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

August 10, 2022

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

RE: **Notice of Exempt Modification for T-Mobile: CT11032D**
Crown Site ID# 876339
782 Old Clinton Road Westbrook, CT 06498
Latitude: 41° 17′ 25.78″ / Longitude: -72° 28′ 8.05″

Dear Ms. Bachman:

T-Mobile currently maintains nine (9) antennas at the 145-foot mount on the existing 160'-0"-foot monopole tower located at 782 Old Clinton Road, Westbrook, CT. The property is owned by Richard and Catherine Wade and tower is owned by Crown Castle. T-Mobile now intends to replace six (6) antennas and ancillary equipment at the 145 ft 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 Air 6419 B41 Antennas
(3) Commscope- W-65A-R1 Antennas
(3) Ericsson-Radio 4460 B25+ B66 RRU
(3) Hybrid Cable 6x24
Antenna Mount Modification

Remove:
(3) Ericsson – AIR21 KRC118023-1_B2P_B4A Antennas
(3) Ericsson – AIR21 KRC118023-1_B2A_B4A Antennas
(3) Ericsson Twin Style 1B - AWS TMAs
(6) 1-5/8" Coaxial Cables
(3) 6x12 Hybrid Cables
(1) 6x18 Hybrid Cables

Ground:

Install New:
(1.) RBS 6601

(1) RP 6651
(1) PSU 4813 Voltage Booster
(1) IXRE Router
(1) B160 Battery Cabinet
(3) Rectifiers for 6160 cabinet
(6) 40amp Breakers
(3) 50amp SPDS

Remove:
(1) RBS 6131 Cabinet
(1.) DUW30
(6.) RU22 RRU

The facility was approved by the Connecticut Siting Council on, Petition No. 511 on July 11, 2001.

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 John Hall, First Selectman, Town of Westbrook, CT and Peter Gillespie, Planning, Zoning Development, Town of Westbrook, CT. Richard & Catherine Wade, 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:

John Hall, First Selectman
Town of Westbrook
866 Boston Post Road
Westbrook, CT 06498
860-399-3041

Peter Gillespie, Planning, Zoning Development
Town of Westbrook
866 Boston Post Road
Westbrook, CT 06498
860-399-3041

Richard & Catherine Wade
782 Old Clinton Road
Westbrook, CT 06498

Crown Castle – Tower Owner

Petition No. 511
Sprint Sites USA
Westbrook, Connecticut
Staff Report
July 11, 2001

On May 24, 2000, Connecticut Siting Council (Council) member William H. Smith and Council Staff Paul M. Aresta met representatives for Sprint Sites USA (SSUSA) and Julie Cashin for an inspection of an existing 160-foot tall monopole tower located at 782 Old Clinton Road, in Westbrook, Connecticut. SSUSA seeks a declaratory ruling that the proposed expansion of the existing compound, modification of the existing access road, co-location of three addition telecommunications carriers, and reinforcement of the existing tower would not have a substantial adverse environmental effect, and that no Certificate of Environmental Compatibility and Public Need (Certificate) would be required.

The existing 160-foot tall monopole tower was approved by the Town of Westbrook on May 26, 1998. The Council approved the shared use of this tower by Omnipoint Communication at a centerline height of 145 feet above ground level (AGL) on June 16, 1999, and Nextel Communication at a centerline height of 130 feet AGL on September 16, 1999. SSUSA contends that the existing tower currently supports antennas for Sprint at the 160 feet AGL, Voicestream's (formerly Omnipoint) at 142.5 AGL, and Nextel at 150 feet AGL. SSUSA request that the Council amend the previous approvals to acknowledge the existing antennas at their current heights.

AT&T Wireless Services (AT&T) proposes to place up to twelve panel antennas on a platform at the 130-foot level; Verizon proposes to place up to fifteen panel antennas on a platform at the 120-foot level; and Springwich Cellular proposes to place up to twelve panel antennas on a platform at the 110-foot level of the existing tower.

The existing tower and foundation would require reinforcing to support all of the proposed equipment. SSUSA has included two proposals to reinforce the existing structure. SSUSA would either construct a structural support consisting of three approximately 125-feet tall columns with eleven cross-braces around the existing monopole structure. The proposed columns would each be constructed of eight-inch diameter pipe filled with post-tensioned concrete. Alternately, SSUSA could install a collar type reinforcement around the existing monopole tower up to 109 feet AGL. The collar would be bolted together around the existing tower. The reinforcement would involve removing the antennas below the 110-foot height on the tower; installing 20-foot deep rock anchors through the existing foundation at each corner; installing the steel sleeve; and reinstalling the existing antennas. The exterior finish on the collar reinforcement would be galvanized steel.

SSUSA proposes to expand the existing fenced compound from 34 feet by 28 feet to 50 feet by 90 feet to accommodate three 12-foot by 20-foot telecommunications equipment buildings. The existing fence would be removed and a new approximately six-foot tall chain link fence with three strands of barbed wire would be constructed around the expanded compound. All vegetation within the existing compound would be removed. Evergreen landscaping would be installed around the perimeter of the expanded site compound and approximately six eight-foot white pines would be installed approximately 35 feet southwest of the expanded site compound. A vehicle turnaround would be constructed on the west side of the expanded compound, and a portion of the existing ten-foot wide gravel access road would be re-routed, at the request of the landowner. Utilities are available within the existing site compound. Verizon would install a 40-kW emergency diesel generator.

The worst case power density for the existing and proposed telecommunications operations at the site would be approximately 79 percent of the applicable ANSI standard at the base of the tower. SSUSA contends that the proposed expansion of the compound, tower reinforcement, and addition of the three telecommunications entities would not cause a significant change to the physical or environmental characteristics of this site.

782 OLD CLINTON RD

Location	782 OLD CLINTON RD	**Mblu**	169/ / 018/ /
Acct#	E0110900	**Owner**	WADE CATHERINE A
Assessment	$544,490	**Appraisal**	$791,250
PID	1175	**Building Count**	1

Current Value

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$611,250	$180,000	$791,250
Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2021	$426,160	$118,330	$544,490

Owner of Record

Owner	WADE CATHERINE A
Co-Owner	
Address	782 OLD CLINTON RD WESTBROOK, CT 06498

Sale Price	$0
Certificate	
Book & Page	162/83
Sale Date	02/03/1994
Instrument	25

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
WADE CATHERINE A	$0		162/83	25	02/03/1994

Building Information

Building 1 : Section 1

Year Built:	1946
Living Area:	3,142
Replacement Cost:	$338,386
Building Percent Good:	46
Replacement Cost Less Depreciation:	$155,660

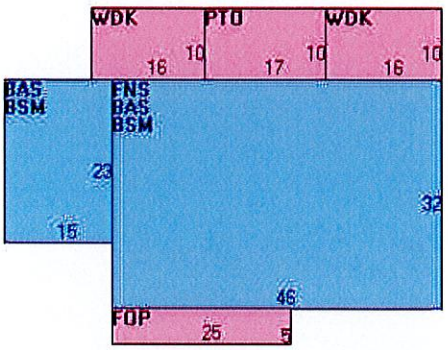
Building Attributes

Field	Description
Style	Colonial
Model	Residential
Grade:	C+
Stories	1.9
Occupancy	1
Exterior Wall 1	Vinyl Siding
Exterior Wall 2	
Roof Structure	Gambrel
Roof Cover	Asphalt
Interior Wall 1	Drywall
Interior Wall 2	
Interior Flr 1	Hardwood
Interior Flr 2	
Heat Fuel	Oil
Heat Type:	Hot Water
AC Type:	None
Total Bedrooms:	7
Full Bthrms:	3
Half Baths:	0
Extra Fixtures	3
Total Rooms:	10
Bath Style:	Modern
Kitchen Style:	Average
Extra Kitchens	0
Fireplace(s)	1
Gas Fireplace(s)	0
Stacks	1
Bsmt Garage(s)	0
Callback	
Fireplaces	
Fin Bsmnt	0.00
Fin Bsmnt Qual	
Bsmt Heat	
Int Vs Ext	Same

Building Photo

(https://images.vgsi.com/photos2/WestbrookCTPhotos///0011/IMG_1301_1

Building Layout



(https://images.vgsi.com/photos2/WestbrookCTPhotos//Sketches/1175_11

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1,817	1,817
FNS	Finished 90% Story	1,472	1,325
BSM	Basement	1,817	0
FOP	Open Porch	125	0
PTO	Patio	170	0
WDK	Deck	320	0
		5,721	3,142

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Use Code	101
Description	Res Dwelling
Zone	RR
Neighborhood	0045
Alt Land Appr	No
Category	

Land Line Valuation

Size (Acres)	5
Depth	
Assessed Value	$118,330
Appraised Value	$180,000

Special Land			
Land Use Code	**Land Use Description**	**Units**	**Unit Type**
712	490 Tillable C	2	AC

Outbuildings

Outbuildings							Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**	**Comment**
FGR1	Garage			868.00 S.F.	$17,360	1	
TCB	Telecomm Bldg			216.00 UNITS	$61,560	1	
TCS	Telecomm Site			700.00 UNITS	$276,500	1	
SHD1	Shed			180.00 S.F.	$1,800	1	
BRN1	1 Story Barn			360.00 S.F.	$5,400	1	
STB	Stable			310.00 S.F.	$6,980	1	
LNT	Lean To			264.00 S.F.	$660	1	
SHD1	Shed			140.00 S.F.	$1,400	1	
GAZ	Gazebo			77.00 S.F.	$770	1	
TCM	Telecomm			100.00 S.F.&HGT	$2,450	1	
TCM	Telecomm			1.00 S.F.&HGT	$10,000	1	
TCM	Telecomm			3.00 S.F.&HGT	$10,000	1	
TCM	Telecomm			1.00 S.F.&HGT	$10,000	1	
TCM	Telecomm			1.00 S.F.&HGT	$10,000	1	
TCM	Telecomm			1.00 S.F.&HGT	$10,000	1	
TCM	Telecomm			0.00 S.F.&HGT	$10,710	1	
TCM	Telecomm			0.00 S.F.&HGT	$20,000	1	

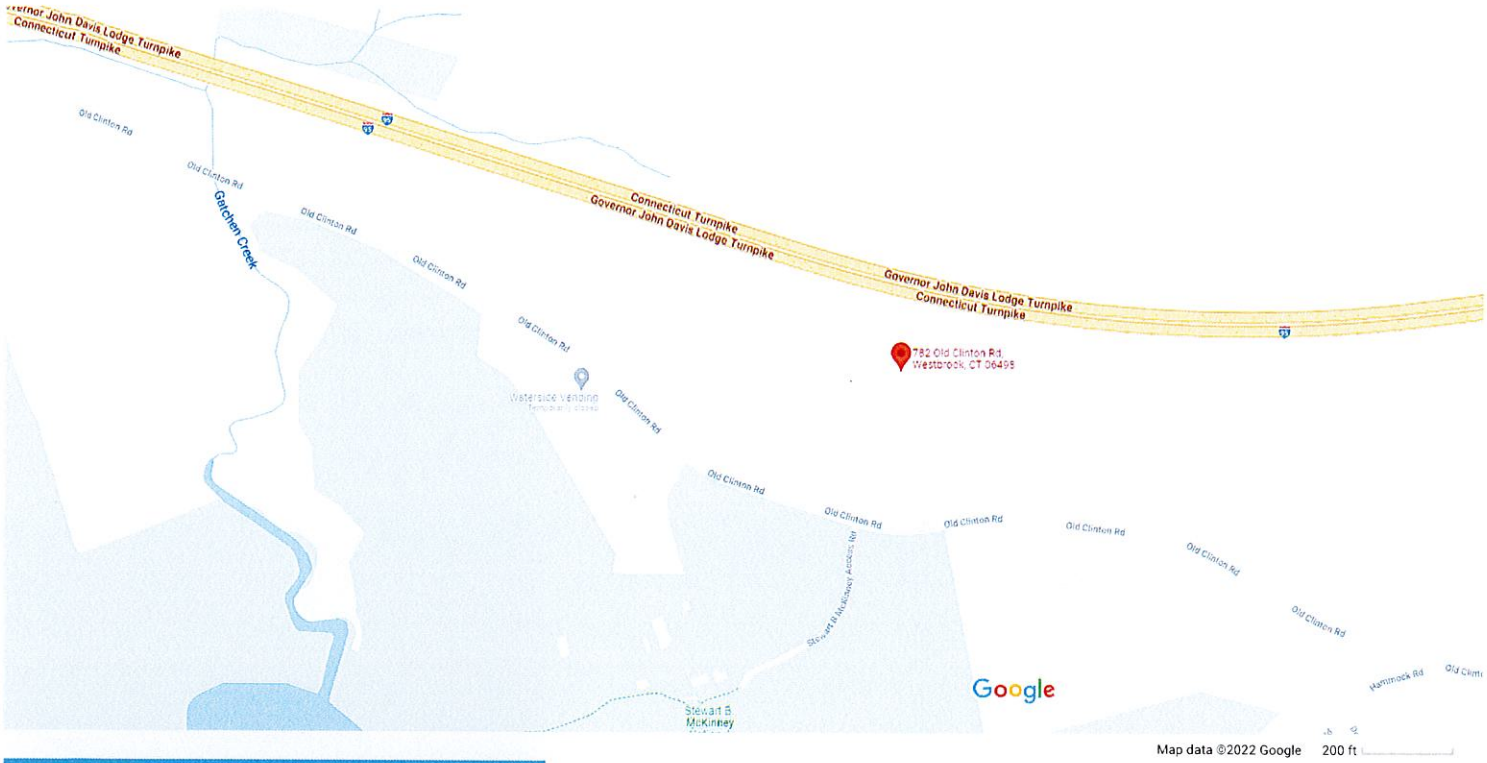
Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$602,990	$114,740	$717,730
2019	$582,990	$114,740	$697,730
2018	$587,600	$114,740	$702,340

Assessment

Valuation Year	Improvements	Land	Total
2020	$420,390	$74,310	$494,700
2019	$413,390	$74,310	$487,700
2018	$416,620	$74,310	$490,930

782 Old Clinton Rd



782 Old Clinton Rd

Westbrook, CT 06498
Building

Directions Save Nearby Send to phone Share

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Thursday, August 11, 2022 10:21 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 777629059020: Your package has been delivered

Hi. Your package was delivered Thu, 08/11/2022 at 10:19am.

Delivered to 866 BOSTON POST RD SELECT, WESTBROOK, CT 06498
Received by B.HELCHOWSKI

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 777629059020

FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Westbrook John Hall, First Selectman 866 Boston Post Road WESTBROOK, CT, US, 06498
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Wed 8/10/2022 05:26 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	WESTBROOK, CT, US, 06498
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: Thursday, August 11, 2022 10:23 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 777629088574: Your package has been delivered

Hi. Your package was delivered Thu, 08/11/2022 at 10:21am.

Delivered to 866 BOSTON POST RD PLANNE, WESTBROOK, CT 06498
Received by M.CASAGRAND

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 777629088574

FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Town of Westbrook Peter Gillespie, Planning 866 Boston Post Road WESTBROOK, CT, US, 06498
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Wed 8/10/2022 05:26 PM
DELIVERED TO	Receptionist/Front Desk
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	WESTBROOK, CT, US, 06498
SPECIAL HANDLING	Deliver Weekday
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Thursday, August 11, 2022 10:35 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 777629132850: Your package has been delivered

Hi. Your package was delivered Thu, 08/11/2022 at 10:32am.

Delivered to 782 OLD CLINTON RD, WESTBROOK, CT 06498

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER 777629132850

FROM	Jeff Barbadora 1800 W. Park Drive WESTBOROUGH, MA, US, 01581
TO	Property Owner Richard & Catherine Wade 782 Old Clinton Road WESTBROOK, CT, US, 06498
REFERENCE	799001.7680
SHIPPER REFERENCE	799001.7680
SHIP DATE	Wed 8/10/2022 05:26 PM
DELIVERED TO	Residence
PACKAGING TYPE	FedEx Envelope
ORIGIN	WESTBOROUGH, MA, US, 01581
DESTINATION	WESTBROOK, CT, US, 06498
SPECIAL HANDLING	Deliver Weekday Residential Delivery
NUMBER OF PIECES	1
TOTAL SHIPMENT WEIGHT	0.50 LB
SERVICE TYPE	FedEx Priority Overnight

Date: **May 31, 2022**

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

Subject: Structural Analysis Report

Carrier Designation:	***T-Mobile* Co-Locate**	
	Site Number:	CT11032D
	Site Name:	Westbrook/ I-95/ X64/ Ch1
Crown Castle Designation:	**BU Number:**	876339
	Site Name:	Pond Meadow Rd. Stable
	JDE Job Number:	713763
	Work Order Number:	2111528
	Order Number:	613478 Rev. 0
Engineering Firm Designation:	**TEP Project Number:**	25580.704654
Site Data:	**782 Old Clinton Road, Westbrook, Middlesex County, CT 06498-1767**	
	Latitude *41° 17' 25.78"*, Longitude *-72° 28' 8.05"*	
	160 Foot - Monopole Tower	

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

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

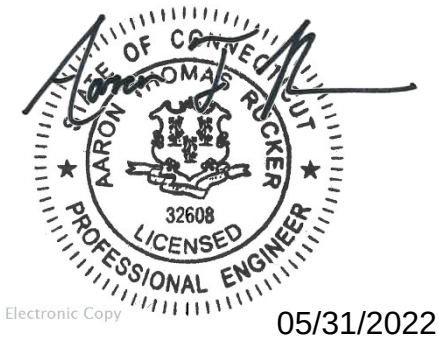
LC7: Proposed Equipment Configuration **Sufficient Capacity - 81.1%**

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

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

Respectfully submitted by:

Aaron T. Rucker, P.E.



Electronic Copy

05/31/2022

TABLE OF CONTENTS

1) INTRODUCTION

This tower is a 160-ft monopole tower designed by Valmont. The tower has been modified multiple times in the past to accommodate additional loading.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	125 mph
Exposure Category:	B
Topographic Factor:	1.0
Ice Thickness:	1.0 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
142.0	145.0	3	Ericsson	AIR 6419 B41_TMO w/ Mount Pipe	3	1-5/8
		3	Commscope	VV-65A-R1_TMO w/ Mount Pipe		
		3	RFS Celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		3	Ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO		
	142.0	1	Site Pro 1	HRK12-U		
		3	Generic	2.875” O.D., 120” Long Mount Pipe		
		1	Tower Mounts	Platform Mount [LP 602-1_KCKR]		

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)
159.0	160.0	2	RFS Celwave	APXVSPP18-C-A20 w/ Mount Pipe	4	1-1/4
		1	RFS Celwave	APXV9ERR18-C-A20 w/ Mount Pipe		
		3	RFS Celwave	APXVTM14-C-120 w/ Mount Pipe		
		3	Alcatel Lucent	TD-RRH8x20-25		
	159.0	1	Tower Mounts	Platform Mount [LP 713-1]		
155.0	156.0	3	Alcatel Lucent	800MHZ 2X50W RRH W/FILTER	-	-
	155.0	1	Tower Mounts	Side Arm Mount [SO 102-3]		
	154.0	3	Alcatel Lucent	PCS 1900MHZ 4X45W-65MHZ		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
132.0	132.0	3	JMA Wireless	MX08FRO665-20 w/ Mount Pipe	1	1-1/2
		3	Fujitsu	TA08025-B604		
		3	Fujitsu	TA08025-B605		
		1	Raycap	RDIDC-9181-PF-48		
		1	Tower Mounts	Platform Mount [LP 716-1]		
116.0	117.0	3	Samsung Telecom.	MT6407-77A w/ Mount Pipe	8	1-5/8
		3	Commscope	JAHH-65B-R3B w/ Mount Pipe		
		3	Commscope	JAHH-65B-R3B		
		1	Antel	LPA-80080/4CF w/ Mount Pipe		
		1	Antel	LPA-80080-4CF-EDIN-0 w/ Mount Pipe		
		4	Antel	LPA-80063-4CF-EDIN-5 w/ Mount Pipe		
		2	RFS Celwave	DB-T1-6Z-8AB-0Z		
		3	Commscope	CBC78T-DS-43-2X		
		3	Samsung Telecom.	RFV01U-D1A		
		6	Samsung Telecom.	RFV01U-D2A		
	116.0	1	Tower Mounts	Platform Mount [LP 303-1_HR-1]		
96.0	103.0	1	GPS	GPS_A	12 2 1 1	1-5/8 3/4 1/2 3/8
	98.0	3	KMW Comm.	AM-X-CD-14-65-00T-RET w/ Mount Pipe		
		6	Powerwave Technologies	7770.00 w/ Mount Pipe		
		6	Powerwave Technologies	TT19-08BP111-001		
		1	Raycap	DC6-48-60-18-8F		
		3	Ericsson	RRUS 12 B2		
		3	Ericsson	RRUS 11		
	96.0	1	Tower Mounts	T-Arm Mount [TA 602-3]		
92.0	93.0	1	Lucent	KS24019-L112A	1	1/2
	92.0	1	Tower Mounts	Side Arm Mount [SO 701-1]		
87.0	87.0	2	Tower Mounts	Side Arm Mount [SO 701-1]	-	-

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Geotechnical Report	1532966	CCISites
Tower Foundation Drawings	1533020	CCISites
Tower Manufacturer Drawings	1531985	CCISites
Tower Reinforcement Drawings	2884023	CCISites
Post-Modification Inspection	2923975	CCISites
Tower Reinforcement Drawings	3366474	CCISites
Post-Modification Inspection	3633208	CCISites
Tower Reinforcement Drawings	3678375	CCISites
Post-Modification Inspection	3682462	CCISites
Tower Reinforcement Drawings	3682464	CCISites
Post-Modification Inspection	4023333	CCISites

3.1) Analysis Method

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

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

3.2) Assumptions

1) 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.

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

4) ANALYSIS RESULTS

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

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
160 - 155	Pole	TP23.3x22.35x0.2188	Pole	3.3%	Pass
155 - 150	Pole	TP24.251x23.3x0.2188	Pole	7.4%	Pass
150 - 145	Pole	TP25.201x24.251x0.2188	Pole	11.4%	Pass
145 - 140	Pole	TP26.152x25.201x0.2188	Pole	18.4%	Pass
140 - 135	Pole	TP27.102x26.152x0.2188	Pole	25.8%	Pass
135 - 130	Pole	TP28.052x27.102x0.2188	Pole	34.0%	Pass
130 - 125	Pole	TP29.003x28.052x0.2188	Pole	42.7%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
125 - 122	Pole	TP30.46x29.003x0.2188	Pole	47.6%	Pass
122 - 117	Pole	TP30.085x29.135x0.2813	Pole	39.2%	Pass
117 - 112	Pole	TP31.035x30.085x0.2813	Pole	46.1%	Pass
112 - 107	Pole	TP31.985x31.035x0.2813	Pole	52.4%	Pass
107 - 102	Pole	TP32.935x31.985x0.2813	Pole	58.4%	Pass
102 - 97	Pole	TP33.885x32.935x0.2813	Pole	64.1%	Pass
97 - 95.83	Pole	TP34.107x33.885x0.2813	Pole	65.8%	Pass
95.83 - 95.58	Pole + Reinf.	TP34.155x34.107x0.3813	Reinf. 8 Tension Rupture	56.0%	Pass
95.58 - 90.58	Pole + Reinf.	TP35.105x34.155x0.3813	Reinf. 8 Tension Rupture	61.2%	Pass
90.58 - 89.83	Pole + Reinf.	TP35.247x35.105x0.375	Reinf. 8 Tension Rupture	61.9%	Pass
89.83 - 89.58	Pole	TP35.295x35.247x0.2813	Pole	73.7%	Pass
89.58 - 88	Pole	TP36.64x35.295x0.2813	Pole	75.7%	Pass
88 - 81.5	Pole	TP36.266x35.033x0.375	Pole	56.9%	Pass
81.5 - 76.5	Pole	TP37.215x36.266x0.375	Pole	60.5%	Pass
76.5 - 74.25	Pole	TP37.642x37.215x0.375	Pole	62.0%	Pass
74.25 - 74	Pole + Reinf.	TP37.689x37.642x0.4875	Reinf. 5 Tension Rupture	58.5%	Pass
74 - 69	Pole + Reinf.	TP38.638x37.689x0.4813	Reinf. 5 Tension Rupture	61.3%	Pass
69 - 64	Pole + Reinf.	TP39.587x38.638x0.475	Reinf. 5 Tension Rupture	64.0%	Pass
64 - 59	Pole + Reinf.	TP40.535x39.587x0.475	Reinf. 5 Tension Rupture	66.5%	Pass
59 - 55.75	Pole + Reinf.	TP41.152x40.535x0.475	Reinf. 5 Tension Rupture	68.0%	Pass
55.75 - 55.5	Pole + Reinf.	TP41.2x41.152x0.6375	Reinf. 4 Tension Rupture	63.9%	Pass
55.5 - 50.5	Pole + Reinf.	TP42.148x41.2x0.6375	Reinf. 4 Tension Rupture	66.3%	Pass
50.5 - 47.75	Pole + Reinf.	TP42.67x42.148x0.6375	Reinf. 4 Tension Rupture	67.5%	Pass
47.75 - 47.5	Pole + Reinf.	TP42.718x42.67x0.5375	Reinf. 4 Tension Rupture	79.4%	Pass
47.5 - 47	Pole + Reinf.	TP44.03x42.718x0.5375	Reinf. 4 Tension Rupture	79.7%	Pass
47 - 39.58	Pole + Reinf.	TP43.473x42.062x0.7	Reinf. 7 Compression	68.8%	Pass
39.58 - 34.58	Pole + Reinf.	TP44.424x43.473x0.7	Reinf. 7 Compression	70.7%	Pass
34.58 - 30.75	Pole + Reinf.	TP45.153x44.424x0.6875	Reinf. 7 Compression	72.0%	Pass
30.75 - 30.5	Pole + Reinf.	TP45.2x45.153x0.5875	Reinf. 4 Tension Rupture	80.1%	Pass
30.5 - 29	Pole + Reinf.	TP45.485x45.2x0.5875	Reinf. 4 Weldment	81.1%	Pass
29 - 28.75	Pole + Reinf.	TP45.533x45.485x0.6375	Reinf. 2 Tension Rupture	69.7%	Pass
28.75 - 23.75	Pole + Reinf.	TP46.484x45.533x0.625	Reinf. 2 Tension Rupture	71.2%	Pass
23.75 - 18.75	Pole + Reinf.	TP47.434x46.484x0.625	Reinf. 2 Tension Rupture	72.5%	Pass
18.75 - 13.75	Pole + Reinf.	TP48.385x47.434x0.625	Reinf. 2 Tension Rupture	73.8%	Pass
13.75 - 13	Pole + Reinf.	TP48.528x48.385x0.625	Reinf. 2 Tension Rupture	74.0%	Pass
13 - 12.75	Pole + Reinf.	TP48.575x48.528x0.7125	Reinf. 2 Tension Rupture	65.6%	Pass
12.75 - 8.25	Pole + Reinf.	TP49.431x48.575x0.7125	Reinf. 2 Tension Rupture	66.7%	Pass
8.25 - 8	Pole + Reinf.	TP49.479x49.431x0.6625	Reinf. 6 Tension Rupture	71.4%	Pass
8 - 5	Pole + Reinf.	TP50.049x49.479x0.6625	Reinf. 6 Tension Rupture	72.1%	Pass
5 - 4.75	Pole + Reinf.	TP50.097x50.049x0.5625	Reinf. 2 Tension Rupture	77.3%	Pass
4.75 - 0	Pole + Reinf.	TP51x50.097x0.5625	Reinf. 2 Tension Rupture	78.3%	Pass
				Summary	
			Pole	75.7%	Pass
			Reinforcement	81.1%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
			Overall	81.1%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Anchor Rods	-	51.0	Pass
1,2	Base Plate	-	32.7	Pass
1,2	Base Foundation Structural	-	45.5	Pass
1,2	Base Foundation Soil Interaction	-	67.1	Pass

Structure Rating (max from all components) =	81.1%

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

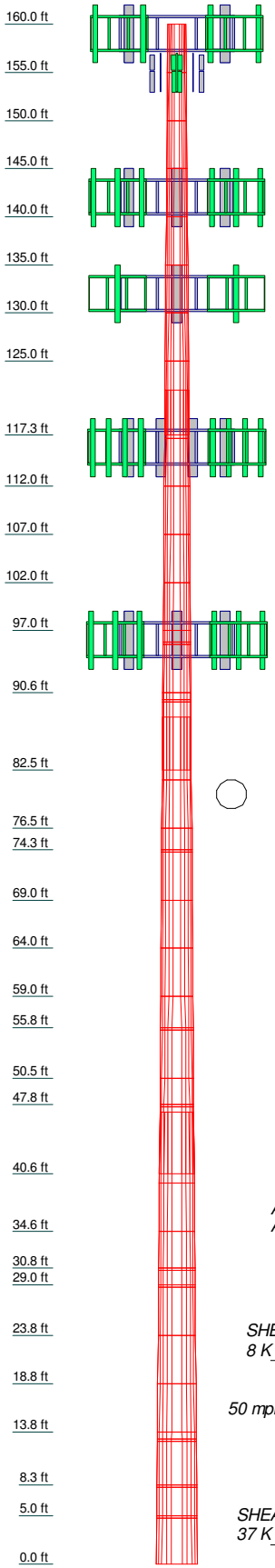
4.1) Recommendations

1) 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	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48
Length (ft)	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	5.00	4.750
Number of Sides	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12	12
Thickness (in)	0.2188	0.2188	0.2188	0.2188	0.2188	0.2188	0.2188	0.2188	0.2188	0.2188	0.2813	0.2813	0.2813	0.2813	0.2813	0.2813	0.2813	0.2813	0.2813	0.3750	0.3750	0.3750	0.3750	0.4750	0.4750	0.4750	0.4750	0.4750	0.5625	0.5625	0.5625	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.7000	0.6250	0.6250	0.6250	0.6250	0.6250	0.6250	0.6250	0.6250	0.6250	0.5625
Socket Length (ft)								4.67												5.50												6.42																		
Top Dia (in)	22.3500	23.3004	24.2508	25.2012	26.1516	27.1019	28.0523	29.0027	29.9530	30.9034	31.8538	32.8042	33.7545	34.7049	35.6553	36.6057	37.5560	38.5064	39.4568	40.4072	41.3575	42.3079	43.2583	44.2087	45.1590	46.1094	47.0598	48.0102	48.9605	49.9109	50.8613	51.8117	52.7620	53.7124	54.6628	55.6132	56.5635	57.5139	58.4643	59.4147	60.3650	61.3154	62.2658	63.2162	64.1665	65.1169	66.0673	67.0177
Bot Dia (in)	23.3004	24.2508	25.2012	26.1516	27.1019	28.0523	29.0027	29.9530	30.9034	31.8538	32.8042	33.7545	34.7049	35.6553	36.6057	37.5560	38.5064	39.4568	40.4072	41.3575	42.3079	43.2583	44.2087	45.1590	46.1094	47.0598	48.0102	48.9605	49.9109	50.8613	51.8117	52.7620	53.7124	54.6628	55.6132	56.5635	57.5139	58.4643	59.4147	60.3650	61.3154	62.2658	63.2162	64.1665	65.1169	66.0673	67.0177
Grade	A572-65																																																
Weight (K)	0.3	0.3	0.3	0.3	0.3	0.3	0.3	0.5	0.5	0.5	0.5	0.5	0.5	0.1	0.1	0.8	0.1	0.1	0.8	0.9	0.7	0.3	0.3	1.0	1.0	1.0	0.7	0.8	1.4	0.8	0.1	1.7	2.3	1.6	1.2	0.1	0.1	1.5	1.5	1.6	0.2	0.1	1.7	0.1	1.1	1.5	32.0



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Middlesex County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 125 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 81.1%

ALL REACTIONS ARE FACTORED

AXIAL 89 K

SHEAR 8 K *MOMENT 876 kip-ft*

TORQUE 0 kip-ft

50 mph WIND - 1.0000 in ICE

AXIAL 63 K

SHEAR 37 K *MOMENT 3984 kip-ft*

TORQUE 0 kip-ft

REACTIONS - 125 mph WIND

Tower Engineering Professionals

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

Job: ***Pond Meadow Rd. Stable (BU 876339)***			
Project: ***TEP No. 25580.704654***			
Client: Crown Castle	Drawn by: tmlester	App'd:	
Code: TIA-222-H	Date: 05/31/22	Scale: NTS	
Path: C:\Users\tmlester\Desktop\Pond Meadow Rd. Stable\876339_2111528_LC7.eri		Dwg No. E-1	

Tower Input Data

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

Tower is located in Middlesex County, Connecticut.
Tower base elevation above sea level: 94.00 ft.
Basic wind speed of 125 mph.
Risk Category II.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
TOWER RATING: 81.1%.
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	160.00-155.00	5.00	0.00	12	22.3500	23.3004	0.2188	0.8750	A572-65 (65 ksi)
L2	155.00-150.00	5.00	0.00	12	23.3004	24.2508	0.2188	0.8750	A572-65 (65 ksi)
L3	150.00-145.00	5.00	0.00	12	24.2508	25.2012	0.2188	0.8750	A572-65 (65 ksi)
L4	145.00-140.00	5.00	0.00	12	25.2012	26.1516	0.2188	0.8750	A572-65 (65 ksi)
L5	140.00-135.00	5.00	0.00	12	26.1516	27.1019	0.2188	0.8750	A572-65 (65 ksi)
L6	135.00-130.00	5.00	0.00	12	27.1019	28.0523	0.2188	0.8750	A572-65 (65 ksi)
L7	130.00-125.00	5.00	0.00	12	28.0523	29.0027	0.2188	0.8750	A572-65 (65 ksi)
L8	125.00-117.33	7.67	4.67	12	29.0027	30.4600	0.2188	0.8750	A572-65 (65 ksi)
L9	117.33-117.00	5.00	0.00	12	29.1355	30.0854	0.2813	1.1250	A572-65 (65 ksi)
L10	117.00-112.00	5.00	0.00	12	30.0854	31.0353	0.2813	1.1250	A572-65 (65 ksi)
L11	112.00-107.00	5.00	0.00	12	31.0353	31.9853	0.2813	1.1250	A572-65 (65 ksi)
L12	107.00-102.00	5.00	0.00	12	31.9853	32.9352	0.2813	1.1250	A572-65 (65 ksi)
L13	102.00-97.00	5.00	0.00	12	32.9352	33.8852	0.2813	1.1250	A572-65 (65 ksi)
L14	97.00-95.83	1.17	0.00	12	33.8852	34.1075	0.2813	1.1250	A572-65 (65 ksi)
L15	95.83-95.58	0.25	0.00	12	34.1075	34.1550	0.3812	1.5250	A572-65 (65 ksi)
L16	95.58-90.58	5.00	0.00	12	34.1550	35.1049	0.3812	1.5250	A572-65 (65 ksi)
L17	90.58-89.83	0.75	0.00	12	35.1049	35.2474	0.3750	1.5000	A572-65 (65 ksi)
L18	89.83-89.58	0.25	0.00	12	35.2474	35.2949	0.2813	1.1250	A572-65 (65 ksi)
L19	89.58-82.50	7.08	5.50	12	35.2949	36.6400	0.2813	1.1250	A572-65 (65 ksi)
L20	82.50-81.50	6.50	0.00	12	35.0326	36.2660	0.3750	1.5000	A572-65 (65 ksi)
L21	81.50-76.50	5.00	0.00	12	36.2660	37.2147	0.3750	1.5000	A572-65 (65 ksi)
L22	76.50-74.25	2.25	0.00	12	37.2147	37.6417	0.3750	1.5000	A572-65 (65 ksi)
L23	74.25-74.00	0.25	0.00	12	37.6417	37.6891	0.4875	1.9500	A572-65 (65 ksi)
L24	74.00-69.00	5.00	0.00	12	37.6891	38.6379	0.4813	1.9250	A572-65 (65 ksi)
L25	69.00-64.00	5.00	0.00	12	38.6379	39.5866	0.4750	1.9000	A572-65 (65 ksi)
L26	64.00-59.00	5.00	0.00	12	39.5866	40.5354	0.4750	1.9000	A572-65 (65 ksi)
L27	59.00-55.75	3.25	0.00	12	40.5354	41.1521	0.4750	1.9000	A572-65 (65 ksi)
L28	55.75-55.50	0.25	0.00	12	41.1521	41.1995	0.6375	2.5500	A572-65 (65 ksi)
L29	55.50-50.50	5.00	0.00	12	41.1995	42.1483	0.6375	2.5500	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
L30	50.50-47.75	2.75	0.00	12	42.1483	42.6701	0.6375	2.5500	A572-65 (65 ksi)
L31	47.75-47.50	0.25	0.00	12	42.6701	42.7175	0.5375	2.1500	A572-65 (65 ksi)
L32	47.50-40.58	6.92	6.42	12	42.7175	44.0300	0.5375	2.1500	A572-65 (65 ksi)
L33	40.58-39.58	7.42	0.00	12	42.0624	43.4728	0.7000	2.8000	A572-65 (65 ksi)
L34	39.58-34.58	5.00	0.00	12	43.4728	44.4236	0.7000	2.8000	A572-65 (65 ksi)
L35	34.58-30.75	3.83	0.00	12	44.4236	45.1525	0.6875	2.7500	A572-65 (65 ksi)
L36	30.75-30.50	0.25	0.00	12	45.1525	45.2001	0.5875	2.3500	A572-65 (65 ksi)
L37	30.50-29.00	1.50	0.00	12	45.2001	45.4853	0.5875	2.3500	A572-65 (65 ksi)
L38	29.00-28.75	0.25	0.00	12	45.4853	45.5329	0.6375	2.5500	A572-65 (65 ksi)
L39	28.75-23.75	5.00	0.00	12	45.5329	46.4837	0.6250	2.5000	A572-65 (65 ksi)
L40	23.75-18.75	5.00	0.00	12	46.4837	47.4345	0.6250	2.5000	A572-65 (65 ksi)
L41	18.75-13.75	5.00	0.00	12	47.4345	48.3853	0.6250	2.5000	A572-65 (65 ksi)
L42	13.75-13.00	0.75	0.00	12	48.3853	48.5279	0.6250	2.5000	A572-65 (65 ksi)
L43	13.00-12.75	0.25	0.00	12	48.5279	48.5754	0.7125	2.8500	A572-65 (65 ksi)
L44	12.75-8.25	4.50	0.00	12	48.5754	49.4312	0.7125	2.8500	A572-65 (65 ksi)
L45	8.25-8.00	0.25	0.00	12	49.4312	49.4787	0.6625	2.6500	A572-65 (65 ksi)
L46	8.00-5.00	3.00	0.00	12	49.4787	50.0492	0.6625	2.6500	A572-65 (65 ksi)
L47	5.00-4.75	0.25	0.00	12	50.0492	50.0967	0.5625	2.2500	A572-65 (65 ksi)
L48	4.75-0.00	4.75		12	50.0967	51.0000	0.5625	2.2500	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	23.0613	15.5887	974.5581	7.9230	11.5773	84.1784	1974.7188	7.6723	5.4036	24.702
	24.0452	16.2581	1105.5792	8.2632	12.0696	91.6003	2240.2033	8.0018	5.6583	25.866
L2	24.0452	16.2581	1105.5792	8.2632	12.0696	91.6003	2240.2033	8.0018	5.6583	25.866
	25.0291	16.9276	1247.8468	8.6035	12.5619	99.3358	2528.4758	8.3312	5.9130	27.031
L3	25.0291	16.9276	1247.8468	8.6035	12.5619	99.3358	2528.4758	8.3312	5.9130	27.031
	26.0130	17.5970	1401.8237	8.9437	13.0542	107.3848	2840.4749	8.6607	6.1677	28.195
L4	26.0130	17.5970	1401.8237	8.9437	13.0542	107.3848	2840.4749	8.6607	6.1677	28.195
	26.9969	18.2664	1567.9731	9.2839	13.5465	115.7474	3177.1387	8.9902	6.4224	29.359
L5	26.9969	18.2664	1567.9731	9.2839	13.5465	115.7474	3177.1387	8.9902	6.4224	29.359
	27.9808	18.9359	1746.7579	9.6242	14.0388	124.4235	3539.4051	9.3197	6.6771	30.524
L6	27.9808	18.9359	1746.7579	9.6242	14.0388	124.4235	3539.4051	9.3197	6.6771	30.524
	28.9648	19.6053	1938.6415	9.9644	14.5311	133.4132	3928.2133	9.6491	6.9318	31.688
L7	28.9648	19.6053	1938.6415	9.9644	14.5311	133.4132	3928.2133	9.6491	6.9318	31.688

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
	29.9487	20.2747	2144.0868	10.3047	15.0234	142.7164	4344.5012	9.9786	7.1865	32.852
L8	29.9487	20.2747	2144.0868	10.3047	15.0234	142.7164	4344.5012	9.9786	7.1865	32.852
	31.4573	21.3012	2486.5036	10.8264	15.7783	157.5903	5038.3305	10.4838	7.5770	34.638
L9	30.9819	26.1311	2776.9116	10.3298	15.0922	183.9968	5626.7757	12.8609	7.0546	25.083
	31.0475	26.9914	3060.3053	10.6699	15.5842	196.3718	6201.0082	13.2843	7.3091	25.988
L10	31.0475	26.9914	3060.3053	10.6699	15.5842	196.3718	6201.0082	13.2843	7.3091	25.988
	32.0309	27.8517	3362.3526	11.0100	16.0763	209.1495	6813.0379	13.7077	7.5637	26.893
L11	32.0309	27.8517	3362.3526	11.0100	16.0763	209.1495	6813.0379	13.7077	7.5637	26.893
	33.0144	28.7120	3683.6474	11.3500	16.5684	222.3300	7464.0683	14.1312	7.8183	27.798
L12	33.0144	28.7120	3683.6474	11.3500	16.5684	222.3300	7464.0683	14.1312	7.8183	27.798
	33.9978	29.5723	4024.7849	11.6901	17.0604	235.9132	8155.3055	14.5546	8.0729	28.704
L13	33.9978	29.5723	4024.7849	11.6901	17.0604	235.9132	8155.3055	14.5546	8.0729	28.704
	34.9813	30.4326	4386.3591	12.0302	17.5525	249.8991	8887.9527	14.9780	8.3275	29.609
L14	34.9813	30.4326	4386.3591	12.0302	17.5525	249.8991	8887.9527	14.9780	8.3275	29.609
	35.2114	30.6339	4473.9819	12.1098	17.6677	253.2300	9065.5003	15.0771	8.3870	29.821
L15	35.1761	41.4031	6011.1026	12.0740	17.6677	340.2319	12180.1235	20.3774	8.1190	21.296
	35.2253	41.4614	6036.5349	12.0910	17.6923	341.1963	12231.6562	20.4061	8.1318	21.329
L16	35.2253	41.4614	6036.5349	12.0910	17.6923	341.1963	12231.6562	20.4061	8.1318	21.329
	36.2088	42.6276	6560.3589	12.4311	18.1843	360.7698	13293.0657	20.9800	8.3864	21.997
L17	36.2110	41.9363	6456.2970	12.4333	18.1843	355.0472	13082.2081	20.6398	8.4031	22.408
	36.3585	42.1084	6536.0908	12.4843	18.2581	357.9822	13243.8921	20.7245	8.4413	22.51
L18	36.3916	31.6662	4941.7103	12.5179	18.2581	270.6578	10013.2448	15.5851	8.6925	30.907
	36.4407	31.7092	4961.8757	12.5349	18.2827	271.3966	10054.1054	15.6063	8.7053	30.952
L19	36.4407	31.7092	4961.8757	12.5349	18.2827	271.3966	10054.1054	15.6063	8.7053	30.952
	37.8333	32.9274	5555.9865	13.0164	18.9795	292.7359	11257.9350	16.2059	9.0658	32.234
L20	37.2165	41.8490	6416.0419	12.4074	18.1469	353.5619	13000.6404	20.5968	8.3837	22.357
	37.4130	43.3383	7125.7098	12.8490	18.7858	379.3143	14438.6200	21.3298	8.7143	23.238
L21	37.4130	43.3383	7125.7098	12.8490	18.7858	379.3143	14438.6200	21.3298	8.7143	23.238
	38.3952	44.4840	7705.8754	13.1886	19.2772	399.7399	15614.1927	21.8937	8.9685	23.916
L22	38.3952	44.4840	7705.8754	13.1886	19.2772	399.7399	15614.1927	21.8937	8.9685	23.916
	38.8372	44.9995	7976.9072	13.3415	19.4984	409.1061	16163.3766	22.1474	9.0830	24.221
L23	38.7975	58.3227	10276.3484	13.3012	19.4984	527.0360	20822.6678	28.7047	8.7815	18.013
	38.8467	58.3972	10315.7608	13.3182	19.5230	528.3914	20902.5281	28.7413	8.7942	18.039
L24	38.8489	57.6582	10188.6409	13.3204	19.5230	521.8801	20644.9488	28.3776	8.8109	18.308
	39.8311	59.1284	10988.0834	13.6601	20.0144	549.0086	22264.8360	29.1012	9.0652	18.837
L25	39.8333	58.3701	10850.7113	13.6623	20.0144	542.1449	21986.4828	28.7280	9.0819	19.12
	40.8155	59.8212	11680.2726	14.0020	20.5059	569.6063	23667.3990	29.4422	9.3362	19.655
L26	40.8155	59.8212	11680.2726	14.0020	20.5059	569.6063	23667.3990	29.4422	9.3362	19.655
	41.7978	61.2724	12551.0720	14.3416	20.9973	597.7461	25431.8746	30.1564	9.5905	20.19
L27	41.7978	61.2724	12551.0720	14.3416	20.9973	597.7461	25431.8746	30.1564	9.5905	20.19
	42.4362	62.2156	13139.6795	14.5624	21.3168	616.4008	26624.5530	30.6206	9.7558	20.538
L28	42.3789	83.1663	17424.3291	14.5042	21.3168	817.3998	35306.4148	40.9319	9.3203	14.62
	42.4280	83.2637	17485.6066	14.5212	21.3414	819.3299	35430.5796	40.9799	9.3330	14.64
L29	42.4280	83.2637	17485.6066	14.5212	21.3414	819.3299	35430.5796	40.9799	9.3330	14.64
	43.4102	85.2113	18741.5176	14.8609	21.8328	858.4107	37975.3958	41.9384	9.5872	15.039
L30	43.4102	85.2113	18741.5176	14.8609	21.8328	858.4107	37975.3958	41.9384	9.5872	15.039
	43.9505	86.2824	19457.2208	15.0477	22.1031	880.2933	39425.6044	42.4656	9.7271	15.258
L31	43.9857	72.9210	16522.4749	15.0835	22.1031	747.5180	33479.0137	35.8895	9.9951	18.596
	44.0348	73.0031	16578.3468	15.1005	22.1277	749.2129	33592.2253	35.9299	10.0078	18.619
L32	44.0348	73.0031	16578.3468	15.1005	22.1277	749.2129	33592.2253	35.9299	10.0078	18.619
	45.3936	75.2746	18174.5391	15.5703	22.8075	796.8654	36826.5436	37.0479	10.3595	19.274
L33	44.5625	93.2309	20359.0508	14.8077	21.7883	934.4016	41252.9564	45.8854	9.3967	13.424
	44.7594	96.4099	22513.4705	15.3127	22.5189	999.7588	45618.3950	47.4500	9.7747	13.964
L34	44.7594	96.4099	22513.4705	15.3127	22.5189	999.7588	45618.3950	47.4500	9.7747	13.964
	45.7438	98.5530	24048.4650	15.6530	23.0114	1045.0665	48728.7100	48.5048	10.0295	14.328
L35	45.7482	96.8208	23639.2910	15.6575	23.0114	1027.2852	47899.6126	47.6522	10.0630	14.637
	46.5028	98.4345	24841.0831	15.9185	23.3890	1062.0834	50334.7691	48.4465	10.2584	14.921
L36	46.5381	84.3059	21371.3785	15.9543	23.3890	913.7357	43304.2069	41.4928	10.5264	17.917
	46.5873	84.3958	21439.8456	15.9713	23.4136	915.6989	43442.9398	41.5371	10.5391	17.939
L37	46.5873	84.3958	21439.8456	15.9713	23.4136	915.6989	43442.9398	41.5371	10.5391	17.939
	46.8826	84.9355	21853.7241	16.0734	23.5614	927.5225	44281.5699	41.8026	10.6156	18.069
L38	46.8650	92.0614	23634.4785	16.0555	23.5614	1003.1018	47889.8610	45.3098	10.4816	16.442

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
	46.9142	92.1590	23709.7179	16.0725	23.5860	1005.2445	48042.3164	45.3578	10.4943	16.462
L39	46.9186	90.3771	23264.2427	16.0770	23.5860	986.3572	47139.6629	44.4808	10.5278	16.844
	47.9030	92.2906	24773.4288	16.4174	24.0785	1028.8593	50197.6831	45.4226	10.7826	17.252
L40	47.9030	92.2906	24773.4288	16.4174	24.0785	1028.8593	50197.6831	45.4226	10.7826	17.252
	48.8873	94.2041	26346.5117	16.7578	24.5711	1072.2579	53385.1756	46.3644	11.0374	17.66
L41	48.8873	94.2041	26346.5117	16.7578	24.5711	1072.2579	53385.1756	46.3644	11.0374	17.66
	49.8717	96.1176	27984.8162	17.0982	25.0636	1116.5532	56704.8247	47.3061	11.2923	18.068
L42	49.8717	96.1176	27984.8162	17.0982	25.0636	1116.5532	56704.8247	47.3061	11.2923	18.068
	50.0193	96.4046	28236.2691	17.1492	25.1375	1123.2749	57214.3364	47.4474	11.3305	18.129
L43	49.9884	109.7005	32013.2764	17.1179	25.1375	1273.5290	64867.5773	53.9912	11.0960	15.573
	50.0377	109.8096	32108.8581	17.1349	25.1621	1276.0813	65061.2516	54.0449	11.1087	15.591
L44	50.0377	109.8096	32108.8581	17.1349	25.1621	1276.0813	65061.2516	54.0449	11.1087	15.591
	50.9236	111.7728	33862.0257	17.4413	25.6053	1322.4592	68613.6445	55.0112	11.3381	15.913
L45	50.9412	104.0358	31582.7842	17.4592	25.6053	1233.4450	63995.2834	51.2032	11.4721	17.316
	50.9904	104.1372	31675.2356	17.4762	25.6300	1235.8670	64182.6149	51.2532	11.4848	17.336
L46	50.9904	104.1372	31675.2356	17.4762	25.6300	1235.8670	64182.6149	51.2532	11.4848	17.336
	51.5810	105.3542	32798.7689	17.6804	25.9255	1265.1170	66459.1980	51.8521	11.6377	17.566
L47	51.6163	89.6328	28017.5172	17.7162	25.9255	1080.6942	56771.0857	44.1145	11.9057	21.166
	51.6655	89.7189	28098.3409	17.7333	25.9501	1082.7832	56934.8564	44.1569	11.9184	21.188
L48	51.6655	89.7189	28098.3409	17.7333	25.9501	1082.7832	56934.8564	44.1569	11.9184	21.188
	52.6007	91.3549	29663.6785	18.0566	26.4180	1122.8586	60106.6548	44.9621	12.1605	21.619

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 160.00-155.00				1	1	1			
L2 155.00-150.00				1	1	1			
L3 150.00-145.00				1	1	1			
L4 145.00-140.00				1	1	1			
L5 140.00-135.00				1	1	1			
L6 135.00-130.00				1	1	1			
L7 130.00-125.00				1	1	1			
L8 125.00-117.33				1	1	1			
L9 117.33-117.00				1	1	1			
L10 117.00-112.00				1	1	1			
L11 112.00-107.00				1	1	1			
L12 107.00-102.00				1	1	1			
L13 102.00-97.00				1	1	1			
L14 97.00-95.83				1	1	1			
L15 95.83-95.58				1	1	1.17465			
L16 95.58-90.58				1	1	1.1627			
L17 90.58-89.83				1	1	1.1801			

