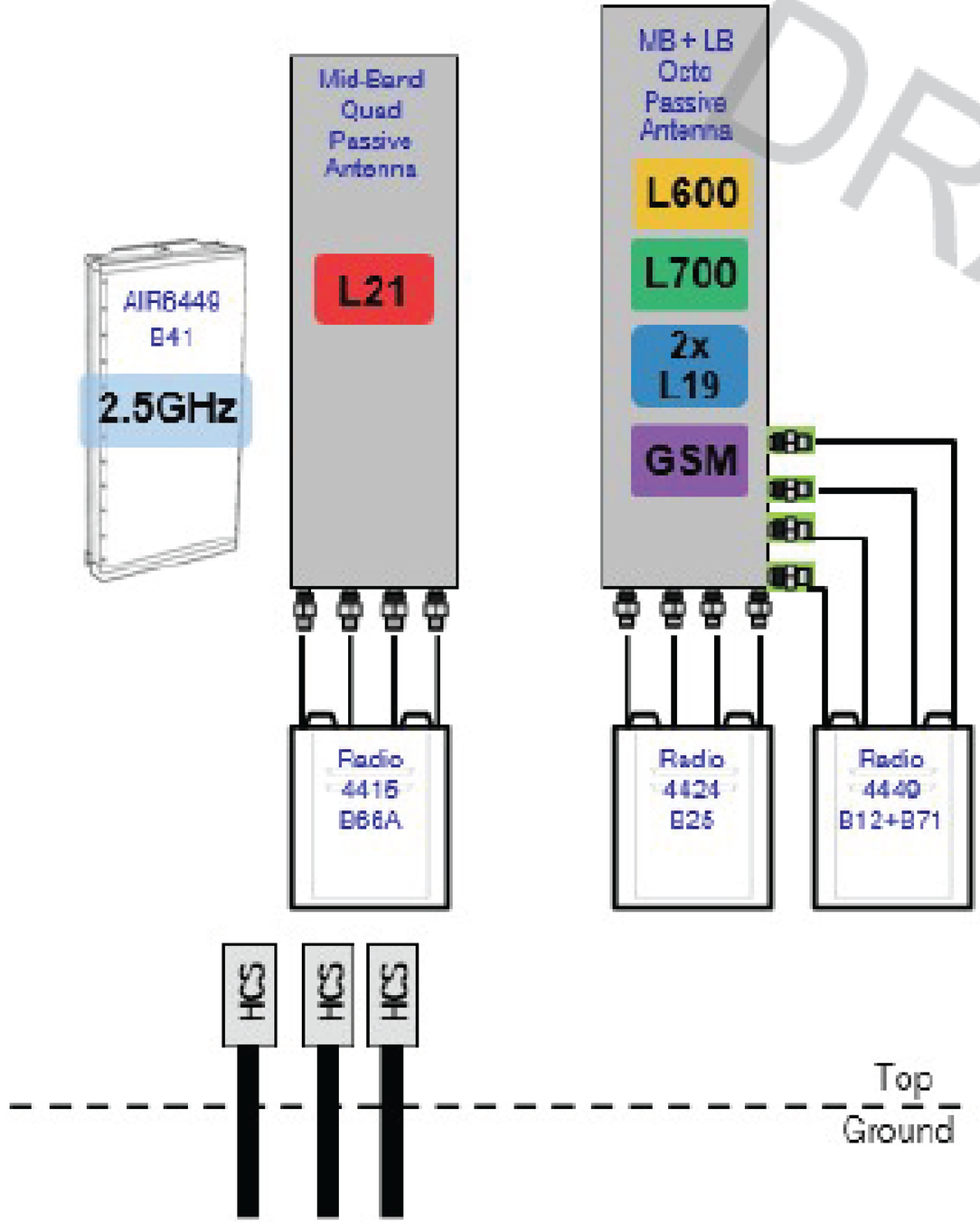
10/10/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: **C-3**
REVISION: **3**