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L18 89.83-89.58				1	1	1			
L19 89.58-82.50				1	1	1			
L20 82.50-81.50				1	1	1			
L21 81.50-76.50				1	1	1			
L22 76.50-74.25				1	1	1			
L23 74.25-74.00				1	1	0.977341			
L24 74.00-69.00				1	1	0.98463			
L25 69.00-64.00				1	1	0.992377			
L26 64.00-59.00				1	1	0.987572			
L27 59.00-55.75				1	1	0.984569			
L28 55.75-55.50				1	1	0.973156			
L29 55.50-50.50				1	1	0.964358			
L30 50.50-47.75				1	1	0.959689			
L31 47.75-47.50				1	1	0.970429			
L32 47.50-40.58				1	1	0.969817			
L33 40.58-39.58				1	1	0.973563			
L34 39.58-34.58				1	1	0.965983			
L35 34.58-30.75				1	1	0.977578			
L36 30.75-30.50				1	1	0.980795			
L37 30.50-29.00				1	1	0.979295			
L38 29.00-28.75				1	1	0.96948			
L39 28.75-23.75				1	1	0.982611			
L40 23.75-18.75				1	1	0.976871			
L41 18.75-13.75				1	1	0.971359			
L42 13.75-13.00				1	1	0.970551			
L43 13.00-12.75				1	1	1.01684			
L44 12.75-8.25				1	1	1.00976			
L45 8.25-8.00				1	1	1.07693			
L46 8.00-5.00				1	1	1.07212			
L47 5.00-4.75				1	1	1.05879			
L48 4.75-0.00				1	1	1.05376			

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
Safety Line 3/8	A	No	Surface Ar (CaAa)	160.00 - 0.00	1	1	-0.250 -0.250	0.3750		0.22
132										
CU12PSM9P6XXX(1-1/2)	B	No	Surface Ar (CaAa)	132.00 - 0.00	1	1	0.000 0.000	1.6000		2.35
LDF7-50A(1-5/8)	B	No	Surface Ar (CaAa)	96.00 - 0.00	12	6	0.000 0.000	1.9800		0.82
2" Flexible Conduit	B	No	Surface Ar (CaAa)	96.00 - 0.00	1	1	-0.250 -0.250	2.0000		0.34
92										
LDF4-50A(1/2)	A	No	Surface Ar (CaAa)	92.00 - 0.00	1	1	0.500 0.500	0.6250		0.15
*										
Mods										
PL 1.25x6.25	B	No	Surface Af (CaAa)	9.00 - 2.00	1	1	0.000 0.000	6.2500	15.0000	0.00
PL 1.25x6.875	A	No	Surface Af (CaAa)	31.25 - 2.00	1	1	0.250 0.250	6.8750	16.2500	0.00
PL 1.25x6.875	B	No	Surface Af (CaAa)	31.25 - 2.00	1	1	0.250 0.250	6.8750	16.2500	0.00
PL 1.25x6.875	C	No	Surface Af (CaAa)	31.25 - 5.00	1	1	0.250 0.250	6.8750	16.2500	0.00
*										
PL 1.25x5.25	A	No	Surface Af (CaAa)	58.00 - 31.25	1	1	0.250 0.250	5.2500	13.0000	0.00
PL 1.25x5.25	B	No	Surface Af (CaAa)	58.00 - 31.25	1	1	0.250 0.250	5.2500	13.0000	0.00
PL 1.25x5.25	C	No	Surface Af (CaAa)	58.00 - 31.25	1	1	0.250 0.250	5.2500	13.0000	0.00
****										
Crown 1x4 (100ksi)	A	No	Surface Af (CaAa)	76.00 - 46.00	1	1	0.500 0.500	4.0000	10.0000	0.00
Crown 1x4 (100ksi)	B	No	Surface Af (CaAa)	76.00 - 46.00	1	1	0.500 0.500	4.0000	10.0000	0.00
Crown 1x4 (100ksi)	C	No	Surface Af (CaAa)	76.00 - 46.00	1	1	0.500 0.500	4.0000	10.0000	0.00
****										
(Area) Sabre MS600 (1.00x6.00)	B	No	Surface Af (CaAa)	15.00 - 5.00	1	1	-0.250 -0.250	6.0000	14.0000	0.00
(Area) Sabre MS600 (1.00x6.00)	C	No	Surface Af (CaAa)	15.00 - 5.00	1	1	-0.250 -0.250	6.0000	14.0000	0.00
(Area) Sabre MS600 (1.00x6.00)	C	No	Surface Af (CaAa)	15.00 - 5.00	1	1	0.500 0.500	6.0000	14.0000	0.00
*										
(Area) Sabre MS450 (1.00x4.50)	A	No	Surface Af (CaAa)	44.25 - 29.25	1	1	-0.250 -0.250	4.5000	11.0000	0.00
(Area) Sabre MS450 (1.00x4.50)	B	No	Surface Af (CaAa)	44.25 - 29.25	1	1	-0.250 -0.250	4.5000	11.0000	0.00
(Area) Sabre MS450 (1.00x4.50)	C	No	Surface Af (CaAa)	44.25 - 29.25	1	1	-0.250 -0.250	4.5000	11.0000	0.00
*										
(Area) Sabre MS600 (1.00x6.00)	A	No	Surface Af (CaAa)	97.83 - 87.83	1	1	0.500 0.500	6.0000	14.0000	0.00
(Area) Sabre MS600 (1.00x6.00)	B	No	Surface Af (CaAa)	97.83 - 87.83	1	1	0.250 0.250	6.0000	14.0000	0.00

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
(Area) Sabre MS600 (1.00x6.00)	C	No	Surface Af (CaAa)	97.83 - 87.83	1	1	0.000 0.000	6.0000	14.0000	0.00
****										
HSS6x6x1/4	A	No	Surface Af (CaAa)	102.00 - 90.00	1	1	0.000 0.000	6.0000	24.0000	18.99
HSS6x6x1/4	A	No	Surface Af (CaAa)	102.00 - 90.00	1	1	0.250 0.250	6.0000	24.0000	18.99
HSS6x6x1/4	B	No	Surface Af (CaAa)	102.00 - 90.00	1	1	-0.250 -0.250	6.0000	24.0000	18.99
HSS6x6x1/4	B	No	Surface Af (CaAa)	102.00 - 90.00	1	1	0.000 0.000	6.0000	24.0000	18.99
HSS6x6x1/4	B	No	Surface Af (CaAa)	102.00 - 90.00	1	1	0.500 0.500	6.0000	24.0000	18.99
HSS6x6x1/4	C	No	Surface Af (CaAa)	102.00 - 90.00	1	1	-0.250 -0.250	6.0000	24.0000	18.99
HSS6x6x1/4	C	No	Surface Af (CaAa)	102.00 - 90.00	1	1	0.250 0.250	6.0000	24.0000	18.99
HSS6x6x1/4	C	No	Surface Af (CaAa)	102.00 - 90.00	1	1	0.500 0.500	6.0000	24.0000	18.99
*** *** ***										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
159									
HB114-1-08U4-M5J (1-1/4)	C	No	No	Inside Pole	159.00 - 0.00	3	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	1.08 1.08 1.08
HB114-21U3M12-XXXF(1-1/4)	C	No	No	Inside Pole	159.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	1.22 1.22 1.22
142									
HB158-21U6S24-xxM_TMO(1-5/8)	C	No	No	Inside Pole	142.00 - 0.00	3	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	2.50 2.50 2.50
116									
LDF7-50A(1-5/8)	A	No	No	Inside Pole	116.00 - 0.00	6	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.82 0.82 0.82
HB158-1-08U8-S8J18(1-5/8)	A	No	No	Inside Pole	116.00 - 0.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	1.30 1.30 1.30
96									
LDF4-50A(1/2)	B	No	No	Inside Pole	96.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.15 0.15 0.15
FB-L98B-034-XXX(3/8)	B	No	No	Inside Pole	96.00 - 0.00	1	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.06 0.06 0.06
WR-VG86ST-BRD(3/4)	B	No	No	Inside Pole	96.00 - 0.00	2	No Ice 1/2" Ice 1" Ice	0.00 0.00 0.00	0.58 0.58 0.58

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
2" Flexible Conduit	B	No	No	Inside Pole	96.00 - 0.00	1	No Ice	0.00	0.34
							1/2" Ice	0.00	0.34
							1" Ice	0.00	0.34
*									
***									
***									
***									

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	160.00-155.00	A	0.000	0.000	0.188	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L2	155.00-150.00	A	0.000	0.000	0.188	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L3	150.00-145.00	A	0.000	0.000	0.188	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.02
L4	145.00-140.00	A	0.000	0.000	0.188	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.04
L5	140.00-135.00	A	0.000	0.000	0.188	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.06
L6	135.00-130.00	A	0.000	0.000	0.188	0.000	0.00
		B	0.000	0.000	0.320	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.06
L7	130.00-125.00	A	0.000	0.000	0.188	0.000	0.00
		B	0.000	0.000	0.800	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.06
L8	125.00-117.33	A	0.000	0.000	0.288	0.000	0.00
		B	0.000	0.000	1.227	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.09
L9	117.33-117.00	A	0.000	0.000	0.012	0.000	0.00
		B	0.000	0.000	0.053	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L10	117.00-112.00	A	0.000	0.000	0.188	0.000	0.03
		B	0.000	0.000	0.800	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.06
L11	112.00-107.00	A	0.000	0.000	0.188	0.000	0.04
		B	0.000	0.000	0.800	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.06
L12	107.00-102.00	A	0.000	0.000	0.188	0.000	0.04
		B	0.000	0.000	0.800	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.06
L13	102.00-97.00	A	0.000	0.000	9.606	0.000	0.23
		B	0.000	0.000	14.550	0.000	0.30
		C	0.000	0.000	13.750	0.000	0.34
L14	97.00-95.83	A	0.000	0.000	3.138	0.000	0.05
		B	0.000	0.000	4.531	0.000	0.07

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	4.107	0.000	0.08
L15	95.83-95.58	A	0.000	0.000	0.670	0.000	0.01
		B	0.000	0.000	1.265	0.000	0.02
		C	0.000	0.000	0.878	0.000	0.02
L16	95.58-90.58	A	0.000	0.000	13.499	0.000	0.23
		B	0.000	0.000	25.293	0.000	0.36
		C	0.000	0.000	17.553	0.000	0.34
L17	90.58-89.83	A	0.000	0.000	1.764	0.000	0.03
		B	0.000	0.000	3.352	0.000	0.04
		C	0.000	0.000	2.191	0.000	0.04
L18	89.83-89.58	A	0.000	0.000	0.253	0.000	0.00
		B	0.000	0.000	0.615	0.000	0.00
		C	0.000	0.000	0.228	0.000	0.00
L19	89.58-82.50	A	0.000	0.000	2.304	0.000	0.06
		B	0.000	0.000	12.556	0.000	0.10
		C	0.000	0.000	1.596	0.000	0.08
L20	82.50-81.50	A	0.000	0.000	0.100	0.000	0.01
		B	0.000	0.000	1.548	0.000	0.01
		C	0.000	0.000	0.000	0.000	0.01
L21	81.50-76.50	A	0.000	0.000	0.500	0.000	0.04
		B	0.000	0.000	7.740	0.000	0.07
		C	0.000	0.000	0.000	0.000	0.06
L22	76.50-74.25	A	0.000	0.000	1.392	0.000	0.02
		B	0.000	0.000	4.650	0.000	0.03
		C	0.000	0.000	1.167	0.000	0.03
L23	74.25-74.00	A	0.000	0.000	0.192	0.000	0.00
		B	0.000	0.000	0.554	0.000	0.00
		C	0.000	0.000	0.167	0.000	0.00
L24	74.00-69.00	A	0.000	0.000	3.833	0.000	0.04
		B	0.000	0.000	11.073	0.000	0.07
		C	0.000	0.000	3.333	0.000	0.06
L25	69.00-64.00	A	0.000	0.000	3.833	0.000	0.04
		B	0.000	0.000	11.073	0.000	0.07
		C	0.000	0.000	3.333	0.000	0.06
L26	64.00-59.00	A	0.000	0.000	3.833	0.000	0.04
		B	0.000	0.000	11.073	0.000	0.07
		C	0.000	0.000	3.333	0.000	0.06
L27	59.00-55.75	A	0.000	0.000	4.460	0.000	0.03
		B	0.000	0.000	9.166	0.000	0.05
		C	0.000	0.000	4.135	0.000	0.04
L28	55.75-55.50	A	0.000	0.000	0.410	0.000	0.00
		B	0.000	0.000	0.772	0.000	0.00
		C	0.000	0.000	0.385	0.000	0.00
L29	55.50-50.50	A	0.000	0.000	8.208	0.000	0.04
		B	0.000	0.000	15.448	0.000	0.07
		C	0.000	0.000	7.708	0.000	0.06
L30	50.50-47.75	A	0.000	0.000	4.515	0.000	0.02
		B	0.000	0.000	8.497	0.000	0.04
		C	0.000	0.000	4.240	0.000	0.03
L31	47.75-47.50	A	0.000	0.000	0.410	0.000	0.00
		B	0.000	0.000	0.772	0.000	0.00
		C	0.000	0.000	0.385	0.000	0.00
L32	47.50-40.58	A	0.000	0.000	10.494	0.000	0.05
		B	0.000	0.000	20.509	0.000	0.10
		C	0.000	0.000	9.802	0.000	0.08
L33	40.58-39.58	A	0.000	0.000	1.725	0.000	0.01
		B	0.000	0.000	3.173	0.000	0.01
		C	0.000	0.000	1.625	0.000	0.01
L34	39.58-34.58	A	0.000	0.000	8.625	0.000	0.04
		B	0.000	0.000	15.865	0.000	0.07
		C	0.000	0.000	8.125	0.000	0.06

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
L35	34.58-30.75	A	0.000	0.000	6.748	0.000	0.03
		B	0.000	0.000	12.298	0.000	0.05
		C	0.000	0.000	6.365	0.000	0.05
L36	30.75-30.50	A	0.000	0.000	0.499	0.000	0.00
		B	0.000	0.000	0.861	0.000	0.00
		C	0.000	0.000	0.474	0.000	0.00
L37	30.50-29.00	A	0.000	0.000	2.806	0.000	0.01
		B	0.000	0.000	4.978	0.000	0.02
		C	0.000	0.000	2.656	0.000	0.02
L38	29.00-28.75	A	0.000	0.000	0.311	0.000	0.00
		B	0.000	0.000	0.673	0.000	0.00
		C	0.000	0.000	0.286	0.000	0.00
L39	28.75-23.75	A	0.000	0.000	6.229	0.000	0.04
		B	0.000	0.000	13.469	0.000	0.07
		C	0.000	0.000	5.729	0.000	0.06
L40	23.75-18.75	A	0.000	0.000	6.229	0.000	0.04
		B	0.000	0.000	13.469	0.000	0.07
		C	0.000	0.000	5.729	0.000	0.06
L41	18.75-13.75	A	0.000	0.000	6.229	0.000	0.04
		B	0.000	0.000	14.609	0.000	0.07
		C	0.000	0.000	8.009	0.000	0.06
L42	13.75-13.00	A	0.000	0.000	0.934	0.000	0.01
		B	0.000	0.000	2.704	0.000	0.01
		C	0.000	0.000	2.228	0.000	0.01
L43	13.00-12.75	A	0.000	0.000	0.311	0.000	0.00
		B	0.000	0.000	0.901	0.000	0.00
		C	0.000	0.000	0.743	0.000	0.00
L44	12.75-8.25	A	0.000	0.000	5.606	0.000	0.04
		B	0.000	0.000	16.854	0.000	0.06
		C	0.000	0.000	13.365	0.000	0.05
L45	8.25-8.00	A	0.000	0.000	0.311	0.000	0.00
		B	0.000	0.000	1.111	0.000	0.00
		C	0.000	0.000	0.743	0.000	0.00
L46	8.00-5.00	A	0.000	0.000	3.738	0.000	0.02
		B	0.000	0.000	13.327	0.000	0.04
		C	0.000	0.000	8.910	0.000	0.04
L47	5.00-4.75	A	0.000	0.000	0.311	0.000	0.00
		B	0.000	0.000	0.883	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.00
L48	4.75-0.00	A	0.000	0.000	3.626	0.000	0.04
		B	0.000	0.000	12.804	0.000	0.07
		C	0.000	0.000	0.000	0.000	0.06

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	160.00-155.00	A	0.994	0.000	0.000	1.181	0.000	0.01
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L2	155.00-150.00	A	0.991	0.000	0.000	1.178	0.000	0.01
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L3	150.00-145.00	A	0.987	0.000	0.000	1.175	0.000	0.01
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.02
L4	145.00-140.00	A	0.984	0.000	0.000	1.171	0.000	0.01

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.04
L5	140.00-135.00	A	0.980	0.000	0.000	1.168	0.000	0.01
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.06
L6	135.00-130.00	A	0.977	0.000	0.000	1.164	0.000	0.01
		B		0.000	0.000	0.711	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.06
L7	130.00-125.00	A	0.973	0.000	0.000	1.161	0.000	0.01
		B		0.000	0.000	1.773	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.06
L8	125.00-117.33	A	0.968	0.000	0.000	1.772	0.000	0.01
		B		0.000	0.000	2.711	0.000	0.04
		C		0.000	0.000	0.000	0.000	0.09
L9	117.33-117.00	A	0.965	0.000	0.000	0.077	0.000	0.00
		B		0.000	0.000	0.118	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.00
L10	117.00-112.00	A	0.963	0.000	0.000	1.150	0.000	0.04
		B		0.000	0.000	1.763	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.06
L11	112.00-107.00	A	0.958	0.000	0.000	1.146	0.000	0.05
		B		0.000	0.000	1.758	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.06
L12	107.00-102.00	A	0.954	0.000	0.000	1.141	0.000	0.05
		B		0.000	0.000	1.754	0.000	0.03
		C		0.000	0.000	0.000	0.000	0.06
L13	102.00-97.00	A	0.949	0.000	0.000	11.808	0.000	0.34
		B		0.000	0.000	17.335	0.000	0.47
		C		0.000	0.000	15.586	0.000	0.50
L14	97.00-95.83	A	0.946	0.000	0.000	3.751	0.000	0.09
		B		0.000	0.000	5.402	0.000	0.12
		C		0.000	0.000	4.635	0.000	0.12
L15	95.83-95.58	A	0.945	0.000	0.000	0.801	0.000	0.02
		B		0.000	0.000	1.605	0.000	0.03
		C		0.000	0.000	0.990	0.000	0.03
L16	95.58-90.58	A	0.943	0.000	0.000	16.376	0.000	0.37
		B		0.000	0.000	32.089	0.000	0.65
		C		0.000	0.000	19.800	0.000	0.53
L17	90.58-89.83	A	0.940	0.000	0.000	2.256	0.000	0.05
		B		0.000	0.000	4.310	0.000	0.08
		C		0.000	0.000	2.468	0.000	0.06
L18	89.83-89.58	A	0.939	0.000	0.000	0.372	0.000	0.00
		B		0.000	0.000	0.867	0.000	0.01
		C		0.000	0.000	0.253	0.000	0.00
L19	89.58-82.50	A	0.935	0.000	0.000	5.129	0.000	0.09
		B		0.000	0.000	19.140	0.000	0.27
		C		0.000	0.000	1.772	0.000	0.10
L20	82.50-81.50	A	0.931	0.000	0.000	0.474	0.000	0.01
		B		0.000	0.000	2.453	0.000	0.04
		C		0.000	0.000	0.000	0.000	0.01
L21	81.50-76.50	A	0.928	0.000	0.000	2.355	0.000	0.06
		B		0.000	0.000	12.239	0.000	0.18
		C		0.000	0.000	0.000	0.000	0.06
L22	76.50-74.25	A	0.923	0.000	0.000	2.546	0.000	0.03
		B		0.000	0.000	6.991	0.000	0.09
		C		0.000	0.000	1.490	0.000	0.04
L23	74.25-74.00	A	0.922	0.000	0.000	0.330	0.000	0.00
		B		0.000	0.000	0.824	0.000	0.01
		C		0.000	0.000	0.213	0.000	0.00
L24	74.00-69.00	A	0.918	0.000	0.000	6.588	0.000	0.08
		B		0.000	0.000	16.461	0.000	0.20

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	4.252	0.000	0.08
L25	69.00-64.00	A	0.912	0.000	0.000	6.568	0.000	0.08
		B		0.000	0.000	16.433	0.000	0.20
		C		0.000	0.000	4.245	0.000	0.08
L26	64.00-59.00	A	0.905	0.000	0.000	6.547	0.000	0.08
		B		0.000	0.000	16.403	0.000	0.20
		C		0.000	0.000	4.238	0.000	0.08
L27	59.00-55.75	A	0.898	0.000	0.000	6.616	0.000	0.06
		B		0.000	0.000	13.018	0.000	0.14
		C		0.000	0.000	5.124	0.000	0.07
L28	55.75-55.50	A	0.896	0.000	0.000	0.590	0.000	0.01
		B		0.000	0.000	1.082	0.000	0.01
		C		0.000	0.000	0.475	0.000	0.01
L29	55.50-50.50	A	0.891	0.000	0.000	11.773	0.000	0.11
		B		0.000	0.000	21.612	0.000	0.23
		C		0.000	0.000	9.491	0.000	0.11
L30	50.50-47.75	A	0.884	0.000	0.000	6.460	0.000	0.06
		B		0.000	0.000	11.867	0.000	0.12
		C		0.000	0.000	5.213	0.000	0.06
L31	47.75-47.50	A	0.882	0.000	0.000	0.587	0.000	0.01
		B		0.000	0.000	1.078	0.000	0.01
		C		0.000	0.000	0.474	0.000	0.01
L32	47.50-40.58	A	0.875	0.000	0.000	15.029	0.000	0.14
		B		0.000	0.000	28.611	0.000	0.30
		C		0.000	0.000	11.916	0.000	0.15
L33	40.58-39.58	A	0.867	0.000	0.000	2.425	0.000	0.02
		B		0.000	0.000	4.389	0.000	0.05
		C		0.000	0.000	1.975	0.000	0.02
L34	39.58-34.58	A	0.860	0.000	0.000	12.065	0.000	0.10
		B		0.000	0.000	21.865	0.000	0.22
		C		0.000	0.000	9.845	0.000	0.11
L35	34.58-30.75	A	0.849	0.000	0.000	9.352	0.000	0.08
		B		0.000	0.000	16.855	0.000	0.17
		C		0.000	0.000	7.667	0.000	0.08
L36	30.75-30.50	A	0.844	0.000	0.000	0.668	0.000	0.01
		B		0.000	0.000	1.157	0.000	0.01
		C		0.000	0.000	0.558	0.000	0.01
L37	30.50-29.00	A	0.841	0.000	0.000	3.774	0.000	0.03
		B		0.000	0.000	6.707	0.000	0.07
		C		0.000	0.000	3.119	0.000	0.03
L38	29.00-28.75	A	0.839	0.000	0.000	0.437	0.000	0.00
		B		0.000	0.000	0.926	0.000	0.01
		C		0.000	0.000	0.328	0.000	0.00
L39	28.75-23.75	A	0.831	0.000	0.000	8.721	0.000	0.08
		B		0.000	0.000	18.485	0.000	0.20
		C		0.000	0.000	6.560	0.000	0.09
L40	23.75-18.75	A	0.813	0.000	0.000	8.669	0.000	0.08
		B		0.000	0.000	18.411	0.000	0.20
		C		0.000	0.000	6.543	0.000	0.09
L41	18.75-13.75	A	0.792	0.000	0.000	8.605	0.000	0.08
		B		0.000	0.000	19.566	0.000	0.20
		C		0.000	0.000	9.015	0.000	0.10
L42	13.75-13.00	A	0.777	0.000	0.000	1.284	0.000	0.01
		B		0.000	0.000	3.485	0.000	0.03
		C		0.000	0.000	2.470	0.000	0.02
L43	13.00-12.75	A	0.774	0.000	0.000	0.428	0.000	0.00
		B		0.000	0.000	1.161	0.000	0.01
		C		0.000	0.000	0.823	0.000	0.01
L44	12.75-8.25	A	0.758	0.000	0.000	7.653	0.000	0.07
		B		0.000	0.000	21.520	0.000	0.20
		C		0.000	0.000	14.784	0.000	0.12

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
L45	8.25-8.00	A	0.739	0.000	0.000	0.422	0.000	0.00
		B		0.000	0.000	1.382	0.000	0.01
		C		0.000	0.000	0.819	0.000	0.01
L46	8.00-5.00	A	0.723	0.000	0.000	5.038	0.000	0.05
		B		0.000	0.000	16.532	0.000	0.14
		C		0.000	0.000	9.812	0.000	0.08
L47	5.00-4.75	A	0.702	0.000	0.000	0.417	0.000	0.00
		B		0.000	0.000	1.125	0.000	0.01
		C		0.000	0.000	0.000	0.000	0.00
L48	4.75-0.00	A	0.653	0.000	0.000	5.226	0.000	0.06
		B		0.000	0.000	16.788	0.000	0.17
		C		0.000	0.000	0.000	0.000	0.06

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	160.00-155.00	-0.2287	0.0000	-0.9822	0.0000
L2	155.00-150.00	-0.2287	0.0000	-0.9853	0.0000
L3	150.00-145.00	-0.2287	0.0000	-0.9880	0.0000
L4	145.00-140.00	-0.2287	0.0000	-0.9903	0.0000
L5	140.00-135.00	-0.2287	0.0000	-0.9921	0.0000
L6	135.00-130.00	0.1241	-0.2001	-0.4216	-0.3063
L7	130.00-125.00	0.6109	-0.4764	0.3413	-0.7166
L8	125.00-117.33	0.6112	-0.4769	0.3426	-0.7197
L9	117.33-117.00	0.6116	-0.4773	0.3430	-0.7214
L10	117.00-112.00	0.6117	-0.4774	0.3439	-0.7214
L11	112.00-107.00	0.6118	-0.4777	0.3450	-0.7233
L12	107.00-102.00	0.6120	-0.4780	0.3460	-0.7249
L13	102.00-97.00	-0.6784	-1.3228	-0.7297	-1.4351
L14	97.00-95.83	1.5963	-0.7729	1.5677	-0.9296
L15	95.83-95.58	2.7104	-1.5483	2.9096	-1.8963
L16	95.58-90.58	2.7345	-1.5835	2.9288	-1.9794
L17	90.58-89.83	3.3383	-1.5845	3.4923	-2.1535
L18	89.83-89.58	7.7826	-1.2980	6.8666	-2.1295
L19	89.58-82.50	6.1673	-3.0002	5.4536	-3.6139
L20	82.50-81.50	5.3203	-3.8864	4.7959	-4.3013
L21	81.50-76.50	5.3422	-3.9031	4.8262	-4.3234
L22	76.50-74.25	4.0343	-2.9481	3.8372	-3.4360
L23	74.25-74.00	3.7795	-2.7621	3.6329	-3.2525
L24	74.00-69.00	3.8018	-2.7788	3.6581	-3.2739
L25	69.00-64.00	3.8438	-2.8103	3.7055	-3.3138
L26	64.00-59.00	3.8849	-2.8411	3.7521	-3.3525
L27	59.00-55.75	3.1090	-2.2741	3.1247	-2.7896
L28	55.75-55.50	2.8621	-2.0937	2.9143	-2.6007
L29	55.50-50.50	2.8817	-2.1082	2.9357	-2.6182
L30	50.50-47.75	2.9103	-2.1296	2.9671	-2.6436
L31	47.75-47.50	2.9205	-2.1371	2.9784	-2.6526
L32	47.50-40.58	3.0631	-2.2418	3.1228	-2.7782
L33	40.58-39.58	2.8747	-2.1040	2.9546	-2.6286
L34	39.58-34.58	2.8962	-2.1199	2.9785	-2.6424
L35	34.58-30.75	2.8971	-2.1210	2.9901	-2.6478
L36	30.75-30.50	2.7239	-1.9944	2.8617	-2.5317
L37	30.50-29.00	2.8258	-2.0691	2.9598	-2.6174
L38	29.00-28.75	3.4358	-2.5158	3.5302	-3.1204
L39	28.75-23.75	3.4545	-2.5297	3.5508	-3.1340

Section	Elevation	CP_X	CP_Z	CP_X Ice	CP_Z Ice
	ft	in	in	in	in
L40	23.75-18.75	3.4899	-2.5561	3.5895	-3.1579
L41	18.75-13.75	3.0690	-2.8861	3.2500	-3.3915
L42	13.75-13.00	2.0390	-3.5992	2.3588	-3.9169
L43	13.00-12.75	2.0417	-3.6044	2.3617	-3.9211
L44	12.75-8.25	2.2840	-3.7309	2.5677	-4.0229
L45	8.25-8.00	3.3738	-4.2413	3.4944	-4.4437
L46	8.00-5.00	3.3867	-4.2586	3.5074	-4.4539
L47	5.00-4.75	8.8835	-6.0053	8.0923	-6.0009
L48	4.75-0.00	7.9010	-5.4469	7.2064	-5.5211