1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
4 SYLVAN WAY
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3530 TORINGDON WAY, SUITE 300
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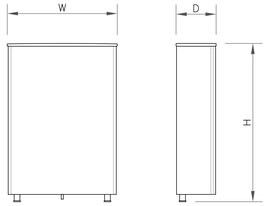
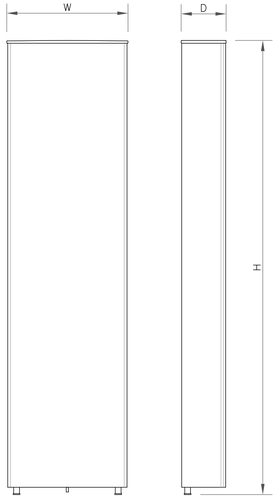
SHEET NUMBER: C-4

REVISION: 3



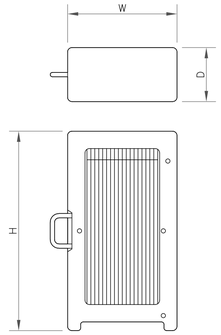
ANTENNA SPECS	
MANUFACTURER	ERICSSON
MODEL #	AIR6449 B41
WIDTH	20.51"
DEPTH	8.54"
HEIGHT	33.11"
WEIGHT	114.63 LBS

1 ANTENNA SPECS
SCALE: NOT TO SCALE



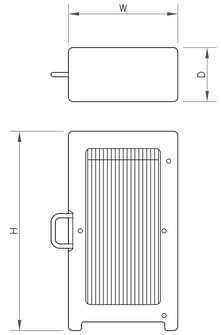
ANTENNA SPECS	
MANUFACTURER	RFS
MODEL #	APXVAALL24_43-U-NA20
WIDTH	24"
DEPTH	8.5"
HEIGHT	95.90"
WEIGHT	149.9 LBS

2 ANTENNA SPECS
SCALE: NOT TO SCALE



RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	RADIO 4460 B25 + B66
WIDTH	17.0"
DEPTH	15.1"
HEIGHT	11.9"
WEIGHT	109.0 LBS

3 RRU SPECS
SCALE: NOT TO SCALE



RRU SPECIFICATIONS	
MANUFACTURER	ERICSSON
MODEL #	RADIO 4480 B71 + B85
WIDTH	22.0"
DEPTH	15.7"
HEIGHT	7.5"
WEIGHT	81.0 LBS

4 RRU SPECS
SCALE: NOT TO SCALE

5 NOT USED
SCALE: N/A

6 NOT USED
SCALE: N/A

ERICSSON 6160 SSC
WEIGHT: 60.0 LBS
SIZE (HxWxD): 63"x25.6"x33.5" IN.

7 ERICSSON 6160 SSC
SCALE: NOT TO SCALE

BATTERY CABINET SPECIFICATIONS	
MODEL #	B160
MANUF.	ERICSSON
HEIGHT	63"
WIDTH	26"
DEPTH	26"
WEIGHT	

8 ERICSSON B160 BATTERY CABINET
SCALE: NOT TO SCALE

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STATE OF CONNECTICUT
MICHAEL E. HILDEBRAND
No. 23924
LICENSED
PROFESSIONAL ENGINEER
10/10/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: C-5
REVISION: 3

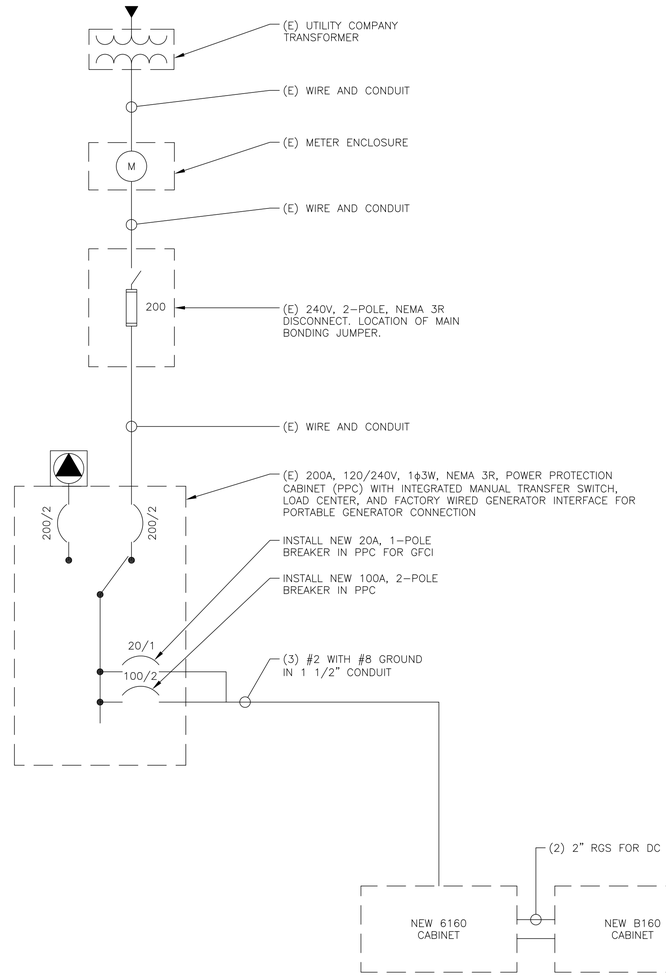
FINAL PANEL SCHEDULE							
LOAD	POLES	AMPS	BUS L1	BUS L2	AMPS	POLES	LOAD
MBTS	2	100A	1	7	80A	2	SURGE PROTECTION
			2	8			
LIGHTS	1	20A	3	9	**20A**	**1**	**GFCI**
6160 CABINET	**2**	**200A**	4	10	20A	1	SPARE
			5	11	15A	1	GFI
FAN	1	10A	6	12	XXA	1	SPARE
RATED VOLTAGE: ■120/240 □_____, 1 PHASE, 3 WIRE			BRANCH POLES: □12 □24 ■				
RATED AMPS: □100 ■200 □400 □_____,			CABINET: ■SURFACE □FLUSH				
□MAIN LUGS ONLY MAIN 200 AMPS ■BREAKER □FUSED SWITCH			■HINGED DOOR				
□FUSED ■CIRCUIT BREAKER BRANCH DEVICES			□_____ TO BE GFCI BREAKERS				
ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT ISC OF 10,000 AMPS SYMMETRICAL							

ADD NEW BREAKER IN POSITION 4 AND 5 WITH A NEW 2P 200A BREAKER
ADD NEW BREAKER IN POSITION 9 WITH A NEW 1P 20A BREAKER
REPLACE EXISTING WIRES FOR EXISTING BBU CABINET WITH (3) 1/0 AWG THWN (COPPER) AND (1) #2G AWG. MINIMUM CONDUIT SIZE TO BE 2".
IF 200A BREAKER WILL NOT PROPERLY FIT IN EXISTING PANEL, REPLACE (E) PANEL WITH SQUARE D PANEL QO12040M200RB (OR APPROVED EQUAL).
UPGRADE FEEDER WIRES TO MEET AMPACITY IF NEW PANEL IS REQUIRED.
FINAL PANEL DESIGN AND CALCULATIONS FOR WIRE SIZE WERE BASED OFF OF EXISTING DOCUMENTS AND PHOTOS

1 FINAL T-MOBILE PANEL DETAIL
SCALE: NOT TO SCALE

NOTES:

1. ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN, THWN-2, XHHW, OR XHHW-2 UNLESS NOTED OTHERWISE.
2. CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
3. ALL GROUNDING AND BONDING PER THE NEC.



NOTES:

1. ALL NEW CONDUCTORS TO BE INSTALLED SHALL BE COPPER. ALL CONDUCTORS SHALL BE THHW, THWN, THWN-2, XHHW, XHHW-2, THW, THW-2, RHW, OR RHW-2 UNLESS NOTED OTHERWISE.
2. CONTRACTOR IS TO FIELD VERIFY ALL EXISTING ITEMS SHOWN ON THE ELECTRICAL ONE-LINE DIAGRAM AND NOTIFY THE ENGINEER OF ANY DISCREPANCIES.
3. ALL GROUNDING AND BONDING PER THE NEC.