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	1	Safety Line 3/8	155.00 - 160.00	1.0000	1.0000
L2	1	Safety Line 3/8	150.00 - 155.00	1.0000	1.0000
L3	1	Safety Line 3/8	145.00 - 150.00	1.0000	1.0000
L4	1	Safety Line 3/8	140.00 - 145.00	1.0000	1.0000
L5	1	Safety Line 3/8	135.00 - 140.00	1.0000	1.0000
L6	1	Safety Line 3/8	130.00 - 135.00	1.0000	1.0000
L6	11	CU12PSM9P6XXX(1-1/2)	130.00 - 132.00	1.0000	1.0000
L7	1	Safety Line 3/8	125.00 - 130.00	1.0000	1.0000
L7	11	CU12PSM9P6XXX(1-1/2)	125.00 - 130.00	1.0000	1.0000
L8	1	Safety Line 3/8	117.33 - 125.00	1.0000	1.0000
L8	11	CU12PSM9P6XXX(1-1/2)	117.33 - 125.00	1.0000	1.0000
L9	1	Safety Line 3/8	117.00 - 117.33	1.0000	1.0000
L9	11	CU12PSM9P6XXX(1-1/2)	117.00 - 117.33	1.0000	1.0000
L10	1	Safety Line 3/8	112.00 - 117.00	1.0000	1.0000
L10	11	CU12PSM9P6XXX(1-1/2)	112.00 - 117.00	1.0000	1.0000
L11	1	Safety Line 3/8	107.00 - 112.00	1.0000	1.0000
L11	11	CU12PSM9P6XXX(1-1/2)	107.00 - 112.00	1.0000	1.0000
L12	1	Safety Line 3/8	102.00 - 107.00	1.0000	1.0000
L12	11	CU12PSM9P6XXX(1-1/2)	102.00 - 107.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L13	1	Safety Line 3/8	97.00 - 102.00	1.0000	1.0000
L13	11	CU12PSM9P6XXX(1-1/2)	97.00 - 102.00	1.0000	1.0000
L13	47	(Area) Sabre MS600 (1.00x6.00)	97.00 - 97.83	1.0000	1.0000
L13	48	(Area) Sabre MS600 (1.00x6.00)	97.00 - 97.83	1.0000	1.0000
L13	49	(Area) Sabre MS600 (1.00x6.00)	97.00 - 97.83	1.0000	1.0000
L13	51	HSS6x6x1/4	97.00 - 102.00	1.0000	1.0000
L13	52	HSS6x6x1/4	97.00 - 102.00	1.0000	1.0000
L13	53	HSS6x6x1/4	97.00 - 102.00	1.0000	1.0000
L13	54	HSS6x6x1/4	97.00 - 102.00	1.0000	1.0000
L13	55	HSS6x6x1/4	97.00 - 102.00	1.0000	1.0000
L13	56	HSS6x6x1/4	97.00 - 102.00	1.0000	1.0000
L13	57	HSS6x6x1/4	97.00 - 102.00	1.0000	1.0000
L13	58	HSS6x6x1/4	97.00 - 102.00	1.0000	1.0000
L14	1	Safety Line 3/8	95.83 - 97.00	1.0000	1.0000
L14	11	CU12PSM9P6XXX(1-1/2)	95.83 - 97.00	1.0000	1.0000
L14	17	LDF7-50A(1-5/8)	95.83 - 96.00	1.0000	1.0000
L14	20	2" Flexible Conduit	95.83 - 96.00	1.0000	1.0000
L14	47	(Area) Sabre MS600 (1.00x6.00)	95.83 - 97.00	1.0000	1.0000
L14	48	(Area) Sabre MS600 (1.00x6.00)	95.83 - 97.00	1.0000	1.0000
L14	49	(Area) Sabre MS600 (1.00x6.00)	95.83 - 97.00	1.0000	1.0000
L14	51	HSS6x6x1/4	95.83 - 97.00	1.0000	1.0000
L14	52	HSS6x6x1/4	95.83 - 97.00	1.0000	1.0000
L14	53	HSS6x6x1/4	95.83 - 97.00	1.0000	1.0000
L14	54	HSS6x6x1/4	95.83 - 97.00	1.0000	1.0000
L14	55	HSS6x6x1/4	95.83 - 97.00	1.0000	1.0000
L14	56	HSS6x6x1/4	95.83 - 97.00	1.0000	1.0000
L14	57	HSS6x6x1/4	95.83 - 97.00	1.0000	1.0000
L14	58	HSS6x6x1/4	95.83 - 97.00	1.0000	1.0000
L15	1	Safety Line 3/8	95.58 - 95.83	1.0000	1.0000
L15	11	CU12PSM9P6XXX(1-1/2)	95.58 - 95.83	1.0000	1.0000
L15	17	LDF7-50A(1-5/8)	95.58 - 95.83	1.0000	1.0000
L15	20	2" Flexible Conduit	95.58 - 95.83	1.0000	1.0000
L15	47	(Area) Sabre MS600 (1.00x6.00)	95.58 - 95.83	1.0000	1.0000
L15	48	(Area) Sabre MS600 (1.00x6.00)	95.58 - 95.83	1.0000	1.0000
L15	49	(Area) Sabre MS600 (1.00x6.00)	95.58 - 95.83	1.0000	1.0000
L15	51	HSS6x6x1/4	95.58 - 95.83	1.0000	1.0000
L15	52	HSS6x6x1/4	95.58 - 95.83	1.0000	1.0000
L15	53	HSS6x6x1/4	95.58 - 95.83	1.0000	1.0000
L15	54	HSS6x6x1/4	95.58 - 95.83	1.0000	1.0000
L15	55	HSS6x6x1/4	95.58 - 95.83	1.0000	1.0000
L15	56	HSS6x6x1/4	95.58 - 95.83	1.0000	1.0000
L15	57	HSS6x6x1/4	95.58 - 95.83	1.0000	1.0000
L15	58	HSS6x6x1/4	95.58 - 95.83	1.0000	1.0000
L16	1	Safety Line 3/8	90.58 - 95.58	1.0000	1.0000
L16	11	CU12PSM9P6XXX(1-1/2)	90.58 - 95.58	1.0000	1.0000
L16	17	LDF7-50A(1-5/8)	90.58 - 95.58	1.0000	1.0000
L16	20	2" Flexible Conduit	90.58 - 95.58	1.0000	1.0000
L16	23	LDF4-50A(1/2)	90.58 - 92.00	1.0000	1.0000
L16	47	(Area) Sabre MS600 (1.00x6.00)	90.58 - 95.58	1.0000	1.0000
L16	48	(Area) Sabre MS600 (1.00x6.00)	90.58 - 95.58	1.0000	1.0000
L16	49	(Area) Sabre MS600	90.58 - 95.58	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		(1.00x6.00)			
L16	51	HSS6x6x1/4	90.58 - 95.58	1.0000	1.0000
L16	52	HSS6x6x1/4	90.58 - 95.58	1.0000	1.0000
L16	53	HSS6x6x1/4	90.58 - 95.58	1.0000	1.0000
L16	54	HSS6x6x1/4	90.58 - 95.58	1.0000	1.0000
L16	55	HSS6x6x1/4	90.58 - 95.58	1.0000	1.0000
L16	56	HSS6x6x1/4	90.58 - 95.58	1.0000	1.0000
L16	57	HSS6x6x1/4	90.58 - 95.58	1.0000	1.0000
L16	58	HSS6x6x1/4	90.58 - 95.58	1.0000	1.0000
L17	1	Safety Line 3/8	89.83 - 90.58	1.0000	1.0000
L17	11	CU12PSM9P6XXX(1-1/2)	89.83 - 90.58	1.0000	1.0000
L17	17	LDF7-50A(1-5/8)	89.83 - 90.58	1.0000	1.0000
L17	20	2" Flexible Conduit	89.83 - 90.58	1.0000	1.0000
L17	23	LDF4-50A(1/2)	89.83 - 90.58	1.0000	1.0000
L17	47	(Area) Sabre MS600 (1.00x6.00)	89.83 - 90.58	1.0000	1.0000
L17	48	(Area) Sabre MS600 (1.00x6.00)	89.83 - 90.58	1.0000	1.0000
L17	49	(Area) Sabre MS600 (1.00x6.00)	89.83 - 90.58	1.0000	1.0000
L17	51	HSS6x6x1/4	90.00 - 90.58	1.0000	1.0000
L17	52	HSS6x6x1/4	90.00 - 90.58	1.0000	1.0000
L17	53	HSS6x6x1/4	90.00 - 90.58	1.0000	1.0000
L17	54	HSS6x6x1/4	90.00 - 90.58	1.0000	1.0000
L17	55	HSS6x6x1/4	90.00 - 90.58	1.0000	1.0000
L17	56	HSS6x6x1/4	90.00 - 90.58	1.0000	1.0000
L17	57	HSS6x6x1/4	90.00 - 90.58	1.0000	1.0000
L17	58	HSS6x6x1/4	90.00 - 90.58	1.0000	1.0000
L18	1	Safety Line 3/8	89.58 - 89.83	1.0000	1.0000
L18	11	CU12PSM9P6XXX(1-1/2)	89.58 - 89.83	1.0000	1.0000
L18	17	LDF7-50A(1-5/8)	89.58 - 89.83	1.0000	1.0000
L18	20	2" Flexible Conduit	89.58 - 89.83	1.0000	1.0000
L18	23	LDF4-50A(1/2)	89.58 - 89.83	1.0000	1.0000
L18	47	(Area) Sabre MS600 (1.00x6.00)	89.58 - 89.83	1.0000	1.0000
L18	48	(Area) Sabre MS600 (1.00x6.00)	89.58 - 89.83	1.0000	1.0000
L18	49	(Area) Sabre MS600 (1.00x6.00)	89.58 - 89.83	1.0000	1.0000
L19	1	Safety Line 3/8	82.50 - 89.58	1.0000	1.0000
L19	11	CU12PSM9P6XXX(1-1/2)	82.50 - 89.58	1.0000	1.0000
L19	17	LDF7-50A(1-5/8)	82.50 - 89.58	1.0000	1.0000
L19	20	2" Flexible Conduit	82.50 - 89.58	1.0000	1.0000
L19	23	LDF4-50A(1/2)	82.50 - 89.58	1.0000	1.0000
L19	47	(Area) Sabre MS600 (1.00x6.00)	87.83 - 89.58	1.0000	1.0000
L19	48	(Area) Sabre MS600 (1.00x6.00)	87.83 - 89.58	1.0000	1.0000
L19	49	(Area) Sabre MS600 (1.00x6.00)	87.83 - 89.58	1.0000	1.0000
L20	1	Safety Line 3/8	81.50 - 82.50	1.0000	1.0000
L20	11	CU12PSM9P6XXX(1-1/2)	81.50 - 82.50	1.0000	1.0000
L20	17	LDF7-50A(1-5/8)	81.50 - 82.50	1.0000	1.0000
L20	20	2" Flexible Conduit	81.50 - 82.50	1.0000	1.0000
L20	23	LDF4-50A(1/2)	81.50 - 82.50	1.0000	1.0000
L21	1	Safety Line 3/8	76.50 - 81.50	1.0000	1.0000
L21	11	CU12PSM9P6XXX(1-1/2)	76.50 - 81.50	1.0000	1.0000
L21	17	LDF7-50A(1-5/8)	76.50 - 81.50	1.0000	1.0000
L21	20	2" Flexible Conduit	76.50 - 81.50	1.0000	1.0000
L21	23	LDF4-50A(1/2)	76.50 - 81.50	1.0000	1.0000
L22	1	Safety Line 3/8	74.25 - 76.50	1.0000	1.0000
L22	11	CU12PSM9P6XXX(1-1/2)	74.25 - 76.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L22	17	LDF7-50A(1-5/8)	74.25 - 76.50	1.0000	1.0000
L22	20	2" Flexible Conduit	74.25 - 76.50	1.0000	1.0000
L22	23	LDF4-50A(1/2)	74.25 - 76.50	1.0000	1.0000
L22	35	Crown 1x4 (100ksi)	74.25 - 76.00	1.0000	1.0000
L22	36	Crown 1x4 (100ksi)	74.25 - 76.00	1.0000	1.0000
L22	37	Crown 1x4 (100ksi)	74.25 - 76.00	1.0000	1.0000
L23	1	Safety Line 3/8	74.00 - 74.25	1.0000	1.0000
L23	11	CU12PSM9P6XXX(1-1/2)	74.00 - 74.25	1.0000	1.0000
L23	17	LDF7-50A(1-5/8)	74.00 - 74.25	1.0000	1.0000
L23	20	2" Flexible Conduit	74.00 - 74.25	1.0000	1.0000
L23	23	LDF4-50A(1/2)	74.00 - 74.25	1.0000	1.0000
L23	35	Crown 1x4 (100ksi)	74.00 - 74.25	1.0000	1.0000
L23	36	Crown 1x4 (100ksi)	74.00 - 74.25	1.0000	1.0000
L23	37	Crown 1x4 (100ksi)	74.00 - 74.25	1.0000	1.0000
L24	1	Safety Line 3/8	69.00 - 74.00	1.0000	1.0000
L24	11	CU12PSM9P6XXX(1-1/2)	69.00 - 74.00	1.0000	1.0000
L24	17	LDF7-50A(1-5/8)	69.00 - 74.00	1.0000	1.0000
L24	20	2" Flexible Conduit	69.00 - 74.00	1.0000	1.0000
L24	23	LDF4-50A(1/2)	69.00 - 74.00	1.0000	1.0000
L24	35	Crown 1x4 (100ksi)	69.00 - 74.00	1.0000	1.0000
L24	36	Crown 1x4 (100ksi)	69.00 - 74.00	1.0000	1.0000
L24	37	Crown 1x4 (100ksi)	69.00 - 74.00	1.0000	1.0000
L25	1	Safety Line 3/8	64.00 - 69.00	1.0000	1.0000
L25	11	CU12PSM9P6XXX(1-1/2)	64.00 - 69.00	1.0000	1.0000
L25	17	LDF7-50A(1-5/8)	64.00 - 69.00	1.0000	1.0000
L25	20	2" Flexible Conduit	64.00 - 69.00	1.0000	1.0000
L25	23	LDF4-50A(1/2)	64.00 - 69.00	1.0000	1.0000
L25	35	Crown 1x4 (100ksi)	64.00 - 69.00	1.0000	1.0000
L25	36	Crown 1x4 (100ksi)	64.00 - 69.00	1.0000	1.0000
L25	37	Crown 1x4 (100ksi)	64.00 - 69.00	1.0000	1.0000
L26	1	Safety Line 3/8	59.00 - 64.00	1.0000	1.0000
L26	11	CU12PSM9P6XXX(1-1/2)	59.00 - 64.00	1.0000	1.0000
L26	17	LDF7-50A(1-5/8)	59.00 - 64.00	1.0000	1.0000
L26	20	2" Flexible Conduit	59.00 - 64.00	1.0000	1.0000
L26	23	LDF4-50A(1/2)	59.00 - 64.00	1.0000	1.0000
L26	35	Crown 1x4 (100ksi)	59.00 - 64.00	1.0000	1.0000
L26	36	Crown 1x4 (100ksi)	59.00 - 64.00	1.0000	1.0000
L26	37	Crown 1x4 (100ksi)	59.00 - 64.00	1.0000	1.0000
L27	1	Safety Line 3/8	55.75 - 59.00	1.0000	1.0000
L27	11	CU12PSM9P6XXX(1-1/2)	55.75 - 59.00	1.0000	1.0000
L27	17	LDF7-50A(1-5/8)	55.75 - 59.00	1.0000	1.0000
L27	20	2" Flexible Conduit	55.75 - 59.00	1.0000	1.0000
L27	23	LDF4-50A(1/2)	55.75 - 59.00	1.0000	1.0000
L27	31	PL 1.25x5.25	55.75 - 58.00	1.0000	1.0000
L27	32	PL 1.25x5.25	55.75 - 58.00	1.0000	1.0000
L27	33	PL 1.25x5.25	55.75 - 58.00	1.0000	1.0000
L27	35	Crown 1x4 (100ksi)	55.75 - 59.00	1.0000	1.0000
L27	36	Crown 1x4 (100ksi)	55.75 - 59.00	1.0000	1.0000
L27	37	Crown 1x4 (100ksi)	55.75 - 59.00	1.0000	1.0000
L28	1	Safety Line 3/8	55.50 - 55.75	1.0000	1.0000
L28	11	CU12PSM9P6XXX(1-1/2)	55.50 - 55.75	1.0000	1.0000
L28	17	LDF7-50A(1-5/8)	55.50 - 55.75	1.0000	1.0000
L28	20	2" Flexible Conduit	55.50 - 55.75	1.0000	1.0000
L28	23	LDF4-50A(1/2)	55.50 - 55.75	1.0000	1.0000
L28	31	PL 1.25x5.25	55.50 - 55.75	1.0000	1.0000
L28	32	PL 1.25x5.25	55.50 - 55.75	1.0000	1.0000
L28	33	PL 1.25x5.25	55.50 - 55.75	1.0000	1.0000
L28	35	Crown 1x4 (100ksi)	55.50 - 55.75	1.0000	1.0000
L28	36	Crown 1x4 (100ksi)	55.50 - 55.75	1.0000	1.0000
L28	37	Crown 1x4 (100ksi)	55.50 - 55.75	1.0000	1.0000
L29	1	Safety Line 3/8	50.50 - 55.50	1.0000	1.0000
L29	11	CU12PSM9P6XXX(1-1/2)	50.50 - 55.50	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L29	17	LDF7-50A(1-5/8)	50.50 - 55.50	1.0000	1.0000
L29	20	2" Flexible Conduit	50.50 - 55.50	1.0000	1.0000
L29	23	LDF4-50A(1/2)	50.50 - 55.50	1.0000	1.0000
L29	31	PL 1.25x5.25	50.50 - 55.50	1.0000	1.0000
L29	32	PL 1.25x5.25	50.50 - 55.50	1.0000	1.0000
L29	33	PL 1.25x5.25	50.50 - 55.50	1.0000	1.0000
L29	35	Crown 1x4 (100ksi)	50.50 - 55.50	1.0000	1.0000
L29	36	Crown 1x4 (100ksi)	50.50 - 55.50	1.0000	1.0000
L29	37	Crown 1x4 (100ksi)	50.50 - 55.50	1.0000	1.0000
L30	1	Safety Line 3/8	47.75 - 50.50	1.0000	1.0000
L30	11	CU12PSM9P6XXX(1-1/2)	47.75 - 50.50	1.0000	1.0000
L30	17	LDF7-50A(1-5/8)	47.75 - 50.50	1.0000	1.0000
L30	20	2" Flexible Conduit	47.75 - 50.50	1.0000	1.0000
L30	23	LDF4-50A(1/2)	47.75 - 50.50	1.0000	1.0000
L30	31	PL 1.25x5.25	47.75 - 50.50	1.0000	1.0000
L30	32	PL 1.25x5.25	47.75 - 50.50	1.0000	1.0000
L30	33	PL 1.25x5.25	47.75 - 50.50	1.0000	1.0000
L30	35	Crown 1x4 (100ksi)	47.75 - 50.50	1.0000	1.0000
L30	36	Crown 1x4 (100ksi)	47.75 - 50.50	1.0000	1.0000
L30	37	Crown 1x4 (100ksi)	47.75 - 50.50	1.0000	1.0000
L31	1	Safety Line 3/8	47.50 - 47.75	1.0000	1.0000
L31	11	CU12PSM9P6XXX(1-1/2)	47.50 - 47.75	1.0000	1.0000
L31	17	LDF7-50A(1-5/8)	47.50 - 47.75	1.0000	1.0000
L31	20	2" Flexible Conduit	47.50 - 47.75	1.0000	1.0000
L31	23	LDF4-50A(1/2)	47.50 - 47.75	1.0000	1.0000
L31	31	PL 1.25x5.25	47.50 - 47.75	1.0000	1.0000
L31	32	PL 1.25x5.25	47.50 - 47.75	1.0000	1.0000
L31	33	PL 1.25x5.25	47.50 - 47.75	1.0000	1.0000
L31	35	Crown 1x4 (100ksi)	47.50 - 47.75	1.0000	1.0000
L31	36	Crown 1x4 (100ksi)	47.50 - 47.75	1.0000	1.0000
L31	37	Crown 1x4 (100ksi)	47.50 - 47.75	1.0000	1.0000
L32	1	Safety Line 3/8	40.58 - 47.50	1.0000	1.0000
L32	11	CU12PSM9P6XXX(1-1/2)	40.58 - 47.50	1.0000	1.0000
L32	17	LDF7-50A(1-5/8)	40.58 - 47.50	1.0000	1.0000
L32	20	2" Flexible Conduit	40.58 - 47.50	1.0000	1.0000
L32	23	LDF4-50A(1/2)	40.58 - 47.50	1.0000	1.0000
L32	31	PL 1.25x5.25	40.58 - 47.50	1.0000	1.0000
L32	32	PL 1.25x5.25	40.58 - 47.50	1.0000	1.0000
L32	33	PL 1.25x5.25	40.58 - 47.50	1.0000	1.0000
L32	35	Crown 1x4 (100ksi)	46.00 - 47.50	1.0000	1.0000
L32	36	Crown 1x4 (100ksi)	46.00 - 47.50	1.0000	1.0000
L32	37	Crown 1x4 (100ksi)	46.00 - 47.50	1.0000	1.0000
L32	43	(Area) Sabre MS450 (1.00x4.50)	40.58 - 44.25	1.0000	1.0000
L32	44	(Area) Sabre MS450 (1.00x4.50)	40.58 - 44.25	1.0000	1.0000
L32	45	(Area) Sabre MS450 (1.00x4.50)	40.58 - 44.25	1.0000	1.0000
L33	1	Safety Line 3/8	39.58 - 40.58	1.0000	1.0000
L33	11	CU12PSM9P6XXX(1-1/2)	39.58 - 40.58	1.0000	1.0000
L33	17	LDF7-50A(1-5/8)	39.58 - 40.58	1.0000	1.0000
L33	20	2" Flexible Conduit	39.58 - 40.58	1.0000	1.0000
L33	23	LDF4-50A(1/2)	39.58 - 40.58	1.0000	1.0000
L33	31	PL 1.25x5.25	39.58 - 40.58	1.0000	1.0000
L33	32	PL 1.25x5.25	39.58 - 40.58	1.0000	1.0000
L33	33	PL 1.25x5.25	39.58 - 40.58	1.0000	1.0000
L33	43	(Area) Sabre MS450 (1.00x4.50)	39.58 - 40.58	1.0000	1.0000
L33	44	(Area) Sabre MS450 (1.00x4.50)	39.58 - 40.58	1.0000	1.0000
L33	45	(Area) Sabre MS450 (1.00x4.50)	39.58 - 40.58	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L34	1	Safety Line 3/8	34.58 - 39.58	1.0000	1.0000
L34	11	CU12PSM9P6XXX(1-1/2)	34.58 - 39.58	1.0000	1.0000
L34	17	LDF7-50A(1-5/8)	34.58 - 39.58	1.0000	1.0000
L34	20	2" Flexible Conduit	34.58 - 39.58	1.0000	1.0000
L34	23	LDF4-50A(1/2)	34.58 - 39.58	1.0000	1.0000
L34	31	PL 1.25x5.25	34.58 - 39.58	1.0000	1.0000
L34	32	PL 1.25x5.25	34.58 - 39.58	1.0000	1.0000
L34	33	PL 1.25x5.25	34.58 - 39.58	1.0000	1.0000
L34	43	(Area) Sabre MS450 (1.00x4.50)	34.58 - 39.58	1.0000	1.0000
L34	44	(Area) Sabre MS450 (1.00x4.50)	34.58 - 39.58	1.0000	1.0000
L34	45	(Area) Sabre MS450 (1.00x4.50)	34.58 - 39.58	1.0000	1.0000
L35	1	Safety Line 3/8	30.75 - 34.58	1.0000	1.0000
L35	11	CU12PSM9P6XXX(1-1/2)	30.75 - 34.58	1.0000	1.0000
L35	17	LDF7-50A(1-5/8)	30.75 - 34.58	1.0000	1.0000
L35	20	2" Flexible Conduit	30.75 - 34.58	1.0000	1.0000
L35	23	LDF4-50A(1/2)	30.75 - 34.58	1.0000	1.0000
L35	27	PL 1.25x6.875	30.75 - 31.25	1.0000	1.0000
L35	28	PL 1.25x6.875	30.75 - 31.25	1.0000	1.0000
L35	29	PL 1.25x6.875	30.75 - 31.25	1.0000	1.0000
L35	31	PL 1.25x5.25	31.25 - 34.58	1.0000	1.0000
L35	32	PL 1.25x5.25	31.25 - 34.58	1.0000	1.0000
L35	33	PL 1.25x5.25	31.25 - 34.58	1.0000	1.0000
L35	43	(Area) Sabre MS450 (1.00x4.50)	30.75 - 34.58	1.0000	1.0000
L35	44	(Area) Sabre MS450 (1.00x4.50)	30.75 - 34.58	1.0000	1.0000
L35	45	(Area) Sabre MS450 (1.00x4.50)	30.75 - 34.58	1.0000	1.0000
L36	1	Safety Line 3/8	30.50 - 30.75	1.0000	1.0000
L36	11	CU12PSM9P6XXX(1-1/2)	30.50 - 30.75	1.0000	1.0000
L36	17	LDF7-50A(1-5/8)	30.50 - 30.75	1.0000	1.0000
L36	20	2" Flexible Conduit	30.50 - 30.75	1.0000	1.0000
L36	23	LDF4-50A(1/2)	30.50 - 30.75	1.0000	1.0000
L36	27	PL 1.25x6.875	30.50 - 30.75	1.0000	1.0000
L36	28	PL 1.25x6.875	30.50 - 30.75	1.0000	1.0000
L36	29	PL 1.25x6.875	30.50 - 30.75	1.0000	1.0000
L36	43	(Area) Sabre MS450 (1.00x4.50)	30.50 - 30.75	1.0000	1.0000
L36	44	(Area) Sabre MS450 (1.00x4.50)	30.50 - 30.75	1.0000	1.0000
L36	45	(Area) Sabre MS450 (1.00x4.50)	30.50 - 30.75	1.0000	1.0000
L37	1	Safety Line 3/8	29.00 - 30.50	1.0000	1.0000
L37	11	CU12PSM9P6XXX(1-1/2)	29.00 - 30.50	1.0000	1.0000
L37	17	LDF7-50A(1-5/8)	29.00 - 30.50	1.0000	1.0000
L37	20	2" Flexible Conduit	29.00 - 30.50	1.0000	1.0000
L37	23	LDF4-50A(1/2)	29.00 - 30.50	1.0000	1.0000
L37	27	PL 1.25x6.875	29.00 - 30.50	1.0000	1.0000
L37	28	PL 1.25x6.875	29.00 - 30.50	1.0000	1.0000
L37	29	PL 1.25x6.875	29.00 - 30.50	1.0000	1.0000
L37	43	(Area) Sabre MS450 (1.00x4.50)	29.25 - 30.50	1.0000	1.0000
L37	44	(Area) Sabre MS450 (1.00x4.50)	29.25 - 30.50	1.0000	1.0000
L37	45	(Area) Sabre MS450 (1.00x4.50)	29.25 - 30.50	1.0000	1.0000
L38	1	Safety Line 3/8	28.75 - 29.00	1.0000	1.0000
L38	11	CU12PSM9P6XXX(1-1/2)	28.75 - 29.00	1.0000	1.0000
L38	17	LDF7-50A(1-5/8)	28.75 - 29.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L38	20	2" Flexible Conduit	28.75 - 29.00	1.0000	1.0000
L38	23	LDF4-50A(1/2)	28.75 - 29.00	1.0000	1.0000
L38	27	PL 1.25x6.875	28.75 - 29.00	1.0000	1.0000
L38	28	PL 1.25x6.875	28.75 - 29.00	1.0000	1.0000
L38	29	PL 1.25x6.875	28.75 - 29.00	1.0000	1.0000
L39	1	Safety Line 3/8	23.75 - 28.75	1.0000	1.0000
L39	11	CU12PSM9P6XXX(1-1/2)	23.75 - 28.75	1.0000	1.0000
L39	17	LDF7-50A(1-5/8)	23.75 - 28.75	1.0000	1.0000
L39	20	2" Flexible Conduit	23.75 - 28.75	1.0000	1.0000
L39	23	LDF4-50A(1/2)	23.75 - 28.75	1.0000	1.0000
L39	27	PL 1.25x6.875	23.75 - 28.75	1.0000	1.0000
L39	28	PL 1.25x6.875	23.75 - 28.75	1.0000	1.0000
L39	29	PL 1.25x6.875	23.75 - 28.75	1.0000	1.0000
L40	1	Safety Line 3/8	18.75 - 23.75	1.0000	1.0000
L40	11	CU12PSM9P6XXX(1-1/2)	18.75 - 23.75	1.0000	1.0000
L40	17	LDF7-50A(1-5/8)	18.75 - 23.75	1.0000	1.0000
L40	20	2" Flexible Conduit	18.75 - 23.75	1.0000	1.0000
L40	23	LDF4-50A(1/2)	18.75 - 23.75	1.0000	1.0000
L40	27	PL 1.25x6.875	18.75 - 23.75	1.0000	1.0000
L40	28	PL 1.25x6.875	18.75 - 23.75	1.0000	1.0000
L40	29	PL 1.25x6.875	18.75 - 23.75	1.0000	1.0000
L41	1	Safety Line 3/8	13.75 - 18.75	1.0000	1.0000
L41	11	CU12PSM9P6XXX(1-1/2)	13.75 - 18.75	1.0000	1.0000
L41	17	LDF7-50A(1-5/8)	13.75 - 18.75	1.0000	1.0000
L41	20	2" Flexible Conduit	13.75 - 18.75	1.0000	1.0000
L41	23	LDF4-50A(1/2)	13.75 - 18.75	1.0000	1.0000
L41	27	PL 1.25x6.875	13.75 - 18.75	1.0000	1.0000
L41	28	PL 1.25x6.875	13.75 - 18.75	1.0000	1.0000
L41	29	PL 1.25x6.875	13.75 - 18.75	1.0000	1.0000
L41	39	(Area) Sabre MS600 (1.00x6.00)	13.75 - 15.00	1.0000	1.0000
L41	40	(Area) Sabre MS600 (1.00x6.00)	13.75 - 15.00	1.0000	1.0000
L41	41	(Area) Sabre MS600 (1.00x6.00)	13.75 - 15.00	1.0000	1.0000
L42	1	Safety Line 3/8	13.00 - 13.75	1.0000	1.0000
L42	11	CU12PSM9P6XXX(1-1/2)	13.00 - 13.75	1.0000	1.0000
L42	17	LDF7-50A(1-5/8)	13.00 - 13.75	1.0000	1.0000
L42	20	2" Flexible Conduit	13.00 - 13.75	1.0000	1.0000
L42	23	LDF4-50A(1/2)	13.00 - 13.75	1.0000	1.0000
L42	27	PL 1.25x6.875	13.00 - 13.75	1.0000	1.0000
L42	28	PL 1.25x6.875	13.00 - 13.75	1.0000	1.0000
L42	29	PL 1.25x6.875	13.00 - 13.75	1.0000	1.0000
L42	39	(Area) Sabre MS600 (1.00x6.00)	13.00 - 13.75	1.0000	1.0000
L42	40	(Area) Sabre MS600 (1.00x6.00)	13.00 - 13.75	1.0000	1.0000
L42	41	(Area) Sabre MS600 (1.00x6.00)	13.00 - 13.75	1.0000	1.0000
L43	1	Safety Line 3/8	12.75 - 13.00	1.0000	1.0000
L43	11	CU12PSM9P6XXX(1-1/2)	12.75 - 13.00	1.0000	1.0000
L43	17	LDF7-50A(1-5/8)	12.75 - 13.00	1.0000	1.0000
L43	20	2" Flexible Conduit	12.75 - 13.00	1.0000	1.0000
L43	23	LDF4-50A(1/2)	12.75 - 13.00	1.0000	1.0000
L43	27	PL 1.25x6.875	12.75 - 13.00	1.0000	1.0000
L43	28	PL 1.25x6.875	12.75 - 13.00	1.0000	1.0000
L43	29	PL 1.25x6.875	12.75 - 13.00	1.0000	1.0000
L43	39	(Area) Sabre MS600 (1.00x6.00)	12.75 - 13.00	1.0000	1.0000
L43	40	(Area) Sabre MS600 (1.00x6.00)	12.75 - 13.00	1.0000	1.0000
L43	41	(Area) Sabre MS600	12.75 - 13.00	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
		(1.00x6.00)			
L44	1	Safety Line 3/8	8.25 - 12.75	1.0000	1.0000
L44	11	CU12PSM9P6XXX(1-1/2)	8.25 - 12.75	1.0000	1.0000
L44	17	LDF7-50A(1-5/8)	8.25 - 12.75	1.0000	1.0000
L44	20	2" Flexible Conduit	8.25 - 12.75	1.0000	1.0000
L44	23	LDF4-50A(1/2)	8.25 - 12.75	1.0000	1.0000
L44	26	PL 1.25x6.25	8.25 - 9.00	1.0000	1.0000
L44	27	PL 1.25x6.875	8.25 - 12.75	1.0000	1.0000
L44	28	PL 1.25x6.875	8.25 - 12.75	1.0000	1.0000
L44	29	PL 1.25x6.875	8.25 - 12.75	1.0000	1.0000
L44	39	(Area) Sabre MS600 (1.00x6.00)	8.25 - 12.75	1.0000	1.0000
L44	40	(Area) Sabre MS600 (1.00x6.00)	8.25 - 12.75	1.0000	1.0000
L44	41	(Area) Sabre MS600 (1.00x6.00)	8.25 - 12.75	1.0000	1.0000
L45	1	Safety Line 3/8	8.00 - 8.25	1.0000	1.0000
L45	11	CU12PSM9P6XXX(1-1/2)	8.00 - 8.25	1.0000	1.0000
L45	17	LDF7-50A(1-5/8)	8.00 - 8.25	1.0000	1.0000
L45	20	2" Flexible Conduit	8.00 - 8.25	1.0000	1.0000
L45	23	LDF4-50A(1/2)	8.00 - 8.25	1.0000	1.0000
L45	26	PL 1.25x6.25	8.00 - 8.25	1.0000	1.0000
L45	27	PL 1.25x6.875	8.00 - 8.25	1.0000	1.0000
L45	28	PL 1.25x6.875	8.00 - 8.25	1.0000	1.0000
L45	29	PL 1.25x6.875	8.00 - 8.25	1.0000	1.0000
L45	39	(Area) Sabre MS600 (1.00x6.00)	8.00 - 8.25	1.0000	1.0000
L45	40	(Area) Sabre MS600 (1.00x6.00)	8.00 - 8.25	1.0000	1.0000
L45	41	(Area) Sabre MS600 (1.00x6.00)	8.00 - 8.25	1.0000	1.0000
L46	1	Safety Line 3/8	5.00 - 8.00	1.0000	1.0000
L46	11	CU12PSM9P6XXX(1-1/2)	5.00 - 8.00	1.0000	1.0000
L46	17	LDF7-50A(1-5/8)	5.00 - 8.00	1.0000	1.0000
L46	20	2" Flexible Conduit	5.00 - 8.00	1.0000	1.0000
L46	23	LDF4-50A(1/2)	5.00 - 8.00	1.0000	1.0000
L46	26	PL 1.25x6.25	5.00 - 8.00	1.0000	1.0000
L46	27	PL 1.25x6.875	5.00 - 8.00	1.0000	1.0000
L46	28	PL 1.25x6.875	5.00 - 8.00	1.0000	1.0000
L46	29	PL 1.25x6.875	5.00 - 8.00	1.0000	1.0000
L46	39	(Area) Sabre MS600 (1.00x6.00)	5.00 - 8.00	1.0000	1.0000
L46	40	(Area) Sabre MS600 (1.00x6.00)	5.00 - 8.00	1.0000	1.0000
L46	41	(Area) Sabre MS600 (1.00x6.00)	5.00 - 8.00	1.0000	1.0000
L47	1	Safety Line 3/8	4.75 - 5.00	1.0000	1.0000
L47	11	CU12PSM9P6XXX(1-1/2)	4.75 - 5.00	1.0000	1.0000
L47	17	LDF7-50A(1-5/8)	4.75 - 5.00	1.0000	1.0000
L47	20	2" Flexible Conduit	4.75 - 5.00	1.0000	1.0000
L47	23	LDF4-50A(1/2)	4.75 - 5.00	1.0000	1.0000
L47	26	PL 1.25x6.25	4.75 - 5.00	1.0000	1.0000
L47	27	PL 1.25x6.875	4.75 - 5.00	1.0000	1.0000
L47	28	PL 1.25x6.875	4.75 - 5.00	1.0000	1.0000
L48	1	Safety Line 3/8	0.00 - 4.75	1.0000	1.0000
L48	11	CU12PSM9P6XXX(1-1/2)	0.00 - 4.75	1.0000	1.0000
L48	17	LDF7-50A(1-5/8)	0.00 - 4.75	1.0000	1.0000
L48	20	2" Flexible Conduit	0.00 - 4.75	1.0000	1.0000
L48	23	LDF4-50A(1/2)	0.00 - 4.75	1.0000	1.0000
L48	26	PL 1.25x6.25	2.00 - 4.75	1.0000	1.0000
L48	27	PL 1.25x6.875	2.00 - 4.75	1.0000	1.0000
L48	28	PL 1.25x6.875	2.00 - 4.75	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	47	(Area) Sabre MS600 (1.00x6.00)	97.00 - 97.83	Auto	0.0000
L13	48	(Area) Sabre MS600 (1.00x6.00)	97.00 - 97.83	Auto	0.0000
L13	49	(Area) Sabre MS600 (1.00x6.00)	97.00 - 97.83	Auto	0.0000
L13	51	HSS6x6x1/4	97.00 - 102.00	Auto	0.0000
L13	52	HSS6x6x1/4	97.00 - 102.00	Auto	0.0000
L13	53	HSS6x6x1/4	97.00 - 102.00	Auto	0.0000
L13	54	HSS6x6x1/4	97.00 - 102.00	Auto	0.0000
L13	55	HSS6x6x1/4	97.00 - 102.00	Auto	0.0000
L13	56	HSS6x6x1/4	97.00 - 102.00	Auto	0.0000
L13	57	HSS6x6x1/4	97.00 - 102.00	Auto	0.0000
L13	58	HSS6x6x1/4	97.00 - 102.00	Auto	0.0000
L14	47	(Area) Sabre MS600 (1.00x6.00)	95.83 - 97.00	Auto	0.0000
L14	48	(Area) Sabre MS600 (1.00x6.00)	95.83 - 97.00	Auto	0.0000
L14	49	(Area) Sabre MS600 (1.00x6.00)	95.83 - 97.00	Auto	0.0000
L14	51	HSS6x6x1/4	95.83 - 97.00	Auto	0.0000
L14	52	HSS6x6x1/4	95.83 - 97.00	Auto	0.0000
L14	53	HSS6x6x1/4	95.83 - 97.00	Auto	0.0000
L14	54	HSS6x6x1/4	95.83 - 97.00	Auto	0.0000
L14	55	HSS6x6x1/4	95.83 - 97.00	Auto	0.0000
L14	56	HSS6x6x1/4	95.83 - 97.00	Auto	0.0000
L14	57	HSS6x6x1/4	95.83 - 97.00	Auto	0.0000
L14	58	HSS6x6x1/4	95.83 - 97.00	Auto	0.0000
L15	47	(Area) Sabre MS600 (1.00x6.00)	95.58 - 95.83	Auto	0.0000
L15	48	(Area) Sabre MS600 (1.00x6.00)	95.58 - 95.83	Auto	0.0000
L15	49	(Area) Sabre MS600 (1.00x6.00)	95.58 - 95.83	Auto	0.0000
L15	51	HSS6x6x1/4	95.58 - 95.83	Auto	0.0000
L15	52	HSS6x6x1/4	95.58 - 95.83	Auto	0.0000
L15	53	HSS6x6x1/4	95.58 - 95.83	Auto	0.0000
L15	54	HSS6x6x1/4	95.58 - 95.83	Auto	0.0000
L15	55	HSS6x6x1/4	95.58 - 95.83	Auto	0.0000
L15	56	HSS6x6x1/4	95.58 - 95.83	Auto	0.0000
L15	57	HSS6x6x1/4	95.58 - 95.83	Auto	0.0000
L15	58	HSS6x6x1/4	95.58 - 95.83	Auto	0.0000
L16	47	(Area) Sabre MS600 (1.00x6.00)	90.58 - 95.58	Auto	0.0000
L16	48	(Area) Sabre MS600 (1.00x6.00)	90.58 - 95.58	Auto	0.0000
L16	49	(Area) Sabre MS600 (1.00x6.00)	90.58 - 95.58	Auto	0.0000
L16	51	HSS6x6x1/4	90.58 - 95.58	Auto	0.0000
L16	52	HSS6x6x1/4	90.58 - 95.58	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L16	53	HSS6x6x1/4	90.58 - 95.58	Auto	0.0000
L16	54	HSS6x6x1/4	90.58 - 95.58	Auto	0.0000
L16	55	HSS6x6x1/4	90.58 - 95.58	Auto	0.0000
L16	56	HSS6x6x1/4	90.58 - 95.58	Auto	0.0000
L16	57	HSS6x6x1/4	90.58 - 95.58	Auto	0.0000
L16	58	HSS6x6x1/4	90.58 - 95.58	Auto	0.0000
L17	47	(Area) Sabre MS600 (1.00x6.00)	89.83 - 90.58	Auto	0.0000
L17	48	(Area) Sabre MS600 (1.00x6.00)	89.83 - 90.58	Auto	0.0000
L17	49	(Area) Sabre MS600 (1.00x6.00)	89.83 - 90.58	Auto	0.0000
L17	51	HSS6x6x1/4	90.00 - 90.58	Auto	0.0000
L17	52	HSS6x6x1/4	90.00 - 90.58	Auto	0.0000
L17	53	HSS6x6x1/4	90.00 - 90.58	Auto	0.0000
L17	54	HSS6x6x1/4	90.00 - 90.58	Auto	0.0000
L17	55	HSS6x6x1/4	90.00 - 90.58	Auto	0.0000
L17	56	HSS6x6x1/4	90.00 - 90.58	Auto	0.0000
L17	57	HSS6x6x1/4	90.00 - 90.58	Auto	0.0000
L17	58	HSS6x6x1/4	90.00 - 90.58	Auto	0.0000
L18	47	(Area) Sabre MS600 (1.00x6.00)	89.58 - 89.83	Auto	0.0000
L18	48	(Area) Sabre MS600 (1.00x6.00)	89.58 - 89.83	Auto	0.0000
L18	49	(Area) Sabre MS600 (1.00x6.00)	89.58 - 89.83	Auto	0.0000
L19	47	(Area) Sabre MS600 (1.00x6.00)	87.83 - 89.58	Auto	0.0000
L19	48	(Area) Sabre MS600 (1.00x6.00)	87.83 - 89.58	Auto	0.0000
L19	49	(Area) Sabre MS600 (1.00x6.00)	87.83 - 89.58	Auto	0.0000
L22	35	Crown 1x4 (100ksi)	74.25 - 76.00	Auto	0.0000
L22	36	Crown 1x4 (100ksi)	74.25 - 76.00	Auto	0.0000
L22	37	Crown 1x4 (100ksi)	74.25 - 76.00	Auto	0.0000
L23	35	Crown 1x4 (100ksi)	74.00 - 74.25	Auto	0.0000
L23	36	Crown 1x4 (100ksi)	74.00 - 74.25	Auto	0.0000
L23	37	Crown 1x4 (100ksi)	74.00 - 74.25	Auto	0.0000
L24	35	Crown 1x4 (100ksi)	69.00 - 74.00	Auto	0.0000
L24	36	Crown 1x4 (100ksi)	69.00 - 74.00	Auto	0.0000
L24	37	Crown 1x4 (100ksi)	69.00 - 74.00	Auto	0.0000
L25	35	Crown 1x4 (100ksi)	64.00 - 69.00	Auto	0.0000
L25	36	Crown 1x4 (100ksi)	64.00 - 69.00	Auto	0.0000
L25	37	Crown 1x4 (100ksi)	64.00 - 69.00	Auto	0.0000
L26	35	Crown 1x4 (100ksi)	59.00 - 64.00	Auto	0.0000
L26	36	Crown 1x4 (100ksi)	59.00 - 64.00	Auto	0.0000
L26	37	Crown 1x4 (100ksi)	59.00 - 64.00	Auto	0.0000
L27	31	PL 1.25x5.25	55.75 - 58.00	Auto	0.0000
L27	32	PL 1.25x5.25	55.75 - 58.00	Auto	0.0000
L27	33	PL 1.25x5.25	55.75 - 58.00	Auto	0.0000
L27	35	Crown 1x4 (100ksi)	55.75 - 59.00	Auto	0.0000
L27	36	Crown 1x4 (100ksi)	55.75 - 59.00	Auto	0.0000
L27	37	Crown 1x4 (100ksi)	55.75 - 59.00	Auto	0.0000
L28	31	PL 1.25x5.25	55.50 - 55.75	Auto	0.0000
L28	32	PL 1.25x5.25	55.50 - 55.75	Auto	0.0000
L28	33	PL 1.25x5.25	55.50 - 55.75	Auto	0.0000
L28	35	Crown 1x4 (100ksi)	55.50 - 55.75	Auto	0.0000
L28	36	Crown 1x4 (100ksi)	55.50 - 55.75	Auto	0.0000
L28	37	Crown 1x4 (100ksi)	55.50 - 55.75	Auto	0.0000
L29	31	PL 1.25x5.25	50.50 - 55.50	Auto	0.0000
L29	32	PL 1.25x5.25	50.50 - 55.50	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L29	33	PL 1.25x5.25	50.50 - 55.50	Auto	0.0000
L29	35	Crown 1x4 (100ksi)	50.50 - 55.50	Auto	0.0000
L29	36	Crown 1x4 (100ksi)	50.50 - 55.50	Auto	0.0000
L29	37	Crown 1x4 (100ksi)	50.50 - 55.50	Auto	0.0000
L30	31	PL 1.25x5.25	47.75 - 50.50	Auto	0.0000
L30	32	PL 1.25x5.25	47.75 - 50.50	Auto	0.0000
L30	33	PL 1.25x5.25	47.75 - 50.50	Auto	0.0000
L30	35	Crown 1x4 (100ksi)	47.75 - 50.50	Auto	0.0000
L30	36	Crown 1x4 (100ksi)	47.75 - 50.50	Auto	0.0000
L30	37	Crown 1x4 (100ksi)	47.75 - 50.50	Auto	0.0000
L31	31	PL 1.25x5.25	47.50 - 47.75	Auto	0.0000
L31	32	PL 1.25x5.25	47.50 - 47.75	Auto	0.0000
L31	33	PL 1.25x5.25	47.50 - 47.75	Auto	0.0000
L31	35	Crown 1x4 (100ksi)	47.50 - 47.75	Auto	0.0000
L31	36	Crown 1x4 (100ksi)	47.50 - 47.75	Auto	0.0000
L31	37	Crown 1x4 (100ksi)	47.50 - 47.75	Auto	0.0000
L32	31	PL 1.25x5.25	40.58 - 47.50	Auto	0.0000
L32	32	PL 1.25x5.25	40.58 - 47.50	Auto	0.0000
L32	33	PL 1.25x5.25	40.58 - 47.50	Auto	0.0000
L32	35	Crown 1x4 (100ksi)	46.00 - 47.50	Auto	0.0000
L32	36	Crown 1x4 (100ksi)	46.00 - 47.50	Auto	0.0000
L32	37	Crown 1x4 (100ksi)	46.00 - 47.50	Auto	0.0000
L32	43	(Area) Sabre MS450 (1.00x4.50)	40.58 - 44.25	Auto	0.0000
L32	44	(Area) Sabre MS450 (1.00x4.50)	40.58 - 44.25	Auto	0.0000
L32	45	(Area) Sabre MS450 (1.00x4.50)	40.58 - 44.25	Auto	0.0000
L33	31	PL 1.25x5.25	39.58 - 40.58	Auto	0.0000
L33	32	PL 1.25x5.25	39.58 - 40.58	Auto	0.0000
L33	33	PL 1.25x5.25	39.58 - 40.58	Auto	0.0000
L33	43	(Area) Sabre MS450 (1.00x4.50)	39.58 - 40.58	Auto	0.0000
L33	44	(Area) Sabre MS450 (1.00x4.50)	39.58 - 40.58	Auto	0.0000
L33	45	(Area) Sabre MS450 (1.00x4.50)	39.58 - 40.58	Auto	0.0000
L34	31	PL 1.25x5.25	34.58 - 39.58	Auto	0.0000
L34	32	PL 1.25x5.25	34.58 - 39.58	Auto	0.0000
L34	33	PL 1.25x5.25	34.58 - 39.58	Auto	0.0000
L34	43	(Area) Sabre MS450 (1.00x4.50)	34.58 - 39.58	Auto	0.0000
L34	44	(Area) Sabre MS450 (1.00x4.50)	34.58 - 39.58	Auto	0.0000
L34	45	(Area) Sabre MS450 (1.00x4.50)	34.58 - 39.58	Auto	0.0000
L35	27	PL 1.25x6.875	30.75 - 31.25	Auto	0.0000
L35	28	PL 1.25x6.875	30.75 - 31.25	Auto	0.0000
L35	29	PL 1.25x6.875	30.75 - 31.25	Auto	0.0000
L35	31	PL 1.25x5.25	31.25 - 34.58	Auto	0.0000
L35	32	PL 1.25x5.25	31.25 - 34.58	Auto	0.0000
L35	33	PL 1.25x5.25	31.25 - 34.58	Auto	0.0000
L35	43	(Area) Sabre MS450 (1.00x4.50)	30.75 - 34.58	Auto	0.0000
L35	44	(Area) Sabre MS450 (1.00x4.50)	30.75 - 34.58	Auto	0.0000
L35	45	(Area) Sabre MS450 (1.00x4.50)	30.75 - 34.58	Auto	0.0000
L36	27	PL 1.25x6.875	30.50 - 30.75	Auto	0.0000
L36	28	PL 1.25x6.875	30.50 - 30.75	Auto	0.0000
L36	29	PL 1.25x6.875	30.50 - 30.75	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L36	43	(Area) Sabre MS450 (1.00x4.50)	30.50 - 30.75	Auto	0.0000
L36	44	(Area) Sabre MS450 (1.00x4.50)	30.50 - 30.75	Auto	0.0000
L36	45	(Area) Sabre MS450 (1.00x4.50)	30.50 - 30.75	Auto	0.0000
L37	27	PL 1.25x6.875	29.00 - 30.50	Auto	0.0000
L37	28	PL 1.25x6.875	29.00 - 30.50	Auto	0.0000
L37	29	PL 1.25x6.875	29.00 - 30.50	Auto	0.0000
L37	43	(Area) Sabre MS450 (1.00x4.50)	29.25 - 30.50	Auto	0.0000
L37	44	(Area) Sabre MS450 (1.00x4.50)	29.25 - 30.50	Auto	0.0000
L37	45	(Area) Sabre MS450 (1.00x4.50)	29.25 - 30.50	Auto	0.0000
L38	27	PL 1.25x6.875	28.75 - 29.00	Auto	0.0000
L38	28	PL 1.25x6.875	28.75 - 29.00	Auto	0.0000
L38	29	PL 1.25x6.875	28.75 - 29.00	Auto	0.0000
L39	27	PL 1.25x6.875	23.75 - 28.75	Auto	0.0000
L39	28	PL 1.25x6.875	23.75 - 28.75	Auto	0.0000
L39	29	PL 1.25x6.875	23.75 - 28.75	Auto	0.0000
L40	27	PL 1.25x6.875	18.75 - 23.75	Auto	0.0000
L40	28	PL 1.25x6.875	18.75 - 23.75	Auto	0.0000
L40	29	PL 1.25x6.875	18.75 - 23.75	Auto	0.0000
L41	27	PL 1.25x6.875	13.75 - 18.75	Auto	0.0000
L41	28	PL 1.25x6.875	13.75 - 18.75	Auto	0.0000
L41	29	PL 1.25x6.875	13.75 - 18.75	Auto	0.0000
L41	39	(Area) Sabre MS600 (1.00x6.00)	13.75 - 15.00	Auto	0.0000
L41	40	(Area) Sabre MS600 (1.00x6.00)	13.75 - 15.00	Auto	0.0000
L41	41	(Area) Sabre MS600 (1.00x6.00)	13.75 - 15.00	Auto	0.0000
L42	27	PL 1.25x6.875	13.00 - 13.75	Auto	0.0000
L42	28	PL 1.25x6.875	13.00 - 13.75	Auto	0.0000
L42	29	PL 1.25x6.875	13.00 - 13.75	Auto	0.0000
L42	39	(Area) Sabre MS600 (1.00x6.00)	13.00 - 13.75	Auto	0.0000
L42	40	(Area) Sabre MS600 (1.00x6.00)	13.00 - 13.75	Auto	0.0000
L42	41	(Area) Sabre MS600 (1.00x6.00)	13.00 - 13.75	Auto	0.0000
L43	27	PL 1.25x6.875	12.75 - 13.00	Auto	0.0000
L43	28	PL 1.25x6.875	12.75 - 13.00	Auto	0.0000
L43	29	PL 1.25x6.875	12.75 - 13.00	Auto	0.0000
L43	39	(Area) Sabre MS600 (1.00x6.00)	12.75 - 13.00	Auto	0.0000
L43	40	(Area) Sabre MS600 (1.00x6.00)	12.75 - 13.00	Auto	0.0000
L43	41	(Area) Sabre MS600 (1.00x6.00)	12.75 - 13.00	Auto	0.0000
L44	26	PL 1.25x6.25	8.25 - 9.00	Auto	0.0000
L44	27	PL 1.25x6.875	8.25 - 12.75	Auto	0.0000
L44	28	PL 1.25x6.875	8.25 - 12.75	Auto	0.0000
L44	29	PL 1.25x6.875	8.25 - 12.75	Auto	0.0000
L44	39	(Area) Sabre MS600 (1.00x6.00)	8.25 - 12.75	Auto	0.0000
L44	40	(Area) Sabre MS600 (1.00x6.00)	8.25 - 12.75	Auto	0.0000
L44	41	(Area) Sabre MS600 (1.00x6.00)	8.25 - 12.75	Auto	0.0000

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L45	26	PL 1.25x6.25	8.00 - 8.25	Auto	0.0000
L45	27	PL 1.25x6.875	8.00 - 8.25	Auto	0.0000
L45	28	PL 1.25x6.875	8.00 - 8.25	Auto	0.0000
L45	29	PL 1.25x6.875	8.00 - 8.25	Auto	0.0000
L45	39	(Area) Sabre MS600 (1.00x6.00)	8.00 - 8.25	Auto	0.0000
L45	40	(Area) Sabre MS600 (1.00x6.00)	8.00 - 8.25	Auto	0.0000
L45	41	(Area) Sabre MS600 (1.00x6.00)	8.00 - 8.25	Auto	0.0000
L46	26	PL 1.25x6.25	5.00 - 8.00	Auto	0.0000
L46	27	PL 1.25x6.875	5.00 - 8.00	Auto	0.0000
L46	28	PL 1.25x6.875	5.00 - 8.00	Auto	0.0000
L46	29	PL 1.25x6.875	5.00 - 8.00	Auto	0.0000
L46	39	(Area) Sabre MS600 (1.00x6.00)	5.00 - 8.00	Auto	0.0000
L46	40	(Area) Sabre MS600 (1.00x6.00)	5.00 - 8.00	Auto	0.0000
L46	41	(Area) Sabre MS600 (1.00x6.00)	5.00 - 8.00	Auto	0.0000
L47	26	PL 1.25x6.25	4.75 - 5.00	Auto	0.0000
L47	27	PL 1.25x6.875	4.75 - 5.00	Auto	0.0000
L47	28	PL 1.25x6.875	4.75 - 5.00	Auto	0.0000
L48	26	PL 1.25x6.25	2.00 - 4.75	Auto	0.0000
L48	27	PL 1.25x6.875	2.00 - 4.75	Auto	0.0000
L48	28	PL 1.25x6.875	2.00 - 4.75	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
** 159' **									
APXVSPP18-C-A20 w/ Mount Pipe	A	From Centroid-Face	4.00 0.00 1.00	0.0000	159.00	No Ice 1/2" Ice 1" Ice	4.60 5.05 5.50	4.01 4.45 4.89	0.10 0.16 0.23
APXV9ERR18-C-A20 w/ Mount Pipe	B	From Centroid-Face	4.00 0.00 1.00	0.0000	159.00	No Ice 1/2" Ice 1" Ice	4.60 5.05 5.50	4.01 4.45 4.89	0.10 0.16 0.23
APXVSPP18-C-A20 w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 1.00	0.0000	159.00	No Ice 1/2" Ice 1" Ice	4.60 5.05 5.50	4.01 4.45 4.89	0.10 0.16 0.23
APXVTM14-C-120 w/ Mount Pipe	A	From Centroid-Face	4.00 0.00 1.00	0.0000	159.00	No Ice 1/2" Ice 1" Ice	4.09 4.48 4.88	2.86 3.23 3.61	0.08 0.13 0.19
APXVTM14-C-120 w/ Mount Pipe	B	From Centroid-Face	4.00 0.00 1.00	0.0000	159.00	No Ice 1/2" Ice 1" Ice	4.09 4.48 4.88	2.86 3.23 3.61	0.08 0.13 0.19
APXVTM14-C-120 w/ Mount Pipe	C	From Centroid-Fa	4.00 0.00	0.0000	159.00	No Ice 1/2" Ice	4.09 4.48	2.86 3.23	0.08 0.13

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
		ce	1.00			1" Ice	4.88	3.61	0.19
TD-RRH8x20-25	A	From	4.00	0.0000	159.00	No Ice	3.70	1.29	0.07
		Centroid-Fa	0.00			1/2" Ice	3.95	1.46	0.09
		ce	1.00			1" Ice	4.20	1.64	0.12
TD-RRH8x20-25	B	From	4.00	0.0000	159.00	No Ice	3.70	1.29	0.07
		Centroid-Fa	0.00			1/2" Ice	3.95	1.46	0.09
		ce	1.00			1" Ice	4.20	1.64	0.12
TD-RRH8x20-25	C	From	4.00	0.0000	159.00	No Ice	3.70	1.29	0.07
		Centroid-Fa	0.00			1/2" Ice	3.95	1.46	0.09
		ce	1.00			1" Ice	4.20	1.64	0.12
2.4" Dia x 6-ft Pipe	A	From	4.00	0.0000	159.00	No Ice	1.43	1.43	0.02
		Centroid-Fa	0.00			1/2" Ice	1.93	1.93	0.03
		ce	0.00			1" Ice	2.30	2.30	0.05
2.4" Dia x 6-ft Pipe	B	From	4.00	0.0000	159.00	No Ice	1.43	1.43	0.02
		Centroid-Fa	0.00			1/2" Ice	1.93	1.93	0.03
		ce	0.00			1" Ice	2.30	2.30	0.05
2.4" Dia x 6-ft Pipe	C	From	4.00	0.0000	159.00	No Ice	1.43	1.43	0.02
		Centroid-Fa	0.00			1/2" Ice	1.93	1.93	0.03
		ce	0.00			1" Ice	2.30	2.30	0.05
(3) 2.4" Dia x 4-ft Mount Pipe	A	From	4.00	0.0000	159.00	No Ice	0.87	0.87	0.01
		Centroid-Fa	0.00			1/2" Ice	1.12	1.12	0.02
		ce	0.00			1" Ice	1.37	1.37	0.03
(3) 2.4" Dia x 4-ft Mount Pipe	B	From	4.00	0.0000	159.00	No Ice	0.87	0.87	0.01
		Centroid-Fa	0.00			1/2" Ice	1.12	1.12	0.02
		ce	0.00			1" Ice	1.37	1.37	0.03
(3) 2.4" Dia x 4-ft Mount Pipe	C	From	4.00	0.0000	159.00	No Ice	0.87	0.87	0.01
		Centroid-Fa	0.00			1/2" Ice	1.12	1.12	0.02
		ce	0.00			1" Ice	1.37	1.37	0.03
Platform Mount [LP 713-1]	C	None		0.0000	159.00	No Ice	32.89	32.89	1.51
						1/2" Ice	35.76	35.76	2.23
						1" Ice	38.76	38.76	3.03
155									
800MHZ 2X50W RRH W/FILTER	A	From Face	2.00	0.0000	155.00	No Ice	2.06	1.93	0.06
			0.00			1/2" Ice	2.24	2.11	0.09
			1.00			1" Ice	2.43	2.29	0.11
800MHZ 2X50W RRH W/FILTER	B	From Face	2.00	0.0000	155.00	No Ice	2.06	1.93	0.06
			0.00			1/2" Ice	2.24	2.11	0.09
			1.00			1" Ice	2.43	2.29	0.11
800MHZ 2X50W RRH W/FILTER	C	From Face	2.00	0.0000	155.00	No Ice	2.06	1.93	0.06
			0.00			1/2" Ice	2.24	2.11	0.09
			1.00			1" Ice	2.43	2.29	0.11
PCS 1900MHZ 4X45W-65MHZ	A	From Face	2.00	0.0000	155.00	No Ice	2.32	2.24	0.06
			0.00			1/2" Ice	2.53	2.44	0.08
			-1.00			1" Ice	2.74	2.65	0.11
PCS 1900MHZ 4X45W-65MHZ	B	From Face	2.00	0.0000	155.00	No Ice	2.32	2.24	0.06
			0.00			1/2" Ice	2.53	2.44	0.08
			-1.00			1" Ice	2.74	2.65	0.11
PCS 1900MHZ 4X45W-65MHZ	C	From Face	2.00	0.0000	155.00	No Ice	2.32	2.24	0.06
			0.00			1/2" Ice	2.53	2.44	0.08
			-1.00			1" Ice	2.74	2.65	0.11
2.4" Dia x 4-ft Mount Pipe	A	From Face	1.00	0.0000	155.00	No Ice	0.87	0.87	0.01
			0.00			1/2" Ice	1.12	1.12	0.02
			0.00			1" Ice	1.37	1.37	0.03
2.4" Dia x 4-ft Mount Pipe	B	From Face	1.00	0.0000	155.00	No Ice	0.87	0.87	0.01
			0.00			1/2" Ice	1.12	1.12	0.02
			0.00			1" Ice	1.37	1.37	0.03
2.4" Dia x 4-ft Mount Pipe	C	From Face	1.00	0.0000	155.00	No Ice	0.87	0.87	0.01

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			0.00			1/2" Ice	1.12	1.12	0.02
			0.00			1" Ice	1.37	1.37	0.03
Side Arm Mount [SO 102-3]	C	None		0.0000	155.00	No Ice	3.60	3.60	0.07
						1/2" Ice	4.18	4.18	0.11
						1" Ice	4.75	4.75	0.14
142									
AIR 6419 B41_TMO w/ Mount Pipe	A	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	6.58 7.06 7.57	3.50 3.90 4.32	0.11 0.16 0.22
AIR 6419 B41_TMO w/ Mount Pipe	B	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	6.58 7.06 7.57	3.50 3.90 4.32	0.11 0.16 0.22
AIR 6419 B41_TMO w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	6.58 7.06 7.57	3.50 3.90 4.32	0.11 0.16 0.22
VV-65A-R1_TMO w/ Mount Pipe	A	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	4.46 4.91 5.36	2.69 3.10 3.52	0.05 0.10 0.15
VV-65A-R1_TMO w/ Mount Pipe	B	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	4.46 4.91 5.36	2.69 3.10 3.52	0.05 0.10 0.15
VV-65A-R1_TMO w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	4.46 4.91 5.36	2.69 3.10 3.52	0.05 0.10 0.15
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	A	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23	6.87 7.55 8.25	0.18 0.31 0.45
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	B	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23	6.87 7.55 8.25	0.18 0.31 0.45
APXVAALL24_43-U-NA20_TMO w/ Mount Pipe	C	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	14.69 15.46 16.23	6.87 7.55 8.25	0.18 0.31 0.45
RADIO 4449 B71 B85A_T-MOBILE	A	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	1.97 2.15 2.33	1.59 1.75 1.92	0.07 0.09 0.12
RADIO 4449 B71 B85A_T-MOBILE	B	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	1.97 2.15 2.33	1.59 1.75 1.92	0.07 0.09 0.12
RADIO 4449 B71 B85A_T-MOBILE	C	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	1.97 2.15 2.33	1.59 1.75 1.92	0.07 0.09 0.12
RADIO 4460 B2/B25 B66_TMO	A	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0.11 0.13 0.16
RADIO 4460 B2/B25 B66_TMO	B	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0.11 0.13 0.16
RADIO 4460 B2/B25 B66_TMO	C	From Centroid-Face	4.00 0.00 3.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	2.14 2.32 2.51	1.69 1.85 2.02	0.11 0.13 0.16
2.9" Dia. x 10' Pipe	A	From Centroid-Face	4.00 0.00 0.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	2.88 3.91 4.96	2.88 3.91 4.96	0.06 0.08 0.11
2.9" Dia. x 10' Pipe	B	From Centroid-Face	4.00 0.00 0.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	2.88 3.91 4.96	2.88 3.91 4.96	0.06 0.08 0.11

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
2.9" Dia. x 10' Pipe	C	From Centroid-Face	4.00 0.00 0.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	2.88 3.91 4.96	2.88 3.91 4.96	0.06 0.08 0.11
Miscellaneous [NA 507-1]	C	None		0.0000	142.00	No Ice 1/2" Ice 1" Ice	4.56 6.39 8.18	4.56 6.39 8.18	0.25 0.31 0.40
Platform Mount [LP 602-1_KCKR]	C	None		0.0000	142.00	No Ice 1/2" Ice 1" Ice	42.30 49.04 55.87	42.30 49.04 55.87	1.62 2.38 3.27
132									
MX08FRO665-20 w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice	8.01 8.52 9.04	4.23 4.69 5.16	0.10 0.18 0.28
MX08FRO665-20 w/ Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice	8.01 8.52 9.04	4.23 4.69 5.16	0.10 0.18 0.28
MX08FRO665-20 w/ Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice	8.01 8.52 9.04	4.23 4.69 5.16	0.10 0.18 0.28
TA08025-B604	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	0.98 1.11 1.25	0.06 0.08 0.10
TA08025-B604	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	0.98 1.11 1.25	0.06 0.08 0.10
TA08025-B604	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	0.98 1.11 1.25	0.06 0.08 0.10
TA08025-B605	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	1.13 1.27 1.41	0.08 0.09 0.11
TA08025-B605	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	1.13 1.27 1.41	0.08 0.09 0.11
TA08025-B605	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice	1.96 2.14 2.32	1.13 1.27 1.41	0.08 0.09 0.11
RDIDC-9181-PF-48	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice	2.01 2.19 2.37	1.17 1.31 1.46	0.02 0.04 0.06
(2) 2.4" Dia x 8-ft Mount Pipe	A	From Centroid-Leg	4.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
(2) 2.4" Dia x 8-ft Mount Pipe	B	From Centroid-Leg	4.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
(2) 2.4" Dia x 8-ft Mount Pipe	C	From Centroid-Leg	4.00 0.00 0.00	0.0000	132.00	No Ice 1/2" Ice 1" Ice	1.90 2.73 3.40	1.90 2.73 3.40	0.03 0.04 0.06
Commscope MC-PK8-DSH	C	None		0.0000	132.00	No Ice 1/2" Ice 1" Ice	34.24 62.95 91.66	34.24 62.95 91.66	1.75 2.10 2.45
116									
MT6407-77A w/ Mount Pipe	A	From Centroid-Leg	4.00 0.00 1.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	4.91 5.26 5.61	2.68 3.14 3.62	0.10 0.14 0.18
MT6407-77A w/ Mount Pipe	B	From	4.00	0.0000	116.00	No Ice	4.91	2.68	0.10

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft	Offsets: Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
		Centroid-Leg	0.00				1/2" Ice	5.26	3.14	0.14
			1.00				1" Ice	5.61	3.62	0.18
MT6407-77A w/ Mount Pipe	C	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	4.91	2.68	0.10
			0.00				1/2" Ice	5.26	3.14	0.14
			1.00				1" Ice	5.61	3.62	0.18
JAHH-65B-R3B w/ Mount Pipe	A	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	5.50	4.38	0.10
			0.00				1/2" Ice	5.97	4.84	0.17
			1.00				1" Ice	6.45	5.30	0.25
JAHH-65B-R3B w/ Mount Pipe	B	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	5.50	4.38	0.10
			0.00				1/2" Ice	5.97	4.84	0.17
			1.00				1" Ice	6.45	5.30	0.25
JAHH-65B-R3B w/ Mount Pipe	C	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	5.50	4.38	0.10
			0.00				1/2" Ice	5.97	4.84	0.17
			1.00				1" Ice	6.45	5.30	0.25
JAHH-65B-R3B	A	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	5.29	3.05	0.06
			0.00				1/2" Ice	5.75	3.48	0.12
			1.00				1" Ice	6.22	3.93	0.19
JAHH-65B-R3B	B	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	5.29	3.05	0.06
			0.00				1/2" Ice	5.75	3.48	0.12
			1.00				1" Ice	6.22	3.93	0.19
JAHH-65B-R3B	C	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	5.29	3.05	0.06
			0.00				1/2" Ice	5.75	3.48	0.12
			1.00				1" Ice	6.22	3.93	0.19
LPA-80080/4CF w/ Mount Pipe	A	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	2.04	5.22	0.04
			0.00				1/2" Ice	2.42	5.67	0.08
			1.00				1" Ice	2.82	6.13	0.13
LPA-80080-4CF-EDIN-0 w/ Mount Pipe	A	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	2.04	5.22	0.04
			0.00				1/2" Ice	2.42	5.67	0.08
			1.00				1" Ice	2.82	6.13	0.13
(2) LPA-80063-4CF-EDIN-5 w/ Mount Pipe	B	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	6.38	6.56	0.04
			0.00				1/2" Ice	6.78	7.19	0.10
			1.00				1" Ice	7.19	7.84	0.18
(2) LPA-80063-4CF-EDIN-5 w/ Mount Pipe	C	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	6.38	6.56	0.04
			0.00				1/2" Ice	6.78	7.19	0.10
			1.00				1" Ice	7.19	7.84	0.18
DB-T1-6Z-8AB-0Z	A	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	4.80	2.00	0.04
			0.00				1/2" Ice	5.07	2.19	0.08
			1.00				1" Ice	5.35	2.39	0.12
DB-T1-6Z-8AB-0Z	B	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	4.80	2.00	0.04
			0.00				1/2" Ice	5.07	2.19	0.08
			1.00				1" Ice	5.35	2.39	0.12
CBC78T-DS-43-2X	A	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	0.37	0.51	0.02
			0.00				1/2" Ice	0.45	0.60	0.03
			1.00				1" Ice	0.53	0.70	0.04
CBC78T-DS-43-2X	B	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	0.37	0.51	0.02
			0.00				1/2" Ice	0.45	0.60	0.03
			1.00				1" Ice	0.53	0.70	0.04
CBC78T-DS-43-2X	C	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	0.37	0.51	0.02
			0.00				1/2" Ice	0.45	0.60	0.03
			1.00				1" Ice	0.53	0.70	0.04
RFV01U-D1A	A	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	1.88	1.25	0.08
			0.00				1/2" Ice	2.05	1.39	0.10
			1.00				1" Ice	2.22	1.54	0.12
RFV01U-D1A	B	From Centroid-Leg	4.00	0.00	0.0000	116.00	No Ice	1.88	1.25	0.08
			0.00				1/2" Ice	2.05	1.39	0.10
			1.00				1" Ice	2.22	1.54	0.12
RFV01U-D1A	C	From	4.00	0.00	0.0000	116.00	No Ice	1.88	1.25	0.08

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
		Centroid-Leg	0.00			1/2" Ice	2.05	1.39	0.10
			1.00			1" Ice	2.22	1.54	0.12
(2) RFV01U-D2A	A	From Centroid-Leg	4.00 0.00 1.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	0.07 0.09 0.11
(2) RFV01U-D2A	B	From Centroid-Leg	4.00 0.00 1.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	0.07 0.09 0.11
(2) RFV01U-D2A	C	From Centroid-Leg	4.00 0.00 1.00	0.0000	116.00	No Ice 1/2" Ice 1" Ice	1.88 2.05 2.22	1.01 1.14 1.28	0.07 0.09 0.11
Platform Mount [LP 303-1_HR-1]	C	None		0.0000	116.00	No Ice 1/2" Ice 1" Ice	17.09 21.47 25.72	17.09 21.47 25.72	1.50 1.88 2.35
** **96**									
AM-X-CD-14-65-00T-RET w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	2.99 3.30 3.62	2.14 2.43 2.73	0.05 0.10 0.14
AM-X-CD-14-65-00T-RET w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	2.99 3.30 3.62	2.14 2.43 2.73	0.05 0.10 0.14
AM-X-CD-14-65-00T-RET w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	2.99 3.30 3.62	2.14 2.43 2.73	0.05 0.10 0.14
(2) 7770.00 w/ Mount Pipe	A	From Leg	4.00 0.00 2.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	3.39 3.75 4.12	2.32 2.66 3.02	0.06 0.10 0.15
(2) 7770.00 w/ Mount Pipe	B	From Leg	4.00 0.00 2.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	3.39 3.75 4.12	2.32 2.66 3.02	0.06 0.10 0.15
(2) 7770.00 w/ Mount Pipe	C	From Leg	4.00 0.00 2.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	3.39 3.75 4.12	2.32 2.66 3.02	0.06 0.10 0.15
GPS_A	B	From Leg	4.00 0.00 7.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	0.12 0.21 0.28	0.12 0.21 0.28	0.00 0.00 0.01
(2) TT19-08BP111-001	A	From Leg	4.00 0.00 2.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	0.55 0.64 0.74	0.44 0.53 0.63	0.02 0.02 0.03
(2) TT19-08BP111-001	B	From Leg	4.00 0.00 2.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	0.55 0.64 0.74	0.44 0.53 0.63	0.02 0.02 0.03
(2) TT19-08BP111-001	C	From Leg	4.00 0.00 2.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	0.55 0.64 0.74	0.44 0.53 0.63	0.02 0.02 0.03
DC6-48-60-18-8F	A	From Leg	4.00 0.00 2.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	1.21 1.89 2.11	1.21 1.89 2.11	0.03 0.05 0.08
RRUS 12 B2	A	From Leg	2.00 0.00 2.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	3.15 3.36 3.59	1.29 1.44 1.60	0.05 0.07 0.10
RRUS 12 B2	B	From Leg	2.00 0.00 2.00	0.0000	96.00	No Ice 1/2" Ice 1" Ice	3.15 3.36 3.59	1.29 1.44 1.60	0.05 0.07 0.10
RRUS 12 B2	C	From Leg	2.00 0.00	0.0000	96.00	No Ice 1/2" Ice	3.15 3.36	1.29 1.44	0.05 0.07