2 ONE LINE DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
4 SYLVAN WAY
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CROWN CASTLE
3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277

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TULSA, OK 74119
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T-MOBILE SITE NUMBER:
CTNL154A

BU #: **876375**
CANTERBURY/LEMIRE

53 WESTMINSTER RD
CANTERBURY, CT 6331

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B&T ENGINEERING, INC.
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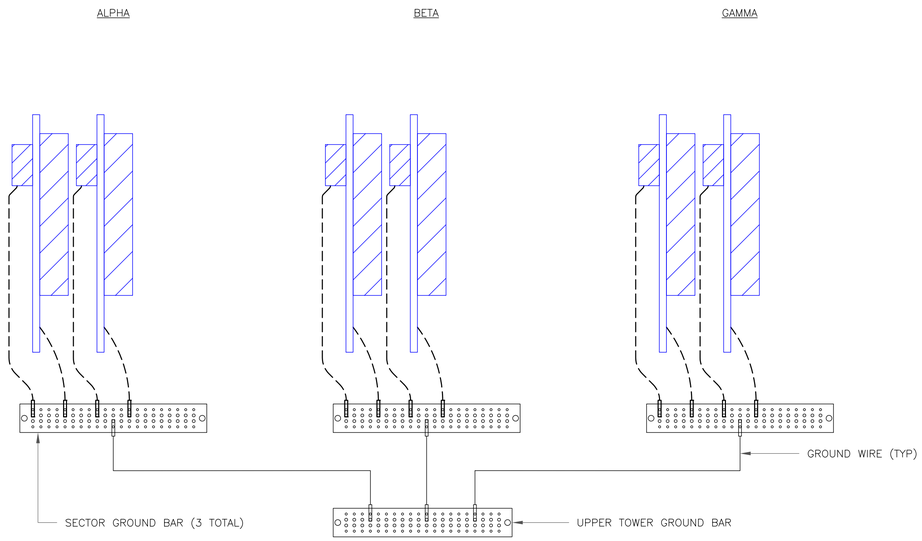
SHEET NUMBER: E-1
REVISION: 3



NOTE:

ALL NEW GROUNDS TO BE #6 STRANDED COPPER WITH GREEN INSULATION UNLESS NOTED OTHERWISE.

1 ANTENNA GROUNDING DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
4 SYLVAN WAY
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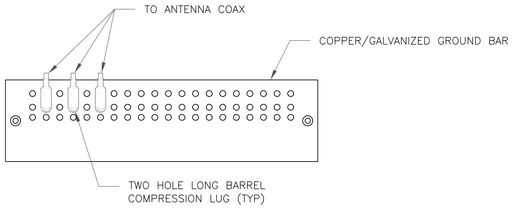
STATE OF CONNECTICUT
CHRISTOPHER E. HILL
No. 23924
LICENSED
PROFESSIONAL ENGINEER
10/10/21

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: G-1

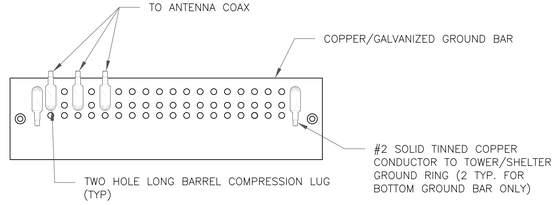
REVISION: 3



NOTES:

1. DOUBLING UP "OR STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
3. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO ANTENNA MOUNT STEEL.

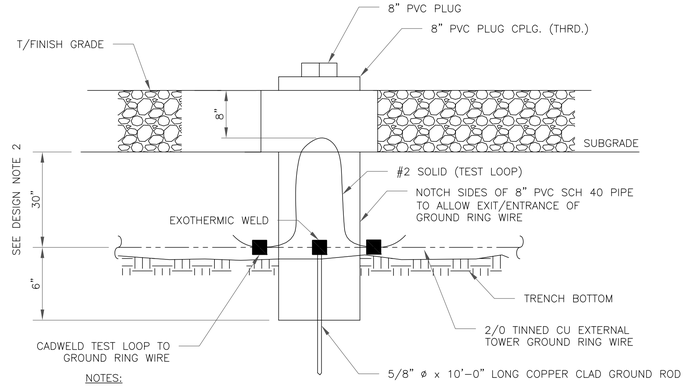
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. EXTERIOR ANTIOXIDANT JOINT COMPOUND TO BE USED ON ALL EXTERIOR CONNECTIONS.
2. GROUND BAR SHALL NOT BE ISOLATED FROM TOWER. MOUNT DIRECTLY TO TOWER STEEL (TOWER ONLY).
3. GROUND BAR SHALL BE ISOLATED FROM BUILDING OR SHELTER.

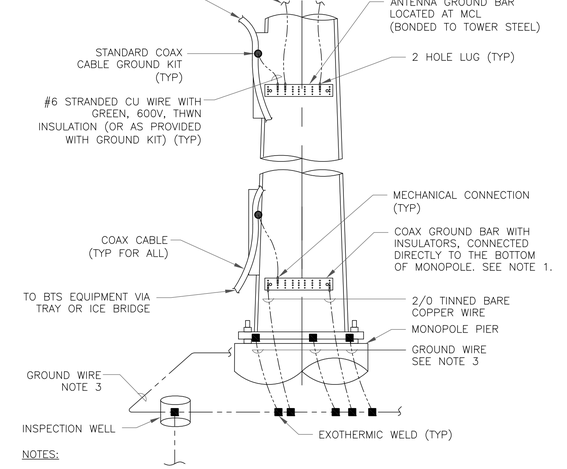
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

1. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
2. GROUND WIRE SHALL BE MIN. 30" BELOW GRADE OR 6" BELOW FROST LINE. (WHICH EVER IS GREATER) AS PER N.E.C. ARTICLE 250-50(D)

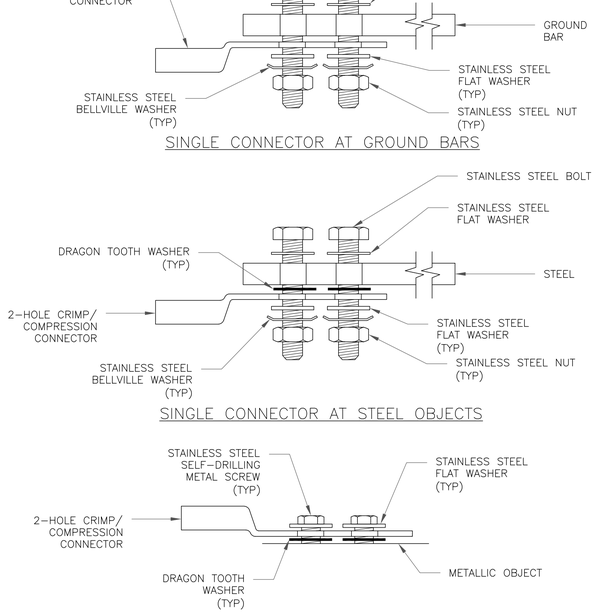
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



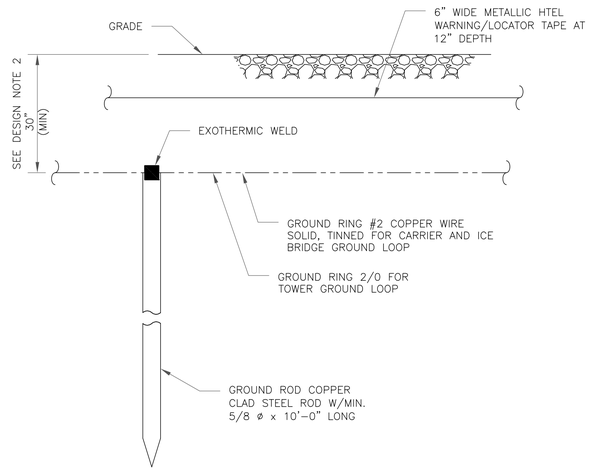
NOTES:

1. NUMBER OF GROUNDING BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATIONS AND CONNECTION ORIENTATION. COAXIAL CABLES EXCEEDING 200 FEET ON THE TOWER SHALL HAVE GROUND KITS AT THE MIDPOINT. PROVIDE AS REQUIRED.
2. ONLY MECHANICAL CONNECTIONS ARE ALLOWED TO BE MADE TO CROWN CASTLE USA INC. TOWERS. ALL MECHANICAL CONNECTIONS SHALL BE TREATED WITH AN ANTI-OXIDANT COATING.
3. ALL TOWER GROUNDING SYSTEMS SHALL COMPLY WITH THE REQUIREMENTS OF THE RECOGNIZED EDITION OF ANSI/TIA 222 AND NFPA 780.