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft / ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
			2.00			1" Ice	3.59	1.60	0.10
RRUS 11	A	From Leg	2.00	0.0000	96.00	No Ice	2.79	1.19	0.05
			0.00			1/2" Ice	3.00	1.34	0.07
			2.00			1" Ice	3.21	1.50	0.10
RRUS 11	B	From Leg	2.00	0.0000	96.00	No Ice	2.79	1.19	0.05
			0.00			1/2" Ice	3.00	1.34	0.07
			2.00			1" Ice	3.21	1.50	0.10
RRUS 11	C	From Leg	2.00	0.0000	96.00	No Ice	2.79	1.19	0.05
			0.00			1/2" Ice	3.00	1.34	0.07
			2.00			1" Ice	3.21	1.50	0.10
2.4" Dia x 4-ft Mount Pipe	A	From Leg	2.00	0.0000	96.00	No Ice	0.87	0.87	0.01
			0.00			1/2" Ice	1.12	1.12	0.02
			0.00			1" Ice	1.37	1.37	0.03
2.4" Dia x 4-ft Mount Pipe	B	From Leg	2.00	0.0000	96.00	No Ice	0.87	0.87	0.01
			0.00			1/2" Ice	1.12	1.12	0.02
			0.00			1" Ice	1.37	1.37	0.03
2.4" Dia x 4-ft Mount Pipe	C	From Leg	2.00	0.0000	96.00	No Ice	0.87	0.87	0.01
			0.00			1/2" Ice	1.12	1.12	0.02
			0.00			1" Ice	1.37	1.37	0.03
T-Arm Mount [TA 602-3]	C	None		0.0000	96.00	No Ice	13.40	13.40	0.77
						1/2" Ice	16.44	16.44	1.00
						1" Ice	19.70	19.70	1.29
92									
KS24019-L112A	C	From Leg	3.00	0.0000	92.00	No Ice	0.08	0.08	0.01
			0.00			1/2" Ice	0.13	0.13	0.01
			1.00			1" Ice	0.19	0.19	0.01
2.4" Dia x 2.5-ft Mount Pipe	C	From Leg	3.00	0.0000	92.00	No Ice	0.46	0.46	0.01
			0.00			1/2" Ice	0.62	0.62	0.01
			0.00			1" Ice	0.78	0.78	0.02
Side Arm Mount [SO 701-1]	C	From Leg	1.50	0.0000	92.00	No Ice	0.85	1.67	0.07
			0.00			1/2" Ice	1.14	2.34	0.08
			0.00			1" Ice	1.43	3.01	0.09
87									
2.4" Dia x 4-ft Mount Pipe	C	From Face	3.00	0.0000	87.00	No Ice	0.87	0.87	0.01
			0.00			1/2" Ice	1.12	1.12	0.02
			0.00			1" Ice	1.37	1.37	0.03
2.4" Dia x 4-ft Mount Pipe	A	From Leg	3.00	0.0000	87.00	No Ice	0.87	0.87	0.01
			0.00			1/2" Ice	1.12	1.12	0.02
			0.00			1" Ice	1.37	1.37	0.03
Side Arm Mount [SO 701-1]	C	From Face	1.50	0.0000	87.00	No Ice	0.85	1.67	0.07
			0.00			1/2" Ice	1.14	2.34	0.08
			0.00			1" Ice	1.43	3.01	0.09
Side Arm Mount [SO 701-1]	A	From Leg	1.50	0.0000	87.00	No Ice	0.85	1.67	0.07
			0.00			1/2" Ice	1.14	2.34	0.08
			0.00			1" Ice	1.43	3.01	0.09
HSS 4"x4"x4'-0"	A	From Leg	0.00	0.0000	87.00	No Ice	1.60	0.13	0.05
			0.00			1/2" Ice	1.89	0.18	0.06
			0.00			1" Ice	2.19	0.24	0.08
HSS 4"x4"x4'-0"	C	From Face	0.00	0.0000	87.00	No Ice	1.60	0.13	0.05
			0.00			1/2" Ice	1.89	0.18	0.06
			0.00			1" Ice	2.19	0.24	0.08
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Load Combinations

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

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	160 - 155	Pole	Max Tension	42	0.00	0.00	-0.00
			Max. Compression	26	-6.04	0.01	0.01
			Max. Mx	20	-2.85	16.18	0.00
			Max. My	2	-2.85	0.00	16.18
			Max. Vy	8	3.90	-16.18	-0.00
			Max. Vx	2	-3.90	0.00	16.18
			Max. Torque	12			-0.00
L2	155 - 150	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-7.55	0.01	0.01
			Max. Mx	20	-3.66	40.60	0.01
			Max. My	2	-3.66	0.00	40.60
			Max. Vy	8	5.12	-40.60	-0.00
			Max. Vx	2	-5.12	0.00	40.60
			Max. Torque	12			-0.00
L3	150 - 145	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-8.10	0.02	0.02
			Max. Mx	20	-4.01	67.38	0.01
			Max. My	2	-4.01	0.01	67.37
			Max. Vy	8	5.59	-67.38	-0.00
			Max. Vx	2	-5.59	0.01	67.37
			Max. Torque	12			-0.00
L4	145 - 140	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-16.62	0.02	0.03
			Max. Mx	20	-8.27	114.02	0.02
			Max. My	2	-8.27	0.01	114.01
			Max. Vy	8	11.20	-114.01	-0.00
			Max. Vx	2	-11.20	0.01	114.01
			Max. Torque	12			-0.00
L5	140 - 135	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-17.25	0.02	0.04
			Max. Mx	20	-8.70	171.21	0.02
			Max. My	2	-8.71	0.01	171.19
			Max. Vy	8	11.69	-171.20	-0.00
			Max. Vx	2	-11.68	0.01	171.19
			Max. Torque	12			-0.00
L6	135 - 130	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-22.77	0.01	0.31
			Max. Mx	8	-12.10	-237.01	0.08
			Max. My	2	-12.10	0.01	237.14
			Max. Vy	8	15.26	-237.01	0.08
			Max. Vx	2	-15.28	0.01	237.14
			Max. Torque	8			0.17
L7	130 - 125	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-23.47	-0.03	0.35
			Max. Mx	8	-12.60	-314.50	0.08
			Max. My	2	-12.60	-0.00	314.76
			Max. Vy	8	15.74	-314.50	0.08
			Max. Vx	2	-15.77	-0.00	314.76
			Max. Torque	8			0.17
L8	125 - 117.333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-23.90	-0.05	0.37
			Max. Mx	8	-12.91	-362.17	0.09
			Max. My	2	-12.91	-0.01	362.50
			Max. Vy	8	16.04	-362.17	0.09
			Max. Vx	2	-16.06	-0.01	362.50
			Max. Torque	8			0.17
L9	117.333 - 117	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.31	-0.08	0.40
			Max. Mx	8	-13.93	-443.76	0.09
			Max. My	2	-13.93	-0.02	444.21
			Max. Vy	8	16.60	-443.76	0.09

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	-16.62	-0.02	444.21
			Max. Torque	8			0.17
L10	117 - 112	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-33.28	-0.55	0.37
			Max. Mx	8	-18.31	-547.81	0.03
			Max. My	2	-18.32	0.02	547.58
			Max. Vy	8	21.23	-547.81	0.03
			Max. Vx	2	-21.10	0.02	547.58
			Max. Torque	14			0.24
L11	112 - 107	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.21	-0.59	0.40
			Max. Mx	8	-19.06	-655.14	-0.16
			Max. My	2	-19.08	0.21	654.29
			Max. Vy	8	21.72	-655.14	-0.16
			Max. Vx	2	-21.59	0.21	654.29
			Max. Torque	14			0.24
L12	107 - 102	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.15	-0.63	0.44
			Max. Mx	8	-19.85	-764.92	-0.36
			Max. My	2	-19.87	0.40	763.44
			Max. Vy	8	22.21	-764.92	-0.36
			Max. Vx	2	-22.08	0.40	763.44
			Max. Torque	14			0.24
L13	102 - 97	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.46	-0.78	0.33
			Max. Mx	8	-21.55	-878.43	-0.65
			Max. My	2	-21.56	0.50	876.15
			Max. Vy	8	23.18	-878.43	-0.65
			Max. Vx	2	-23.06	0.50	876.15
			Max. Torque	14			0.24
L14	97 - 95.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.84	-0.87	0.75
			Max. Mx	8	-23.93	-908.66	-0.54
			Max. My	2	-23.94	0.52	906.38
			Max. Vy	8	25.44	-908.66	-0.54
			Max. Vx	2	-25.32	0.52	906.38
			Max. Torque	12			0.33
L15	95.83 - 95.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-41.98	-0.89	0.75
			Max. Mx	8	-24.05	-915.03	-0.55
			Max. My	2	-24.06	0.52	912.71
			Max. Vy	8	25.48	-915.03	-0.55
			Max. Vx	2	-25.36	0.52	912.71
			Max. Torque	12			0.34
L16	95.58 - 90.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.06	-0.90	0.56
			Max. Mx	8	-26.28	-1045.05	-0.96
			Max. My	2	-26.29	0.82	1042.01
			Max. Vy	8	26.60	-1045.05	-0.96
			Max. Vx	2	-26.49	0.82	1042.01
			Max. Torque	12			0.45
L17	90.58 - 89.83	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.46	-0.96	0.57
			Max. Mx	8	-26.58	-1065.07	-1.00
			Max. My	2	-26.59	0.83	1061.92
			Max. Vy	8	26.74	-1065.07	-1.00
			Max. Vx	2	-26.63	0.83	1061.92
			Max. Torque	12			0.29
L18	89.83 - 89.58	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.53	-0.97	0.58
			Max. Mx	8	-26.63	-1071.76	-1.01

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-26.64	0.84	1068.58
			Max. Vy	8	26.76	-1071.76	-1.01
			Max. Vx	2	-26.65	0.84	1068.58
			Max. Torque	12			0.29
L19	89.58 - 82.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.91	-1.05	0.64
			Max. Mx	8	-26.92	-1114.18	-1.08
			Max. My	2	-26.93	0.89	1110.80
			Max. Vy	8	26.92	-1114.18	-1.08
			Max. Vx	2	-26.80	0.89	1110.80
			Max. Torque	12			0.29
L20	82.5 - 81.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-49.20	-1.37	0.86
			Max. Mx	8	-29.40	-1292.78	-1.35
			Max. My	2	-29.41	1.11	1288.86
			Max. Vy	8	27.86	-1292.78	-1.35
			Max. Vx	2	-27.79	1.11	1288.86
			Max. Torque	12			0.29
L21	81.5 - 76.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-50.64	-1.61	1.02
			Max. Mx	8	-30.60	-1433.26	-1.56
			Max. My	2	-30.61	1.28	1428.97
			Max. Vy	8	28.32	-1433.26	-1.56
			Max. Vx	2	-28.26	1.28	1428.97
			Max. Torque	12			0.29
L22	76.5 - 74.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.33	-1.72	1.10
			Max. Mx	8	-31.15	-1497.24	-1.66
			Max. My	2	-31.16	1.35	1492.77
			Max. Vy	8	28.53	-1497.24	-1.66
			Max. Vx	2	-28.46	1.35	1492.77
			Max. Torque	12			0.29
L23	74.25 - 74	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-51.42	-1.73	1.11
			Max. Mx	8	-31.24	-1504.38	-1.67
			Max. My	2	-31.24	1.36	1499.89
			Max. Vy	8	28.55	-1504.38	-1.67
			Max. Vx	2	-28.48	1.36	1499.89
			Max. Torque	12			0.29
L24	74 - 69	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-53.22	-1.98	1.28
			Max. Mx	8	-32.69	-1648.42	-1.88
			Max. My	2	-32.69	1.53	1643.56
			Max. Vy	8	29.05	-1648.42	-1.88
			Max. Vx	2	-28.98	1.53	1643.56
			Max. Torque	12			0.29
L25	69 - 64	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-55.04	-2.23	1.46
			Max. Mx	8	-34.18	-1794.92	-2.08
			Max. My	2	-34.18	1.69	1789.68
			Max. Vy	8	29.53	-1794.92	-2.08
			Max. Vx	2	-29.46	1.69	1789.68
			Max. Torque	12			0.29
L26	64 - 59	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-56.89	-2.49	1.64
			Max. Mx	8	-35.69	-1943.80	-2.28
			Max. My	2	-35.70	1.84	1938.19
			Max. Vy	8	30.01	-1943.80	-2.28
			Max. Vx	2	-29.94	1.84	1938.19
			Max. Torque	12			0.29
L27	59 - 55.75	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-58.14	-2.66	1.75
			Max. Mx	8	-36.70	-2041.84	-2.42
			Max. My	2	-36.70	1.94	2035.98
			Max. Vy	8	30.31	-2041.84	-2.42
			Max. Vx	2	-30.24	1.94	2035.98
			Max. Torque	12			0.29
L28	55.75 - 55.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-58.26	-2.67	1.76
			Max. Mx	8	-36.80	-2049.42	-2.43
			Max. My	2	-36.81	1.95	2043.54
			Max. Vy	8	30.32	-2049.42	-2.43
			Max. Vx	2	-30.26	1.95	2043.54
			Max. Torque	12			0.29
L29	55.5 - 50.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-60.64	-2.94	1.95
			Max. Mx	8	-38.73	-2202.38	-2.63
			Max. My	2	-38.74	2.10	2196.12
			Max. Vy	8	30.83	-2202.38	-2.63
			Max. Vx	2	-30.76	2.10	2196.12
			Max. Torque	12			0.29
L30	50.5 - 47.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-61.95	-3.08	2.05
			Max. Mx	8	-39.81	-2287.56	-2.73
			Max. My	2	-39.81	2.19	2281.09
			Max. Vy	8	31.10	-2287.56	-2.73
			Max. Vx	2	-31.04	2.19	2281.09
			Max. Torque	12			0.29
L31	47.75 - 47.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.06	-3.10	2.06
			Max. Mx	8	-39.90	-2295.34	-2.74
			Max. My	2	-39.91	2.19	2288.85
			Max. Vy	8	31.11	-2295.34	-2.74
			Max. Vx	2	-31.05	2.19	2288.85
			Max. Torque	12			0.29
L32	47.5 - 40.5833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-62.28	-3.12	2.08
			Max. Mx	8	-40.07	-2310.92	-2.76
			Max. My	2	-40.08	2.21	2304.39
			Max. Vy	8	31.16	-2310.92	-2.76
			Max. Vx	2	-31.09	2.21	2304.39
			Max. Torque	12			0.29
L33	40.5833 - 39.5833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-68.31	-3.53	2.36
			Max. Mx	8	-45.11	-2545.29	-3.06
			Max. My	2	-45.12	2.43	2538.21
			Max. Vy	8	31.99	-2545.29	-3.06
			Max. Vx	2	-31.92	2.43	2538.21
			Max. Torque	12			0.29
L34	39.5833 - 34.5833	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.95	-3.80	2.54
			Max. Mx	8	-47.32	-2706.42	-3.25
			Max. My	2	-47.32	2.57	2698.95
			Max. Vy	8	32.44	-2706.42	-3.25
			Max. Vx	2	-32.37	2.57	2698.95
			Max. Torque	12			0.29
L35	34.5833 - 30.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-72.99	-4.02	2.69
			Max. Mx	8	-49.03	-2831.43	-3.40

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. My	2	-49.03	2.68	2823.67
			Max. Vy	8	32.77	-2831.43	-3.40
			Max. Vx	2	-32.70	2.68	2823.67
			Max. Torque	12			0.29
L36	30.75 - 30.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.11	-4.03	2.70
			Max. Mx	8	-49.14	-2839.62	-3.41
			Max. My	2	-49.14	2.69	2831.85
			Max. Vy	8	32.77	-2839.62	-3.41
			Max. Vx	2	-32.71	2.69	2831.85
			Max. Torque	12			0.29
L37	30.5 - 29	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.83	-4.11	2.76
			Max. Mx	8	-49.72	-2888.90	-3.47
			Max. My	2	-49.73	2.73	2881.01
			Max. Vy	8	32.91	-2888.90	-3.47
			Max. Vx	2	-32.84	2.73	2881.01
			Max. Torque	12			0.29
L38	29 - 28.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-73.95	-4.13	2.77
			Max. Mx	8	-49.84	-2897.13	-3.48
			Max. My	2	-49.85	2.74	2889.22
			Max. Vy	8	32.91	-2897.13	-3.48
			Max. Vx	2	-32.84	2.74	2889.22
			Max. Torque	12			0.29
L39	28.75 - 23.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-76.44	-4.41	2.96
			Max. Mx	8	-51.97	-3062.76	-3.67
			Max. My	2	-51.97	2.88	3054.47
			Max. Vy	8	33.31	-3062.76	-3.67
			Max. Vx	2	-33.25	2.88	3054.47
			Max. Torque	12			0.29
L40	23.75 - 18.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-78.95	-4.69	3.15
			Max. Mx	8	-54.13	-3230.37	-3.86
			Max. My	2	-54.13	3.01	3221.71
			Max. Vy	8	33.71	-3230.37	-3.86
			Max. Vx	2	-33.64	3.01	3221.71
			Max. Torque	12			0.29
L41	18.75 - 13.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.49	-4.98	3.33
			Max. Mx	8	-56.32	-3399.95	-4.05
			Max. My	2	-56.32	3.15	3390.91
			Max. Vy	8	34.10	-3399.95	-4.05
			Max. Vx	2	-34.04	3.15	3390.91
			Max. Torque	12			0.29
L42	13.75 - 13	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-81.89	-5.02	3.36
			Max. Mx	8	-56.65	-3425.56	-4.07
			Max. My	2	-56.65	3.17	3416.46
			Max. Vy	8	34.16	-3425.56	-4.07
			Max. Vx	2	-34.09	3.17	3416.46
			Max. Torque	12			0.29
L43	13 - 12.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-82.04	-5.04	3.36
			Max. Mx	8	-56.78	-3434.10	-4.08
			Max. My	2	-56.78	3.17	3424.99
			Max. Vy	8	34.17	-3434.10	-4.08
			Max. Vx	2	-34.11	3.17	3424.99
			Max. Torque	12			0.29
L44	12.75 - 8.25	Pole	Max Tension	1	0.00	0.00	0.00

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
			Max. Compression	26	-84.73	-5.31	3.49
			Max. Mx	8	-59.09	-3588.82	-4.25
			Max. My	2	-59.09	3.29	3579.37
			Max. Vy	8	34.56	-3588.82	-4.25
			Max. Vx	2	-34.49	3.29	3579.37
			Max. Torque	12			0.29
L45	8.25 - 8	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-84.88	-5.33	3.50
			Max. Mx	8	-59.23	-3597.46	-4.26
			Max. My	2	-59.23	3.30	3587.99
			Max. Vy	8	34.57	-3597.46	-4.26
			Max. Vx	2	-34.50	3.30	3587.99
			Max. Torque	12			0.29
L46	8 - 5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-86.68	-5.53	3.60
			Max. Mx	8	-60.78	-3701.59	-4.37
			Max. My	2	-60.78	3.37	3691.90
			Max. Vy	8	34.82	-3701.59	-4.37
			Max. Vx	2	-34.76	3.37	3691.90
			Max. Torque	12			0.29
L47	5 - 4.75	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-86.80	-5.55	3.61
			Max. Mx	8	-60.90	-3710.30	-4.38
			Max. My	2	-60.90	3.38	3700.59
			Max. Vy	8	34.83	-3710.30	-4.38
			Max. Vx	2	-34.76	3.38	3700.59
			Max. Torque	12			0.29
L48	4.75 - 0	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-89.17	-5.85	3.83
			Max. Mx	8	-63.04	-3876.68	-4.55
			Max. My	2	-63.04	3.50	3866.62
			Max. Vy	8	35.20	-3876.68	-4.55
			Max. Vx	2	-35.14	3.50	3866.62
			Max. Torque	12			0.29

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	89.17	-0.00	0.00
	Max. H_x	20	63.05	35.18	0.05
	Max. H_z	2	63.05	0.05	35.11
	Max. M_x	2	3866.62	0.05	35.11
	Max. M_z	8	3876.68	-35.18	-0.05
	Max. Torsion	12	0.29	-18.46	-31.87
	Min. Vert	17	47.29	17.68	-30.62
	Min. H_x	8	63.05	-35.18	-0.05
	Min. H_z	14	63.05	-0.05	-35.11
	Min. M_x	14	-3863.47	-0.05	-35.11
	Min. M_z	20	-3871.44	35.18	0.05
	Min. Torsion	24	-0.28	18.46	31.87

Tower Mast Reaction Summary

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 Only	52.54	0.00	0.00	-1.26	-2.11	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	63.05	-0.05	-35.11	-3866.62	3.50	0.12
0.9 Dead+1.0 Wind 0 deg - No Ice	47.29	-0.05	-35.11	-3823.42	4.11	0.12
1.2 Dead+1.0 Wind 30 deg - No Ice	63.05	17.68	-30.62	-3369.93	-1948.06	0.05
0.9 Dead+1.0 Wind 30 deg - No Ice	47.29	17.68	-30.62	-3332.29	-1925.87	0.05
1.2 Dead+1.0 Wind 60 deg - No Ice	63.05	30.67	-17.65	-1942.76	-3378.34	-0.07
0.9 Dead+1.0 Wind 60 deg - No Ice	47.29	30.67	-17.65	-1920.89	-3340.34	-0.07
1.2 Dead+1.0 Wind 90 deg - No Ice	63.05	35.18	0.05	4.55	-3876.68	-0.13
0.9 Dead+1.0 Wind 90 deg - No Ice	47.29	35.18	0.05	4.89	-3833.11	-0.13
1.2 Dead+1.0 Wind 120 deg - No Ice	63.05	30.81	17.79	1954.19	-3391.34	-0.26
0.9 Dead+1.0 Wind 120 deg - No Ice	47.29	30.81	17.79	1932.99	-3353.23	-0.25
1.2 Dead+1.0 Wind 150 deg - No Ice	63.05	18.46	31.87	3445.59	-2000.63	-0.29
0.9 Dead+1.0 Wind 150 deg - No Ice	47.29	18.46	31.87	3408.22	-1978.06	-0.28
1.2 Dead+1.0 Wind 180 deg - No Ice	63.05	0.05	35.11	3863.47	-8.75	-0.13
0.9 Dead+1.0 Wind 180 deg - No Ice	47.29	0.05	35.11	3821.08	-8.01	-0.12
1.2 Dead+1.0 Wind 210 deg - No Ice	63.05	-17.68	30.62	3366.79	1942.82	-0.04
0.9 Dead+1.0 Wind 210 deg - No Ice	47.29	-17.68	30.62	3329.95	1921.98	-0.04
1.2 Dead+1.0 Wind 240 deg - No Ice	63.05	-30.67	17.65	1939.61	3373.09	0.08
0.9 Dead+1.0 Wind 240 deg - No Ice	47.29	-30.67	17.65	1918.55	3336.44	0.08
1.2 Dead+1.0 Wind 270 deg - No Ice	63.05	-35.18	-0.05	-7.70	3871.44	0.14
0.9 Dead+1.0 Wind 270 deg - No Ice	47.29	-35.18	-0.05	-7.23	3829.22	0.13
1.2 Dead+1.0 Wind 300 deg - No Ice	63.05	-30.81	-17.79	-1957.34	3386.10	0.25
0.9 Dead+1.0 Wind 300 deg - No Ice	47.29	-30.81	-17.79	-1935.33	3349.33	0.24
1.2 Dead+1.0 Wind 330 deg - No Ice	63.05	-18.46	-31.87	-3448.73	1995.38	0.28
0.9 Dead+1.0 Wind 330 deg - No Ice	47.29	-18.46	-31.87	-3410.56	1974.16	0.27
1.2 Dead+1.0 Ice+1.0 Temp	89.17	0.00	-0.00	-3.83	-5.85	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	89.17	-0.01	-7.58	-870.14	-4.87	0.02
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	89.17	3.80	-6.58	-756.04	-440.06	-0.01
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	89.17	6.59	-3.79	-437.48	-758.97	-0.03
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	89.17	7.58	0.01	-2.76	-872.72	-0.04

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	89.17	6.62	3.82	432.62	-761.93	-0.05
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	89.17	3.84	6.63	753.35	-444.54	-0.05
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	89.17	0.01	7.58	862.15	-7.33	-0.02
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	89.17	-3.80	6.58	748.05	427.86	0.01
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	89.17	-6.59	3.79	429.49	746.77	0.03
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	89.17	-7.58	-0.01	-5.23	860.52	0.04
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	89.17	-6.62	-3.82	-440.61	749.74	0.05
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	89.17	-3.84	-6.63	-761.34	432.34	0.05
Dead+Wind 0 deg - Service	52.54	-0.01	-7.62	-834.87	-0.85	0.03
Dead+Wind 30 deg - Service	52.54	3.84	-6.65	-727.76	-421.75	0.01
Dead+Wind 60 deg - Service	52.54	6.66	-3.83	-419.96	-730.22	-0.02
Dead+Wind 90 deg - Service	52.54	7.63	0.01	0.02	-837.69	-0.04
Dead+Wind 120 deg - Service	52.54	6.69	3.86	420.50	-733.03	-0.06
Dead+Wind 150 deg - Service	52.54	4.01	6.92	742.20	-433.12	-0.07
Dead+Wind 180 deg - Service	52.54	0.01	7.62	832.26	-3.50	-0.03
Dead+Wind 210 deg - Service	52.54	-3.84	6.65	725.15	417.40	-0.01
Dead+Wind 240 deg - Service	52.54	-6.66	3.83	417.35	725.87	0.02
Dead+Wind 270 deg - Service	52.54	-7.63	-0.01	-2.63	833.34	0.04
Dead+Wind 300 deg - Service	52.54	-6.69	-3.86	-423.11	728.68	0.06
Dead+Wind 330 deg - Service	52.54	-4.01	-6.92	-744.81	428.77	0.07

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	0.00	-52.54	0.00	0.00	52.54	0.00	0.000%
2	-0.05	-63.05	-35.11	0.05	63.05	35.11	0.000%
3	-0.05	-47.29	-35.11	0.05	47.29	35.11	0.000%
4	17.68	-63.05	-30.62	-17.68	63.05	30.62	0.000%
5	17.68	-47.29	-30.62	-17.68	47.29	30.62	0.000%
6	30.67	-63.05	-17.65	-30.67	63.05	17.65	0.000%
7	30.67	-47.29	-17.65	-30.67	47.29	17.65	0.000%
8	35.18	-63.05	0.05	-35.18	63.05	-0.05	0.000%
9	35.18	-47.29	0.05	-35.18	47.29	-0.05	0.000%
10	30.81	-63.05	17.79	-30.81	63.05	-17.79	0.000%
11	30.81	-47.29	17.79	-30.81	47.29	-17.79	0.000%
12	18.46	-63.05	31.87	-18.46	63.05	-31.87	0.000%
13	18.46	-47.29	31.87	-18.46	47.29	-31.87	0.000%
14	0.05	-63.05	35.11	-0.05	63.05	-35.11	0.000%
15	0.05	-47.29	35.11	-0.05	47.29	-35.11	0.000%
16	-17.68	-63.05	30.62	17.68	63.05	-30.62	0.000%
17	-17.68	-47.29	30.62	17.68	47.29	-30.62	0.000%
18	-30.67	-63.05	17.65	30.67	63.05	-17.65	0.000%
19	-30.67	-47.29	17.65	30.67	47.29	-17.65	0.000%
20	-35.18	-63.05	-0.05	35.18	63.05	0.05	0.000%
21	-35.18	-47.29	-0.05	35.18	47.29	0.05	0.000%
22	-30.81	-63.05	-17.79	30.81	63.05	17.79	0.000%
23	-30.81	-47.29	-17.79	30.81	47.29	17.79	0.000%
24	-18.46	-63.05	-31.87	18.46	63.05	31.87	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
25	-18.46	-47.29	-31.87	18.46	47.29	31.87	0.000%
26	0.00	-89.17	0.00	-0.00	89.17	0.00	0.000%
27	-0.01	-89.17	-7.58	0.01	89.17	7.58	0.000%
28	3.80	-89.17	-6.58	-3.80	89.17	6.58	0.000%
29	6.59	-89.17	-3.79	-6.59	89.17	3.79	0.000%
30	7.58	-89.17	0.01	-7.58	89.17	-0.01	0.000%
31	6.62	-89.17	3.82	-6.62	89.17	-3.82	0.000%
32	3.84	-89.17	6.63	-3.84	89.17	-6.63	0.000%
33	0.01	-89.17	7.58	-0.01	89.17	-7.58	0.000%
34	-3.80	-89.17	6.58	3.80	89.17	-6.58	0.000%
35	-6.59	-89.17	3.79	6.59	89.17	-3.79	0.000%
36	-7.58	-89.17	-0.01	7.58	89.17	0.01	0.000%
37	-6.62	-89.17	-3.82	6.62	89.17	3.82	0.000%
38	-3.84	-89.17	-6.63	3.84	89.17	6.63	0.000%
39	-0.01	-52.54	-7.62	0.01	52.54	7.62	0.000%
40	3.84	-52.54	-6.65	-3.84	52.54	6.65	0.000%
41	6.66	-52.54	-3.83	-6.66	52.54	3.83	0.000%
42	7.63	-52.54	0.01	-7.63	52.54	-0.01	0.000%
43	6.69	-52.54	3.86	-6.69	52.54	-3.86	0.000%
44	4.01	-52.54	6.92	-4.01	52.54	-6.92	0.000%
45	0.01	-52.54	7.62	-0.01	52.54	-7.62	0.000%
46	-3.84	-52.54	6.65	3.84	52.54	-6.65	0.000%
47	-6.66	-52.54	3.83	6.66	52.54	-3.83	0.000%
48	-7.63	-52.54	-0.01	7.63	52.54	0.01	0.000%
49	-6.69	-52.54	-3.86	6.69	52.54	3.86	0.000%
50	-4.01	-52.54	-6.92	4.01	52.54	6.92	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	5	0.00000001	0.00022536
3	Yes	5	0.00000001	0.00008149
4	Yes	6	0.00000001	0.00058259
5	Yes	6	0.00000001	0.00019382
6	Yes	6	0.00000001	0.00058268
7	Yes	6	0.00000001	0.00019381
8	Yes	5	0.00000001	0.00022492
9	Yes	5	0.00000001	0.00008126
10	Yes	6	0.00000001	0.00058434
11	Yes	6	0.00000001	0.00019410
12	Yes	6	0.00000001	0.00059875
13	Yes	6	0.00000001	0.00019816
14	Yes	5	0.00000001	0.00024566
15	Yes	5	0.00000001	0.00009285
16	Yes	6	0.00000001	0.00057938
17	Yes	6	0.00000001	0.00019291
18	Yes	6	0.00000001	0.00057976
19	Yes	6	0.00000001	0.00019300
20	Yes	5	0.00000001	0.00024133
21	Yes	5	0.00000001	0.00009055
22	Yes	6	0.00000001	0.00058860
23	Yes	6	0.00000001	0.00019565
24	Yes	6	0.00000001	0.00059300
25	Yes	6	0.00000001	0.00019619

26	Yes	4	0.00000001	0.00018320
27	Yes	6	0.00000001	0.00035499
28	Yes	6	0.00000001	0.00039208
29	Yes	6	0.00000001	0.00039239
30	Yes	6	0.00000001	0.00035587
31	Yes	6	0.00000001	0.00039170
32	Yes	6	0.00000001	0.00039211
33	Yes	6	0.00000001	0.00035232
34	Yes	6	0.00000001	0.00038594
35	Yes	6	0.00000001	0.00038599
36	Yes	6	0.00000001	0.00035195
37	Yes	6	0.00000001	0.00039011
38	Yes	6	0.00000001	0.00039129
39	Yes	4	0.00000001	0.00082830
40	Yes	5	0.00000001	0.00014357
41	Yes	5	0.00000001	0.00014375
42	Yes	4	0.00000001	0.00083069
43	Yes	5	0.00000001	0.00014257
44	Yes	5	0.00000001	0.00014928
45	Yes	4	0.00000001	0.00082725
46	Yes	5	0.00000001	0.00014106
47	Yes	5	0.00000001	0.00014107
48	Yes	4	0.00000001	0.00082834
49	Yes	5	0.00000001	0.00014541
50	Yes	5	0.00000001	0.00014529

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 155	21.502	50	1.2001	0.0003
L2	155 - 150	20.246	50	1.1981	0.0003
L3	150 - 145	18.995	50	1.1908	0.0003
L4	145 - 140	17.754	50	1.1784	0.0003
L5	140 - 135	16.529	50	1.1606	0.0003
L6	135 - 130	15.327	50	1.1344	0.0003
L7	130 - 125	14.156	50	1.1008	0.0003
L8	125 - 117.333	13.025	50	1.0595	0.0003
L9	122 - 117	12.368	50	1.0313	0.0003
L10	117 - 112	11.300	50	1.0067	0.0002
L11	112 - 107	10.270	50	0.9596	0.0002
L12	107 - 102	9.292	50	0.9073	0.0002
L13	102 - 97	8.371	50	0.8510	0.0002
L14	97 - 95.83	7.511	50	0.7913	0.0002
L15	95.83 - 95.58	7.319	50	0.7770	0.0002
L16	95.58 - 90.58	7.278	50	0.7747	0.0002
L17	90.58 - 89.83	6.492	50	0.7271	0.0001
L18	89.83 - 89.58	6.378	50	0.7197	0.0001
L19	89.58 - 82.5	6.340	50	0.7164	0.0001
L20	88 - 81.5	6.107	50	0.6953	0.0001
L21	81.5 - 76.5	5.187	50	0.6508	0.0001
L22	76.5 - 74.25	4.535	50	0.5943	0.0001
L23	74.25 - 74	4.261	50	0.5684	0.0001
L24	74 - 69	4.231	50	0.5661	0.0001
L25	69 - 64	3.663	50	0.5202	0.0001
L26	64 - 59	3.143	50	0.4729	0.0001
L27	59 - 55.75	2.672	50	0.4251	0.0001
L28	55.75 - 55.5	2.394	50	0.3938	0.0001
L29	55.5 - 50.5	2.373	50	0.3920	0.0001

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L30	50.5 - 47.75	1.982	50	0.3555	0.0000
L31	47.75 - 47.5	1.783	50	0.3354	0.0000
L32	47.5 - 40.5833	1.765	50	0.3333	0.0000
L33	47 - 39.5833	1.730	50	0.3289	0.0000
L34	39.5833 - 34.5833	1.242	50	0.2970	0.0000
L35	34.5833 - 30.75	0.949	50	0.2617	0.0000
L36	30.75 - 30.5	0.750	50	0.2343	0.0000
L37	30.5 - 29	0.738	50	0.2322	0.0000
L38	29 - 28.75	0.667	50	0.2199	0.0000
L39	28.75 - 23.75	0.656	50	0.2180	0.0000
L40	23.75 - 18.75	0.448	50	0.1791	0.0000
L41	18.75 - 13.75	0.280	50	0.1405	0.0000
L42	13.75 - 13	0.153	50	0.1021	0.0000
L43	13 - 12.75	0.138	50	0.0964	0.0000
L44	12.75 - 8.25	0.133	50	0.0947	0.0000
L45	8.25 - 8	0.058	50	0.0646	0.0000
L46	8 - 5	0.054	50	0.0628	0.0000
L47	5 - 4.75	0.022	50	0.0414	0.0000
L48	4.75 - 0	0.020	50	0.0393	0.0000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
159.00	APXVSPP18-C-A20 w/ Mount Pipe	50	21.251	1.1999	0.0003	62433
155.00	800MHZ 2X50W RRH W/FILTER	50	20.246	1.1981	0.0003	62433
142.00	AIR 6419 B41_TMO w/ Mount Pipe	50	17.017	1.1686	0.0003	15156
132.00	MX08FRO665-20 w/ Mount Pipe	50	14.620	1.1149	0.0003	8406
116.00	MT6407-77A w/ Mount Pipe	50	11.090	0.9995	0.0002	7340
96.00	AM-X-CD-14-65-00T-RET w/ Mount Pipe	50	7.346	0.7788	0.0002	5272
92.00	KS24019-L112A	50	6.710	0.7403	0.0001	5737
87.00	2.4" Dia x 4-ft Mount Pipe	50	5.961	0.6851	0.0001	6977

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	160 - 155	99.736	24	5.5772	0.0011
L2	155 - 150	93.914	24	5.5679	0.0011
L3	150 - 145	88.115	24	5.5341	0.0011
L4	145 - 140	82.363	24	5.4764	0.0011
L5	140 - 135	76.684	24	5.3936	0.0011
L6	135 - 130	71.110	24	5.2715	0.0011
L7	130 - 125	65.682	24	5.1156	0.0011
L8	125 - 117.333	60.434	24	4.9235	0.0011
L9	122 - 117	57.387	24	4.7926	0.0010
L10	117 - 112	52.434	24	4.6783	0.0010
L11	112 - 107	47.656	24	4.4590	0.0010
L12	107 - 102	43.119	24	4.2162	0.0009

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L13	102 - 97	38.846	24	3.9542	0.0008
L14	97 - 95.83	34.855	24	3.6764	0.0007
L15	95.83 - 95.58	33.963	24	3.6100	0.0007
L16	95.58 - 90.58	33.775	24	3.5993	0.0007
L17	90.58 - 89.83	30.124	24	3.3778	0.0006
L18	89.83 - 89.58	29.597	24	3.3433	0.0006
L19	89.58 - 82.5	29.423	24	3.3280	0.0006
L20	88 - 81.5	28.338	24	3.2300	0.0006
L21	81.5 - 76.5	24.070	24	3.0231	0.0005
L22	76.5 - 74.25	21.044	24	2.7601	0.0004
L23	74.25 - 74	19.772	24	2.6396	0.0004
L24	74 - 69	19.635	24	2.6291	0.0004
L25	69 - 64	16.994	24	2.4155	0.0003
L26	64 - 59	14.581	24	2.1958	0.0003
L27	59 - 55.75	12.398	24	1.9735	0.0003
L28	55.75 - 55.5	11.105	24	1.8281	0.0002
L29	55.5 - 50.5	11.010	24	1.8197	0.0002
L30	50.5 - 47.75	9.193	24	1.6501	0.0002
L31	47.75 - 47.5	8.270	24	1.5567	0.0002
L32	47.5 - 40.5833	8.189	24	1.5467	0.0002
L33	47 - 39.5833	8.028	24	1.5266	0.0002
L34	39.5833 - 34.5833	5.761	24	1.3780	0.0002
L35	34.5833 - 30.75	4.404	24	1.2143	0.0001
L36	30.75 - 30.5	3.480	24	1.0871	0.0001
L37	30.5 - 29	3.424	24	1.0775	0.0001
L38	29 - 28.75	3.094	24	1.0203	0.0001
L39	28.75 - 23.75	3.041	24	1.0114	0.0001
L40	23.75 - 18.75	2.076	24	0.8309	0.0001
L41	18.75 - 13.75	1.300	24	0.6516	0.0001
L42	13.75 - 13	0.711	24	0.4736	0.0000
L43	13 - 12.75	0.639	24	0.4472	0.0000
L44	12.75 - 8.25	0.616	24	0.4394	0.0000
L45	8.25 - 8	0.268	24	0.2995	0.0000
L46	8 - 5	0.252	24	0.2912	0.0000
L47	5 - 4.75	0.100	24	0.1920	0.0000
L48	4.75 - 0	0.091	24	0.1824	0.0000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
159.00	APXVSPP18-C-A20 w/ Mount Pipe	24	98.571	5.5763	0.0015	13674
155.00	800MHZ 2X50W RRH W/FILTER	24	93.914	5.5679	0.0015	13674
142.00	AIR 6419 B41_TMO w/ Mount Pipe	24	78.945	5.4308	0.0015	3317
132.00	MX08FRO665-20 w/ Mount Pipe	24	67.834	5.1813	0.0014	1837
116.00	MT6407-77A w/ Mount Pipe	24	51.462	4.6448	0.0012	1599
96.00	AM-X-CD-14-65-00T-RET w/ Mount Pipe	24	34.092	3.6182	0.0007	1143
92.00	KS24019-L112A	24	31.138	3.4390	0.0006	1244
87.00	2.4" Dia x 4-ft Mount Pipe	24	27.662	3.1822	0.0006	1512

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	160 - 155 (1)	TP23.3004x22.35x0.2188	5.00	0.00	0.0	16.2581	-2.85	951.10	0.003
L2	155 - 150 (2)	TP24.2508x23.3004x0.2188	5.00	0.00	0.0	16.9276	-3.66	990.26	0.004
L3	150 - 145 (3)	TP25.2012x24.2508x0.2188	5.00	0.00	0.0	17.5970	-4.00	1029.42	0.004
L4	145 - 140 (4)	TP26.1516x25.2012x0.2188	5.00	0.00	0.0	18.2664	-8.26	1068.59	0.008
L5	140 - 135 (5)	TP27.1019x26.1516x0.2188	5.00	0.00	0.0	18.9359	-8.69	1107.75	0.008
L6	135 - 130 (6)	TP28.0523x27.1019x0.2188	5.00	0.00	0.0	19.6053	-12.08	1146.91	0.011
L7	130 - 125 (7)	TP29.0027x28.0523x0.2188	5.00	0.00	0.0	20.2747	-12.58	1186.07	0.011
L8	125 - 117.333 (8)	TP30.46x29.0027x0.2188	7.67	0.00	0.0	20.6764	-12.89	1209.57	0.011
L9	117.333 - 117 (9)	TP30.0854x29.1355x0.2813	5.00	0.00	0.0	26.9914	-13.91	1579.00	0.009
L10	117 - 112 (10)	TP31.0353x30.0854x0.2813	5.00	0.00	0.0	27.8517	-18.29	1629.32	0.011
L11	112 - 107 (11)	TP31.9853x31.0353x0.2813	5.00	0.00	0.0	28.7120	-19.05	1679.65	0.011
L12	107 - 102 (12)	TP32.9352x31.9853x0.2813	5.00	0.00	0.0	29.5723	-19.84	1729.98	0.011
L13	102 - 97 (13)	TP33.8852x32.9352x0.2813	5.00	0.00	0.0	30.4326	-21.53	1780.30	0.012
L14	97 - 95.83 (14)	TP34.1075x33.8852x0.2813	1.17	0.00	0.0	30.6339	-23.91	1792.08	0.013
L15	95.83 - 95.58 (15)	TP34.155x34.1075x0.3813	0.25	0.00	0.0	41.4614	-24.03	2425.49	0.010
L16	95.58 - 90.58 (16)	TP35.1049x34.155x0.3813	5.00	0.00	0.0	42.6276	-26.25	2493.72	0.011
L17	90.58 - 89.83 (17)	TP35.2474x35.1049x0.375	0.75	0.00	0.0	42.1084	-26.55	2463.34	0.011
L18	89.83 - 89.58 (18)	TP35.2949x35.2474x0.2813	0.25	0.00	0.0	31.7092	-26.60	1854.99	0.014
L19	89.58 - 82.5 (19)	TP36.64x35.2949x0.2813	7.08	0.00	0.0	31.9811	-26.89	1870.89	0.014
L20	82.5 - 81.5 (20)	TP36.266x35.0326x0.375	6.50	0.00	0.0	43.3383	-29.34	2535.29	0.012
L21	81.5 - 76.5 (21)	TP37.2147x36.266x0.375	5.00	0.00	0.0	44.4840	-30.54	2602.31	0.012
L22	76.5 - 74.25 (22)	TP37.6417x37.2147x0.375	2.25	0.00	0.0	44.9995	-31.09	2632.47	0.012
L23	74.25 - 74 (23)	TP37.6891x37.6417x0.4875	0.25	0.00	0.0	58.3972	-31.18	3416.24	0.009
L24	74 - 69 (24)	TP38.6379x37.6891x0.4813	5.00	0.00	0.0	59.1284	-32.63	3459.01	0.009
L25	69 - 64 (25)	TP39.5866x38.6379x0.475	5.00	0.00	0.0	59.8212	-34.12	3499.54	0.010
L26	64 - 59 (26)	TP40.5354x39.5866x0.475	5.00	0.00	0.0	61.2724	-35.64	3584.43	0.010
L27	59 - 55.75 (27)	TP41.1521x40.5354x0.475	3.25	0.00	0.0	62.2156	-36.64	3639.61	0.010
L28	55.75 - 55.5 (28)	TP41.1995x41.1521x0.6375	0.25	0.00	0.0	83.2637	-36.75	4870.93	0.008
L29	55.5 - 50.5 (29)	TP42.1483x41.1995x0.6375	5.00	0.00	0.0	85.2113	-38.68	4984.86	0.008
L30	50.5 - 47.75 (30)	TP42.6701x42.1483x0.6375	2.75	0.00	0.0	86.2824	-39.75	5047.52	0.008
L31	47.75 - 47.5 (31)	TP42.7175x42.6701x0.5375	0.25	0.00	0.0	73.0031	-39.85	4270.68	0.009
L32	47.5 - 40.5833 (32)	TP44.03x42.7175x0.5375	6.92	0.00	0.0	73.1673	-40.02	4280.29	0.009
L33	40.5833 - 39.5833 (33)	TP43.4728x42.0624x0.7	7.42	0.00	0.0	96.4099	-45.06	5639.98	0.008
L34	39.5833 - 34.5833 (34)	TP44.4236x43.4728x0.7	5.00	0.00	0.0	98.5530	-47.27	5765.35	0.008
L35	34.5833 - 30.75 (35)	TP45.1525x44.4236x0.6875	3.83	0.00	0.0	98.4345	-48.99	5758.42	0.009
L36	30.75 - 30.5 (36)	TP45.2001x45.1525x0.5875	0.25	0.00	0.0	84.3958	-49.10	4937.16	0.010
L37	30.5 - 29 (37)	TP45.4853x45.2001x0.5875	1.50	0.00	0.0	84.9354	-49.68	4968.72	0.010
L38	29 - 28.75 (38)	TP45.5329x45.4853x0.6375	0.25	0.00	0.0	92.1590	-49.80	5391.30	0.009
L39	28.75 - 23.75	TP46.4837x45.5329x0.625	5.00	0.00	0.0	92.2906	-51.93	5399.00	0.010

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L40	23.75 - 18.75 (40)	TP47.4345x46.4837x0.625	5.00	0.00	0.0	94.2041	-54.10	5510.94	0.010
L41	18.75 - 13.75 (41)	TP48.3853x47.4345x0.625	5.00	0.00	0.0	96.1176	-56.29	5622.88	0.010
L42	13.75 - 13 (42)	TP48.5279x48.3853x0.625	0.75	0.00	0.0	96.4046	-56.63	5639.67	0.010
L43	13 - 12.75 (43)	TP48.5754x48.5279x0.7125	0.25	0.00	0.0	109.8100	-56.76	6423.86	0.009
L44	12.75 - 8.25 (44)	TP49.4312x48.5754x0.7125	4.50	0.00	0.0	111.7730	-59.08	6538.71	0.009
L45	8.25 - 8 (45)	TP49.4787x49.4312x0.6625	0.25	0.00	0.0	104.1370	-59.22	6092.03	0.010
L46	8 - 5 (46)	TP50.0492x49.4787x0.6625	3.00	0.00	0.0	105.3540	-60.77	6163.22	0.010
L47	5 - 4.75 (47)	TP50.0967x50.0492x0.5625	0.25	0.00	0.0	89.7189	-60.89	5248.55	0.012
L48	4.75 - 0 (48)	TP51x50.0967x0.5625	4.75	0.00	0.0	91.3549	-63.04	5344.26	0.012

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	160 - 155 (1)	TP23.3004x22.35x0.2188	16.19	515.54	0.031	0.00	515.54	0.000
L2	155 - 150 (2)	TP24.2508x23.3004x0.2188	40.63	549.62	0.074	0.00	549.62	0.000
L3	150 - 145 (3)	TP25.2012x24.2508x0.2188	67.43	583.92	0.115	0.00	583.92	0.000
L4	145 - 140 (4)	TP26.1516x25.2012x0.2188	114.09	618.37	0.185	0.00	618.37	0.000
L5	140 - 135 (5)	TP27.1019x26.1516x0.2188	171.33	652.87	0.262	0.00	652.87	0.000
L6	135 - 130 (6)	TP28.0523x27.1019x0.2188	237.30	687.34	0.345	0.00	687.34	0.000
L7	130 - 125 (7)	TP29.0027x28.0523x0.2188	314.94	721.67	0.436	0.00	721.67	0.000
L8	125 - 117.333 (8)	TP30.46x29.0027x0.2188	362.70	742.18	0.489	0.00	742.18	0.000
L9	117.333 - 117 (9)	TP30.0854x29.1355x0.2813	444.45	1103.26	0.403	0.00	1103.26	0.000
L10	117 - 112 (10)	TP31.0353x30.0854x0.2813	548.13	1159.56	0.473	0.00	1159.56	0.000
L11	112 - 107 (11)	TP31.9853x31.0353x0.2813	655.36	1216.18	0.539	0.00	1216.18	0.000
L12	107 - 102 (12)	TP32.9352x31.9853x0.2813	765.19	1273.01	0.601	0.00	1273.01	0.000
L13	102 - 97 (13)	TP33.8852x32.9352x0.2813	879.14	1329.97	0.661	0.00	1329.97	0.000
L14	97 - 95.83 (14)	TP34.1075x33.8852x0.2813	909.48	1343.31	0.677	0.00	1343.31	0.000
L15	95.83 - 95.58 (15)	TP34.155x34.1075x0.3813	915.90	2046.93	0.447	0.00	2046.93	0.000
L16	95.58 - 90.58 (16)	TP35.1049x34.155x0.3813	1047.39	2144.66	0.488	0.00	2144.66	0.000
L17	90.58 - 89.83 (17)	TP35.2474x35.1049x0.375	1067.69	2113.06	0.505	0.00	2113.06	0.000
L18	89.83 - 89.58 (18)	TP35.2949x35.2474x0.2813	1074.47	1414.56	0.760	0.00	1414.56	0.000
L19	89.58 - 82.5 (19)	TP36.64x35.2949x0.2813	1117.48	1432.56	0.780	0.00	1432.56	0.000
L20	82.5 - 81.5 (20)	TP36.266x35.0326x0.375	1299.47	2216.39	0.586	0.00	2216.39	0.000
L21	81.5 - 76.5 (21)	TP37.2147x36.266x0.375	1443.30	2313.57	0.624	0.00	2313.57	0.000
L22	76.5 - 74.25 (22)	TP37.6417x37.2147x0.375	1508.92	2357.57	0.640	0.00	2357.57	0.000
L23	74.25 - 74 (23)	TP37.6891x37.6417x0.4875	1516.24	3245.64	0.467	0.00	3245.64	0.000
L24	74 - 69 (24)	TP38.6379x37.6891x0.4813	1664.36	3372.28	0.494	0.00	3372.28	0.000
L25	69 - 64 (25)	TP39.5866x38.6379x0.475	1815.47	3495.23	0.519	0.00	3495.23	0.000
L26	64 - 59 (26)	TP40.5354x39.5866x0.475	1969.47	3641.73	0.541	0.00	3641.73	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 $\frac{M_{uy}}{\phi M_{ny}}$
L27	59 - 55.75 (27)	TP41.1521x40.5354x0.475	2071.09	3737.84	0.554	0.00	3737.84	0.000
L28	55.75 - 55.5 (28)	TP41.1995x41.1521x0.6375	2078.95	5032.73	0.413	0.00	5032.73	0.000
L29	55.5 - 50.5 (29)	TP42.1483x41.1995x0.6375	2237.81	5272.79	0.424	0.00	5272.79	0.000
L30	50.5 - 47.75 (30)	TP42.6701x42.1483x0.6375	2326.42	5407.20	0.430	0.00	5407.20	0.000
L31	47.75 - 47.5 (31)	TP42.7175x42.6701x0.5375	2334.51	4602.04	0.507	0.00	4602.04	0.000
L32	47.5 - 40.5833 (32)	TP44.03x42.7175x0.5375	2350.72	4622.90	0.508	0.00	4622.90	0.000
L33	40.5833 - 39.5833 (33)	TP43.4728x42.0624x0.7	2594.83	6141.02	0.423	0.00	6141.02	0.000
L34	39.5833 - 34.5833 (34)	TP44.4236x43.4728x0.7	2762.78	6419.32	0.430	0.00	6419.32	0.000
L35	34.5833 - 30.75 (35)	TP45.1525x44.4236x0.6875	2893.13	6523.85	0.443	0.00	6523.85	0.000
L36	30.75 - 30.5 (36)	TP45.2001x45.1525x0.5875	2901.68	5624.68	0.516	0.00	5624.68	0.000
L37	30.5 - 29 (37)	TP45.4853x45.2001x0.5875	2953.07	5697.31	0.518	0.00	5697.31	0.000
L38	29 - 28.75 (38)	TP45.5329x45.4853x0.6375	2961.65	6174.72	0.480	0.00	6174.72	0.000
L39	28.75 - 23.75 (39)	TP46.4837x45.5329x0.625	3134.41	6319.77	0.496	0.00	6319.77	0.000
L40	23.75 - 18.75 (40)	TP47.4345x46.4837x0.625	3309.26	6586.34	0.502	0.00	6586.34	0.000
L41	18.75 - 13.75 (41)	TP48.3853x47.4345x0.625	3486.20	6858.42	0.508	0.00	6858.42	0.000
L42	13.75 - 13 (42)	TP48.5279x48.3853x0.625	3512.92	6899.72	0.509	0.00	6899.72	0.000
L43	13 - 12.75 (43)	TP48.5754x48.5279x0.7125	3521.83	7838.33	0.449	0.00	7838.33	0.000
L44	12.75 - 8.25 (44)	TP49.4312x48.5754x0.7125	3683.38	8123.21	0.453	0.00	8123.21	0.000
L45	8.25 - 8 (45)	TP49.4787x49.4312x0.6625	3692.41	7591.32	0.486	0.00	7591.32	0.000
L46	8 - 5 (46)	TP50.0492x49.4787x0.6625	3801.24	7770.98	0.489	0.00	7770.98	0.000
L47	5 - 4.75 (47)	TP50.0967x50.0492x0.5625	3810.35	6508.42	0.585	0.00	6508.42	0.000
L48	4.75 - 0 (48)	TP51x50.0967x0.5625	3984.38	6709.77	0.594	0.00	6709.77	0.000

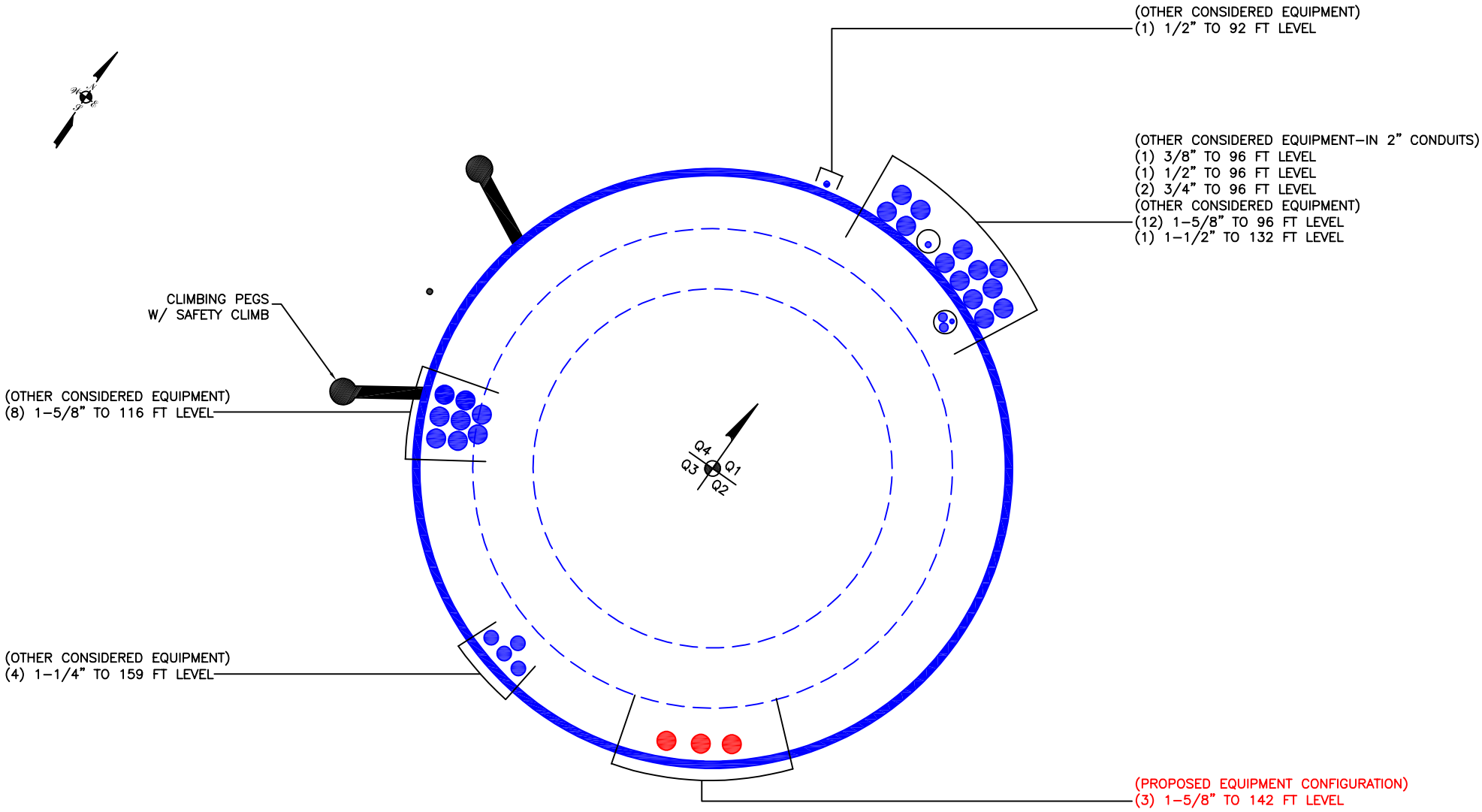
Pole Shear Design Data

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	160 - 155 (1)	TP23.3004x22.35x0.2188	3.91	285.33	0.014	0.00	579.31	0.000
L2	155 - 150 (2)	TP24.2508x23.3004x0.2188	5.13	297.08	0.017	0.00	628.00	0.000
L3	150 - 145 (3)	TP25.2012x24.2508x0.2188	5.60	308.83	0.018	0.00	678.66	0.000
L4	145 - 140 (4)	TP26.1516x25.2012x0.2188	11.21	320.58	0.035	0.00	731.27	0.000
L5	140 - 135 (5)	TP27.1019x26.1516x0.2188	11.69	332.32	0.035	0.00	785.86	0.000
L6	135 - 130 (6)	TP28.0523x27.1019x0.2188	15.29	344.07	0.044	0.08	842.40	0.000
L7	130 - 125 (7)	TP29.0027x28.0523x0.2188	15.78	355.82	0.044	0.08	900.91	0.000
L8	125 - 117.333 (8)	TP30.46x29.0027x0.2188	16.07	362.87	0.044	0.08	936.96	0.000
L9	117.333 - 117 (9)	TP30.0854x29.1355x0.2813	16.64	473.70	0.035	0.08	1241.88	0.000
L10	117 - 112 (10)	TP31.0353x30.0854x0.2813	21.19	488.80	0.043	0.18	1322.30	0.000
L11	112 - 107 (11)	TP31.9853x31.0353x0.2813	21.73	503.89	0.043	0.08	1405.25	0.000
L12	107 - 102 (12)	TP32.9352x31.9853x0.2813	22.22	518.99	0.043	0.08	1490.72	0.000
L13	102 - 97 (13)	TP33.8852x32.9352x0.2813	23.33	534.09	0.044	0.13	1578.72	0.000
L14	97 - 95.83 (14)	TP34.1075x33.8852x0.2813	25.62	537.62	0.048	0.32	1599.68	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 $\frac{T_u}{\phi T_n}$
L15	95.83 - 95.58 (15)	TP34.155x34.1075x0.3813	25.68	727.65	0.035	0.33	2161.72	0.000
L16	95.58 - 90.58 (16)	TP35.1049x34.155x0.3813	26.96	748.12	0.036	0.24	2285.03	0.000
L17	90.58 - 89.83 (17)	TP35.2474x35.1049x0.375	27.12	739.00	0.037	0.26	2266.88	0.000
L18	89.83 - 89.58 (18)	TP35.2949x35.2474x0.2813	27.15	556.50	0.049	0.26	1713.96	0.000
L19	89.58 - 82.5 (19)	TP36.64x35.2949x0.2813	27.30	561.27	0.049	0.26	1743.47	0.000
L20	82.5 - 81.5 (20)	TP36.266x35.0326x0.375	28.51	760.59	0.037	0.29	2401.23	0.000
L21	81.5 - 76.5 (21)	TP37.2147x36.266x0.375	29.05	780.69	0.037	0.29	2529.86	0.000
L22	76.5 - 74.25 (22)	TP37.6417x37.2147x0.375	29.31	789.74	0.037	0.29	2588.84	0.000
L23	74.25 - 74 (23)	TP37.6891x37.6417x0.4875	29.33	1024.87	0.029	0.29	3353.75	0.000
L24	74 - 69 (24)	TP38.6379x37.6891x0.4813	29.94	1037.70	0.029	0.29	3482.92	0.000
L25	69 - 64 (25)	TP39.5866x38.6379x0.475	30.53	1049.86	0.029	0.28	3611.92	0.000
L26	64 - 59 (26)	TP40.5354x39.5866x0.475	31.10	1075.33	0.029	0.28	3789.28	0.000
L27	59 - 55.75 (27)	TP41.1521x40.5354x0.475	31.46	1091.88	0.029	0.28	3906.84	0.000
L28	55.75 - 55.5 (28)	TP41.1995x41.1521x0.6375	31.48	1461.28	0.022	0.28	5213.77	0.000
L29	55.5 - 50.5 (29)	TP42.1483x41.1995x0.6375	32.08	1495.46	0.021	0.28	5460.53	0.000
L30	50.5 - 47.75 (30)	TP42.6701x42.1483x0.6375	32.39	1514.26	0.021	0.28	5598.67	0.000
L31	47.75 - 47.5 (31)	TP42.7175x42.6701x0.5375	32.41	1281.20	0.025	0.28	4753.63	0.000
L32	47.5 - 40.5833 (32)	TP44.03x42.7175x0.5375	32.46	1284.09	0.025	0.28	4775.04	0.000
L33	40.5833 - 39.5833 (33)	TP43.4728x42.0624x0.7	33.36	1691.99	0.020	0.28	6365.99	0.000
L34	39.5833 - 34.5833 (34)	TP44.4236x43.4728x0.7	33.84	1729.60	0.020	0.28	6652.16	0.000
L35	34.5833 - 30.75 (35)	TP45.1525x44.4236x0.6875	34.20	1727.53	0.020	0.28	6756.82	0.000
L36	30.75 - 30.5 (36)	TP45.2001x45.1525x0.5875	34.20	1481.15	0.023	0.28	5812.40	0.000
L37	30.5 - 29 (37)	TP45.4853x45.2001x0.5875	34.35	1490.62	0.023	0.28	5886.96	0.000
L38	29 - 28.75 (38)	TP45.5329x45.4853x0.6375	34.35	1617.39	0.021	0.28	6387.28	0.000
L39	28.75 - 23.75 (39)	TP46.4837x45.5329x0.625	34.78	1619.70	0.021	0.28	6533.65	0.000
L40	23.75 - 18.75 (40)	TP47.4345x46.4837x0.625	35.19	1653.28	0.021	0.28	6807.38	0.000
L41	18.75 - 13.75 (41)	TP48.3853x47.4345x0.625	35.61	1686.86	0.021	0.28	7086.74	0.000
L42	13.75 - 13 (42)	TP48.5279x48.3853x0.625	35.68	1691.90	0.021	0.28	7129.13	0.000
L43	13 - 12.75 (43)	TP48.5754x48.5279x0.7125	35.69	1927.16	0.019	0.28	8113.65	0.000
L44	12.75 - 8.25 (44)	TP49.4312x48.5754x0.7125	36.13	1961.61	0.018	0.28	8406.33	0.000
L45	8.25 - 8 (45)	TP49.4787x49.4312x0.6625	36.14	1827.61	0.020	0.28	7847.78	0.000
L46	8 - 5 (46)	TP50.0492x49.4787x0.6625	36.44	1848.97	0.020	0.28	8032.27	0.000
L47	5 - 4.75 (47)	TP50.0967x50.0492x0.5625	36.45	1574.57	0.023	0.28	6860.67	0.000
L48	4.75 - 0 (48)	TP51x50.0967x0.5625	36.85	1603.28	0.023	0.28	7113.16	0.000

APPENDIX B

BASE LEVEL DRAWING


(OTHER CONSIDERED EQUIPMENT)
(1) 1/2" TO 92 FT LEVEL
(OTHER CONSIDERED EQUIPMENT–IN 2" CONDUITS)
(1) 3/8" TO 96 FT LEVEL
(1) 1/2" TO 96 FT LEVEL
(2) 3/4" TO 96 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(12) 1–5/8" TO 96 FT LEVEL
(1) 1–1/2" TO 132 FT LEVEL
CLIMBING PEGS
W/ SAFETY CLIMB
(OTHER CONSIDERED EQUIPMENT)
(8) 1–5/8" TO 116 FT LEVEL
Q4
Q1
Q3
Q2
(OTHER CONSIDERED EQUIPMENT)
(4) 1–1/4" TO 159 FT LEVEL
(PROPOSED EQUIPMENT CONFIGURATION)
(3) 1–5/8" TO 142 FT LEVEL

APPENDIX C

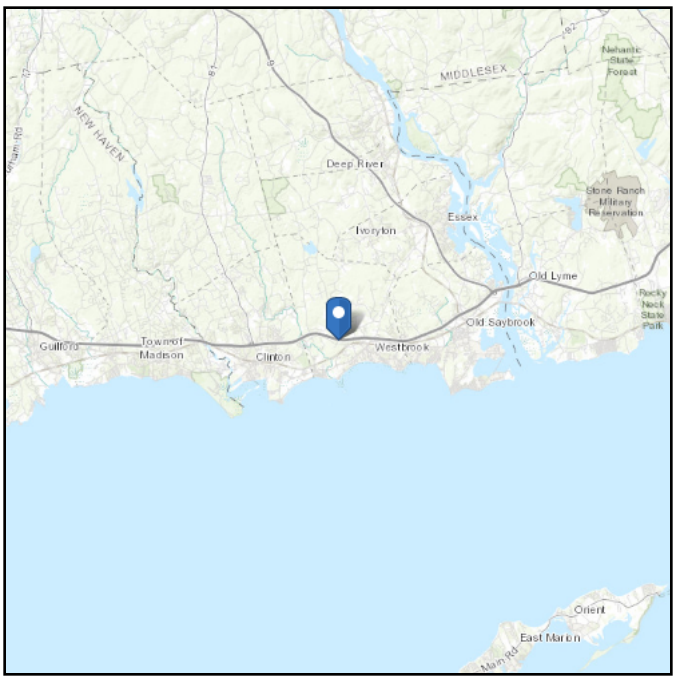
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 94.27 ft (NAVD 88)
Latitude: 41.290494
Longitude: -72.468903



Wind

Results:

Wind Speed	125 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	96 Vmph
100-year MRI	102 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Tue May 24 2022

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

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

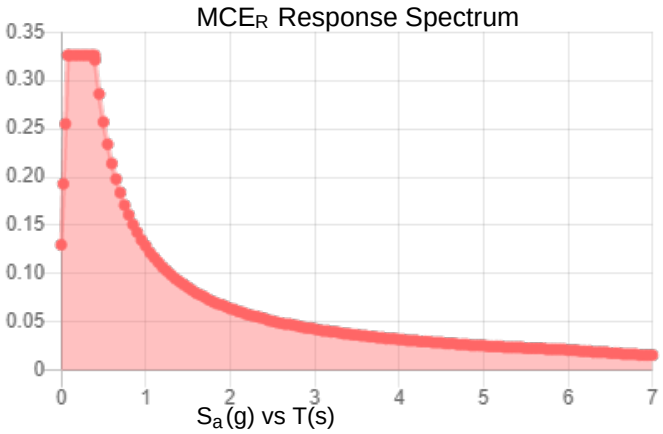
Seismic

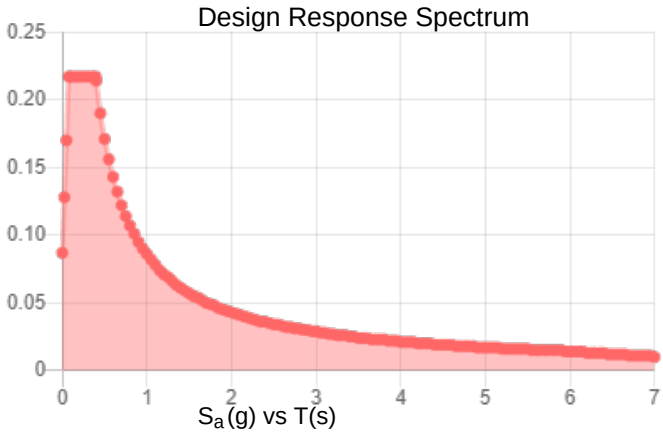
Site Soil Class: D - Default (see Section 11.4.3)

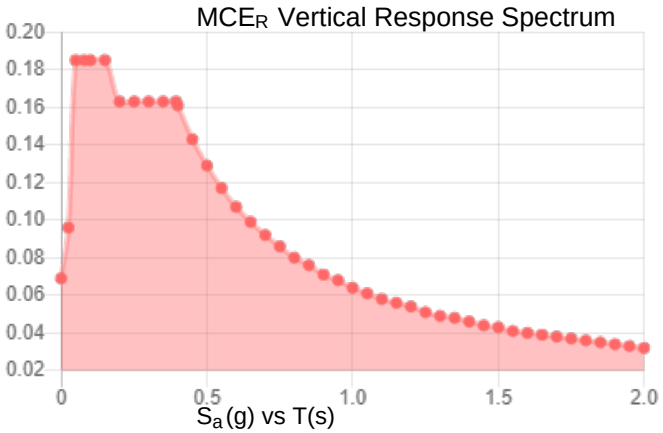
Results:

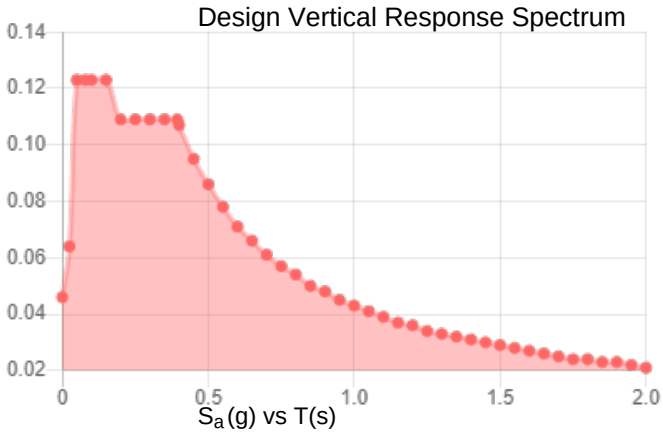
S_S :	0.204	S_{D1} :	0.086
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.114
F_v :	2.4	PGA_M :	0.179
S_{MS} :	0.326	F_{PGA} :	1.572
S_{M1} :	0.129	I_e :	1
S_{DS} :	0.217	C_v :	0.708

Seismic Design Category B









Data Accessed: **Tue May 24 2022**

Date Source:

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

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Tue May 24 2022

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

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

CCIpole

per TIA-222- H

Site BU: 876339

Work Order: 2111528

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	160	42.6667	4.6667	12	22.35	30.46	0.21875	Auto	A572-65
2	122	39.5	5.5	12	29.14	36.64	0.28125	Auto	A572-65
3	88	47.4167	6.4167	12	35.03	44.03	0.375	Auto	A572-65
4	47	47	0	12	42.06	51	0.4375	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
1	0	8.25	plate	WPL 1.25x6.25 (65ksi)	1								x				
2	0	29	plate	WPL 1.25x6.875 (65ksi	2			x								x	
3	8.25	29	plate	PL 1.25x6.875 (65ksi)	1							x					
4	29	55.75	plate	PL 1.25x5.25 (65ksi)	3			x				x				x	
5	47.75	74.25	plate	ISP-UR-0754	3		x				x				x		
6	5	13	plate	MS-600 (1.1875")	3		x			x				x			
7	30.75	42.75	plate	MS-450 (1.1875")	3	x				x				x			
8	89.83	95.83	plate	MS-600 (1.1875")	3				x			x			x		
9																	
10																	

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	6.25	1.25	7.8125	0.625	Welded	n/a	PC 8.8 - M20 (100)	33.000	19.000	6.209	1.2205	A572-65
2	6.875	1.25	8.59375	0.625	Welded	n/a	PC 8.8 - M20 (100)	54.000	18.000	6.990	1.2205	A572-65
3	6.875	1.25	8.59375	0.625	PC 8.8 - M20 (100)	39	PC 8.8 - M20 (100)	54.000	18.000	6.990	1.2205	A572-65
4	5.25	1.25	6.5625	0.625	Welded	n/a	PC 8.8 - M20 (100)	27.000	22.000	4.959	1.2205	A572-65
5	4	1	4	0.5	PC 8.8 - M20 (100)	21	PC 8.8 - M20 (100)	21.000	20.000	2.750	1.1875	A514-GR100
6	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.375	4.750	1.1875	A572-65
7	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.625	3.250	1.1875	A572-65
8	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.375	4.750	1.1875	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)
WPL 1.25x6.25 (65ksi)	Top	11	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	80	CJP Groove	6.25	1.25	45	0.5	-	-	-
WPL 1.25x6.875 (65ksi)	Top	18	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	80	CJP Groove	6.875	1.25	45	0.5	-	-	-
PL 1.25x6.875 (65ksi)	Top	18	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	13	N	3	3	-	-	-	-	-	-	-	-	-
PL 1.25x5.25 (65ksi)	Top	9	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	80	Fillet	5.25	-	-	0.5	9	0.500	-
ISP-UR-0754	Top	7	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	7	N	3	3	-	-	-	-	-	-	-	-	-

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	160 - 155	5		12	22.350	23.300	0.21875	A572-65	1.000
2	155 - 150	5		12	23.300	24.251	0.21875	A572-65	1.000
3	150 - 145	5		12	24.251	25.201	0.21875	A572-65	1.000
4	145 - 140	5		12	25.201	26.152	0.21875	A572-65	1.000
5	140 - 135	5		12	26.152	27.102	0.21875	A572-65	1.000
6	135 - 130	5		12	27.102	28.052	0.21875	A572-65	1.000
7	130 - 125	5		12	28.052	29.003	0.21875	A572-65	1.000
8	125 - 122	7.6667	4.6667	12	29.003	30.460	0.21875	A572-65	1.000
9	122 - 117	5		12	29.135	30.085	0.28125	A572-65	1.000
10	117 - 112	5		12	30.085	31.035	0.28125	A572-65	1.000
11	112 - 107	5		12	31.035	31.985	0.28125	A572-65	1.000
12	107 - 102	5		12	31.985	32.935	0.28125	A572-65	1.000
13	102 - 97	5		12	32.935	33.885	0.28125	A572-65	1.000
14	97 - 95.83	1.17		12	33.885	34.107	0.28125	A572-65	1.000
15	95.83 - 95.58	0.25		12	34.107	34.155	0.38125	A572-65	1.175
16	95.58 - 90.58	5		12	34.155	35.105	0.38125	A572-65	1.163
17	90.58 - 89.83	0.75		12	35.105	35.247	0.375	A572-65	1.180
18	89.83 - 89.58	0.25		12	35.247	35.295	0.28125	A572-65	1.000
19	89.58 - 88	7.08	5.5	12	35.295	36.640	0.28125	A572-65	1.000
20	88 - 81.5	6.5		12	35.033	36.266	0.375	A572-65	1.000
21	81.5 - 76.5	5		12	36.266	37.215	0.375	A572-65	1.000
22	76.5 - 74.25	2.25		12	37.215	37.642	0.375	A572-65	1.000
23	74.25 - 74	0.25		12	37.642	37.689	0.4875	A572-65	0.977
24	74 - 69	5		12	37.689	38.638	0.48125	A572-65	0.985
25	69 - 64	5		12	38.638	39.587	0.475	A572-65	0.992
26	64 - 59	5		12	39.587	40.535	0.475	A572-65	0.988
27	59 - 55.75	3.25		12	40.535	41.152	0.475	A572-65	0.985
28	55.75 - 55.5	0.25		12	41.152	41.200	0.6375	A572-65	0.973
29	55.5 - 50.5	5		12	41.200	42.148	0.6375	A572-65	0.964
30	50.5 - 47.75	2.75		12	42.148	42.670	0.6375	A572-65	0.960
31	47.75 - 47.5	0.25		12	42.670	42.718	0.5375	A572-65	0.970
32	47.5 - 47	6.9167	6.4167	12	42.718	44.030	0.5375	A572-65	0.970
33	47 - 39.5833	7.4167		12	42.062	43.473	0.7	A572-65	0.974
34	39.5833 - 34.5833	5		12	43.473	44.424	0.7	A572-65	0.966
35	34.5833 - 30.75	3.8333		12	44.424	45.153	0.6875	A572-65	0.978
36	30.75 - 30.5	0.25		12	45.153	45.200	0.5875	A572-65	0.981
37	30.5 - 29	1.5		12	45.200	45.485	0.5875	A572-65	0.979
38	29 - 28.75	0.25		12	45.485	45.533	0.6375	A572-65	0.969
39	28.75 - 23.75	5		12	45.533	46.484	0.625	A572-65	0.983
40	23.75 - 18.75	5		12	46.484	47.434	0.625	A572-65	0.977
41	18.75 - 13.75	5		12	47.434	48.385	0.625	A572-65	0.971
42	13.75 - 13	0.75		12	48.385	48.528	0.625	A572-65	0.971
43	13 - 12.75	0.25		12	48.528	48.575	0.7125	A572-65	1.017
44	12.75 - 8.25	4.5		12	48.575	49.431	0.7125	A572-65	1.010
45	8.25 - 8	0.25		12	49.431	49.479	0.6625	A572-65	1.077
46	8 - 5	3		12	49.479	50.049	0.6625	A572-65	1.072
47	5 - 4.75	0.25		12	50.049	50.097	0.5625	A572-65	1.059
48	4.75 - 0	4.75		12	50.097	51.000	0.5625	A572-65	1.054

TNX Section Forces

Increment (ft):	5	TNX Output		
	Section Height (ft)	P_u (K)	M_{ux} (kip-ft)	V_u (K)
1	160 - 155	2.85	16.19	3.91
2	155 - 150	3.66	40.63	5.13
3	150 - 145	4.00	67.43	5.60
4	145 - 140	8.26	114.09	11.21
5	140 - 135	8.69	171.33	11.69
6	135 - 130	12.08	237.30	15.29
7	130 - 125	12.58	314.94	15.78
8	125 - 122	12.89	362.70	16.07
9	122 - 117	13.91	444.45	16.64
10	117 - 112	18.29	548.13	21.19
11	112 - 107	19.05	655.36	21.73
12	107 - 102	19.84	765.19	22.22
13	102 - 97	21.53	879.14	23.33
14	97 - 95.83	23.91	909.48	25.62
15	95.83 - 95.58	24.03	915.90	25.68
16	95.58 - 90.58	26.25	1047.39	26.96
17	90.58 - 89.83	26.55	1067.69	27.12
18	89.83 - 89.58	26.60	1074.47	27.15
19	89.58 - 88	26.89	1117.48	27.30
20	88 - 81.5	29.34	1299.48	28.51
21	81.5 - 76.5	30.54	1443.30	29.05
22	76.5 - 74.25	31.09	1508.92	29.31
23	74.25 - 74	31.18	1516.24	29.33
24	74 - 69	32.63	1664.36	29.94
25	69 - 64	34.12	1815.47	30.53
26	64 - 59	35.64	1969.47	31.10
27	59 - 55.75	36.64	2071.09	31.46
28	55.75 - 55.5	36.75	2078.95	31.48
29	55.5 - 50.5	38.68	2237.81	32.08
30	50.5 - 47.75	39.75	2326.41	32.39
31	47.75 - 47.5	39.85	2334.51	32.41
32	47.5 - 47	40.02	2350.73	32.46
33	47 - 39.5833	45.06	2594.84	33.36
34	39.5833 - 34.5833	47.27	2762.78	33.84
35	34.5833 - 30.75	48.99	2893.13	34.20
36	30.75 - 30.5	49.10	2901.67	34.20
37	30.5 - 29	49.68	2953.06	34.35
38	29 - 28.75	49.80	2961.65	34.35
39	28.75 - 23.75	51.93	3134.41	34.78
40	23.75 - 18.75	54.10	3309.26	35.19
41	18.75 - 13.75	56.29	3486.20	35.61
42	13.75 - 13	56.63	3512.92	35.68
43	13 - 12.75	56.76	3521.84	35.69
44	12.75 - 8.25	59.08	3683.38	36.13
45	8.25 - 8	59.22	3692.41	36.14
46	8 - 5	60.77	3801.24	36.44
47	5 - 4.75	60.89	3810.35	36.45
48	4.75 - 0	63.04	3984.38	36.85

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
160 - 155	Pole	TP23.3x22.35x0.2188	Pole	3.3%	Pass
155 - 150	Pole	TP24.251x23.3x0.2188	Pole	7.4%	Pass
150 - 145	Pole	TP25.201x24.251x0.2188	Pole	11.4%	Pass
145 - 140	Pole	TP26.152x25.201x0.2188	Pole	18.4%	Pass
140 - 135	Pole	TP27.102x26.152x0.2188	Pole	25.8%	Pass
135 - 130	Pole	TP28.052x27.102x0.2188	Pole	34.0%	Pass
130 - 125	Pole	TP29.003x28.052x0.2188	Pole	42.7%	Pass
125 - 122	Pole	TP30.46x29.003x0.2188	Pole	47.6%	Pass
122 - 117	Pole	TP30.085x29.135x0.2813	Pole	39.2%	Pass
117 - 112	Pole	TP31.035x30.085x0.2813	Pole	46.1%	Pass
112 - 107	Pole	TP31.985x31.035x0.2813	Pole	52.4%	Pass
107 - 102	Pole	TP32.935x31.985x0.2813	Pole	58.4%	Pass
102 - 97	Pole	TP33.885x32.935x0.2813	Pole	64.1%	Pass
97 - 95.83	Pole	TP34.107x33.885x0.2813	Pole	65.8%	Pass
95.83 - 95.58	Pole + Reinf.	TP34.155x34.107x0.3813	Reinf. 8 Tension Rupture	56.0%	Pass
95.58 - 90.58	Pole + Reinf.	TP35.105x34.155x0.3813	Reinf. 8 Tension Rupture	61.2%	Pass
90.58 - 89.83	Pole + Reinf.	TP35.247x35.105x0.375	Reinf. 8 Tension Rupture	61.9%	Pass
89.83 - 89.58	Pole	TP35.295x35.247x0.2813	Pole	73.7%	Pass
89.58 - 88	Pole	TP36.64x35.295x0.2813	Pole	75.7%	Pass
88 - 81.5	Pole	TP36.266x35.033x0.375	Pole	56.9%	Pass
81.5 - 76.5	Pole	TP37.215x36.266x0.375	Pole	60.5%	Pass
76.5 - 74.25	Pole	TP37.642x37.215x0.375	Pole	62.0%	Pass
74.25 - 74	Pole + Reinf.	TP37.689x37.642x0.4875	Reinf. 5 Tension Rupture	58.5%	Pass
74 - 69	Pole + Reinf.	TP38.638x37.689x0.4813	Reinf. 5 Tension Rupture	61.3%	Pass
69 - 64	Pole + Reinf.	TP39.587x38.638x0.475	Reinf. 5 Tension Rupture	64.0%	Pass
64 - 59	Pole + Reinf.	TP40.535x39.587x0.475	Reinf. 5 Tension Rupture	66.5%	Pass
59 - 55.75	Pole + Reinf.	TP41.152x40.535x0.475	Reinf. 5 Tension Rupture	68.0%	Pass
55.75 - 55.5	Pole + Reinf.	TP41.2x41.152x0.6375	Reinf. 4 Tension Rupture	63.9%	Pass
55.5 - 50.5	Pole + Reinf.	TP42.148x41.2x0.6375	Reinf. 4 Tension Rupture	66.3%	Pass
50.5 - 47.75	Pole + Reinf.	TP42.67x42.148x0.6375	Reinf. 4 Tension Rupture	67.5%	Pass
47.75 - 47.5	Pole + Reinf.	TP42.718x42.67x0.5375	Reinf. 4 Tension Rupture	79.4%	Pass
47.5 - 47	Pole + Reinf.	TP44.03x42.718x0.5375	Reinf. 4 Tension Rupture	79.7%	Pass
47 - 39.58	Pole + Reinf.	TP43.473x42.062x0.7	Reinf. 7 Compression	68.8%	Pass
39.58 - 34.58	Pole + Reinf.	TP44.424x43.473x0.7	Reinf. 7 Compression	70.7%	Pass
34.58 - 30.75	Pole + Reinf.	TP45.153x44.424x0.6875	Reinf. 7 Compression	72.0%	Pass
30.75 - 30.5	Pole + Reinf.	TP45.2x45.153x0.5875	Reinf. 4 Tension Rupture	80.1%	Pass
30.5 - 29	Pole + Reinf.	TP45.485x45.2x0.5875	Reinf. 4 Weldment	81.1%	Pass
29 - 28.75	Pole + Reinf.	TP45.533x45.485x0.6375	Reinf. 2 Tension Rupture	69.7%	Pass
28.75 - 23.75	Pole + Reinf.	TP46.484x45.533x0.625	Reinf. 2 Tension Rupture	71.2%	Pass
23.75 - 18.75	Pole + Reinf.	TP47.434x46.484x0.625	Reinf. 2 Tension Rupture	72.5%	Pass
18.75 - 13.75	Pole + Reinf.	TP48.385x47.434x0.625	Reinf. 2 Tension Rupture	73.8%	Pass
13.75 - 13	Pole + Reinf.	TP48.528x48.385x0.625	Reinf. 2 Tension Rupture	74.0%	Pass
13 - 12.75	Pole + Reinf.	TP48.575x48.528x0.7125	Reinf. 2 Tension Rupture	65.6%	Pass
12.75 - 8.25	Pole + Reinf.	TP49.431x48.575x0.7125	Reinf. 2 Tension Rupture	66.7%	Pass
8.25 - 8	Pole + Reinf.	TP49.479x49.431x0.6625	Reinf. 6 Tension Rupture	71.4%	Pass
8 - 5	Pole + Reinf.	TP50.049x49.479x0.6625	Reinf. 6 Tension Rupture	72.1%	Pass
5 - 4.75	Pole + Reinf.	TP50.097x50.049x0.5625	Reinf. 2 Tension Rupture	77.3%	Pass
4.75 - 0	Pole + Reinf.	TP51x50.097x0.5625	Reinf. 2 Tension Rupture	78.3%	Pass
				Summary	
			Pole	75.7%	Pass
			Reinforcement	81.1%	Pass
			Overall	81.1%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in^4)			Area (in^2)			% Capacity* (100% Max. Allowable)								
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7	R8
160 - 155	1107	n/a	1107	16.23	n/a	16.23	3.3%								
155 - 150	1250	n/a	1250	16.90	n/a	16.90	7.4%								
150 - 145	1404	n/a	1404	17.57	n/a	17.57	11.4%								
145 - 140	1570	n/a	1570	18.24	n/a	18.24	18.4%								
140 - 135	1749	n/a	1749	18.91	n/a	18.91	25.8%								
135 - 130	1941	n/a	1941	19.58	n/a	19.58	34.0%								
130 - 125	2147	n/a	2147	20.25	n/a	20.25	42.7%								
125 - 122	2277	n/a	2277	20.65	n/a	20.65	47.6%								
122 - 117	3064	n/a	3064	26.95	n/a	26.95	39.2%								
117 - 112	3367	n/a	3367	27.81	n/a	27.81	46.1%								
112 - 107	3689	n/a	3689	28.67	n/a	28.67	52.4%								
107 - 102	4030	n/a	4030	29.53	n/a	29.53	58.4%								
102 - 97	4392	n/a	4392	30.39	n/a	30.39	64.1%								
97 - 95.83	4480	n/a	4480	30.59	n/a	30.59	65.8%								
95.83 - 95.58	4643	1518	6160	30.63	18.00	48.63	52.3%								56.0%
95.58 - 90.58	5039	1604	6643	31.49	18.00	49.49	57.7%								61.2%
90.58 - 89.83	5100	1617	6717	31.62	18.00	49.62	58.5%								61.9%
89.83 - 89.58	4969	n/a	4969	31.66	n/a	31.66	73.7%								
89.58 - 88	5097	n/a	5097	31.94	n/a	31.94	75.7%								
88 - 81.5	7135	n/a	7135	43.28	n/a	43.28	56.9%								
81.5 - 76.5	7716	n/a	7716	44.42	n/a	44.42	60.5%								
76.5 - 74.25	7988	n/a	7988	44.94	n/a	44.94	62.0%								
74.25 - 74	8018	2254	10272	44.99	12.00	56.99	46.9%					58.5%			
74 - 69	8646	2365	11011	46.14	12.00	58.14	49.7%					61.3%			
69 - 64	9305	2479	11784	47.28	12.00	59.28	52.4%					64.0%			
64 - 59	9997	2596	12593	48.42	12.00	60.42	55.0%					66.5%			
59 - 55.75	10464	2674	13138	49.17	12.00	61.17	56.6%					68.0%			
55.75 - 55.5	10501	7138	17639	49.23	31.69	80.91	42.4%				63.9%	50.9%			
55.5 - 50.5	11250	7460	18710	50.37	31.69	82.06	44.5%				66.3%	52.8%			
50.5 - 47.75	11677	7640	19317	51.00	31.69	82.69	45.6%				67.5%	53.8%			
47.75 - 47.5	11716	4781	16497	51.06	19.69	70.74	53.7%				79.4%				
47.5 - 47	11795	4802	16597	51.17	19.69	70.86	53.9%				79.7%				
47 - 39.58	14351	8296	22647	60.54	33.19	93.73	41.9%				65.5%			68.8%	
39.58 - 34.58	15323	8651	23975	61.88	33.19	95.06	43.4%				67.2%			70.7%	
34.58 - 30.75	16098	8929	25027	62.90	33.19	96.09	44.5%				68.5%			72.0%	
30.75 - 30.5	16149	5334	21483	62.97	19.69	82.66	52.1%				80.1%				
30.5 - 29	16460	5399	21859	63.37	19.69	83.06	52.5%				81.1%				
29 - 28.75	16512	7106	23618	63.44	25.78	89.22	48.8%		69.7%	69.7%					
28.75 - 23.75	17579	7395	24974	64.77	25.78	90.56	50.3%		71.2%	71.2%					
23.75 - 18.75	18690	7691	26381	66.11	25.78	91.89	51.7%		72.5%	72.5%					
18.75 - 13.75	19848	7992	27840	67.45	25.78	93.23	53.1%		73.8%	73.8%					
13.75 - 13	20025	8038	28063	67.65	25.78	93.43	53.3%		74.0%	74.0%					
13 - 12.75	20113	12356	32469	67.72	43.78	111.50	48.4%		65.6%	63.3%			63.7%		
12.75 - 8.25	21204	12782	33987	68.92	43.78	112.70	49.6%		66.7%	64.3%			64.7%		
8.25 - 8	21243	10504	31747	68.99	43.00	111.99	53.1%	63.5%	68.1%				71.4%		
8 - 5	21993	10740	32733	69.79	43.00	112.79	53.9%	64.2%	68.8%				72.1%		
5 - 4.75	22139	6159	28297	69.86	25.00	94.86	64.5%	76.9%	77.3%						
4.75 - 0	23366	6378	29744	71.13	25.00	96.13	65.8%	78.0%	78.3%						

Note: Section capacity checked assuming all reinforcements are effective and using 5 degree increments.

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

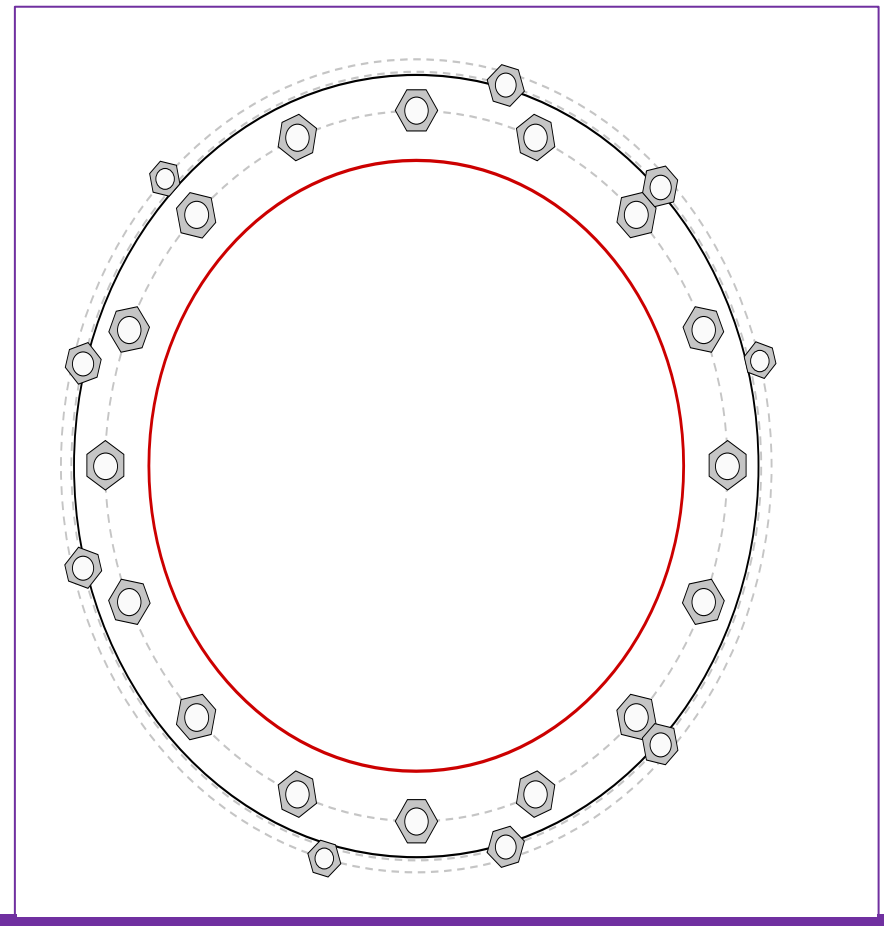
Monopole Base Plate Connection

Site Info	
BU #	876339
Site Name	ond Meadow Rd. Stab
Order #	613478 Rev.0

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

Applied Loads	
Moment (kip-ft)	3984.00
Axial Force (kips)	63.00
Shear Force (kips)	37.00

**TIA-222-H Section 15.5 Applied*



Connection Properties

Anchor Rod Data

GROUP 1: (16) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 59.3" BC
GROUP 2: (6) 2" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 65.8" BC
GROUP 3: (3) 1-3/4" ø bolts (A193 Gr. B7 N; Fy=105 ksi, Fu=125 ksi) on 67.8" BC

Base Plate Data

65.3" OD x 2.75" Plate (S-128; Fy=60 ksi, Fu=80 ksi)

Stiffener Data

N/A

Pole Data

51" x 0.4375" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

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

GROUP 1:		
Pu_t = 130.5	ϕPn_t = 243.75	**Stress Rating**
Vu = 2.31	ϕVn = 149.1	**51.0%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 2:		
Pu_t = 114.75	ϕPn_t = 234.38	**Stress Rating**
Vu = 0	ϕVn = 147.26	**46.6%**
Mu = n/a	ϕMn = n/a	**Pass**
GROUP 3:		
Pu_t = 89.86	ϕPn_t = 178.13	**Stress Rating**
Vu = 0	ϕVn = 112.75	**48.0%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	18.52	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	**32.7%**	**Pass**

CCIplate

Elevation (ft)	0	*(Base)*

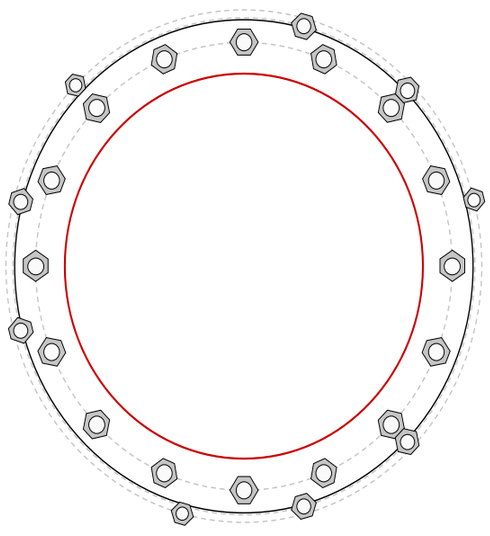
note: Bending interaction not considered when Grout Considered = "Yes"

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

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η:	I_{ar} (in):	Thread Type	Area Override, in^2	Tension Only
1	1	0	2.25	A615-75	59.3	0.5	0	N-Included		No
2	1	22.5	2.25	A615-75	59.3	0.5	0	N-Included		No
3	1	45	2.25	A615-75	59.3	0.5	0	N-Included		No
4	1	67.5	2.25	A615-75	59.3	0.5	0	N-Included		No
5	1	90	2.25	A615-75	59.3	0.5	0	N-Included		No
6	1	112.5	2.25	A615-75	59.3	0.5	0	N-Included		No
7	1	135	2.25	A615-75	59.3	0.5	0	N-Included		No
8	1	157.5	2.25	A615-75	59.3	0.5	0	N-Included		No
9	1	180	2.25	A615-75	59.3	0.5	0	N-Included		No
10	1	202.5	2.25	A615-75	59.3	0.5	0	N-Included		No
11	1	225	2.25	A615-75	59.3	0.5	0	N-Included		No
12	1	247.5	2.25	A615-75	59.3	0.5	0	N-Included		No
13	1	270	2.25	A615-75	59.3	0.5	0	N-Included		No
14	1	292.5	2.25	A615-75	59.3	0.5	0	N-Included		No
15	1	315	2.25	A615-75	59.3	0.5	0	N-Included		No
16	1	337.5	2.25	A615-75	59.3	0.5	0	N-Included		No
17	2	45	2	A193 Gr. B7	65.8	0.5	0	N-Included		No
18	2	75	2	A193 Gr. B7	65.8	0.5	0	N-Included		No
19	2	165	2	A193 Gr. B7	65.8	0.5	0	N-Included		No
20	2	195	2	A193 Gr. B7	65.8	0.5	0	N-Included		No
21	2	285	2	A193 Gr. B7	65.8	0.5	0	N-Included		No
22	2	315	2	A193 Gr. B7	65.8	0.5	0	N-Included		No
23	3	15	1.75	A193 Gr. B7	67.8	0.5	0	N-Included		No
24	3	135	1.75	A193 Gr. B7	67.8	0.5	0	N-Included		No
25	3	255	1.75	A193 Gr. B7	67.8	0.5	0	N-Included		No

Plot Graphic



Pier and Pad Foundation

BU # :	876339
Site Name:	Pond Meadow Rd.
App. Number:	613478 Rev.0

TIA-222 Revision:	H
Tower Type:	Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp}:	63	kips
Base Shear, Vu_comp:	37	kips
Moment, M_u:	3984	ft-kips
Tower Height, **H**:	160	ft
BP Dist. Above Fdn, bp_{dist}:	0	in

Pier Properties		
Pier Shape:	Circular	
Pier Diameter, **dpier**:	7	ft
Ext. Above Grade, **E**:	0.5	ft
Pier Rebar Size, **Sc**:	11	
Pier Rebar Quantity, **mc**:	36	
Pier Tie/Spiral Size, **St**:	5	
Pier Tie/Spiral Quantity, **mt**:	5	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier}:	3	in

Pad Properties		
Depth, **D**:	7.5	ft
Pad Width, W_1:	23	ft
Pad Thickness, **T**:	3.5	ft
Pad Rebar Size (Bottom dir. 2), Sp_2:	11	
Pad Rebar Quantity (Bottom dir. 2), mp_2:	24	
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:	120	pcf
Ultimate Gross Bearing, Qult:	30.000	ksf
Cohesion, **Cu**:		ksf
Friction Angle, φ:	33	degrees
SPT Blow Count, N_{blows}:	20	
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)	326.25	37.00	**10.8%**	**Pass**
Bearing Pressure (ksf)	22.50	3.43	**15.2%**	**Pass**
*Overturning (kip*ft)*	6375.49	4280.00	**67.1%**	**Pass**
*Pier Flexure (Comp.) (kip*ft)*	8682.06	4150.50	**45.5%**	**Pass**
Pier Compression (kip)	24494.62	94.17	**0.4%**	**Pass**
*Pad Flexure (kip*ft)*	6012.73	1772.96	**28.1%**	**Pass**
Pad Shear - 1-way (kips)	965.78	282.84	**27.9%**	**Pass**
Pad Shear - 2-way (Comp) (ksi)	0.190	0.000	**0.0%**	**Pass**
*Flexural 2-way (Comp) (kip*ft)*	9015.07	2490.30	**26.3%**	**Pass**

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

Structural Rating*:	**45.5%**
Soil Rating*:	**67.1%**

Date: **July 29, 2022**

Trylon
1825 W. Walnut Hill Lane,
Suite 302
Irving, TX 75038
214-930-1730

Subject:	**Mount Modification Report**	
Carrier Designation:	**T-Mobile Equipment Change-out**	
	Carrier Site Number:	CT11032D
	Carrier Site Name:	Westbrook/ I-95/ X64/ Ch1
Crown Castle Designation:	**BU Number:**	876339
	Site Name:	Pond Meadow Rd. Stable
	JDE Job Number:	713763
	Order Number:	613478 Rev. 0
Engineering Firm Designation:	**Trylon Report Designation:**	213576
Site Data:	**782 Old Clinton Road, Westbrook, Middlesex County, CT, 06498-1767**	
	Latitude 41°17'25.78" Longitude -72°28'8.05"	
Structure Information:	**Tower Height & Type:**	**160.0 ft Monopole**
	Mount Elevation:	**142.0 ft**
	Mount Width & Type:	**12.8 ft Platform**

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

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

Platform **Sufficient***

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

This analysis utilizes an ultimate 3-second gust wind speed of 135 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: Andrei Florea

Respectfully Submitted by:
Cliff Abernathy, P.E.

TABLE OF CONTENTS

1) INTRODUCTION

This is an existing 3 sector 12.8 ft Platform, previously analyzed by Paul J Ford and Company.

2) ANALYSIS CRITERIA

Building Code:	2015 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Ultimate Wind Speed:	135 mph
Exposure Category:	B
Topographic Factor at Base:	1.00
Topographic Factor at Mount:	1.00
Ice Thickness:	1.50 in
Wind Speed with Ice:	50 mph
Seismic S_s:	0.167
Seismic S_1:	0.059
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
142.0	145.0	3	Commscope	VV-65A-R1_TMO	12.8 ft Platform
		3	Ericsson	AIR 6419 B41_TMO	
		3	RFS/Celwave	APXVAALL24_43-U-NA20_TMO	
		3	Ericsson	RADIO 4449 B71 B85A_T-MOBILE	
		3	Ericsson	RADIO 4460 B2/B25 B66_TMO	

3) ANALYSIS PROCEDURE

Table 2 - Documents Provided

Document	Remarks	Reference	Source
Crown Application	T-Mobile Application	613478, Rev. 0	CCI Sites
Structural Analysis Report	Tower Engineering Professionals	9746100	CCI Sites
Mount Modification Report	Paul J Ford and Company	8456469	CCI Sites
Exposure Category Determination	Crown Castle	6535928	CCI Sites
Mount Modification Drawings	Trylon	Appendix E	Trylon

3.1) Analysis Method

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

A tool internally developed, using Microsoft Excel, by Trylon 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 *Tower Mount Analysis* (Revision E).

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design 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) 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.
5) Prior structural modifications to the tower mounting system are assumed to be installed as shown per available data.
6) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A500 (GR B-46)
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. Trylon 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, All Sectors)

Notes	Component	Critical Member	Centerline (ft)	% Capacity	Pass / Fail
1,2,3,4	Mount Pipe(s)	MP5	142.0	39.5	Pass
	Horizontal(s)	H1		53.5	Pass
	Standoff(s)	M80A		17.6	Pass
	Bracing(s)	M81A		38.2	Pass
	Handrail(s)	M80D		38.6	Pass
	Kicker(s)	M81C		12.1	Pass
	Plate(s)	M74		41.0	Pass
	Mount Connection(s)	-		25.9	Pass

Structure Rating (max from all components) =	**53.5%**

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 detailed mount connection calculations.
3) All sectors are typical
4) Rating 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 structural modifications listed below must be completed.

1. Install a new Site Pro 1, HRK12-U handrail kit.
2. Install new 2.875" O.D., mounting pipe.

Engineering detail drawings have been provided in Appendix E – Mount Modification Design Drawings. Connection from the mount to the tower and local stresses on the tower are sufficient.