4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

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6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

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B&T ENGINEERING, INC.
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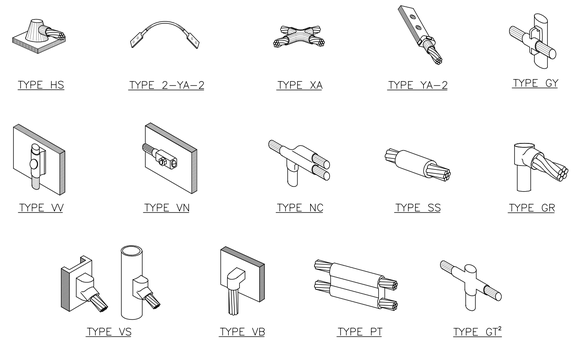
Expires 2/10/22

SHEET NUMBER: G-2
REVISION: 3

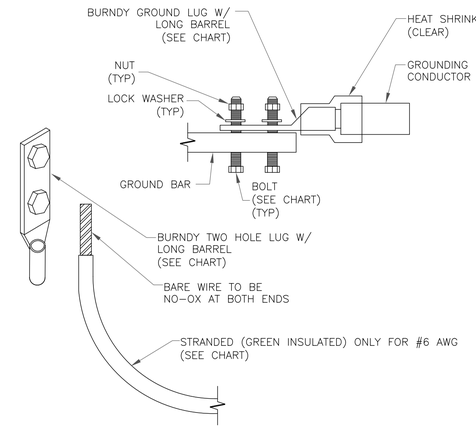


NOTE:

1. ERICO EXOTHERMIC "MOLD TYPES" SHOWN HERE ARE EXAMPLES. CONSULT WITH CONSTRUCTION MANAGER FOR SPECIFIC MOLDS TO BE USED FOR THIS PROJECT.
2. MOLD TYPE ONLY TO BE USED BELOW GRADE WHEN CONNECTING GROUND RING TO GROUND ROD.

1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE

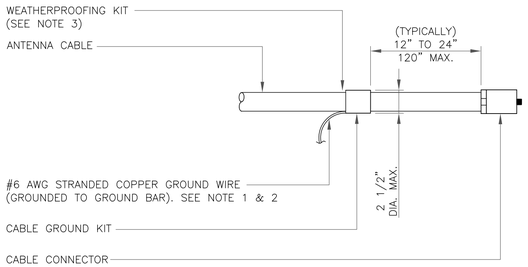
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



NOTES:

1. ALL GROUNDING LUGS ARE TO BE INSTALLED PER MANUFACTURER'S SPECIFICATIONS. ALL HARDWARE BOLTS, NUTS, LOCK WASHERS SHALL BE STAINLESS STEEL. ALL HARDWARE ARE TO BE AS FOLLOWS: BOLT, FLAT WASHER,GROUND BAR, GROUND LUG, FLAT WASHER AND NUT.

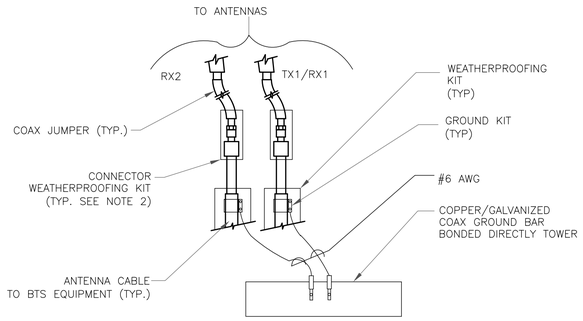
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.
3. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT, COLD SHRINK SHALL NOT BE USED.

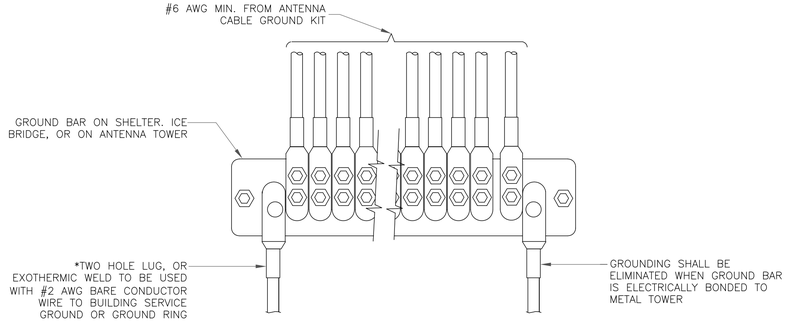
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



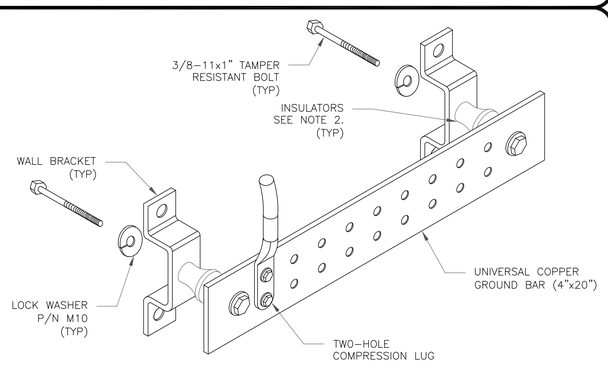
NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO ANTENNA GROUND BAR.
2. WEATHER PROOFING SHALL BE TWO-PART TAPE KIT. COLD SHRINK SHALL NOT BE USED.

4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



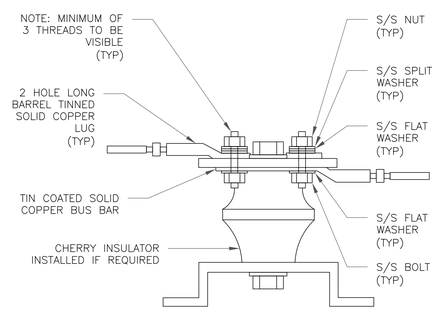
5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



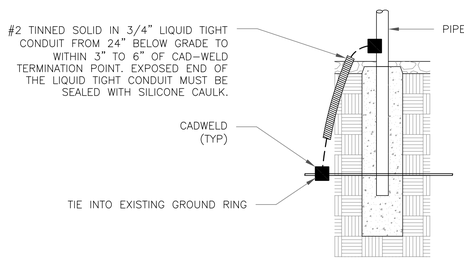
NOTES:

1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR WHEN MOUNTING TO TOWER STEEL OR PLATFORM STEEL USE INSULATORS WHEN ATTACHING TO BUILDING OR SHELTERS.

6 GROUND BAR DETAIL
SCALE: NOT TO SCALE



7 LUG DETAIL
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

T-Mobile
4 SYLVAN WAY
PARSIPPANY, NJ 07054

CROWN CASTLE
3530 TORINGDON WAY, SUITE 300
CHARLOTTE, NC 28277

B+T GRP
1717 S. BOULDER
SUITE 300
TULSA, OK 74119
PH: (918) 587-4630
www.btgrp.com

T-MOBILE SITE NUMBER:
CTNL154A

BU #: **876375**
CANTERBURY/LEMIRE

53 WESTMINSTER RD
CANTERBURY, CT 6331

EXISTING
180'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	6/14/21	GEH	CONSTRUCTION	GEH
1	9/16/21	BLB	CONSTRUCTION	BLB
2	9/20/21	MEH	CONSTRUCTION	MEH
3	10/10/21	MEH	CONSTRUCTION	MEH

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/22

SHEET NUMBER: G-3
REVISION: 3

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Friday, October 29, 2021 12:00 PM
To: Barbadora, Jeff
Subject: FedEx Shipment 775059700524: Your package has been delivered

Hi. Your package was delivered Fri, 10/29/2021 at 11:58am.

Delivered to 14 DEBBIE CT, NORWICH, CT 06360

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 775059700524

FROM Jeff Barbadora
1800 W. Park Drive
WESTBOROUGH, MA, US, 01581

TO	John R. Lemire 14 Debbie Crt NORWICH, CT, US, 06360
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Thu 10/28/2021 06:04 PM
DELIVERED TO	Residence
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	NORWICH, CT, US, 06360
SPECIAL HANDLING	Deliver Weekday Residential Delivery
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	1.00 LB
SERVICE TYPE	FedEx Priority Overnight

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All weights are estimated.

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

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

Thank you for your business.