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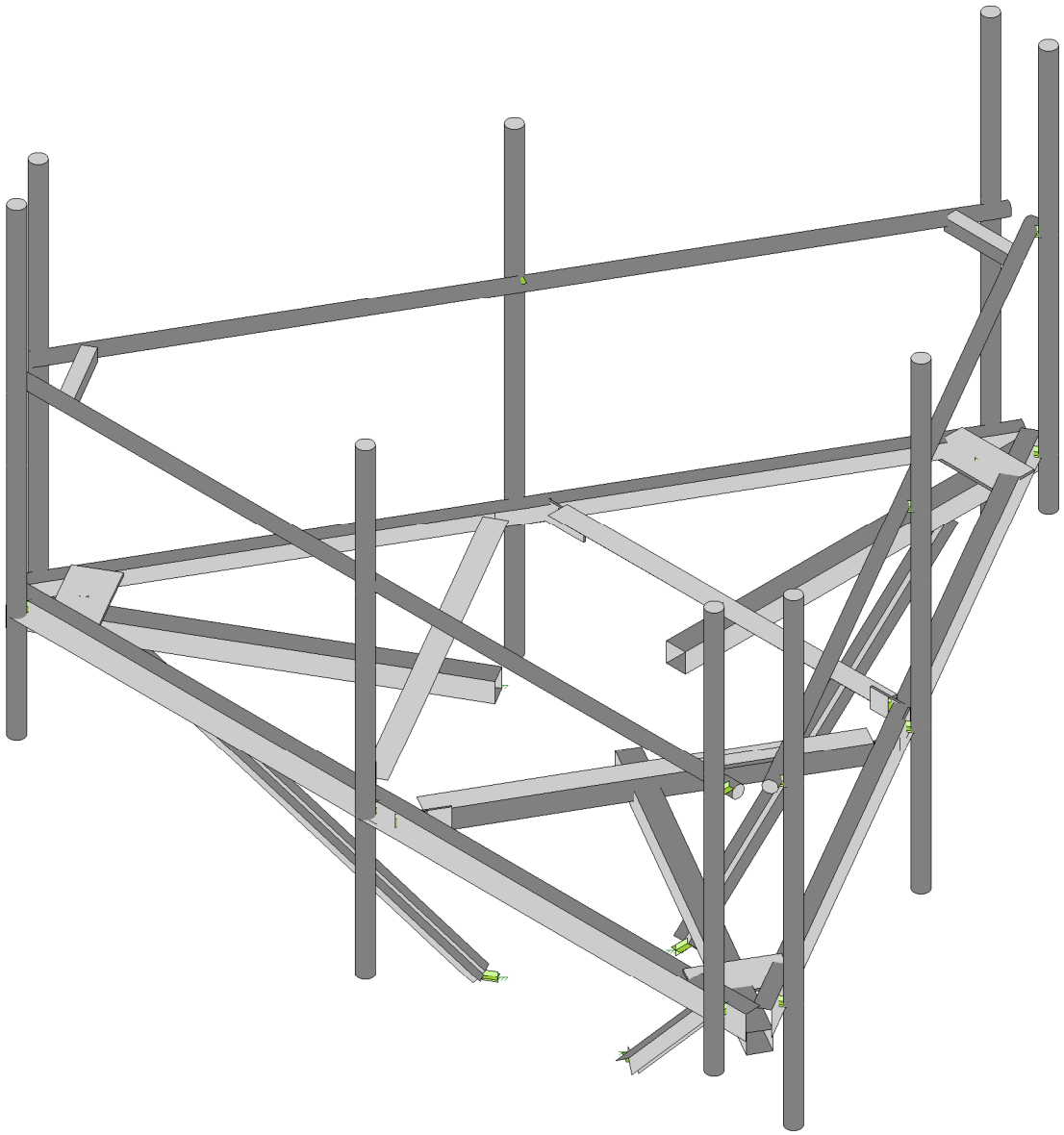
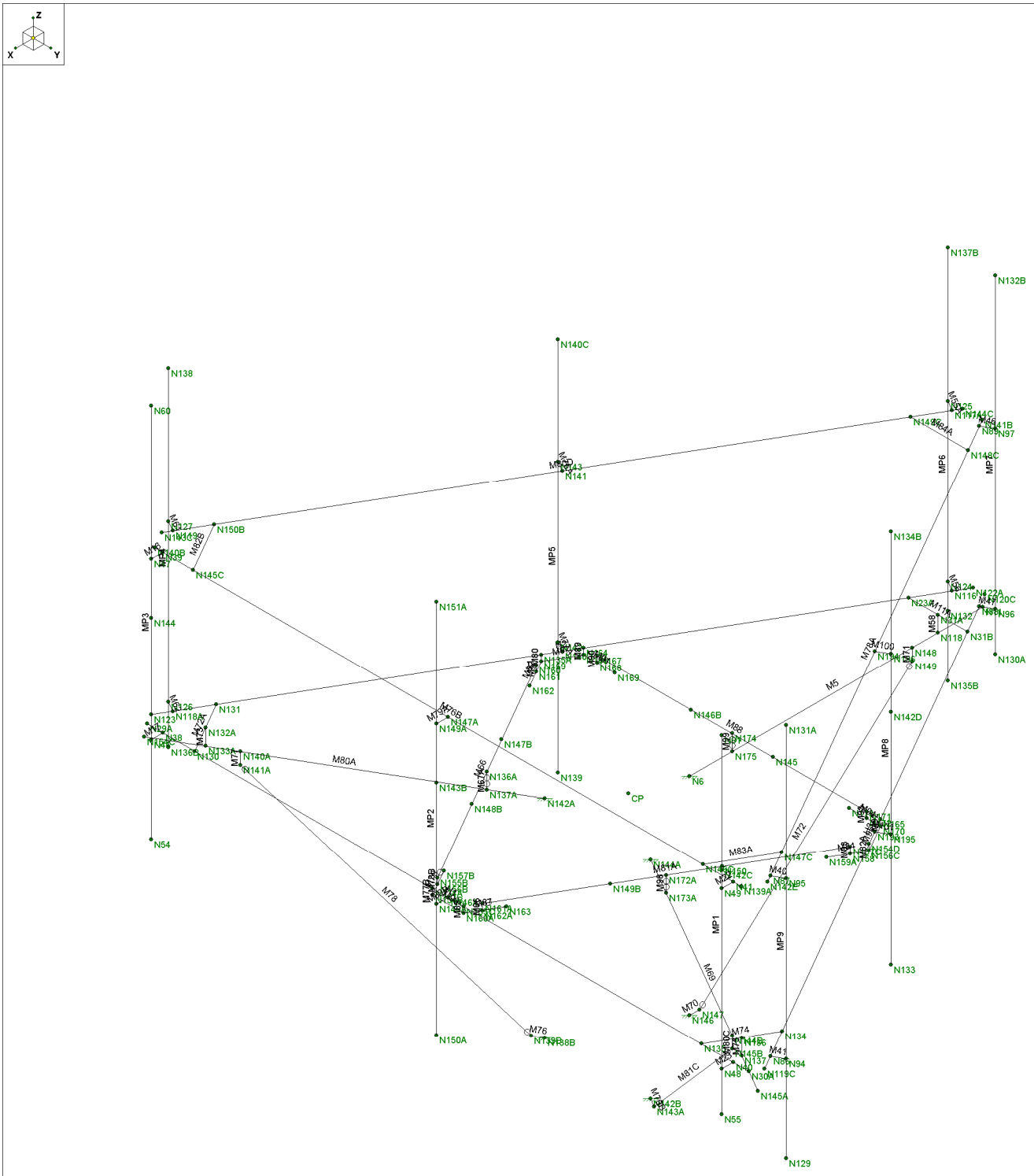
APPENDIX A

WIRE FRAME AND RENDERED MODELS



Envelope Only Solution

Trylon	876339	SK - 1
AF		July 29, 2022 at 4:26 PM
213576		876339_loaded.r3d



Envelope Only Solution

Trylon	876339	SK - 2
AF		July 29, 2022 at 4:26 PM
213576		876339_loaded.r3d

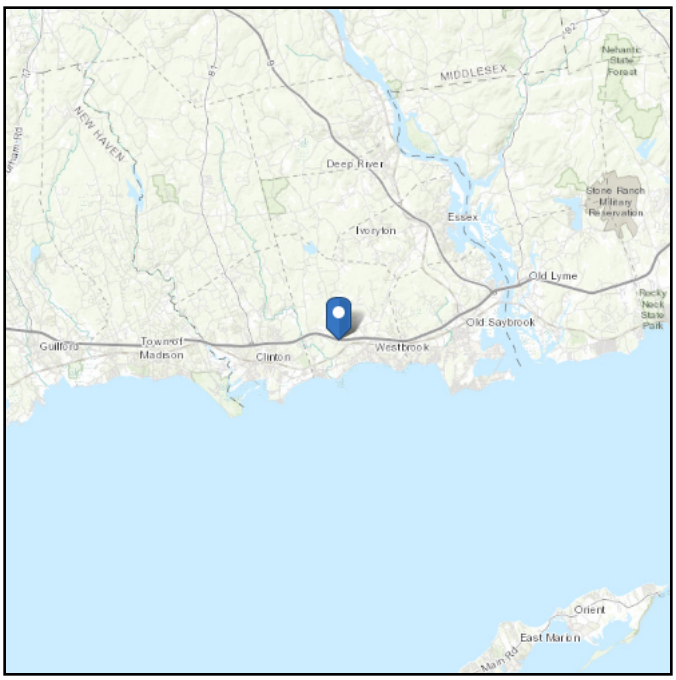
APPENDIX B

SOFTWARE INPUT CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-10	**Elevation:**	94.27 ft (NAVD 88)
Risk Category:	II	**Latitude:**	41.290494
Soil Class:	D - Stiff Soil	**Longitude:**	-72.468903



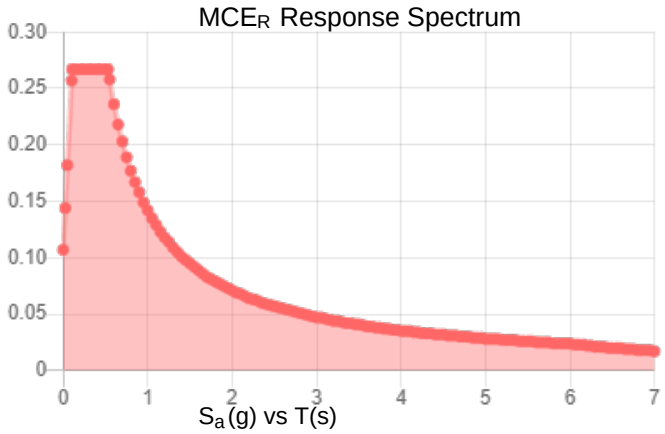
Seismic

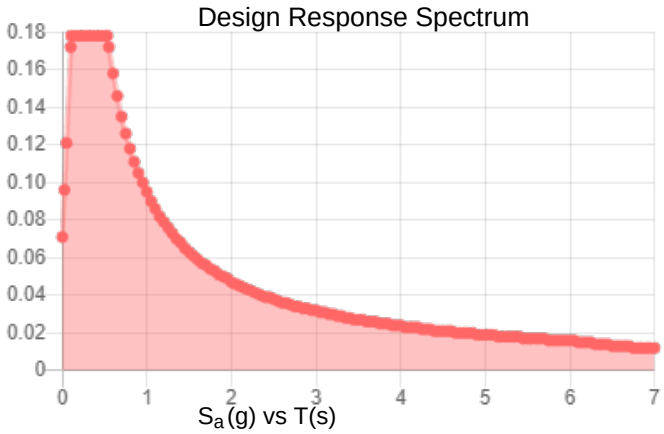
Site Soil Class: D - Stiff Soil

Results:

S_S :	0.167	S_{DS} :	0.178
S_1 :	0.059	S_{D1} :	0.095
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.084
S_{MS} :	0.267	PGA_M :	0.134
S_{M1} :	0.142	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B





Data Accessed: **Fri Jul 29 2022**

Date Source:

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

Ice

Results:

Ice Thickness:	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:	Fri Jul 29 2022

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

Values provided are equivalent radial ice thicknesses due to freezing rain with concurrent 3-second gust speeds, for a 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.

Trylon
1825 W. Walnut Hill Lane Suite 120
Irving, TX 75038

TIA LOAD CALCULATOR 2.2

PROJECT DATA	
Job Code:	213576
Carrier Site ID:	CT11032D
Carrier Site Name:	Westbrook/ I-95/ X64/ Ch1

CODES AND STANDARDS	
Building Code:	2015 IBC
Local Building Code:	2018 CSBC
Design Standard:	TIA-222-H

STRUCTURE DETAILS		
Mount Type:	Platform	--
Mount Elevation:	142.0	ft.
Number of Sectors:	3	--
Structure Type:	Monopole	--
Structure Height:	160.0	ft.

ANALYSIS CRITERIA		
Structure Risk Category:	II	--
Exposure Category:	B	--
Site Class:	D - Default	--
Ground Elevation:	94.27	ft.

TOPOGRAPHIC DATA		
Topographic Category:	1.00	--
Topographic Feature:	N/A	--
Crest Point Elevation:	0.00	ft.
Base Point Elevation:	0.00	ft.
Crest to Mid-Height (L/2):	0.00	ft.
Distance from Crest (x):	0.00	ft.
Base Topo Factor (K_{zt}):	1.00	--
Mount Topo Factor (K_{zt}):	1.00	--

WIND PARAMETERS		
Design Wind Speed:	135	mph
Wind Escalation Factor (K_s):	1.00	--
Velocity Coefficient (K_z):	1.09	--
Directionality Factor (K_d):	0.95	--
Gust Effect Factor (Gh):	1.00	--
Shielding Factor (K_a):	0.90	--
Velocity Pressure (q_z):	48.25	psf
Ground Elevation Factor (K_e):	1.00	--

ICE PARAMETERS		
Design Ice Wind Speed:	50	mph
Design Ice Thickness (t_i):	1.50	in
Importance Factor (I_i):	1.00	--
Ice Velocity Pressure (q_{zi}):	7.01	psf
Mount Ice Thickness (t_{iz}):	1.74	in

WIND STRUCTURE CALCULATIONS		
Flat Member Pressure:	86.85	psf
Round Member Pressure:	52.11	psf
Ice Wind Pressure:	7.57	psf

SEISMIC PARAMETERS		
Importance Factor (I_e):	1.00	--
Short Period Accel .(S_s):	0.17	g
1 Second Accel (S_1):	0.06	g
Short Period Des. (S_{DS}):	0.18	g
1 Second Des. (S_{D1}):	0.09	g
Short Period Coeff. (F_a):	1.60	--
1 Second Coeff. (F_v):	2.40	--
Response Coefficient (Cs):	0.09	--
Amplification Factor (A_S):	1.20	--

LOAD COMBINATIONS [LRFD]

#	Description
1	1.4DL
2	1.2DL + 1WL 0 AZI
3	1.2DL + 1WL 30 AZI
4	1.2DL + 1WL 45 AZI
5	1.2DL + 1WL 60 AZI
6	1.2DL + 1WL 90 AZI
7	1.2DL + 1WL 120 AZI
8	1.2DL + 1WL 135 AZI
9	1.2DL + 1WL 150 AZI
10	1.2DL + 1WL 180 AZI
11	1.2DL + 1WL 210 AZI
12	1.2DL + 1WL 225 AZI
13	1.2DL + 1WL 240 AZI
14	1.2DL + 1WL 270 AZI
15	1.2DL + 1WL 300 AZI
16	1.2DL + 1WL 315 AZI
17	1.2DL + 1WL 330 AZI
18	0.9DL + 1WL 0 AZI
19	0.9DL + 1WL 30 AZI
20	0.9DL + 1WL 45 AZI
21	0.9DL + 1WL 60 AZI
22	0.9DL + 1WL 90 AZI
23	0.9DL + 1WL 120 AZI
24	0.9DL + 1WL 135 AZI
25	0.9DL + 1WL 150 AZI
26	0.9DL + 1WL 180 AZI
27	0.9DL + 1WL 210 AZI
28	0.9DL + 1WL 225 AZI
29	0.9DL + 1WL 240 AZI
30	0.9DL + 1WL 270 AZI
31	0.9DL + 1WL 300 AZI
32	0.9DL + 1WL 315 AZI
33	0.9DL + 1WL 330 AZI
34	1.2DL + 1DLi + 1WLi 0 AZI
35	1.2DL + 1DLi + 1WLi 30 AZI
36	1.2DL + 1DLi + 1WLi 45 AZI
37	1.2DL + 1DLi + 1WLi 60 AZI
38	1.2DL + 1DLi + 1WLi 90 AZI
39	1.2DL + 1DLi + 1WLi 120 AZI
40	1.2DL + 1DLi + 1WLi 135 AZI
41	1.2DL + 1DLi + 1WLi 150 AZI

#	Description
42	1.2DL + 1DLi + 1WLi 180 AZI
43	1.2DL + 1DLi + 1WLi 210 AZI
44	1.2DL + 1DLi + 1WLi 225 AZI
45	1.2DL + 1DLi + 1WLi 240 AZI
46	1.2DL + 1DLi + 1WLi 270 AZI
47	1.2DL + 1DLi + 1WLi 300 AZI
48	1.2DL + 1DLi + 1WLi 315 AZI
49	1.2DL + 1DLi + 1WLi 330 AZI
50	(1.2+0.2Sds) + 1.0E 0 AZI
51	(1.2+0.2Sds) + 1.0E 30 AZI
52	(1.2+0.2Sds) + 1.0E 45 AZI
53	(1.2+0.2Sds) + 1.0E 60 AZI
54	(1.2+0.2Sds) + 1.0E 90 AZI
55	(1.2+0.2Sds) + 1.0E 120 AZI
56	(1.2+0.2Sds) + 1.0E 135 AZI
57	(1.2+0.2Sds) + 1.0E 150 AZI
58	(1.2+0.2Sds) + 1.0E 180 AZI
59	(1.2+0.2Sds) + 1.0E 210 AZI
60	(1.2+0.2Sds) + 1.0E 225 AZI
61	(1.2+0.2Sds) + 1.0E 240 AZI
62	(1.2+0.2Sds) + 1.0E 270 AZI
63	(1.2+0.2Sds) + 1.0E 300 AZI
64	(1.2+0.2Sds) + 1.0E 315 AZI
65	(1.2+0.2Sds) + 1.0E 330 AZI
66	(0.9-0.2Sds) + 1.0E 0 AZI
67	(0.9-0.2Sds) + 1.0E 30 AZI
68	(0.9-0.2Sds) + 1.0E 45 AZI
69	(0.9-0.2Sds) + 1.0E 60 AZI
70	(0.9-0.2Sds) + 1.0E 90 AZI
71	(0.9-0.2Sds) + 1.0E 120 AZI
72	(0.9-0.2Sds) + 1.0E 135 AZI
73	(0.9-0.2Sds) + 1.0E 150 AZI
74	(0.9-0.2Sds) + 1.0E 180 AZI
75	(0.9-0.2Sds) + 1.0E 210 AZI
76	(0.9-0.2Sds) + 1.0E 225 AZI
77	(0.9-0.2Sds) + 1.0E 240 AZI
78	(0.9-0.2Sds) + 1.0E 270 AZI
79	(0.9-0.2Sds) + 1.0E 300 AZI
80	(0.9-0.2Sds) + 1.0E 315 AZI
81	(0.9-0.2Sds) + 1.0E 330 AZI
82-88	1.2D + 1.5 Lv1

#	Description
89	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP1
90	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP1
91	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP1
92	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP1
93	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP1
94	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP1
95	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP1
96	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP1
97	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP1
98	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP1
99	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP1
100	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP1
101	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP1
102	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP1
103	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP1
104	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP1
105	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP2
106	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP2
107	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP2
108	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP2
109	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP2
110	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP2
111	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP2
112	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP2
113	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP2
114	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP2
115	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP2
116	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP2
117	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP2
118	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP2
119	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP2
120	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP2

#	Description
121	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP3
122	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP3
123	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP3
124	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP3
125	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP3
126	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP3
127	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP3
128	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP3
129	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP3
130	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP3
131	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP3
132	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP3
133	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP3
134	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP3
135	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP3
136	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP3
137	1.2D + 1.5Lm + 1.0Wm 0 AZI - MP4
138	1.2D + 1.5Lm + 1.0Wm 30 AZI - MP4
139	1.2D + 1.5Lm + 1.0Wm 45 AZI - MP4
140	1.2D + 1.5Lm + 1.0Wm 60 AZI - MP4
141	1.2D + 1.5Lm + 1.0Wm 90 AZI - MP4
142	1.2D + 1.5Lm + 1.0Wm 120 AZI - MP4
143	1.2D + 1.5Lm + 1.0Wm 135 AZI - MP4
144	1.2D + 1.5Lm + 1.0Wm 150 AZI - MP4
145	1.2D + 1.5Lm + 1.0Wm 180 AZI - MP4
146	1.2D + 1.5Lm + 1.0Wm 210 AZI - MP4
147	1.2D + 1.5Lm + 1.0Wm 225 AZI - MP4
148	1.2D + 1.5Lm + 1.0Wm 240 AZI - MP4
149	1.2D + 1.5Lm + 1.0Wm 270 AZI - MP4
150	1.2D + 1.5Lm + 1.0Wm 300 AZI - MP4
151	1.2D + 1.5Lm + 1.0Wm 315 AZI - MP4
152	1.2D + 1.5Lm + 1.0Wm 330 AZI - MP4

*This page shows an example of maintenance loads for (4) pipes, the number of mount pipe LCs may vary per site

EQUIPMENT LOADING

Appurtenance Name	Qty.	Elevation [ft]	--	EPA $_N$ (ft2)	EPA $_T$ (ft2)	Weight (lbs)
VV-65A-R1_TMO	3	145	No Ice	4.48	1.74	33.30
--	--	--	w/ Ice	5.94	3.05	137.91
APXVAALL24_43-U-NA20_TMO	3	145	No Ice	14.67	5.32	149.90
--	--	--	w/ Ice	17.04	7.41	426.07
AIR 6419 B41_TMO	3	145	No Ice	7	2.83	96.50
--	--	--	w/ Ice	8.69	4.17	170.89
RADIO 4449 B71 B85A_T-MOBILE	3	145	No Ice	1.97	1.59	73.21
--	--	--	w/ Ice	2.40	1.99	81.66
RADIO 4460 B2/B25 B66_TMO	3	145	No Ice	2.14	1.69	109.00
--	--	--	w/ Ice	2.58	2.09	90.62
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
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			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			

EQUIPMENT LOADING [CONT.]

Appurtenance Name	Qty.	Elevation [ft]	--	EPA $_N$ (ft2)	EPA $_T$ (ft2)	Weight (lbs)
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			
			No Ice			
--	--	--	w/ Ice			

EQUIPMENT WIND CALCULATIONS

Appurtenance Name	Qty.	Elevation [ft]	K_{zt}	K_z	K_d	t_d	q_z [psf]	q_{zi} [psf]
VV-65A-R1_TMO	3	145	1.00	1.10	0.95	1.74	48.54	6.66
XVAALL24_43-U-NA20_TI	3	145	1.00	1.10	0.95	1.74	48.54	6.66
AIR 6419 B41_TMO	3	145	1.00	1.10	0.95	1.74	48.54	6.66
DIO 4449 B71 B85A_T-MOI	3	145	1.00	1.10	0.95	1.74	48.54	6.66
ADIO 4460 B2/B25 B66_TM	3	145	1.00	1.10	0.95	1.74	48.54	6.66

EQUIPMENT LATERAL WIND FORCE CALCULATIONS

Appurtenance Name	Qty.	--	0° 180°	30° 210°	60° 240°	90° 270°	120° 300°	150° 330°
VV-65A-R1_TMO	3	No Ice	195.72	105.94	165.79	76.02	165.79	105.94
--	--	w/ Ice	35.61	22.60	31.27	18.26	31.27	22.60
APXVAALL24_43-U-NA20_TMO	3	No Ice	640.89	334.54	538.77	232.42	538.77	334.54
--	--	w/ Ice	102.10	58.81	87.67	44.38	87.67	58.81
AIR 6419 B41_TMO	3	No Ice	305.81	169.18	260.27	123.64	260.27	169.18
--	--	w/ Ice	52.05	31.75	45.28	24.98	45.28	31.75
ADIO 4449 B71 B85A_T-MOBIL	3	No Ice	86.07	73.50	81.88	69.31	81.88	73.50
--	--	w/ Ice	14.40	12.54	13.78	11.92	13.78	12.54
RADIO 4460 B2/B25 B66_TMO	3	No Ice	93.45	78.60	88.50	73.65	88.50	78.60
--	--	w/ Ice	15.48	13.27	14.75	12.54	14.75	13.27
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
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		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						

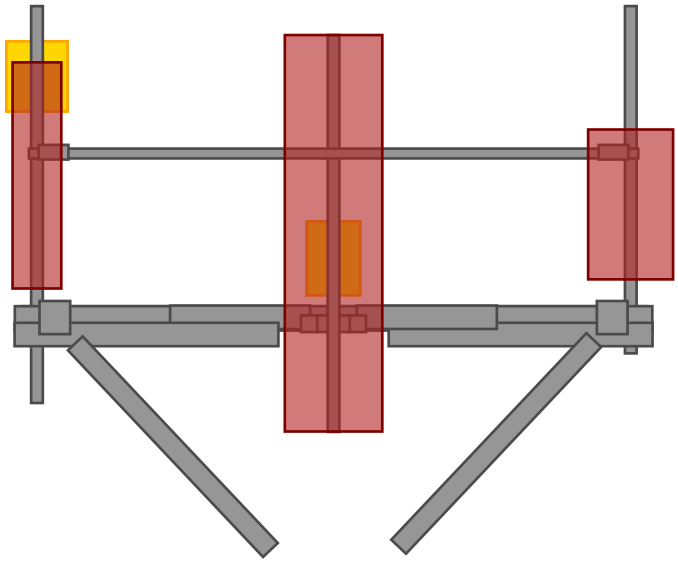
EQUIPMENT LATERAL WIND FORCE CALCULATIONS [CONT.]

Appurtenance Name	Qty.	--	0° 180°	30° 210°	60° 240°	90° 270°	120° 300°	150° 330°
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						
		No Ice						
--	--	w/ Ice						

EQUIPMENT SEISMIC FORCE CALCULATIONS

Appurtenance Name	*Qty.*	*Elevation [ft]*	*Weight [lbs]*	F_p [lbs]
VV-65A-R1_TMO	3	145	33.3	3.56
APXVAALL24_43-U-NA20_TMO	3	145	149.9	16.02
AIR 6419 B41_TMO	3	145	96.5	10.31
RADIO 4449 B71 B85A_T-MOBILE	3	145	73.21	7.82
RADIO 4460 B2/B25 B66_TMO	3	145	109	11.65

ELEVATION VIEW

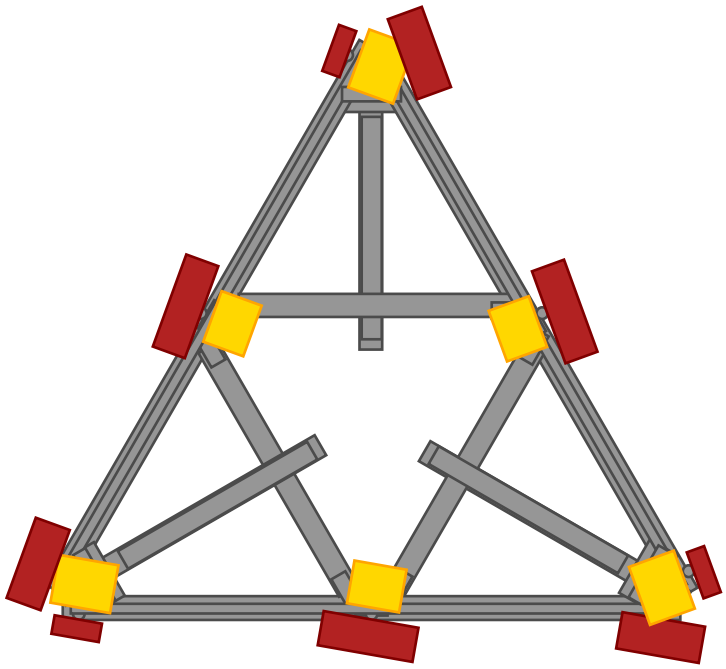


MP3 MP2 MP1

*these drawings are intended to show approximate locations of equipment on the mount and should not be used to determine exact placement of equipment or additional hardware

**Elevation View Shows Only One Sector

PLAN VIEW



1825 W. Walnut Hill Lane, Suite 120
Irving, Texas 75038

Equipment Name	Total Quantity	Antenna Centerline	Mount Pipe Positions	Equipment Azimuths
VV-65A-R1_TMO	3	145	MP3/MP6/MP9	10/110/250
APXVAALL24_43-U-NA20_TMO	3	145	MP2/MP5/MP8	10/110/250
AIR 6419 B41_TMO	3	145	MP1/MP4/MP7	10/110/250
RADIO 4449 B71 B85A_T-MOBILE	3	145	MP2/MP5/MP8	10/110/250
RADIO 4460 B2/B25 B66_TMO	3	145	MP3/MP6/MP9	10/110/250

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	Yes
Max Iterations for Wall Stiffness	3
Gravity Acceleration (in/sec^2)	386.4
Wall Mesh Size (in)	24
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Z
Global Member Orientation Plane	XY
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

Hot Rolled Steel Code	AISC 15th(360-16): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 15th(360-16): LRFD
Cold Formed Steel Code	AISI S100-16: LRFD
Wood Code	None
Wood Temperature	< 100F
Concrete Code	None
Masonry Code	None
Aluminum Code	None - Building
Stainless Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)

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

(Global) Model Settings, Continued

Seismic Code	ASCE 7-16
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Drift Cat	Other
Om Z	1
Om X	1
Cd Z	1
Cd X	1
Rho Z	1
Rho X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1...	Density[k/f...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
8	Q345	29000	11154	.3	.65	.49	36	1.5	58	1.2
9	Q235-GB	29000	11154	.3	.65	.49	35	1.5	58	1.2

Cold Formed Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E5 F)	Density[k/ft^3]	Yield[ksi]	Fu[ksi]
1	A653 SS Gr33	29500	11346	.3	.65	.49	33	45
2	A653 SS Gr50/1	29500	11346	.3	.65	.49	50	65

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	HSS4X4X3	HSS4X4X3	Beam	Tube	A500 Gr.B Rect	Typical	2.58	6.21	6.21	10
2	L5X3X4	L5X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.94	1.41	5.09	.044
3	L3X3X3	L3X3X3	Beam	Single Angle	A36 Gr.36	Typical	1.09	.948	.948	.014
4	PL8X0.5	PL8X0.5	Beam	RECT	A36 Gr.36	Typical	4	.083	21.333	.32
5	PIPE_2.5	PIPE_2.5	Beam	Pipe	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
6	PL4X0.375	PL4X0.375	Beam	RECT	A36 Gr.36	Typical	1.5	.018	2	.066
7	L4X4X4	L4X4X4	Beam	Single Angle	A36 Gr.36	Typical	1.93	3	3	.044
8	LL2.5X2.5X3_0	LL2.5X2.5X3_0	Beam	Double Angle (...	A36 Gr.36	Typical	1.809	1.969	1.096	.02
9	PL6X0.5	PL6X0.5	Beam	RECT	A36 Gr.36	Typical	3	.063	9	.237
10	PIPE_2.0	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25

Hot Rolled Steel Section Sets (Continued)

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
11	L2.5x2.5x4	L2.5x2.5x4	Beam	Single Angle	A36 Gr.36	Typical	1.19	.692	.692	.026

Cold Formed Steel Section Sets

	Label	Shape	Type	Design ...	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	CF1A	8CU1.25X057	Beam	None	A653 S...	Typical	.581	.057	4.41	.00063

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N6	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N142A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N144A	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
4	N146	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
5	N147						
6	N148						
7	N149						
8	N138B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
9	N139B						
10	N140A						
11	N141A						
12	N142B	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
13	N143A						
14	N144B						
15	N145B						

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
1	Self Weight	DL			-1		24		3	
2	Structure Wind X	WLX						81		
3	Structure Wind Y	WLY						81		
4	Wind Load 0 AZI	WLX					48			
5	Wind Load 30 AZI	None					48			
6	Wind Load 45 AZI	None					48			
7	Wind Load 60 AZI	None					48			
8	Wind Load 90 AZI	WLY					48			
9	Wind Load 120 AZI	None					48			
10	Wind Load 135 AZI	None					48			
11	Wind Load 150 AZI	None					48			
12	Ice Weight	OL1					24	81	3	
13	Ice Structure Wind X	OL2						81		
14	Ice Structure Wind Y	OL3						81		
15	Ice Wind Load 0 AZI	OL2					48			
16	Ice Wind Load 30 AZI	None					48			
17	Ice Wind Load 45 AZI	None					48			
18	Ice Wind Load 60 AZI	None					48			
19	Ice Wind Load 90 AZI	OL3					48			
20	Ice Wind Load 120 AZI	None					48			
21	Ice Wind Load 135 AZI	None					48			
22	Ice Wind Load 150 AZI	None					48			
23	Seismic Load X	ELX	-.107				24			
24	Seismic Load Y	ELY		-.107			24			
25	Live Load 1 (Lv)	None					1			
26	Live Load 2 (Lv)	None					1			

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed	Area(Me...	Surface(P...
27	Live Load 3 (Lv)	None					1			
28	Live Load 4 (Lv)	None					1			
29	Live Load 5 (Lv)	None					1			
30	Live Load 6 (Lv)	None					1			
31	Live Load 7 (Lv)	None					1			
32	Live Load 8 (Lv)	None					1			
33	Live Load 9 (Lv)	None					1			
34	Maintenance Load 1 (...	None					1			
35	Maintenance Load 2 (...	None					1			
36	Maintenance Load 3 (...	None					1			
37	Maintenance Load 4 (...	None					1			
38	Maintenance Load 5 (...	None					1			
39	Maintenance Load 6 (...	None					1			
40	Maintenance Load 7 (...	None					1			
41	Maintenance Load 8 (...	None					1			
42	Maintenance Load 9 (...	None					1			
43	BLC 1 Transient Area...	None						48		
44	BLC 12 Transient Are...	None						48		

Load Combinations

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
1	1.4DL	Yes	Y		DL	1.4																		
2	1.2DL + 1WL 0 ...	Yes	Y		DL	1.2	2	1	3		4	1												
3	1.2DL + 1WL 30 ...	Yes	Y		DL	1.2	2	.866	3	.5	5	1												
4	1.2DL + 1WL 45 ...	Yes	Y		DL	1.2	2	.707	3	.707	6	1												
5	1.2DL + 1WL 60 ...	Yes	Y		DL	1.2	2	.5	3	.866	7	1												
6	1.2DL + 1WL 90 ...	Yes	Y		DL	1.2	2		3	1	8	1												
7	1.2DL + 1WL 12...	Yes	Y		DL	1.2	2	-.5	3	.866	9	1												
8	1.2DL + 1WL 13...	Yes	Y		DL	1.2	2	-.707	3	.707	10	1												
9	1.2DL + 1WL 15...	Yes	Y		DL	1.2	2	-.866	3	.5	11	1												
10	1.2DL + 1WL 18...	Yes	Y		DL	1.2	2	-1	3		4	-1												
11	1.2DL + 1WL 21...	Yes	Y		DL	1.2	2	-.866	3	-.5	5	-1												
12	1.2DL + 1WL 22...	Yes	Y		DL	1.2	2	-.707	3	-.707	6	-1												
13	1.2DL + 1WL 24...	Yes	Y		DL	1.2	2	-.5	3	-.866	7	-1												
14	1.2DL + 1WL 27...	Yes	Y		DL	1.2	2		3	-1	8	-1												
15	1.2DL + 1WL 30...	Yes	Y		DL	1.2	2	.5	3	-.866	9	-1												
16	1.2DL + 1WL 31...	Yes	Y		DL	1.2	2	.707	3	-.707	10	-1												
17	1.2DL + 1WL 33...	Yes	Y		DL	1.2	2	.866	3	-.5	11	-1												
18	0.9DL + 1WL 0 ...	Yes	Y		DL	.9	2	1	3		4	1												
19	0.9DL + 1WL 30 ...	Yes	Y		DL	.9	2	.866	3	.5	5	1												
20	0.9DL + 1WL 45 ...	Yes	Y		DL	.9	2	.707	3	.707	6	1												
21	0.9DL + 1WL 60 ...	Yes	Y		DL	.9	2	.5	3	.866	7	1												
22	0.9DL + 1WL 90 ...	Yes	Y		DL	.9	2		3	1	8	1												
23	0.9DL + 1WL 12...	Yes	Y		DL	.9	2	-.5	3	.866	9	1												
24	0.9DL + 1WL 13...	Yes	Y		DL	.9	2	-.707	3	.707	10	1												
25	0.9DL + 1WL 15...	Yes	Y		DL	.9	2	-.866	3	.5	11	1												
26	0.9DL + 1WL 18...	Yes	Y		DL	.9	2	-1	3		4	-1												
27	0.9DL + 1WL 21...	Yes	Y		DL	.9	2	-.866	3	-.5	5	-1												
28	0.9DL + 1WL 22...	Yes	Y		DL	.9	2	-.707	3	-.707	6	-1												
29	0.9DL + 1WL 24...	Yes	Y		DL	.9	2	-.5	3	-.866	7	-1												
30	0.9DL + 1WL 27...	Yes	Y		DL	.9	2		3	-1	8	-1												
31	0.9DL + 1WL 30...	Yes	Y		DL	.9	2	.5	3	-.866	9	-1												
32	0.9DL + 1WL 31...	Yes	Y		DL	.9	2	.707	3	-.707	10	-1												
33	0.9DL + 1WL 33...	Yes	Y		DL	.9	2	.866	3	-.5	11	-1												
34	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13	1	14		15	1										

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
35	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13	.866	14	.5	16	1												
36	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13	.707	14	.707	17	1												
37	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13	.5	14	.866	18	1												
38	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13		14	1	19	1												
39	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13	-.5	14	.866	20	1												
40	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13	-.707	14	.707	21	1												
41	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13	-.866	14	.5	22	1												
42	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13	-1	14		15	-1												
43	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13	-.866	14	-.5	16	-1												
44	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13	-.707	14	-.707	17	-1												
45	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13	-.5	14	-.866	18	-1												
46	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13		14	-1	19	-1												
47	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13	.5	14	-.866	20	-1												
48	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13	.707	14	-.707	21	-1												
49	1.2DL + 1DLi + 1...	Yes	Y		DL	1.2	OL1	1	13	.866	14	-.5	22	-1												
50	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23	1	24																	
51	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23	.866	24	.5																
52	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23	.707	24	.707																
53	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23	.5	24	.866																
54	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23		24	1																
55	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23	-.5	24	.866																
56	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23	-.707	24	.707																
57	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23	-.866	24	.5																
58	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23	-1	24																	
59	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23	-.866	24	-.5																
60	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23	-.707	24	-.707																
61	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23	-.5	24	-.866																
62	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23		24	-1																
63	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23	.5	24	-.866																
64	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23	.707	24	-.707																
65	(1.2+0.2Sds)DL ...	Yes	Y		DL	1.236	23	.866	24	-.5																
66	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23	1	24																	
67	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23	.866	24	.5																
68	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23	.707	24	.707																
69	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23	.5	24	.866																
70	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23		24	1																
71	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23	-.5	24	.866																
72	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23	-.707	24	.707																
73	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23	-.866	24	.5																
74	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23	-1	24																	
75	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23	-.866	24	-.5																
76	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23	-.707	24	-.707																
77	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23	-.5	24	-.866																
78	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23		24	-1																
79	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23	.5	24	-.866																
80	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23	.707	24	-.707																
81	(0.9-0.2Sds)DL ...	Yes	Y		DL	.864	23	.866	24	-.5																
82	1.2DL + 1Lv1	Yes	Y		DL	1.2	25	1.5																		
83	1.2DL + 1Lv2	Yes	Y		DL	1.2	26	1.5																		
84	1.2DL + 1Lv3	Yes	Y		DL	1.2	27	1.5																		
85	1.2DL + 1Lv4	Yes	Y		DL	1.2	28	1.5																		
86	1.2DL + 1Lv5	Yes	Y		DL	1.2	29	1.5																		
87	1.2DL + 1Lv6	Yes	Y		DL	1.2	30	1.5																		
88	1.2DL + 1Lv7	Yes	Y		DL	1.2	31	1.5																		
89	1.2DL + 1Lv8	Yes	Y		DL	1.2	32	1.5																		
90	1.2DL + 1Lv9	Yes	Y		DL	1.2	33	1.5																		
91	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2	.049	3		4	.049												

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
92	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2	.043	3	.025	5	.049										
93	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2	.035	3	.035	6	.049										
94	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2	.025	3	.043	7	.049										
95	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2		3	.049	8	.049										
96	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2	-.025	3	.043	9	.049										
97	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2	-.035	3	.035	10	.049										
98	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2	-.043	3	.025	11	.049										
99	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2	-.049	3		4	-.049										
100	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2	-.043	3	-.025	5	-.049										
101	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2	-.035	3	-.035	6	-.049										
102	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2	-.025	3	-.043	7	-.049										
103	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2		3	-.049	8	-.049										
104	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2	.025	3	-.043	9	-.049										
105	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2	.035	3	-.035	10	-.049										
106	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	34	1.5	2	.043	3	-.025	11	-.049										
107	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2	.049	3		4	.049										
108	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2	.043	3	.025	5	.049										
109	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2	.035	3	.035	6	.049										
110	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2	.025	3	.043	7	.049										
111	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2		3	.049	8	.049										
112	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2	-.025	3	.043	9	.049										
113	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2	-.035	3	.035	10	.049										
114	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2	-.043	3	.025	11	.049										
115	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2	-.049	3		4	-.049										
116	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2	-.043	3	-.025	5	-.049										
117	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2	-.035	3	-.035	6	-.049										
118	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2	-.025	3	-.043	7	-.049										
119	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2		3	-.049	8	-.049										
120	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2	.025	3	-.043	9	-.049										
121	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2	.035	3	-.035	10	-.049										
122	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	35	1.5	2	.043	3	-.025	11	-.049										
123	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2	.049	3		4	.049										
124	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2	.043	3	.025	5	.049										
125	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2	.035	3	.035	6	.049										
126	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2	.025	3	.043	7	.049										
127	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2		3	.049	8	.049										
128	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2	-.025	3	.043	9	.049										
129	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2	-.035	3	.035	10	.049										
130	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2	-.043	3	.025	11	.049										
131	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2	-.049	3		4	-.049										
132	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2	-.043	3	-.025	5	-.049										
133	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2	-.035	3	-.035	6	-.049										
134	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2	-.025	3	-.043	7	-.049										
135	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2		3	-.049	8	-.049										
136	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2	.025	3	-.043	9	-.049										
137	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2	.035	3	-.035	10	-.049										
138	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	36	1.5	2	.043	3	-.025	11	-.049										
139	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2	.049	3		4	.049										
140	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2	.043	3	.025	5	.049										
141	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2	.035	3	.035	6	.049										
142	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2	.025	3	.043	7	.049										
143	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2		3	.049	8	.049										
144	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2	-.025	3	.043	9	.049										
145	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2	-.035	3	.035	10	.049										
146	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2	-.043	3	.025	11	.049										
147	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2	-.049	3		4	-.049										
148	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2	-.043	3	-.025	5	-.049										

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
149	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2	-.035	3	-.035	6	-.049										
150	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2	-.025	3	-.043	7	-.049										
151	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2		3	-.049	8	-.049										
152	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2	.025	3	-.043	9	-.049										
153	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2	.035	3	-.035	10	-.049										
154	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	37	1.5	2	.043	3	-.025	11	-.049										
155	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2	.049	3		4	.049										
156	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2	.043	3	.025	5	.049										
157	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2	.035	3	.035	6	.049										
158	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2	.025	3	.043	7	.049										
159	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2		3	.049	8	.049										
160	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2	-.025	3	.043	9	.049										
161	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2	-.035	3	.035	10	.049										
162	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2	-.043	3	.025	11	.049										
163	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2	-.049	3		4	-.049										
164	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2	-.043	3	-.025	5	-.049										
165	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2	-.035	3	-.035	6	-.049										
166	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2	-.025	3	-.043	7	-.049										
167	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2		3	-.049	8	-.049										
168	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2	.025	3	-.043	9	-.049										
169	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2	.035	3	-.035	10	-.049										
170	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	38	1.5	2	.043	3	-.025	11	-.049										
171	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2	.049	3		4	.049										
172	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2	.043	3	.025	5	.049										
173	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2	.035	3	.035	6	.049										
174	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2	.025	3	.043	7	.049										
175	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2		3	.049	8	.049										
176	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2	-.025	3	.043	9	.049										
177	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2	-.035	3	.035	10	.049										
178	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2	-.043	3	.025	11	.049										
179	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2	-.049	3		4	-.049										
180	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2	-.043	3	-.025	5	-.049										
181	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2	-.035	3	-.035	6	-.049										
182	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2	-.025	3	-.043	7	-.049										
183	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2		3	-.049	8	-.049										
184	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2	.025	3	-.043	9	-.049										
185	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2	.035	3	-.035	10	-.049										
186	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	39	1.5	2	.043	3	-.025	11	-.049										
187	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2	.049	3		4	.049										
188	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2	.043	3	.025	5	.049										
189	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2	.035	3	.035	6	.049										
190	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2	.025	3	.043	7	.049										
191	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2		3	.049	8	.049										
192	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2	-.025	3	.043	9	.049										
193	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2	-.035	3	.035	10	.049										
194	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2	-.043	3	.025	11	.049										
195	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2	-.049	3		4	-.049										
196	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2	-.043	3	-.025	5	-.049										
197	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2	-.035	3	-.035	6	-.049										
198	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2	-.025	3	-.043	7	-.049										
199	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2		3	-.049	8	-.049										
200	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2	.025	3	-.043	9	-.049										
201	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2	.035	3	-.035	10	-.049										
202	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	40	1.5	2	.043	3	-.025	11	-.049										
203	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2	.049	3		4	.049										
204	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2	.043	3	.025	5	.049										
205	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2	.035	3	.035	6	.049										

Load Combinations (Continued)

	Description	So...	P...	S...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...	BLC	Fac...
206	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2	.025	3	.043	7	.049										
207	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2		3	.049	8	.049										
208	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2	-.025	3	.043	9	.049										
209	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2	-.035	3	.035	10	.049										
210	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2	-.043	3	.025	11	.049										
211	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2	-.049	3		4	-.049										
212	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2	-.043	3	-.025	5	-.049										
213	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2	-.035	3	-.035	6	-.049										
214	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2	-.025	3	-.043	7	-.049										
215	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2		3	-.049	8	-.049										
216	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2	.025	3	-.043	9	-.049										
217	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2	.035	3	-.035	10	-.049										
218	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	41	1.5	2	.043	3	-.025	11	-.049										
219	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2	.049	3		4	.049										
220	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2	.043	3	.025	5	.049										
221	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2	.035	3	.035	6	.049										
222	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2	.025	3	.043	7	.049										
223	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2		3	.049	8	.049										
224	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2	-.025	3	.043	9	.049										
225	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2	-.035	3	.035	10	.049										
226	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2	-.043	3	.025	11	.049										
227	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2	-.049	3		4	-.049										
228	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2	-.043	3	-.025	5	-.049										
229	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2	-.035	3	-.035	6	-.049										
230	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2	-.025	3	-.043	7	-.049										
231	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2		3	-.049	8	-.049										
232	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2	.025	3	-.043	9	-.049										
233	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2	.035	3	-.035	10	-.049										
234	1.2DL + 1.5Lm +...	Yes	Y		DL	1.2	42	1.5	2	.043	3	-.025	11	-.049										

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N6	max	4984.865	2	563.182	22	1027.743	42	383.274	30	857.428	10	1594.713	14
2		min	-4504.565	26	-564.091	30	-174.125	18	-401.975	6	-423.169	18	-1598.316	6
3	N142A	max	2505.691	31	4616.72	7	1018.677	47	423.181	24	244.036	22	968.293	14
4		min	-2752.572	7	-4198.147	31	-199.02	23	-784.365	16	-476.195	14	-977.953	6
5	N144A	max	2415.603	21	4005.077	21	1018.394	37	748.802	5	304.647	31	996.699	14
6		min	-2667.621	13	-4422.151	13	-179.527	29	-367.154	29	-500.394	7	-992.81	6
7	N146	max	560.759	26	54.394	22	2563.654	34	.199	32	534.095	34	11.294	30
8		min	-2711.6	34	-54.421	30	-566.414	26	-.21	8	-118.003	26	-11.279	22
9	N138B	max	1366.974	39	558.294	31	2585.082	39	119.019	31	68.624	31	18.013	19
10		min	-325.412	31	-2366.121	39	-659.451	31	-466.404	39	-269.283	39	-17.997	27
11	N142B	max	1363.196	45	2359.381	45	2577.998	45	465.15	45	62.154	21	17.99	25
12		min	-291.734	21	-500.194	21	-597.851	21	-107.936	21	-268.503	45	-17.98	33
13	Totals:	max	5982.414	18	6236.623	22	9709.481	36						
14		min	-5982.422	10	-6236.623	30	2548.925	75						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
1	H1	L5X3X4	.562	11.229	7	.265	77	y	48	36671.7...	62856	1574.351	4556.571	1	H2-1
2	H2	L5X3X4	.562	142....	7	.264	77	y	47	36671.7...	62856	1574.351	4556.571	1	H2-1
3	H3	L5X3X4	.558	11.229	13	.265	77	y	38	36671.7...	62856	1574.351	4556.571	1	H2-1
4	M74	PL8X0.5	.431	7.559	46	.183	7.559	y	14	112172....	129600	1350	21600	2....	H1-1b
5	M72A	PL8X0.5	.430	7.559	41	.177	7.559	y	9	112172....	129600	1350	21600	2....	H1-1b

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

	Member	Shape	Code Check	Loc[in]	LC	Shear ...	Loc[in]	Dir	LC	phi*Pnc ...	phi*Pnt [...	phi*Mn y...	phi*Mn z...	Cb	Eqn
6	M11A	PL8X0.5	.426	7.559	36	.175	0	y	1...	112172....	129600	1350	21600	2....	H1-1b
7	MP5	PIPE_2.5	.415	67	16	.079	67		17	25752.8...	50715	3596.25	3596.25	2....	H1-1b
8	MP8	PIPE_2.5	.410	67	5	.075	67		11	25752.8...	50715	3596.25	3596.25	1	H1-1b
9	M80D	PIPE_2.0	.406	9.375	14	.193	139....		5	6295.422	32130	1871.625	1871.625	2....	H1-1b
10	MP2	PIPE_2.5	.403	67	14	.081	67		6	25752.8...	50715	3596.25	3596.25	2....	H1-1b
11	M81A	L4X4X4	.402	34.474	38	.029	34.474	z	49	48150.8...	62532	3137.597	6714.886	1....	H2-1
12	M66	L4X4X4	.399	34.474	46	.029	34.474	z	43	48150.8...	62532	3137.597	6714.886	1....	H2-1
13	M88	L4X4X4	.394	34.474	44	.030	34.474	z	14	48150.8...	62532	3137.597	6714.886	1....	H2-1
14	M78A	PIPE_2.0	.382	140....	6	.190	139....		15	6295.422	32130	1871.625	1871.625	1....	H1-1b
15	M76B	PIPE_2.0	.381	140....	16	.192	139....		10	6295.422	32130	1871.625	1871.625	1....	H1-1b
16	M82B	L2.5x2.5x4	.377	0	10	.086	14.697	y	11	36714.1...	38556	1113.554	2537.388	2....	H2-1
17	M83A	L2.5x2.5x4	.373	0	15	.093	0	y	17	36714.1...	38556	1113.554	2537.388	2....	H2-1
18	M84A	L2.5x2.5x4	.360	0	5	.099	0	y	6	36714.1...	38556	1113.554	2537.388	2....	H2-1
19	MP1	PIPE_2.5	.304	73.5	14	.141	73.5		16	33961.6...	50715	3596.25	3596.25	2....	H1-1b
20	MP4	PIPE_2.5	.297	73.5	9	.126	73.5		10	33961.6...	50715	3596.25	3596.25	1	H1-1b
21	MP3	PIPE_2.5	.296	74	6	.119	74		4	37773.8...	50715	3596.25	3596.25	1	H1-1b
22	MP6	PIPE_2.5	.294	74	16	.135	74		14	37773.8...	50715	3596.25	3596.25	2....	H1-1b
23	MP7	PIPE_2.5	.291	73.5	4	.144	73.5		6	33961.6...	50715	3596.25	3596.25	1	H1-1b
24	MP9	PIPE_2.5	.278	74	11	.122	74		9	37773.8...	50715	3596.25	3596.25	1....	H1-1b
25	M80A	HSS4X4X3	.185	57.032	6	.079	57.032	y	41	91274.1...	106812	12661.5	12661.5	2....	H1-1b
26	M69	HSS4X4X3	.183	57.032	14	.079	57.032	y	47	91274.1...	106812	12661.5	12661.5	2....	H1-1b
27	M5	HSS4X4X3	.180	57.032	17	.079	57.032	y	37	91274.1...	106812	12661.5	12661.5	2....	H1-1b
28	M79	PL4X0.375	.179	8	14	.086	4.5	y	6	45997.7...	48600	379.688	4050	1....	H1-1b
29	M87	PL4X0.375	.179	8	6	.086	4.5	y	14	45997.7...	48600	379.688	4050	1....	H1-1b
30	M91	PL4X0.375	.154	8	9	.073	4.5	y	16	45997.7...	48600	379.688	4050	1....	H1-1b
31	M94	PL4X0.375	.147	8	11	.070	4.5	y	12	45997.7...	48600	379.688	4050	1....	H1-1b
32	M82	PL4X0.375	.136	8	17	.065	4.5	y	17	45997.7...	48600	379.688	4050	1....	H1-1b
33	M81C	LL2.5X2.5X3_0	.127	36.977	15	.008	0	z	15	36439.55	58621.7...	3393.131	2580.341	1....	H1-1b
34	M84	PL4X0.375	.127	8	3	.062	4.5	y	10	45997.7...	48600	379.688	4050	1....	H1-1b
35	M78	LL2.5X2.5X3_0	.127	36.977	5	.008	73.954	z	13	36439.55	58621.7...	3393.131	2580.341	1....	H1-1b
36	M72	LL2.5X2.5X3_0	.102	0	34	.005	73.954	y	3	36439.55	58621.7...	3393.131	2580.341	1	H1-1b*
37	M97	PL4X0.375	.092	0	9	.041	7.999	y	1...	36457.5...	48600	379.688	4050	2....	H1-1b
38	M96	PL4X0.375	.091	7.999	14	.041	0	y	2...	36457.5...	48600	379.688	4050	2....	H1-1b
39	M95	PL4X0.375	.087	0	11	.042	0	y	1...	36457.5...	48600	379.688	4050	2....	H1-1b

Envelope AISI S100-16: LRFD Cold Formed Steel Code Checks

Member	Shape	Code ...	Loc[in]	LC	Shear...	Loc[in]	Dir	LC	phi*Pn[l...	phi*Tn[l...	phi*Mn...	phi*Mn...	phi*...	phi*...	Cb	Eqn
No Data to Print ...																

APPENDIX D

ADDITIONAL CALCULATIONS

Trylon

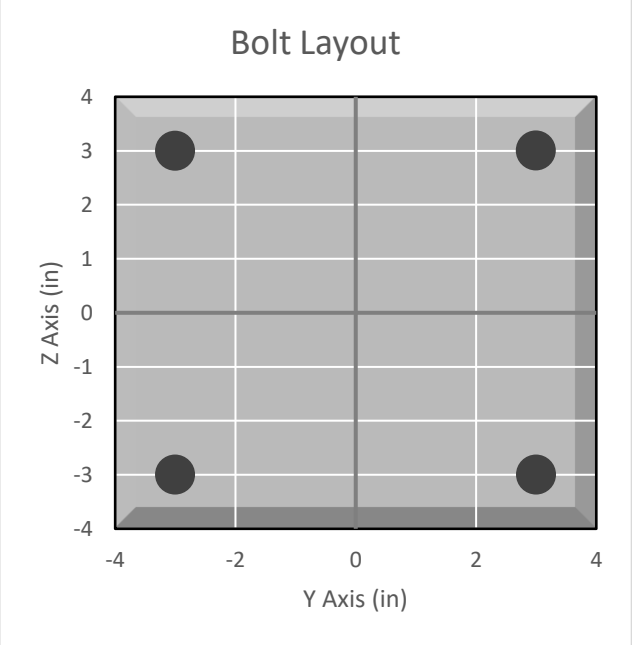
Analysis date: 7/29/2022

BOLT TOOL 1.5.2

Project Data	
Job Code:	213576
Carrier Site ID:	CT11032D
Carrier Site Name:	Westbrook/ I-95/ X64/ Ch1

Code	
Design Standard:	TIA-222-H
Slip Check:	No
Pretension Standard:	AISC

Bolt Properties		
Connection Type:	Bolt	
Diameter:	0.625	in
Grade:	A325	--
Yield Strength (Fy):	92	ksi
Ultimate Strength (Fu):	120	ksi
Number of Bolts:	4	--
Threads Included:	Yes	--
Double Shear:	No	--
Connection Pipe Size:	-	in



Connection Description
Standoff To Collar

Bolt Check*		
Tensile Capacity (ϕT_n):	20340.1	lbs
Shear Capacity (ϕV_n):	13805.8	lbs
Tension Force (T_u):	2501.1	lbs
Shear Force (V_u):	70.0	lbs
Tension Usage:	11.7%	--
Shear Usage:	0.5%	--
Interaction:	11.7%	Pass
Controlling Member:	M69	--
Controlling LC:	30	--

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

1825 W. Walnut Hill Lane, Suite 120
Irving, Texas 75038

Trylon

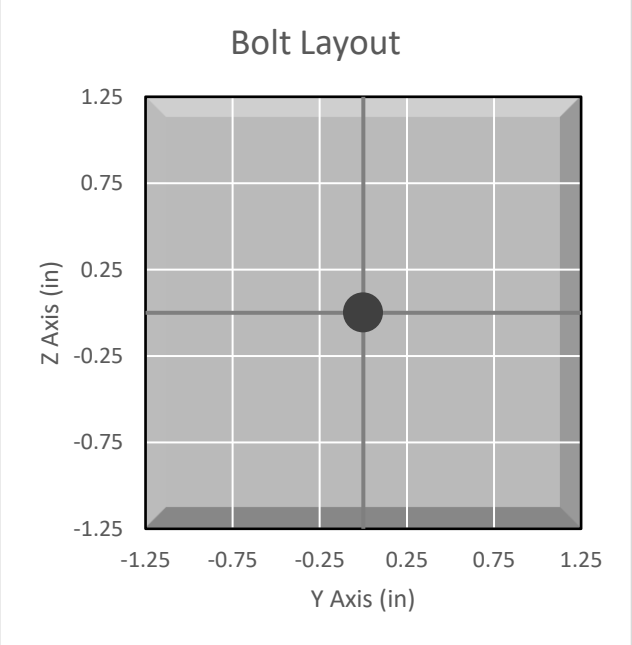
Analysis date: 7/29/2022

BOLT TOOL 1.5.2

Project Data	
Job Code:	213576
Carrier Site ID:	CT11032D
Carrier Site Name:	Westbrook/ I-95/ X64/ Ch1

Code	
Design Standard:	TIA-222-H
Slip Check:	No
Pretension Standard:	AISC

Bolt Properties		
Connection Type:	Bolt	
Diameter:	0.625	in
Grade:	A325	--
Yield Strength (Fy):	92	ksi
Ultimate Strength (Fu):	120	ksi
Number of Bolts:	1	--
Threads Included:	Yes	--
Double Shear:	No	--
Connection Pipe Size:	-	in



Connection Description
Standoff To Collar

Bolt Check*		
Tensile Capacity (ϕT_n):	20340.1	lbs
Shear Capacity (ϕV_n):	13805.8	lbs
Tension Force (T_u):	0.0	lbs
Shear Force (V_u):	3761.6	lbs
Tension Usage:	0.0%	--
Shear Usage:	25.9%	--
Interaction:	25.9%	Pass
Controlling Member:	M76	--
Controlling LC:	39	--

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

1825 W. Walnut Hill Lane, Suite 120
Irving, Texas 75038

APPENDIX E

MOUNT MODIFICATION DESIGN DRAWINGS (MDD)

T··Mobile·

UPGRADE:

MOUNT REINFORCEMENT

VICINITY MAP

GENERAL NOTES

PRIOR TO ACCESSING/ ENTERING THE SITE, YOU MUST CONTACT THE CROWN NOC AT 800-788-7011 AND CROWN CM
CHAD STEINHOFF- 214-287-3756, CHAD.STEINHOFF@CROWNCASTLE.COM

THE HEIGHT OF THE TOWER WILL NOT BE INCREASED, NOR AN EXPANSION OF THE GROUND/ LEASE AREA WHEN AND WHERE APPLICABLE

BUILDING CODES

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL AUTHORITIES HAVING JURISDICTION

1. 2015 INTERNATIONAL BUILDING CODE
2. UNIFORM BUILDING CODE
3. CITY/COUNTY ORDINANCES
4. TIA-222-H

IF YOU DIG IN ANY STATE DIAL 811
FOR THE LOCAL "ONE CALL CENTER"
IT'S THE LAW

THE UTILITIES SHOWN HEREIN ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER/SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL THE UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO THE EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

SITE NAME:
POND MEADOW RD. STABLE

SITE NUMBER:
CT11032D

CROWN CASTLE BU#:
876339

SITE ADDRESS:

782 OLD CLINTON ROAD,
WESTBROOK, CT 06498-1767

APPROVALS

T-MOBILE CONSTRUCTION MANAGER

T-MOBILE RF ENGINEER

LAND USE PLANNER

NETWORK OPERATION

PROPERTY OWNER

CONTRACTOR

DRIVING DIRECTION

FROM TWEED-NEW HAVEN AIRPORT:
HEAD SOUTHWEST (417 FT), TURN LEFT (0.2 MI), TURN RIGHT ONTO BURR ST (0.2 MI), TURN LEFT TO STAY ON BURR ST (0.1 MI), SLIGHT LEFT ONTO CHARTER OAK AVE (0.6 MI), TURN LEFT ONTO MAIN ST (0.4 MI), TURN RIGHT ONTO OAKLEY ST (358 FT), TURN RIGHT ONTO US-1 N (0.5 MI), USE THE LEFT LANE TO TAKE THE RAMP ONTO I-95 N (0.2 MI), MERGE WITH I-95 N, DESTINATION WILL BE ON THE RIGHT.

PROJECT INFORMATION

SCOPE OF WORK:	REINFORCE AS FOLLOWS: • INSTALL NEW SITE PRO 1, HRK12-U HANDRAIL KIT, AT 40" ABOVE THE BOTTOM FACE HORIZONTAL ELEVATION. • INSTALL NEW 2.875" O.D., SCH. 40, 120" LONG ANTENNA MOUNTING PIPE ON ALL SECTORS AT POS. #3 (1 PER SECTOR, 3 TOTAL) • INSTALL NEW (2) 1/2"ø U-BOLTS TO CONNECT THE NEW PIPE TO THE BOTTOM FACE HORIZONTALS (2 PER SECTOR, 6 TOTAL).
JURISDICTION:	MIDDLESEX COUNTY
SITE NAME:	POND MEADOW RD. STABLE
SITE ADDRESS:	782 OLD CLINTON ROAD, WESTBROOK, CT 06498-1767
LATITUDE:	41° 17' 25.78"
LONGITUDE:	-72° 28' 8.05"
TOWER TYPE:	MONOPOLE
OVERALL TOWER HEIGHT:	160'
ELEVATION OF WORK ON TOWER:	142'

SHEET INDEX

SHEET #	DESCRIPTION	REVISION #
T-1.	TITLE SHEET	0
S-1	MOUNT REINFORCEMENT	0
S-2	MOUNT REINFORCEMENT DETAIL	0

CROWN CASTLE
1220 AUGUSTA DRIVE SUIT 500
HOUSTON, TX 77057

T··Mobile·

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038
1-855-669-5421

STATE OF CONNECTICUT
JEFF ABERNATHY
No. 31022
LICENSED
PROFESSIONAL ENGINEER
7-24-22

DRAWING SCALES ARE INTENDED FOR 24"x36" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	05/16/22	FOR REVIEW	RC

SITE INFORMATION

SITE NAME:
POND MEADOW RD. STABLE

SITE NUMBER:
CT11032D

SITE ADDRESS:
782 OLD CLINTON ROAD,
WESTBROOK, CT
06498-1767

SHEET DESCRIPTION

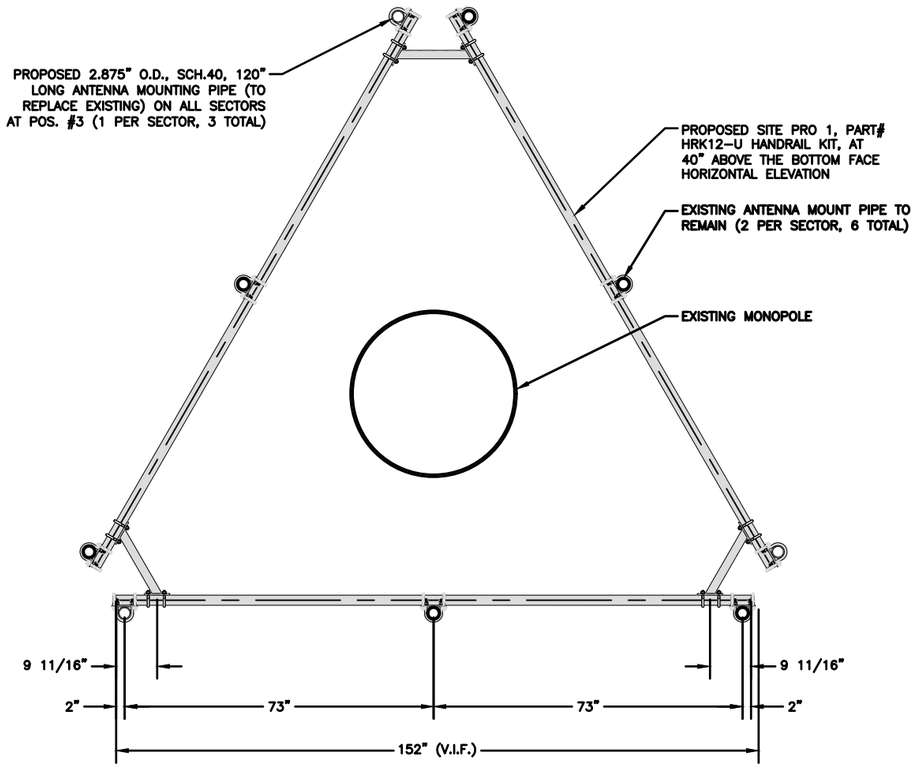
TITLE SHEET

SHEET No.

T-1

INSTALLATION NOTES:

- INSTALL NEW SITE PRO 1, HRK12-U HANDRAIL KIT, AT 40" ABOVE THE BOTTOM FACE HORIZONTAL ELEVATION.
- INSTALL NEW 2.875" O.D., SCH. 40, 120" LONG ANTENNA MOUNTING PIPE ON ALL SECTORS AT POS. #3 (1 PER SECTOR, 3 TOTAL)
- INSTALL NEW (2) 1/2"ø U-BOLTS TO CONNECT THE NEW PIPE TO THE BOTTOM FACE HORIZONTALS (2 PER SECTOR, 6 TOTAL).



2 / S-1

EQUIPMENT NOT SHOWN FOR CLARITY.

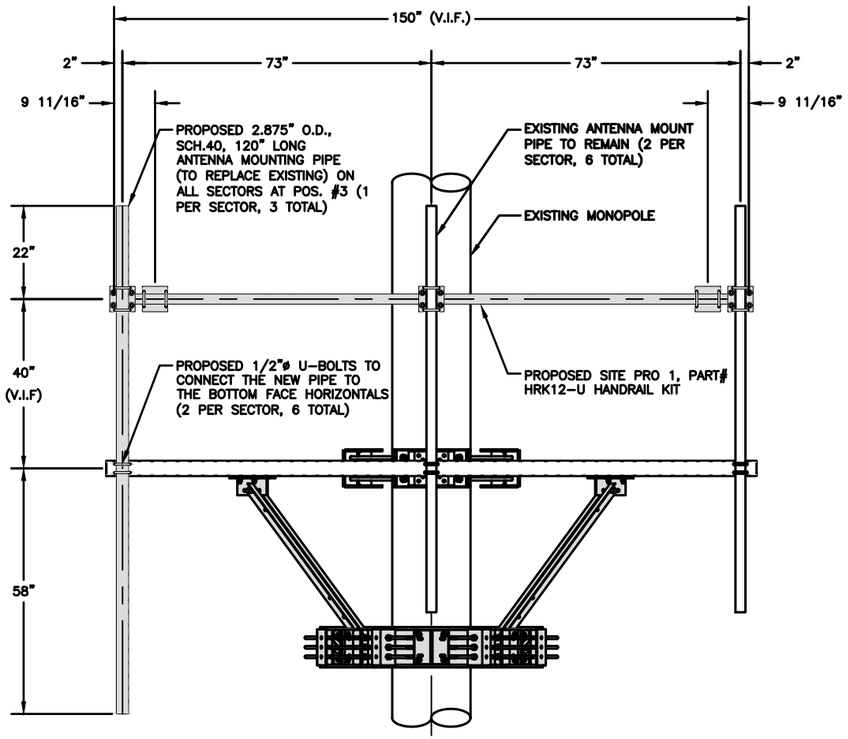
1 / S-1 PROPOSED TOP PLAN VIEW (ALL SECTORS)
SCALE: 3/4" = 1'-0"

0 0'-8" 1'-4" 2'-8" 4'-0"

BILL OF MATERIALS		
QTY.	KIT NO./PART NO.	DESCRIPTION
1 TOTAL	HRK12-U	HANDRAIL KIT
1 PER SECTOR, 3 TOTAL	–	2.875" O.D., SCH.40, 120" LONG PIPE
2 PER SECTOR, 6 TOTAL	–	1/2"ø U-BOLTS

GENERAL NOTES:

1. ALL STEEL ANGLE TO BE ASTM A36 (GR 36) OR BETTER.
2. ALL STEEL PLATE TO BE ASTM A36 (GR 36) OR BETTER.
3. ALL PIPES TO BE ASTM A53 (GR 35) OR BETTER.
4. HOT DIP GALVANIZE LEVEL 3 PARTS.
5. APPLY TWO COATS OF GALVICON TO ALL FIELD CUT OR DRILL EDGES.
6. ALL BOLTS TO MAINTAIN 1" EDGE DISTANCE.



EQUIPMENT NOT SHOWN FOR CLARITY.

2 / S-1 PROPOSED ELEVATION VIEW (ALL SECTORS)
SCALE: 3/4" = 1'-0"

0 0'-8" 1'-4" 2'-8" 4'-0"

CROWN CASTLE
1220 AUGUSTA DRIVE SUIT 500
HOUSTON, TX 77057

T-Mobile

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038
1-855-669-5421

STATE OF CONNECTICUT
JEFF ABERNATHY
No. 31022
LICENSED
PROFESSIONAL ENGINEER
7-24-22

DRAWING SCALES ARE INTENDED FOR 24"x36" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	05/16/22	FOR REVIEW	RC

SITE INFORMATION

SITE NAME:
POND MEADOW RD. STABLE

SITE NUMBER:
CT11032D

SITE ADDRESS:
782 OLD CLINTON ROAD,
WESTBROOK, CT
06498-1767

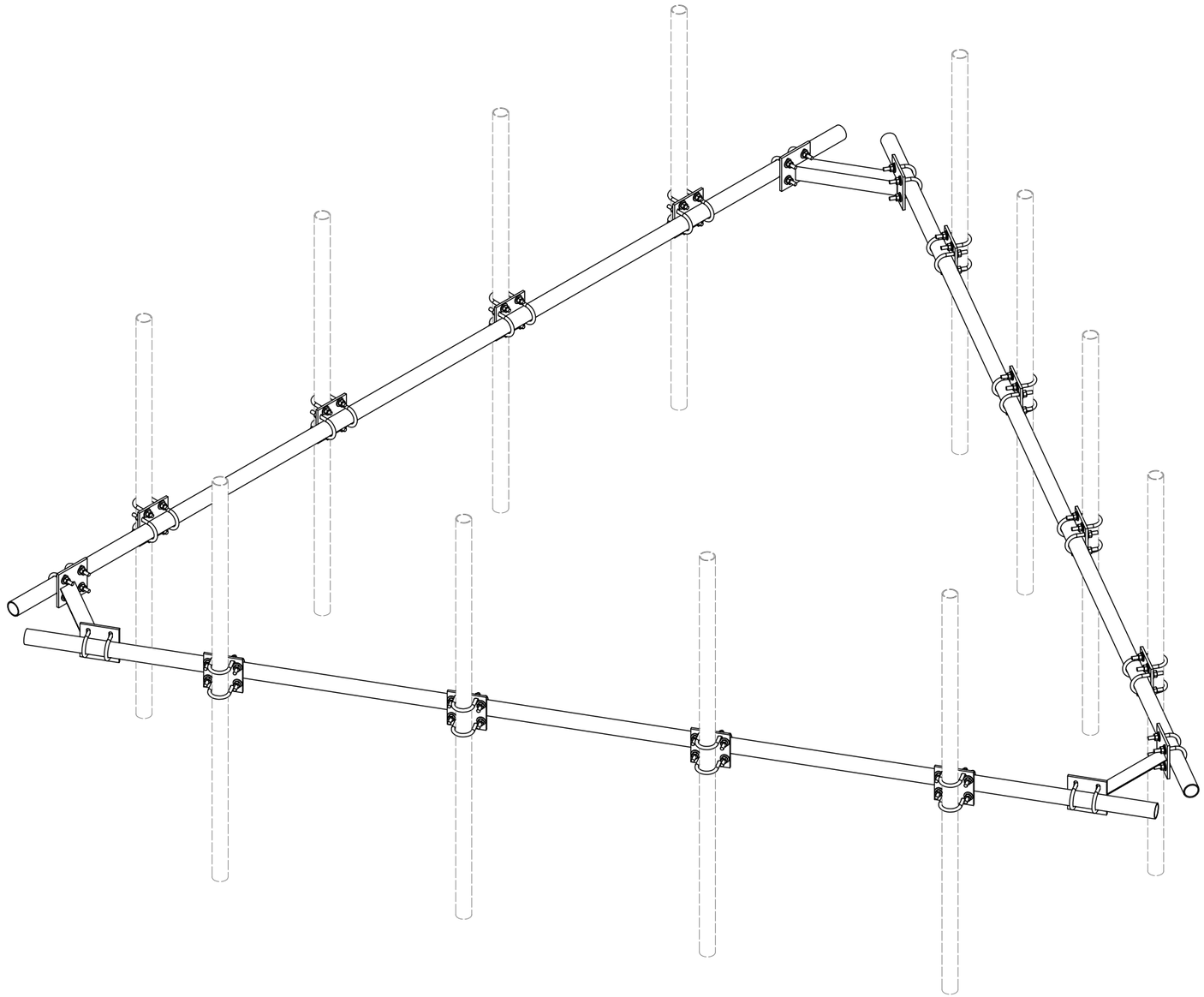
SHEET DESCRIPTION

MOUNT REINFORCEMENT

SHEET No.

S-1

MOUNT KIT	
PART NUMBER	DESCRIPTION
HRK12-U	HANDRAIL KIT



CROWN CASTLE

1220 AUGUSTA DRIVE SUIT 500
HOUSTON, TX 77057

T-Mobile

Trylon

1825 W. WALNUT HILL LANE, SUITE 120
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1-855-669-5421

STATE OF CONNECTICUT
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7-24-22

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SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	05/16/22	FOR REVIEW	RC

SITE INFORMATION

SITE NAME:
POND MEADOW RD. STABLE

SITE NUMBER:
CT11032D

SITE ADDRESS:
782 OLD CLINTON ROAD,
WESTBROOK, CT
06498-1767

SHEET DESCRIPTION

MOUNT REINFORCEMENT DETAIL

SHEET No.

S-2

Radio Frequency Exposure Analysis Report

July 12, 2022

Centerline on behalf of T-Mobile
Centerline Communications Project Number: N/A

T-Mobile Site Name: Westbrook/ I-95/ X64/ Ch1
Site Number: CT11032D

Site Address: 782 Old Clinton Road, Westbrook, CT 06498

Site Compliance Summary

T-Mobile Compliance Status:	Compliant
Cumulative Calculated Power Density (Ground Level):	7.78644 µW/cm^2
Cumulative General Population % MPE (Ground Level):	0.86510%

750 West Center Street | Suite 301 | West Bridgewater | MA | 02379

July 12, 2022

Centerline
Attn: Ryan Clark -- Site Acquisition Consultant
750 W Center St, Suite 301
West Bridgewater, MA 02379

RF Exposure Analysis for Site: **Westbrook/ I-95/ X64/ Ch1**

Centerline Communications, LLC ("Centerline") was contracted to analyze the proposed T-Mobile facility at **782 Old Clinton Road, Westbrook, CT 06498** for the purpose of determining whether the predictive exposure from the proposed facility is within specified federal limits.

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu W/cm^2$). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm^2) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ($f_{MHz}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of 1 mW/cm^2 (1000 $\mu W/cm^2$). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Wireless carriers use different frequency bands with varying MPE limits; therefore, it is useful to report results in terms of % MPE as opposed to power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the 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.

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, 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.

Calculation Methodology

Centerline Communications, LLC has performed theoretical modeling of the site using a software tool, RoofMaster®, which incorporates calculation methodologies detailed in FCC OET 65. RoofMaster® uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations, the power decreases inversely with the square of the distance. The modeling is based on worst-case assumptions in terms of transmitter power and duty cycle. No losses were included in the power calculations unless they were specifically provided for the project.

In OET 65, a far field model is presented to calculate the spatial peak power density. The RoofMaster® implementation of this model incorporates antenna manufacturer's horizontal and vertical pattern data to determine the power density in all directions. This model yields the power density at a single point in space. In order to determine the spatial power density for comparison to the FCC limits, the average of several points calculated within the human profile (0-6') must be conducted. RoofMaster® calculates seven power density values between 0-6' above the specified study plane and performs a linear spatial average.

Data & Results

The following table details the antennas and operating parameters for the T-Mobile antenna system as well as any other antenna systems at the site. This is based on antenna information provided by the client and data compiled from other sources where necessary. The data below was input into Roofmaster® to perform the theoretical exposure calculations at the Ground.

The theoretical calculations performed in Roofmaster® determine the cumulative exposure at all sample points at ground level (0-6' spatial average). The results from highest cumulative sample point at ground level surrounding the site are displayed in the table below. The contribution from directional antennas to the maximum cumulative totals varies greatly depending on location; therefore, the contribution from one antenna sector at the highest calculated exposure point may be greater or less than other sectors since sectorized directional antennas are pointed in different directions and there is not much overlapping exposure.

The contribution to the cumulative power density and % MPE for each antenna/frequency band is listed in the table. The cumulative power density and cumulative % MPE are displayed at the bottom of the table.

Maximum Calculated Cumulative Power Density (Location: approximately 10' West of site)

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density (μW/cm²)	General Population MPE Limit (μW/cm²)	General Population % MPE
T-Mobile A 1	ERICSSON AIR6419	2500	22.85	145.00	2.00	80.00	30840.40	0.00116	1000.00	0.00012
T-Mobile A 1	ERICSSON AIR6419	2500	22.85	145.00	2.00	80.00	30840.40	0.00116	1000.00	0.00012
T-Mobile A 2	RFS APXVAALL24 43-U-NA20	700	13.65	145.00	4.00	40.00	3707.83	0.00004	466.67	0.00001
T-Mobile A 2	RFS APXVAALL24 43-U-NA20	600	12.95	145.00	4.00	40.00	3155.88	0.00000	400.00	0.00000
T-Mobile A 2	RFS APXVAALL24 43-U-NA20	600	12.95	145.00	4.00	30.00	2366.91	0.00000	400.00	0.00000
T-Mobile A 3	COMMSCOPE VV-65A-R1	2100	16.47	145.00	2.00	140.00	12421.04	0.00001	1000.00	0.00000
T-Mobile A 3	COMMSCOPE VV-65A-R1	1900	15.77	145.00	2.00	140.00	10572.02	0.00005	1000.00	0.00001
T-Mobile A 3	COMMSCOPE VV-65A-R1	1900	15.77	145.00	1.00	15.00	566.36	0.00000	1000.00	0.00000
T-Mobile B 4	ERICSSON AIR6419	2500	22.85	145.00	2.00	80.00	30840.40	0.95587	1000.00	0.09559
T-Mobile B 4	ERICSSON AIR6419	2500	22.85	145.00	2.00	80.00	30840.40	0.95587	1000.00	0.09559
T-Mobile B 5	RFS APXVAALL24 43-U-NA20	700	13.65	145.00	4.00	40.00	3707.83	0.00760	466.67	0.00163
T-Mobile B 5	RFS APXVAALL24 43-U-NA20	600	12.95	145.00	4.00	40.00	3155.88	0.00627	400.00	0.00157
T-Mobile B 5	RFS APXVAALL24 43-U-NA20	600	12.95	145.00	4.00	30.00	2366.91	0.00470	400.00	0.00118
T-Mobile B 6	COMMSCOPE VV-65A-R1	2100	16.47	145.00	2.00	140.00	12421.04	0.02231	1000.00	0.00223
T-Mobile B 6	COMMSCOPE VV-65A-R1	1900	15.77	145.00	2.00	140.00	10572.02	0.03040	1000.00	0.00304
T-Mobile B 6	COMMSCOPE VV-65A-R1	1900	15.77	145.00	1.00	15.00	566.36	0.00163	1000.00	0.00016
T-Mobile C 7	ERICSSON AIR6419	2500	22.85	145.00	2.00	80.00	30840.40	0.97364	1000.00	0.09736
T-Mobile C 7	ERICSSON AIR6419	2500	22.85	145.00	2.00	80.00	30840.40	0.97364	1000.00	0.09736
T-Mobile C 8	RFS APXVAALL24 43-U-NA20	700	13.65	145.00	4.00	40.00	3707.83	0.04612	466.67	0.00988
T-Mobile C 8	RFS APXVAALL24 43-U-NA20	600	12.95	145.00	4.00	40.00	3155.88	0.05191	400.00	0.01298
T-Mobile C 8	RFS APXVAALL24 43-U-NA20	600	12.95	145.00	4.00	30.00	2366.91	0.03893	400.00	0.00973
T-Mobile C 9	COMMSCOPE VV-65A-R1	2100	16.47	145.00	2.00	140.00	12421.04	0.12985	1000.00	0.01299
T-Mobile C 9	COMMSCOPE VV-65A-R1	1900	15.77	145.00	2.00	140.00	10572.02	0.12213	1000.00	0.01221
T-Mobile C 9	COMMSCOPE VV-65A-R1	1900	15.77	145.00	1.00	15.00	566.36	0.00654	1000.00	0.00065
Sprint A 10	RFS APXV9ERR18-C	850	11.85	160.00	2.00	50.00	1531.09	0.00004	566.67	0.00001
Sprint A 11	RFS APXV9ERR18-C	1900	14.55	160.00	4.00	45.00	5131.83	0.00003	1000.00	0.00000
Sprint A 12	RFS APXVTM14 ALU-I20	2500	15.85	160.00	8.00	20.00	6153.47	0.00006	1000.00	0.00001
Sprint B 13	RFS APXVSPP18-C-A20	850	13.35	160.00	2.00	50.00	2162.72	0.00570	566.67	0.00101
Sprint B 13	RFS APXVSPP18-C-A20	1900	15.85	160.00	4.00	45.00	6922.65	0.00954	1000.00	0.00095
Sprint B 14	RFS APXVTM14 ALU-I20	2500	15.85	160.00	8.00	20.00	6153.47	0.00874	1000.00	0.00087
Sprint C 15	RFS APXVSPP18-C-A20	850	13.35	160.00	2.00	50.00	2162.72	0.03005	566.67	0.00530
Sprint C 15	RFS APXVSPP18-C-A20	1900	15.85	160.00	4.00	45.00	6922.65	0.05477	1000.00	0.00548
Sprint C 16	RFS APXVTM14 ALU-I20	2500	15.85	160.00	8.00	20.00	6153.47	0.07857	1000.00	0.00786
Dish A 17	JMA MX08FRO665-20	600	11.35	132.00	4.00	30.00	1637.50	0.00001	400.00	0.00000
Dish A 17	JMA MX08FRO665-20	2007	15.75	132.00	4.00	30.00	4510.05	0.00005	1000.00	0.00001

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density (μW/cm²)	General Population MPE Limit (μW/cm²)	General Population % MPE
Dish A 17	JMA MX08FRO665-20	2100	16.75	132.00	4.00	40.00	7570.42	0.00010	1000.00	0.00001
Dish B 18	JMA MX08FRO665-20	600	11.35	132.00	4.00	30.00	1637.50	0.00623	400.00	0.00156
Dish B 18	JMA MX08FRO665-20	2007	15.75	132.00	4.00	30.00	4510.05	0.00698	1000.00	0.00070
Dish B 18	JMA MX08FRO665-20	2100	16.75	132.00	4.00	40.00	7570.42	0.00755	1000.00	0.00076
Dish C 19	JMA MX08FRO665-20	600	11.35	132.00	4.00	30.00	1637.50	0.05178	400.00	0.01295
Dish C 19	JMA MX08FRO665-20	2007	15.75	132.00	4.00	30.00	4510.05	0.07146	1000.00	0.00715
Dish C 19	JMA MX08FRO665-20	2100	16.75	132.00	4.00	40.00	7570.42	0.08472	1000.00	0.00847
Verizon A 20	AMPHENOL LPA-80080-4CF	850	12.50	117.00	7.00	20.00	2489.59	0.00001	566.67	0.00000
Verizon A 21	Samsung MT6407	3700	23.45	117.00	4.00	50.00	44261.89	0.01735	1000.00	0.00174
Verizon A 22	COMMSCOPE JAHH-65B-R3B	700	12.11	117.00	2.00	40.00	1300.44	0.00001	466.67	0.00000
Verizon A 22	COMMSCOPE JAHH-65B-R3B	850	12.81	117.00	2.00	40.00	1527.88	0.00001	566.67	0.00000
Verizon A 22	COMMSCOPE JAHH-65B-R3B	1900	15.72	117.00	4.00	40.00	5972.00	0.00002	1000.00	0.00000
Verizon A 23	COMMSCOPE JAHH-65B-R3B	700	12.11	117.00	2.00	40.00	1300.44	0.00001	466.67	0.00000
Verizon A 23	COMMSCOPE JAHH-65B-R3B	850	12.81	117.00	2.00	40.00	1527.88	0.00001	566.67	0.00000
Verizon A 23	COMMSCOPE JAHH-65B-R3B	2100	15.71	117.00	4.00	40.00	5958.27	0.00006	1000.00	0.00001
Verizon A 24	AMPHENOL LPA-80080-4CF	850	12.50	117.00	7.00	20.00	2489.59	0.00001	566.67	0.00000
Verizon B 25	AMPHENOL LPA-80063-4C	850	13.00	117.00	7.00	20.00	2793.37	0.02012	566.67	0.00355
Verizon B 26	Samsung SMT6407	3700	23.45	117.00	4.00	50.00	44261.89	0.46692	1000.00	0.04669
Verizon B 27	COMMSCOPE JAHH-65B-R3B	700	12.11	117.00	2.00	40.00	1300.44	0.00801	466.67	0.00172
Verizon B 27	COMMSCOPE JAHH-65B-R3B	850	12.81	117.00	2.00	40.00	1527.88	0.00708	566.67	0.00125
Verizon B 27	COMMSCOPE JAHH-65B-R3B	1900	15.72	117.00	4.00	40.00	5972.00	0.01363	1000.00	0.00136
Verizon B 28	COMMSCOPE JAHH-65B-R3B	700	12.11	117.00	2.00	40.00	1300.44	0.00801	466.67	0.00172
Verizon B 28	COMMSCOPE JAHH-65B-R3B	850	12.81	117.00	2.00	40.00	1527.88	0.00708	566.67	0.00125
Verizon B 28	COMMSCOPE JAHH-65B-R3B	2100	15.71	117.00	4.00	40.00	5958.27	0.01580	1000.00	0.00158
Verizon B 29	AMPHENOL LPA-80063-4CF	850	13.00	117.00	7.00	20.00	2793.37	0.02012	566.67	0.00355
Verizon C 30	AMPHENOL LPA-80063-4CF	850	13.00	117.00	7.00	20.00	2793.37	0.11849	566.67	0.02091
Verizon C 31	Samsung MT6407	3700	23.45	117.00	4.00	50.00	44261.89	1.61900	1000.00	0.16190
Verizon C 32	COMMSCOPE JAHH-65B-R3B	700	12.11	117.00	2.00	40.00	1300.44	0.04343	466.67	0.00931
Verizon C 32	COMMSCOPE JAHH-65B-R3B	850	12.81	117.00	2.00	40.00	1527.88	0.04719	566.67	0.00833
Verizon C 32	COMMSCOPE JAHH-65B-R3B	1900	15.72	117.00	4.00	40.00	5972.00	0.09127	1000.00	0.00913
Verizon C 33	COMMSCOPE JAHH-65B-R3B	700	12.11	117.00	2.00	40.00	1300.44	0.04343	466.67	0.00931
Verizon C 33	COMMSCOPE JAHH-65B-R3B	850	12.81	117.00	2.00	40.00	1527.88	0.04719	566.67	0.00833
Verizon C 33	COMMSCOPE JAHH-65B-R3B	2100	15.71	117.00	4.00	40.00	5958.27	0.09566	1000.00	0.00957
Verizon C 34	AMPHENOL LPA-80063-4CF	850	13.00	117.00	7.00	20.00	2793.37	0.11849	566.67	0.02091
Unknown A 35	KMW AM-X-CD-14-65-00T	850	12.35	98.00	2.00	30.00	1030.75	0.00003	566.67	0.00001

Antenna ID	Make / Model	Frequency Band (MHz)	Antenna Gain (dBd)	Antenna Centerline (ft)	Channel Count	TX Power/ Channel (watts)	ERP (watts)	Calculated Power Density (µW/cm²)	General Population MPE Limit (µW/cm²)	General Population % MPE
Unknown A 36	POWERWAVE 7770	850	11.35	98.00	1.00	60.00	818.75	0.00012	566.67	0.00002
Unknown A 37	POWERWAVE 7770	1900	13.35	98.00	1.00	60.00	1297.63	0.00000	1000.00	0.00001
Unknown B 38	KMW AM-X-CD-14-65-00T	850	12.35	98.00	2.00	30.00	1030.75	0.00970	566.67	0.00171
Unknown B 39	POWERWAVE 7770	850	11.35	98.00	1.00	60.00	818.75	0.01696	566.67	0.00299
Unknown B 40	POWERWAVE 7770	1900	13.35	98.00	1.00	60.00	1297.63	0.02135	1000.00	0.00214
Unknown C 41	KMW AM-X-CD-14-65-00T	850	12.35	98.00	2.00	30.00	1030.75	0.07704	566.67	0.01359
Unknown C 42	POWERWAVE 7770	850	11.35	98.00	1.00	60.00	818.75	0.05747	566.67	0.01014
Unknown C 43	POWERWAVE 7770	1900	13.35	98.00	1.00	60.00	1297.63	0.04913	1000.00	0.00491
							Cumulative Power Density:	**7.78644 µW/cm²**	**Cumulative % MPE:**	**0.86510%**

Summary

The theoretical calculations performed for this analysis yielded cumulative power density totals in all areas at Ground that are within the allowable federal limits for public exposure to RF energy. Therefore, the site is **Compliant** with FCC rules and regulations.

Michelle Stone

Michelle Stone
RF EME Technical Writer II
Centerline Communications, LLC

T-MOBILE SITE NUMBER: CT11032D
T-MOBILE SITE NAME: WESTBROOK/ I-95/ X64/ CH1
SITE TYPE: MONOPOLE
TOWER HEIGHT: 160'-0"

BUSINESS UNIT #: 876339
SITE ADDRESS: 782 OLD CLINTON ROAD WESTBROOK, CT 06498
COUNTY: MIDDLESEX
JURISDICTION: CONNECTICUT SITING COUNCIL

T-MOBILE ANCHOR SITE CONFIGURATION: 67D5D998E 6160

SITE INFORMATION

CROWN CASTLE USA INC. SITE NAME:	POND MEADOW RD. STABLE
SITE ADDRESS:	782 OLD CLINTON ROAD WESTBROOK, CT 06498
COUNTY:	MIDDLESEX
MAP/PARCEL #:	169/018
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.290494°
LONGITUDE:	-72.468903°
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	102 FT
CURRENT ZONING:	RR - RURAL RESIDENTIAL DISTRICT
JURISDICTION:	CONNECTICUT SITING COUNCIL
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	WADE CATHERINE A 782 OLD CLINTON RD WESTBROOK, CT 06498
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	T-MOBILE 35 GRIFFIN ROAD BLOOMFIELD, CT 06002
ELECTRIC PROVIDER:	UNITED ILLUMINATING CO 203-499-5973
TELCO PROVIDER:	COMCAST PHONE 800-934-6489

PROJECT TEAM

A&E FIRM:	B+T GROUP 1717 S. BOULDER AVE. TULSA, OK 74119 MARVIN PHILLIPS MARVIN.PHILLIPS@BTGRP.COM
CROWN CASTLE USA INC. DISTRICT CONTACTS:	1505 WESTLAKE AVENUE NORTH, SUITE 800 SEATTLE, WA 98109 TRICIA PELON - PROJECT MANAGER TRICIA.PELON@CROWNCASTLE.COM JASON D'AMICO - CONSTRUCTION MANAGER JASON.DAMICO@CROWNCASTLE.COM

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	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
ATTACHED	MOUNT MODIFICATION DRAWINGS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR FULL SIZE. 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 (3) TMAs
- INSTALL (6) ANTENNAS
- INSTALL (3) RADIOs
- INSTALL (3) HYBRID CABLES
- INSTALL MOUNT MODIFICATIONS REQUIRED PER MOUNT MODIFICATION DRAWINGS BY TRYLON DATED JULY 29, 2022

GROUND SCOPE OF WORK:
- REMOVE (1) RBS 6131 CABINET
- REMOVE (1) DUW30
- REMOVE (6) RU22 RRU
- ELEVATE EXISTING ICE BRIDGE
- INSTALL (1) ENCLOSURE 6160 AC V1 CABINET
- INSTALL (1) B160 BATTERY CABINET
- INSTALL (1) RP 6651
- INSTALL (1) RBS 6601
- INSTALL (1) PSU 4813 vR4A (Kit)
- INSTALL (1) CSR IXRe V2 (Gen2)

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
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	TOWER ENGINEERING PROFESSIONALS
DATED:	5/31/22
MOUNT ANALYSIS:	TRYLON
DATED:	7/29/22
RFDS REVISION:	8
DATED:	4/20/22
ORDER ID:	613478
REVISION:	0

CALL CONNECTICUT ONE CALL
(800) 922-4455 CBYD.COM
CALL 2 WORKING DAYS BEFORE YOU DIG!

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
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1505 WESTLAKE AVENUE NORTH, SUITE 800
SEATTLE, WA 98109

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

T-MOBILE SITE NUMBER:
CT11032D

BU #: **876339**
POND MEADOW RD. STABLE

782 OLD CLINTON ROAD
WESTBROOK, CT 06498

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	6/20/22	MEH	PRELIMINARY REVIEW	CV
0	6/27/22	MEH	CONSTRUCTION	CV
1	8/3/22	TDG	CONSTRUCTION	LR
2	8/8/22	MLC	CONSTRUCTION	LR

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: T-1

REVISION: 2

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···
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BLOOMFIELD, CT 06002

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T-MOBILE SITE NUMBER:
CT11032D

BU #: **876339**
POND MEADOW RD.
STABLE

782 OLD CLINTON ROAD
WESTBROOK, CT 06498

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	6/20/22	MEH	PRELIMINARY REVIEW	CV
0	6/27/22	MEH	CONSTRUCTION	CV
1	8/3/22	TDG	CONSTRUCTION	LR
2	8/8/22	MLC	CONSTRUCTION	LR

No. 23924
8/8/22

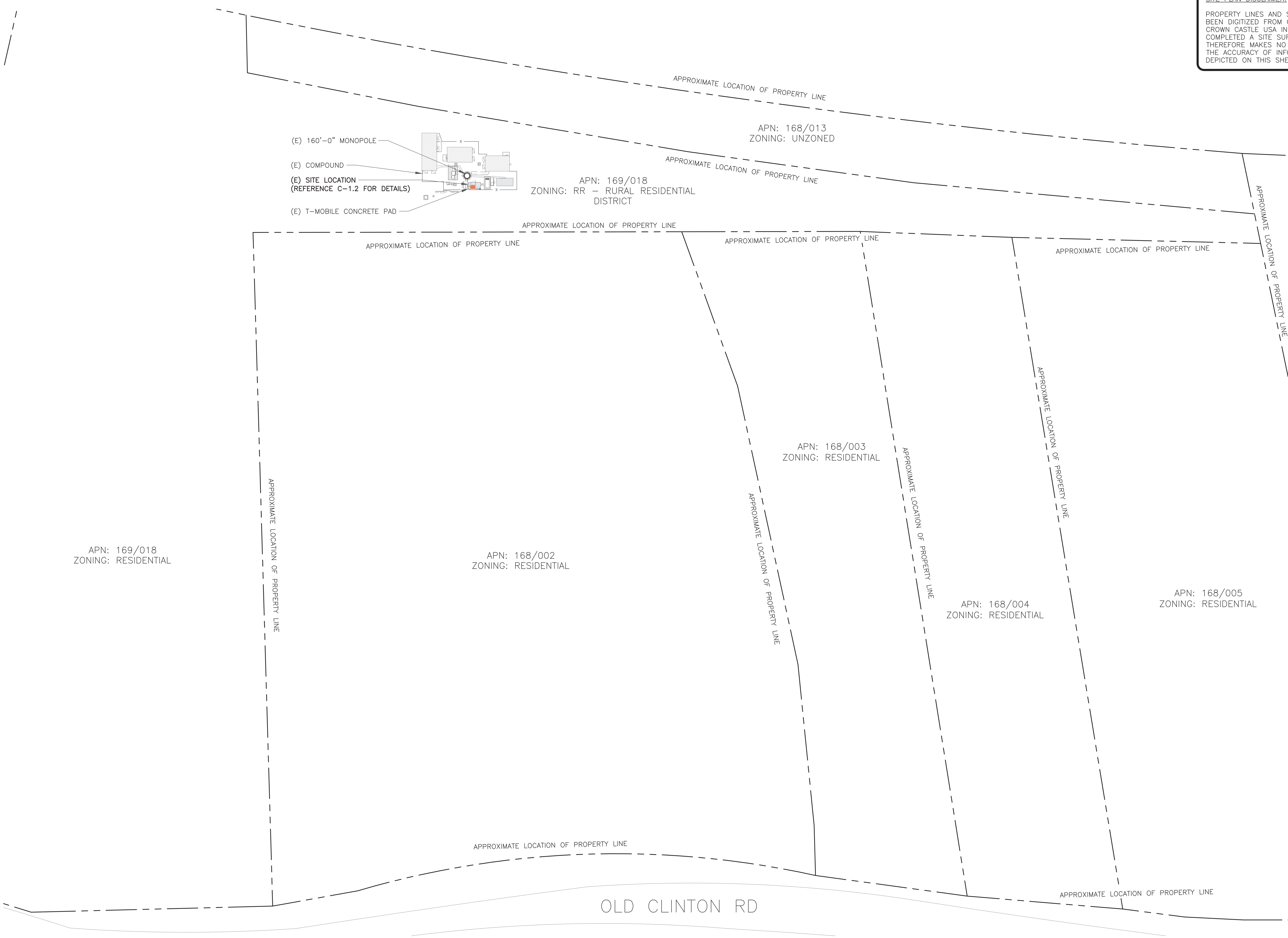
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

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-2
REVISION: 2

SITE PLAN DISCLAIMER:

PROPERTY LINES AND STRUCTURES HAVE BEEN DIGITIZED FROM GOOGLE MAPS. 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.



1 OVERALL SITE PLAN

SCALE: 40' 20' 0 40' 1"=40'-0" (FULL SIZE) 1"=80'-0" (11x17)

N

T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE

1505 WESTLAKE AVENUE NORTH, SUITE 800
SEATTLE, WA 98109

B+T GRP

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

T-MOBILE SITE NUMBER:
CT11032D

BU #: **876339**
POND MEADOW RD. STABLE

782 OLD CLINTON ROAD
WESTBROOK, CT 06498

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

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STATE OF CONNECTICUT No. 23924 LICENSED PROFESSIONAL ENGINEER
8/8/22

B&T ENGINEERING, INC.
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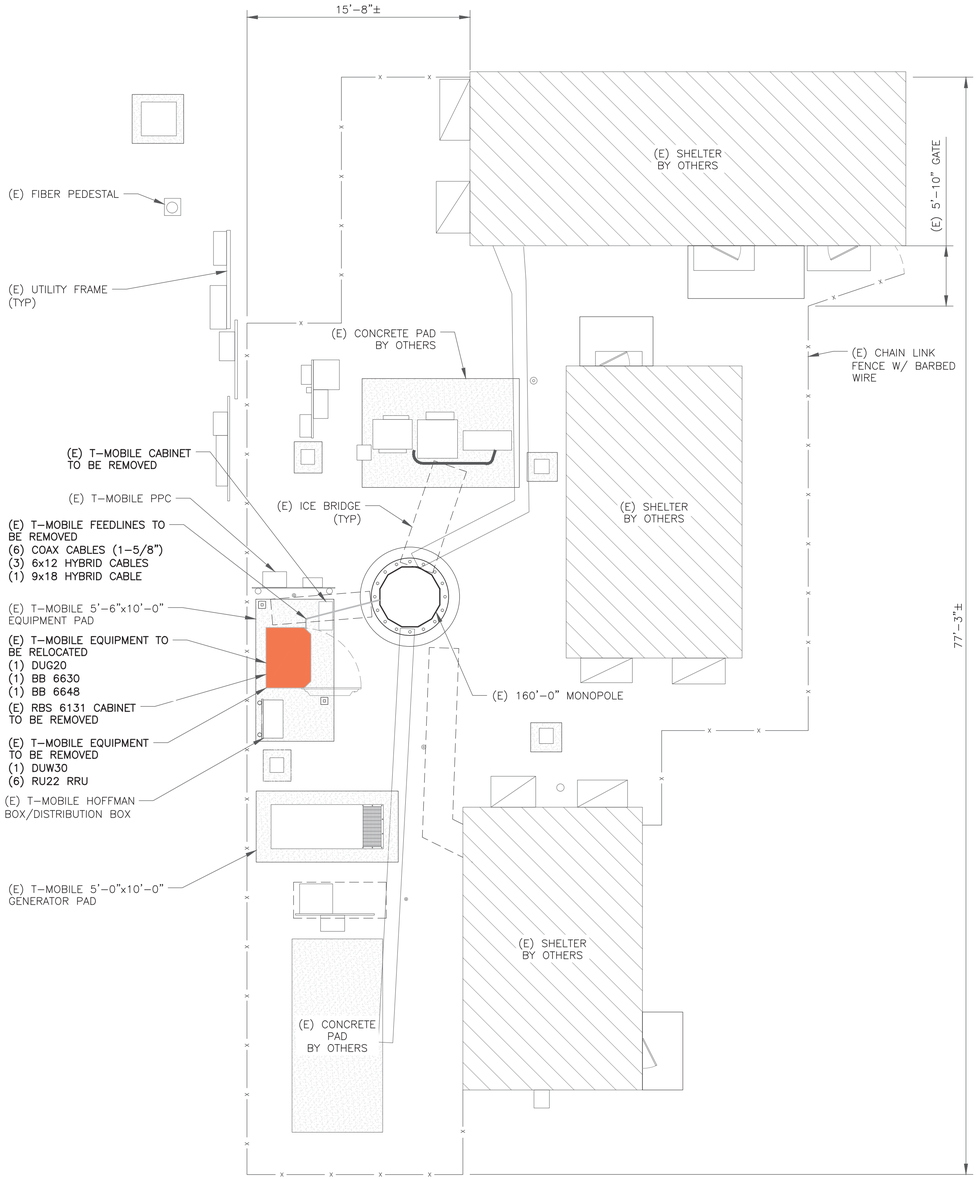
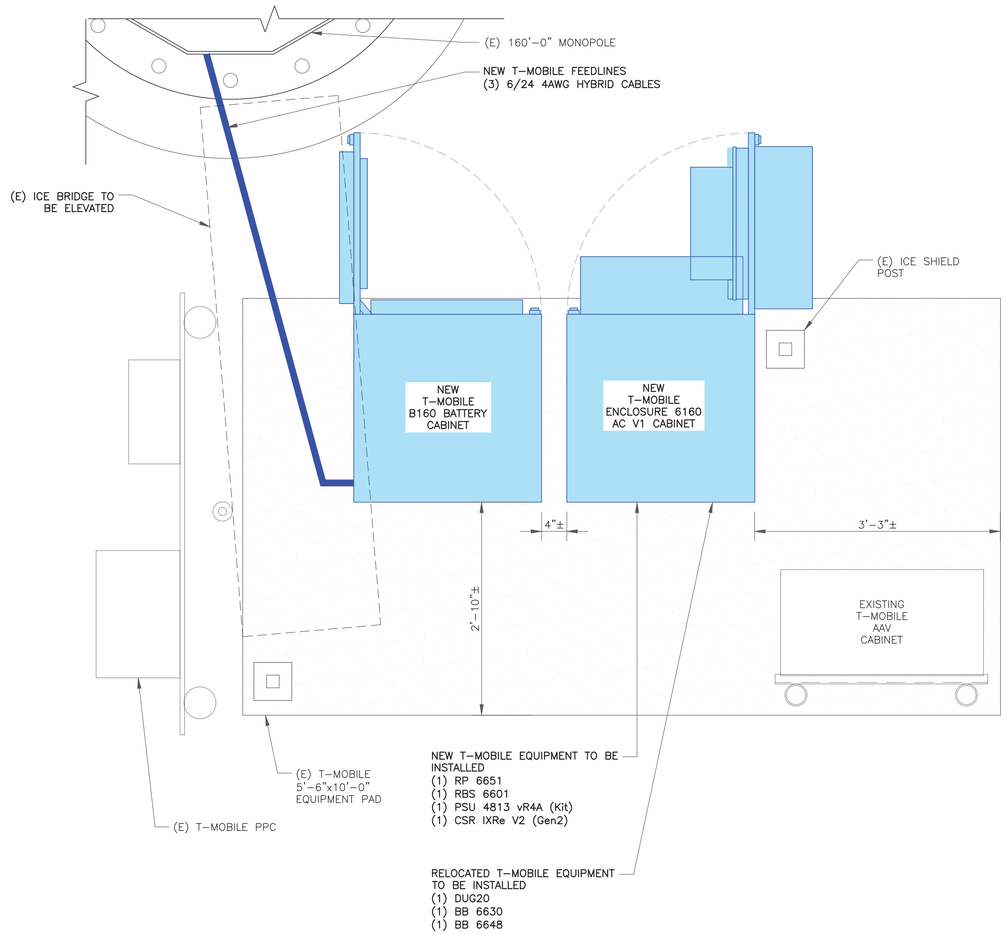
SHEET NUMBER: C-1.1

REVISION: 2



1 SITE PLAN
SCALE: 4' 2' 0 4'
3/16"=1'-0" (FULL SIZE)
3/32"=1'-0" (11x17)

N



2 ENLARGED SITE PLAN
SCALE: 1' 6" 0 1'
1"=1'-0" (FULL SIZE)
1/2"=1'-0" (11x17)

N

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B&T ENGINEERING, INC.
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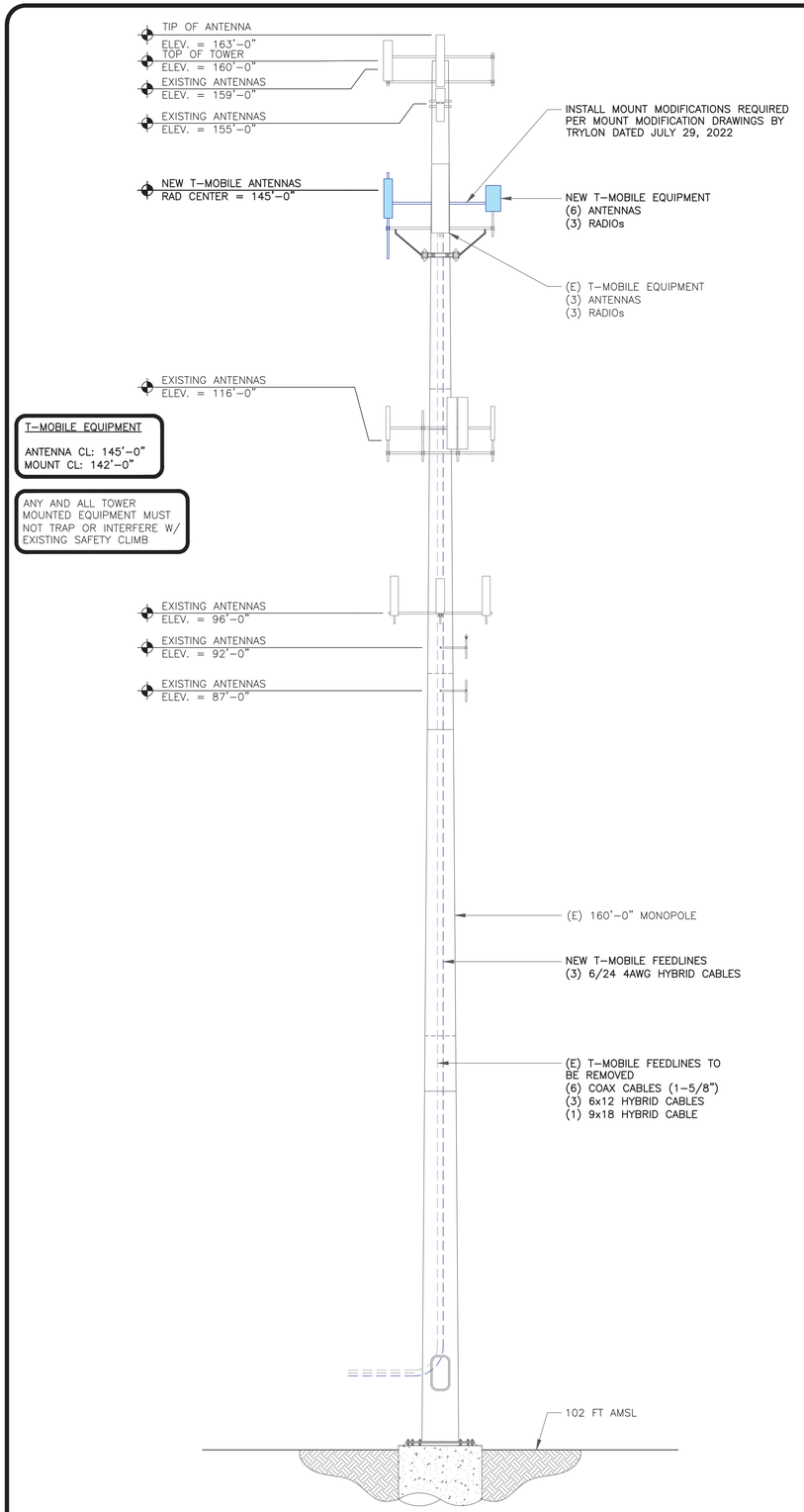
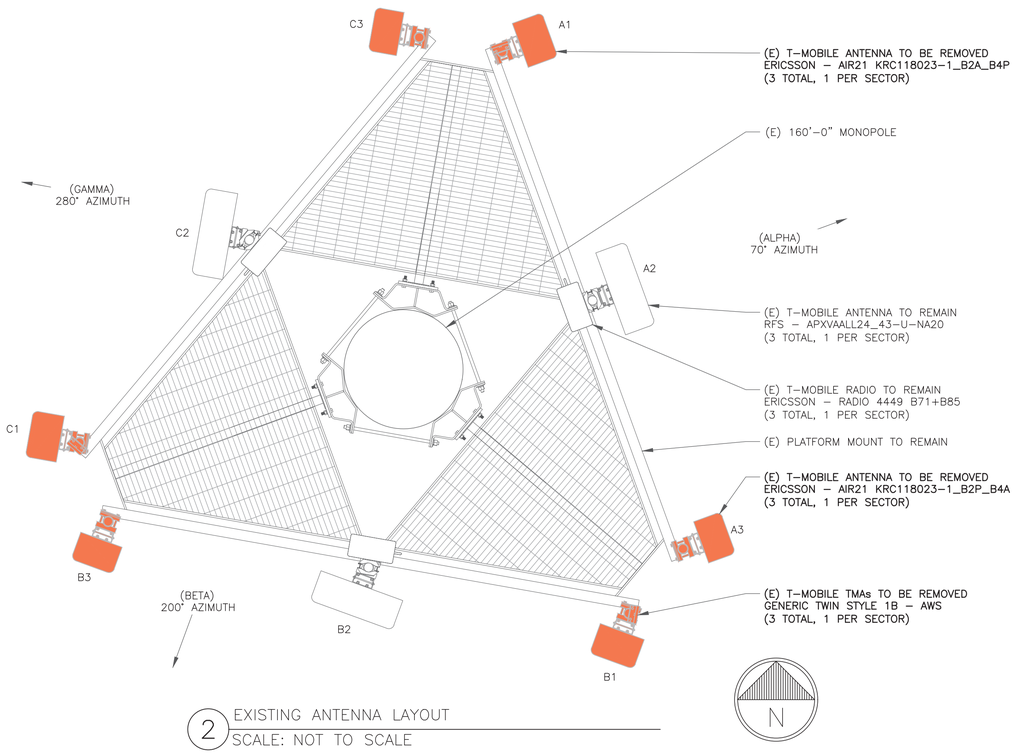
SHEET NUMBER: C-1.2

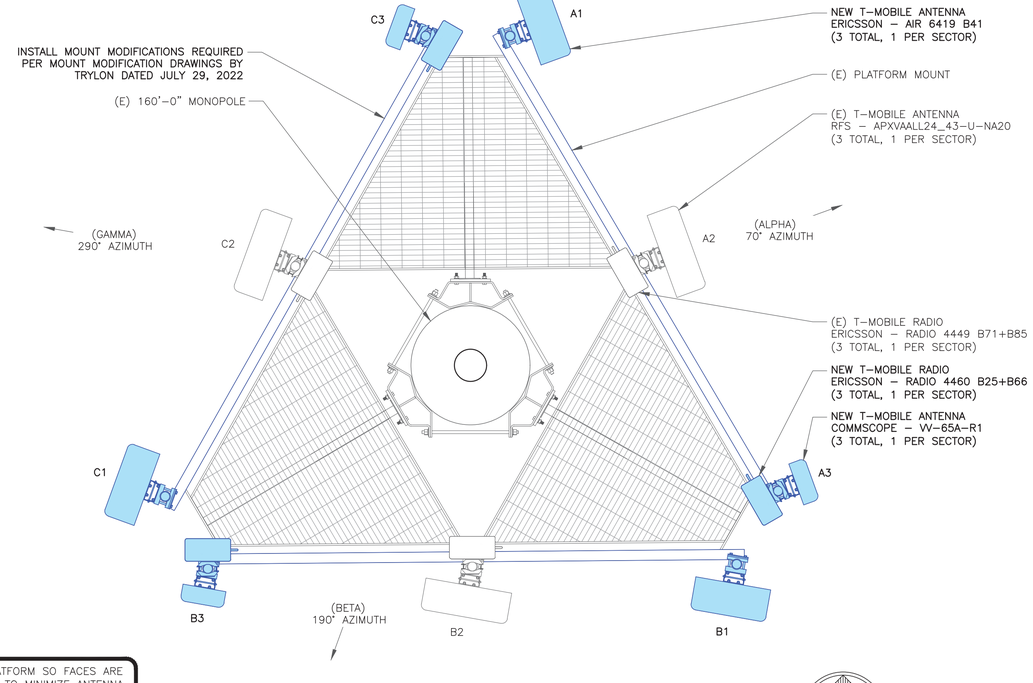
REVISION: 2



1 FINAL ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA LAYOUT
SCALE: NOT TO SCALE



NOTE: ROTATE PLATFORM SO FACES ARE AT 60°/180°/300° TO MINIMIZE ANTENNA SKEW. ANTENNA SKEW WILL BE 10°/10°/10°.

3 FINAL ANTENNA LAYOUT
SCALE: NOT TO SCALE

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B&T ENGINEERING, INC.
PEC.0001564
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SHEET NUMBER: C-2

REVISION: 2

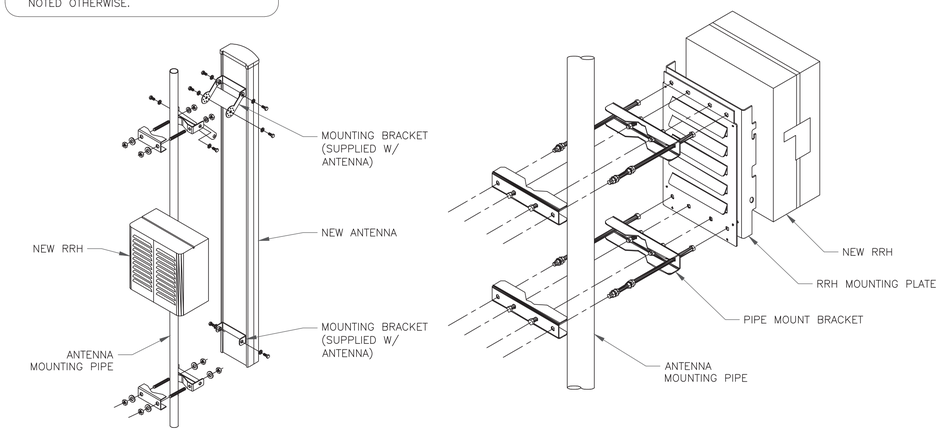
RF SYSTEM SCHEDULE

SECTOR	ANTENNA	TECH	MANUFACTURER	ANTENNA MODEL	AZIMUTH	M-TILT	E-TILT	RAD CENTER	TMA/RRU	FEEDLINE TYPE
ALPHA	A1	L2500/N2500	ERICSSON	AIR 6419 B41	70°	0°	2°/2°	145'-0"	-	(1) HYBRID TRUNK 6/24 4AWG
	A2	N600/L700/L600	RFS	APXVAALL24_43-U-NA20	70°	0°	2°/2°	145'-0"	(1) ERICSSON - RADIO 4449 B71+B85	
	A3	L2100/L1900/ G1900	COMMSCOPE	VV-65A-R1	70°	0°	2°/2°	145'-0"	(1) ERICSSON - RADIO 4460 B25+B66	
BETA	B1	L2500/N2500	ERICSSON	AIR 6419 B41	190°	0°	2°/2°	145'-0"	-	(1) HYBRID TRUNK 6/24 4AWG
	B2	N600/L700/L600	RFS	APXVAALL24_43-U-NA20	190°	0°	2°/2°	145'-0"	(1) ERICSSON - RADIO 4449 B71+B85	
	B3	L2100/L1900/ G1900	COMMSCOPE	VV-65A-R1	190°	0°	2°/2°	145'-0"	(1) ERICSSON - RADIO 4460 B25+B66	
GAMMA	C1	L2500/N2500	ERICSSON	AIR 6419 B41	290°	0°	2°/2°	145'-0"	-	(1) HYBRID TRUNK 6/24 4AWG
	C2	N600/L700/L600	RFS	APXVAALL24_43-U-NA20	290°	0°	2°/2°	145'-0"	(1) ERICSSON - RADIO 4449 B71+B85	
	C3	L2100/L1900/ G1900	COMMSCOPE	VV-65A-R1	290°	0°	2°/2°	145'-0"	(1) ERICSSON - RADIO 4460 B25+B66	

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 RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

T-Mobile
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BU #: **876339**
POND MEADOW RD.
STABLE

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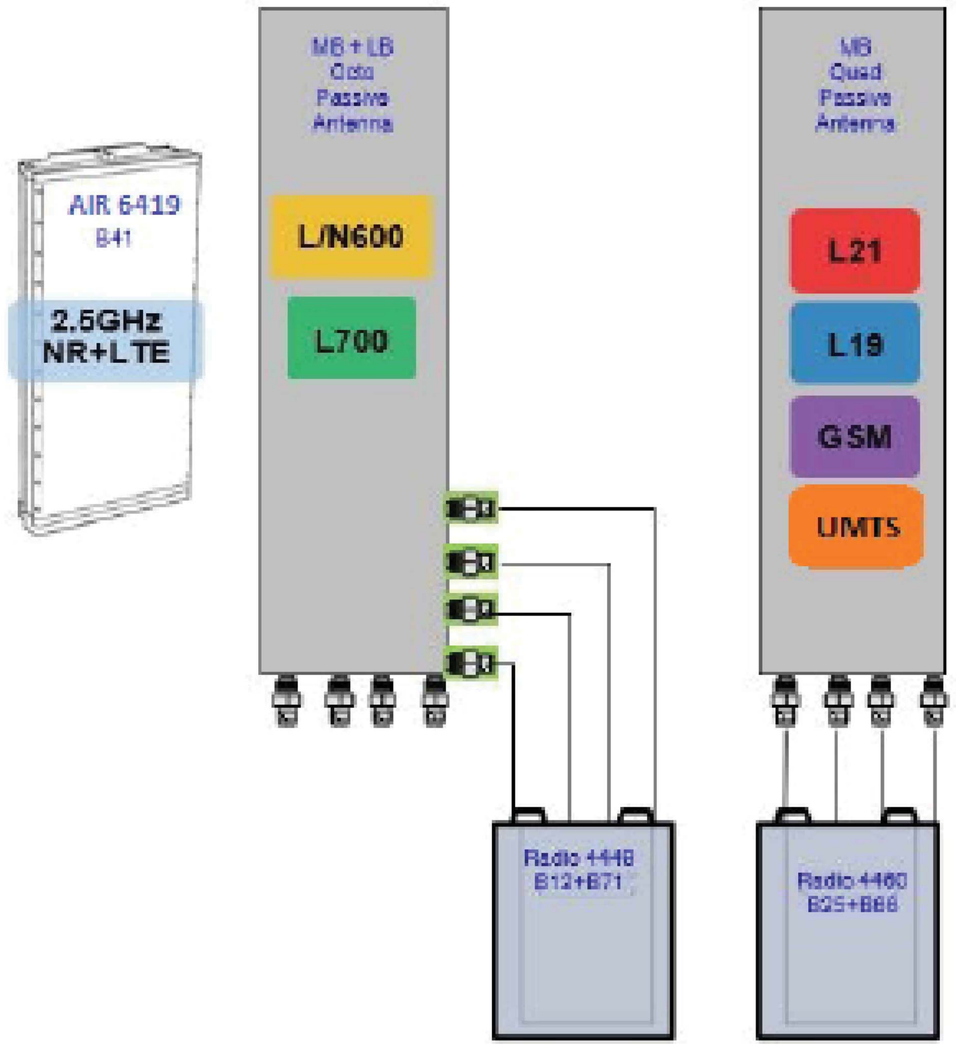
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: C-3

REVISION: 2

67D5998E_1xAIR+1OP+1QP.JPG



1 PLUMBING DIAGRAM
SCALE: NOT TO SCALE

T-Mobile
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BLOOMFIELD, CT 06002

CROWN CASTLE
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POND MEADOW RD.
STABLE

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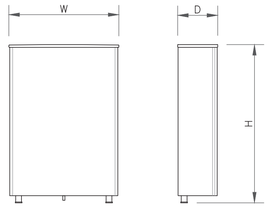
B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

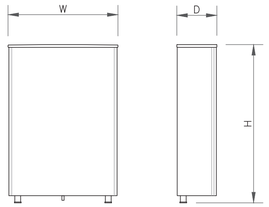
SHEET NUMBER: C-4

REVISION: 2



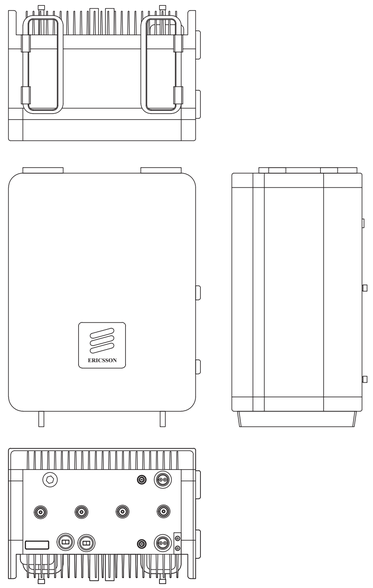
ANTENNA SPECS	
MANUFACTURER	COMMSCOPE
MODEL #	VV-65A-R1
WIDTH	12.0"
DEPTH	4.6"
HEIGHT	54.7"
WEIGHT	33.3 LBS

1 ANTENNA SPECS
SCALE: NOT TO SCALE



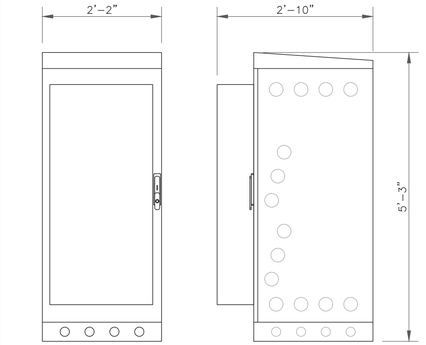
ANTENNA SPECS	
MANUFACTURER	ERICSSON
MODEL #	AIR6449 B41
WIDTH	20.91"
DEPTH	9.02"
HEIGHT	36.25"
WEIGHT	96.5 LBS

2 ANTENNA SPECS
SCALE: NOT TO SCALE



ERICSSON – RADIO 4460
WEIGHT: 109 LBS
SIZE (HxWxD): 17.0x15.1x11.9 IN.

3 ERICSSON – RADIO 4460
SCALE: NOT TO SCALE



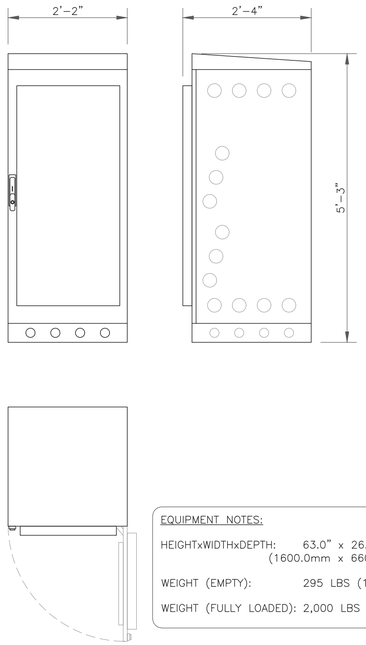
EQUIPMENT NOTES:

HEIGHTxWIDTHxDEPTH: 63.0" x 26.0" x 34.0"
(1600.0mm x 660.0mm x 864.0mm)

WEIGHT (EMPTY): 320 LBS (145 kg)

WEIGHT (FULLY LOADED): 1,500 LBS (681 kg)

4 ERICSSON – 6160
SCALE: NOT TO SCALE



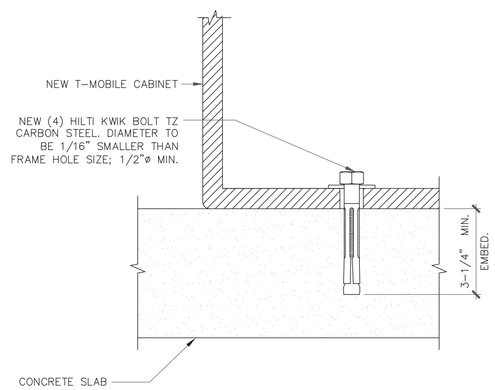
EQUIPMENT NOTES:

HEIGHTxWIDTHxDEPTH: 63.0" x 26.0" x 28.0"
(1600.0mm x 660.0mm x 711.0mm)

WEIGHT (EMPTY): 295 LBS (134 kg)

WEIGHT (FULLY LOADED): 2,000 LBS (908 kg)

5 ERICSSON – B160
SCALE: NOT TO SCALE



6 CABINET ANCHOR DETAIL
SCALE: NOT TO SCALE

7 NOT USED
SCALE: NOT TO SCALE

8 NOT USED
SCALE: NOT TO SCALE

T-Mobile

35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE

1505 WESTLAKE AVENUE NORTH, SUITE 800
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B+T GRP

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www.btgrp.com

T-MOBILE SITE NUMBER:
CT11032D

BU #: **876339**
POND MEADOW RD.
STABLE

782 OLD CLINTON ROAD
WESTBROOK, CT 06498

EXISTING
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STATE OF CONNECTICUT
LICENSED PROFESSIONAL ENGINEER
No. 23024
8/8/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: C-5

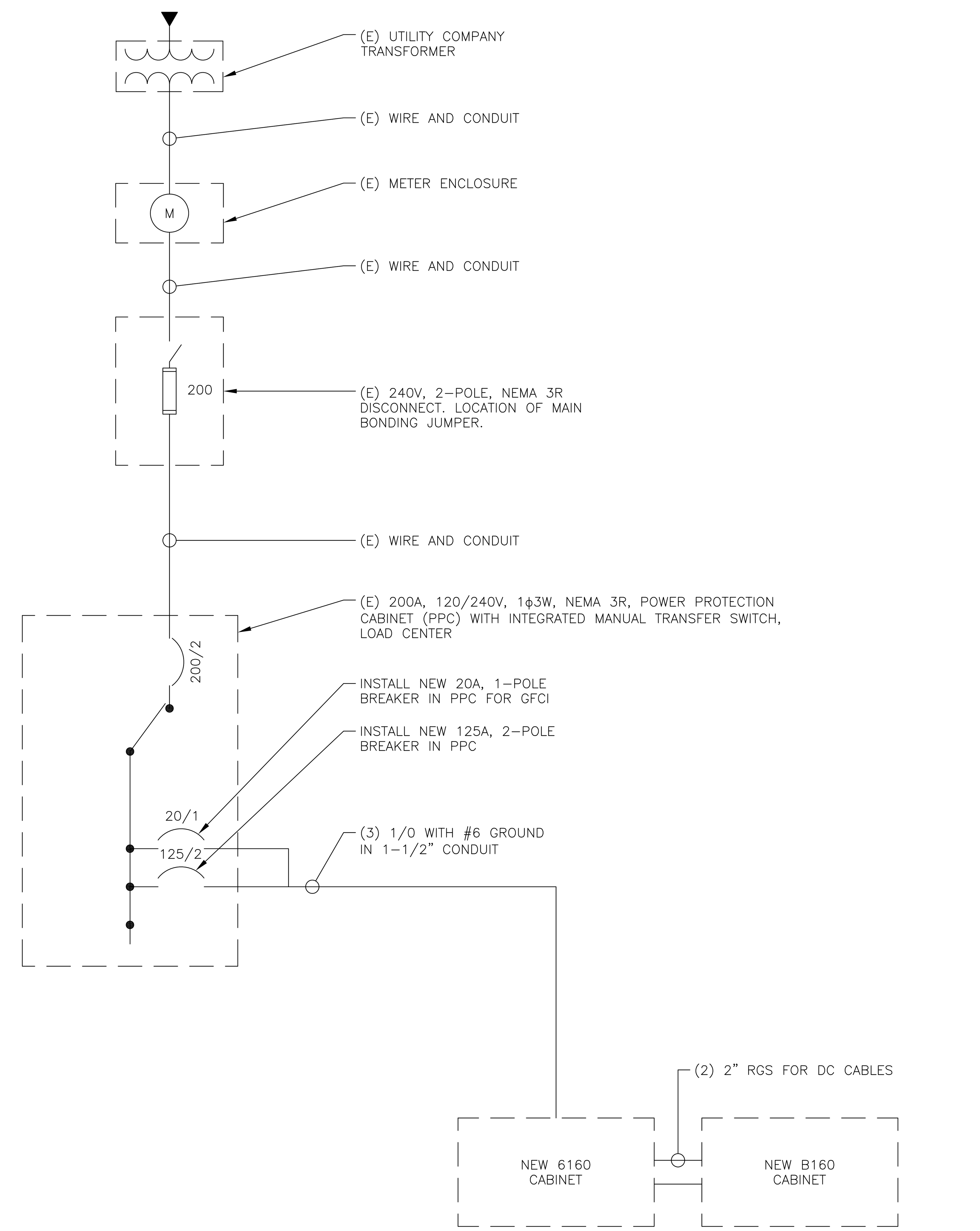
REVISION: 2

FINAL PANEL SCHEDULE							
LOAD	POLES	AMPS	BUS L1	BUS L2	AMPS	POLES	LOAD
SURGE	2	20A	1	2	20A	1	EMERSON OUTLET
			3	4	125A	2	6160
6131	2	125A	5	6			
			7	8	20A	1	GFCI
TELCO GFCI	1	20A	9	10			
SAFETY LIGHT	1	20A	11	12			
			13	14			
			15	16			
			17	18			
			19	20			
			21	22			
			23	24			
			25	26			
			27	28			
			29	30			

RATED VOLTAGE: ■120/240 ☐______. 1 PHASE, 3 WIRE	BRANCH POLES: ☐12 ☐24 ■30 ☐42	APPROVED MF'RS
RATED AMPS: ☐100 ■200 ☐400 ☐______.	CABINET: ■SURFACE ☐FLUSH	NEMA ☐1 ■3R ☐4X
☐MAIN LUGS ONLY / MAIN 200 AMPS ■BREAKER ☐FUSED SWITCH	■HINGED DOOR	■KEYED DOOR LATCH
☐FUSED ■CIRCUIT BREAKER BRANCH DEVICES	☐__________ TO BE GFCI BREAKERS	FULL NEUTRAL BUS / GROUND BAR
ALL BREAKERS MUST BE RATED TO INTERRUPT A SHORT CIRCUIT ISC OF 10,000 AMPS SYMMETRICAL		

REPLACE EXISTING BREAKER IN POSITION 4 AND 6 WITH A NEW 2P 125A BREAKER
REPLACE EXISTING BREAKER IN POSITION 8 WITH A NEW 1P 20A BREAKER
IF 125A 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, 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
35 GRIFFIN ROAD
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BU #: **876339**
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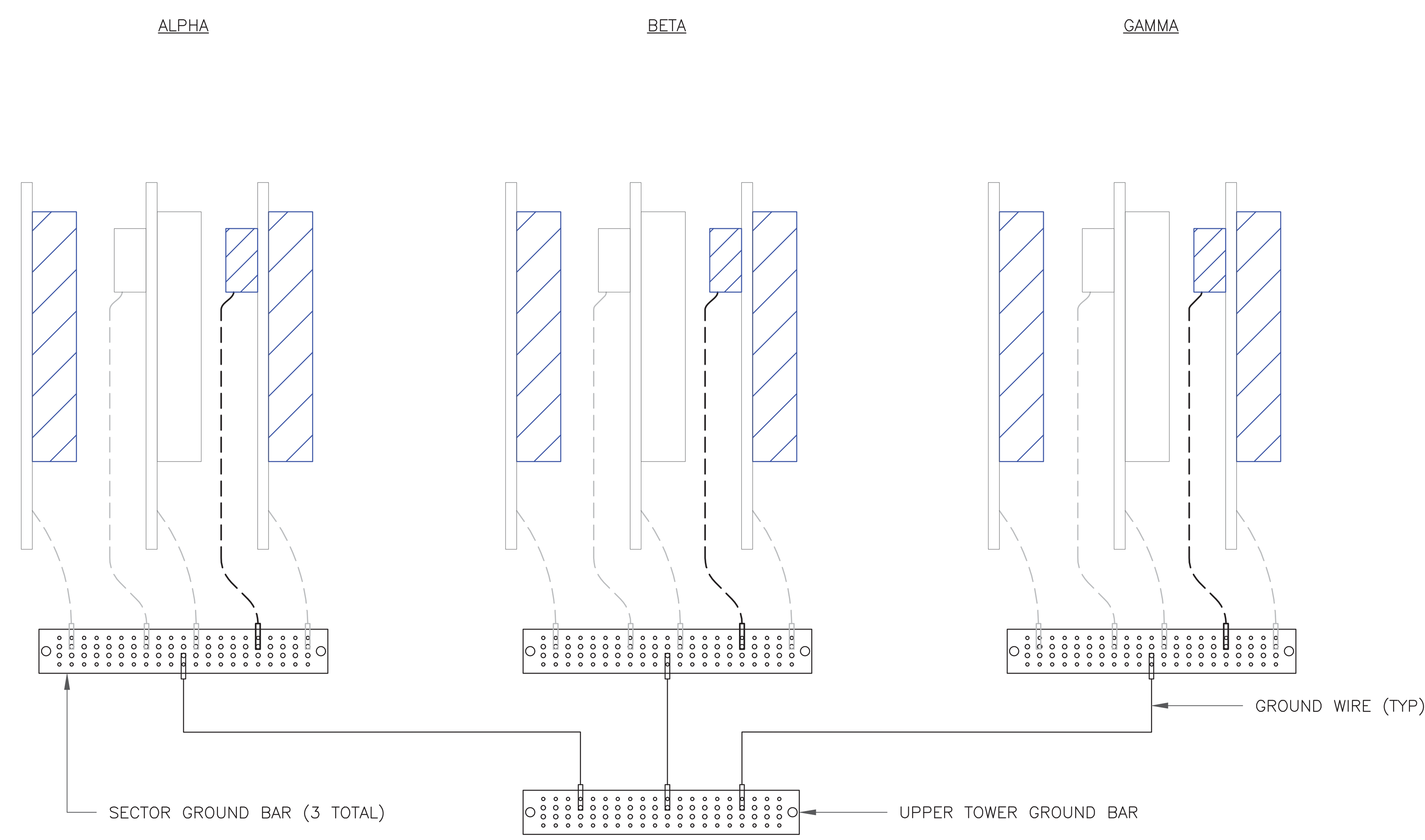
SHEET NUMBER: E-1
REVISION: 2



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
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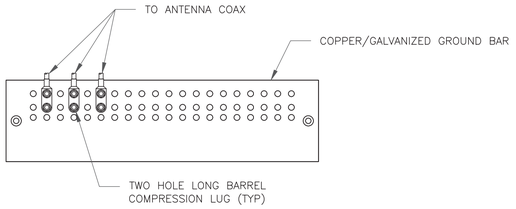
8/8/22

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: G-1

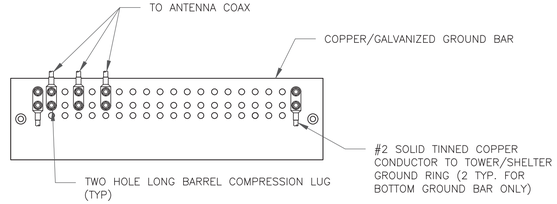
REVISION: 2



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.

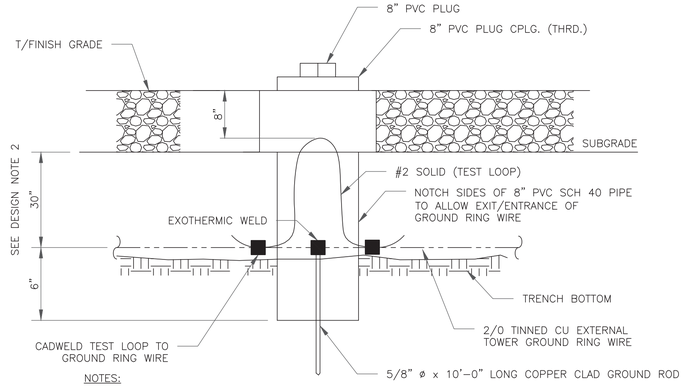
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



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.

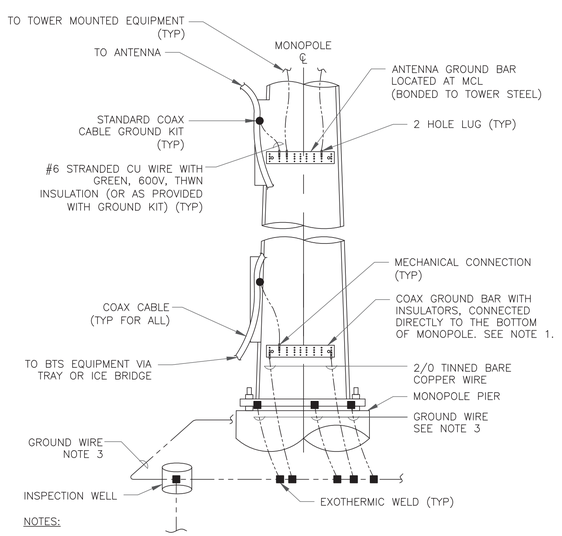
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



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)

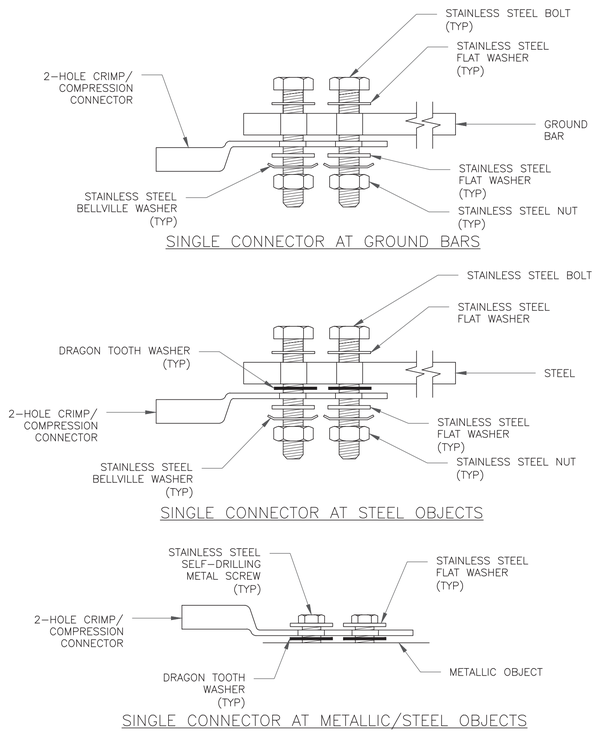
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



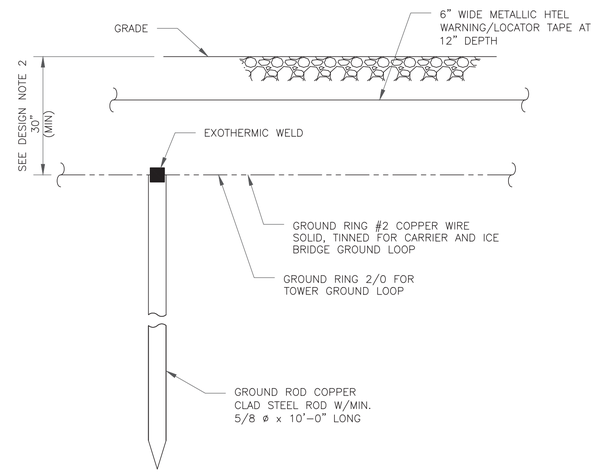
NOTES:

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:

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)

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

T-Mobile
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1505 WESTLAKE AVENUE NORTH, SUITE 800
SEATTLE, WA 98109

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

T-MOBILE SITE NUMBER:
CT11032D

BU #: **876339**
POND MEADOW RD. STABLE

782 OLD CLINTON ROAD
WESTBROOK, CT 06498

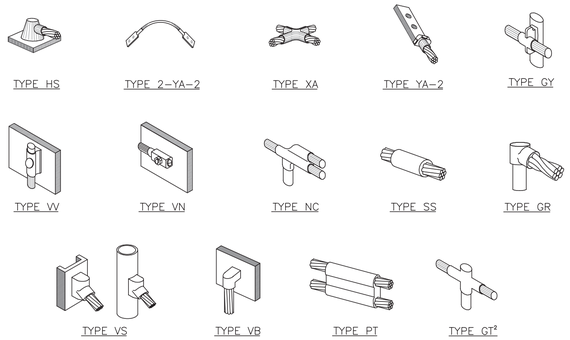
EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	6/20/22	MEH	PRELIMINARY REVIEW	CV
0	6/27/22	MEH	CONSTRUCTION	CV
1	8/3/22	TDG	CONSTRUCTION	LR
2	8/8/22	MLC	CONSTRUCTION	LR

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: G-2
REVISION: 2

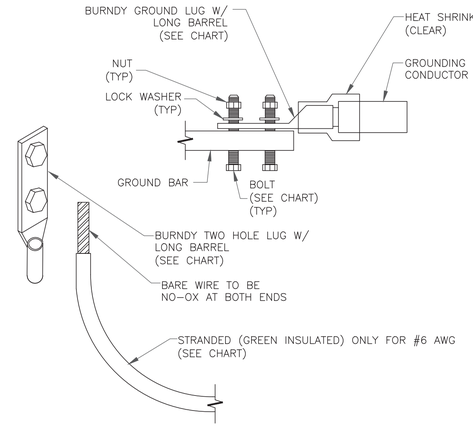


NOTE:

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

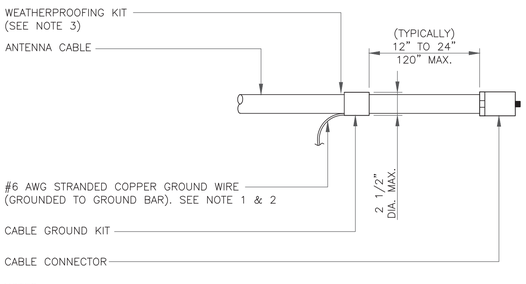
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



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.

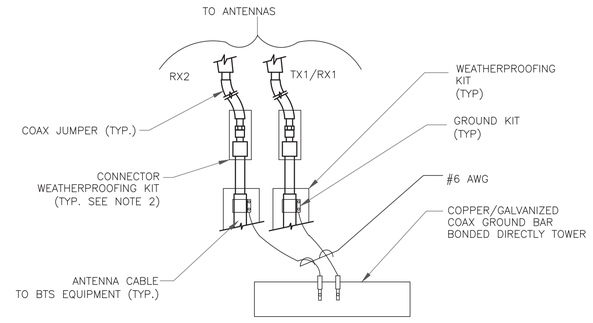
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



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.

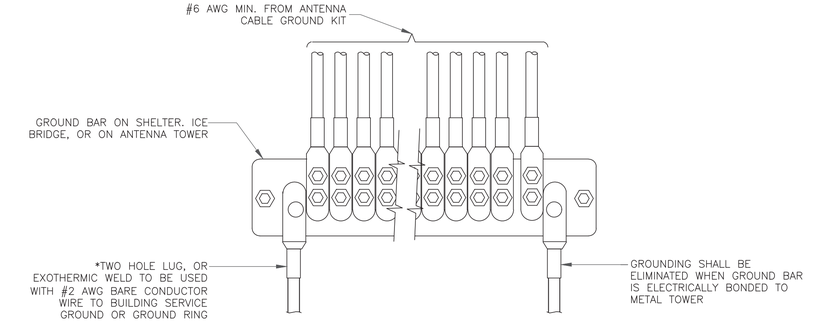
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



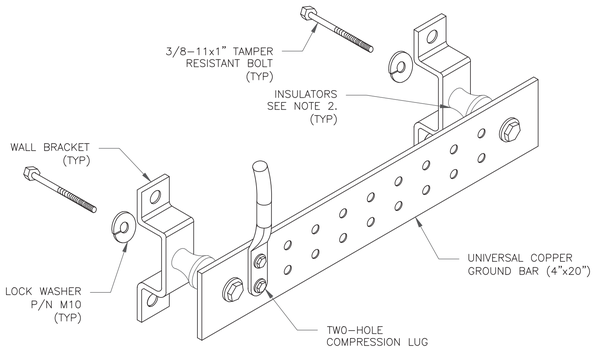
NOTES:

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



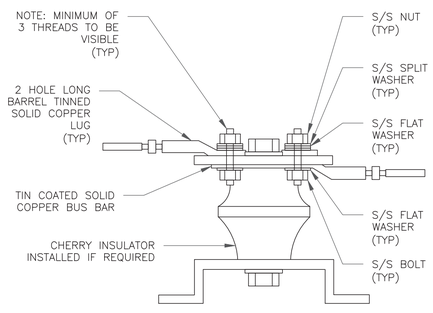
5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



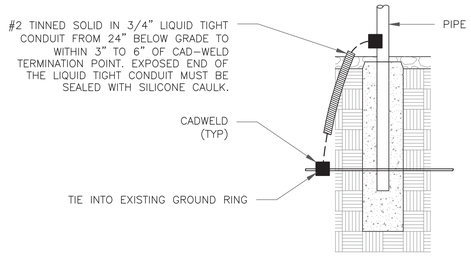
NOTES:

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
35 GRIFFIN ROAD
BLOOMFIELD, CT 06002

CROWN CASTLE
1505 WESTLAKE AVENUE NORTH, SUITE 800
SEATTLE, WA 98109

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

T-MOBILE SITE NUMBER:
CT11032D

BU #: **876339**
POND MEADOW RD.
STABLE

782 OLD CLINTON ROAD
WESTBROOK, CT 06498

EXISTING
160'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
A	6/20/22	MEH	PRELIMINARY REVIEW	CV
0	6/27/22	MEH	CONSTRUCTION	CV
1	8/3/22	TDG	CONSTRUCTION	LR
2	8/8/22	MLC	CONSTRUCTION	LR

B&T ENGINEERING, INC.
PEC.0001564
Expires 2/10/23

SHEET NUMBER: G-3

REVISION: 2

T··Mobile·

UPGRADE:

MOUNT REINFORCEMENT

VICINITY MAP

GENERAL NOTES

PRIOR TO ACCESSING/ ENTERING THE SITE, YOU MUST CONTACT THE CROWN NOC AT 800-788-7011 AND CROWN CM
CHAD STEINHOFF- 214-287-3756, CHAD.STEINHOFF@CROWNCASTLE.COM

THE HEIGHT OF THE TOWER WILL NOT BE INCREASED, NOR AN EXPANSION OF THE GROUND/ LEASE AREA WHEN AND WHERE APPLICABLE

BUILDING CODES

ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL AUTHORITIES HAVING JURISDICTION

1. 2015 INTERNATIONAL BUILDING CODE
2. UNIFORM BUILDING CODE
3. CITY/COUNTY ORDINANCES
4. TIA-222-H

IF YOU DIG IN ANY STATE DIAL 811
FOR THE LOCAL "ONE CALL CENTER"
IT'S THE LAW

THE UTILITIES SHOWN HEREIN ARE FOR THE CONTRACTORS CONVENIENCE ONLY. THERE MAY BE OTHER UTILITIES NOT SHOWN ON THESE PLANS. THE ENGINEER/SURVEYOR ASSUMES NO RESPONSIBILITY FOR THE LOCATIONS SHOWN AND IT SHALL BE THE CONTRACTOR'S RESPONSIBILITY TO VERIFY ALL THE UTILITIES WITHIN THE LIMITS OF THE WORK. ALL DAMAGE MADE TO THE EXISTING UTILITIES BY THE CONTRACTOR SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.

SITE NAME:
POND MEADOW RD. STABLE

SITE NUMBER:
CT11032D

CROWN CASTLE BU#:
876339

SITE ADDRESS:

782 OLD CLINTON ROAD,
WESTBROOK, CT 06498-1767

APPROVALS

T-MOBILE CONSTRUCTION MANAGER

T-MOBILE RF ENGINEER

LAND USE PLANNER

NETWORK OPERATION

PROPERTY OWNER

CONTRACTOR

DRIVING DIRECTION

FROM TWEED-NEW HAVEN AIRPORT:
HEAD SOUTHWEST (417 FT), TURN LEFT (0.2 MI), TURN RIGHT ONTO BURR ST (0.2 MI), TURN LEFT TO STAY ON BURR ST (0.1 MI), SLIGHT LEFT ONTO CHARTER OAK AVE (0.6 MI), TURN LEFT ONTO MAIN ST (0.4 MI), TURN RIGHT ONTO OAKLEY ST (358 FT), TURN RIGHT ONTO US-1 N (0.5 MI), USE THE LEFT LANE TO TAKE THE RAMP ONTO I-95 N (0.2 MI), MERGE WITH I-95 N, DESTINATION WILL BE ON THE RIGHT.

PROJECT INFORMATION

SCOPE OF WORK:	REINFORCE AS FOLLOWS: • INSTALL NEW SITE PRO 1, HRK12-U HANDRAIL KIT, AT 40" ABOVE THE BOTTOM FACE HORIZONTAL ELEVATION. • INSTALL NEW 2.875" O.D., SCH. 40, 120" LONG ANTENNA MOUNTING PIPE ON ALL SECTORS AT POS. #3 (1 PER SECTOR, 3 TOTAL) • INSTALL NEW (2) 1/2"ø U-BOLTS TO CONNECT THE NEW PIPE TO THE BOTTOM FACE HORIZONTALS (2 PER SECTOR, 6 TOTAL).
JURISDICTION:	MIDDLESEX COUNTY
SITE NAME:	POND MEADOW RD. STABLE
SITE ADDRESS:	782 OLD CLINTON ROAD, WESTBROOK, CT 06498-1767
LATITUDE:	41° 17' 25.78"
LONGITUDE:	-72° 28' 8.05"
TOWER TYPE:	MONOPOLE
OVERALL TOWER HEIGHT:	160'
ELEVATION OF WORK ON TOWER:	142'

SHEET INDEX

SHEET #	DESCRIPTION	REVISION #
T-1.	TITLE SHEET	0
S-1	MOUNT REINFORCEMENT	0
S-2	MOUNT REINFORCEMENT DETAIL	0

CROWN CASTLE
1220 AUGUSTA DRIVE SUIT 500
HOUSTON, TX 77057

T··Mobile·

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038
1-855-669-5421

STATE OF CONNECTICUT
JEFF ABERNATHY
No. 31022
LICENSED
PROFESSIONAL ENGINEER
7-24-22

DRAWING SCALES ARE INTENDED FOR 24"x36" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	05/16/22	FOR REVIEW	RC

SITE INFORMATION

SITE NAME:
POND MEADOW RD. STABLE

SITE NUMBER:
CT11032D

SITE ADDRESS:
782 OLD CLINTON ROAD,
WESTBROOK, CT
06498-1767

SHEET DESCRIPTION

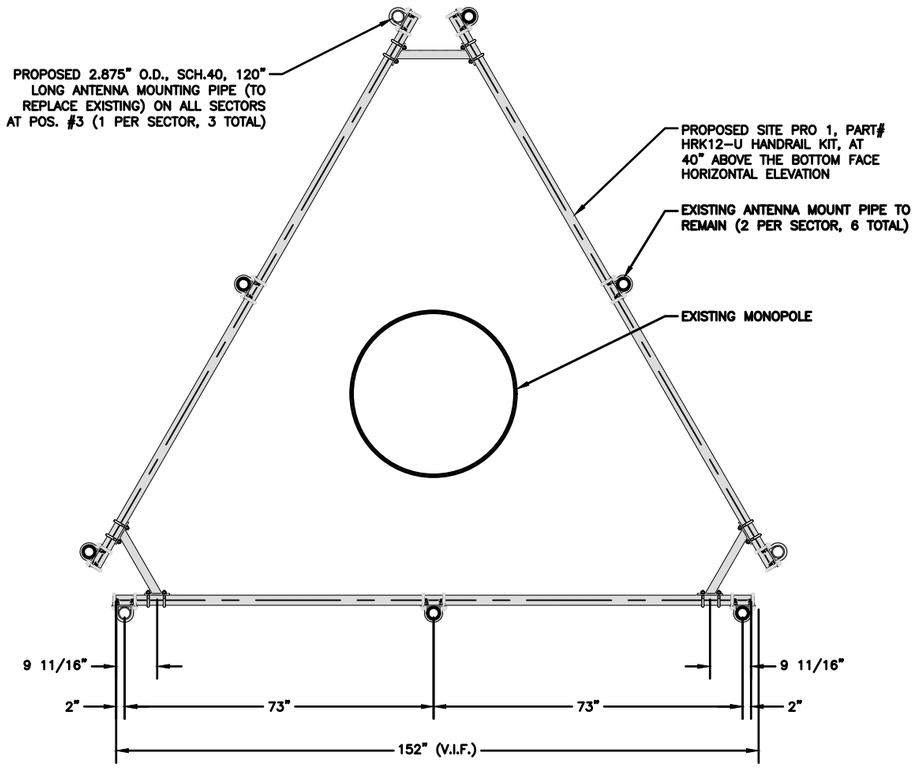
TITLE SHEET

SHEET No.

T-1

INSTALLATION NOTES:

- INSTALL NEW SITE PRO 1, HRK12-U HANDRAIL KIT, AT 40" ABOVE THE BOTTOM FACE HORIZONTAL ELEVATION.
- INSTALL NEW 2.875" O.D., SCH. 40, 120" LONG ANTENNA MOUNTING PIPE ON ALL SECTORS AT POS. #3 (1 PER SECTOR, 3 TOTAL)
- INSTALL NEW (2) 1/2"ø U-BOLTS TO CONNECT THE NEW PIPE TO THE BOTTOM FACE HORIZONTALS (2 PER SECTOR, 6 TOTAL).



2 / S-1

EQUIPMENT NOT SHOWN FOR CLARITY.

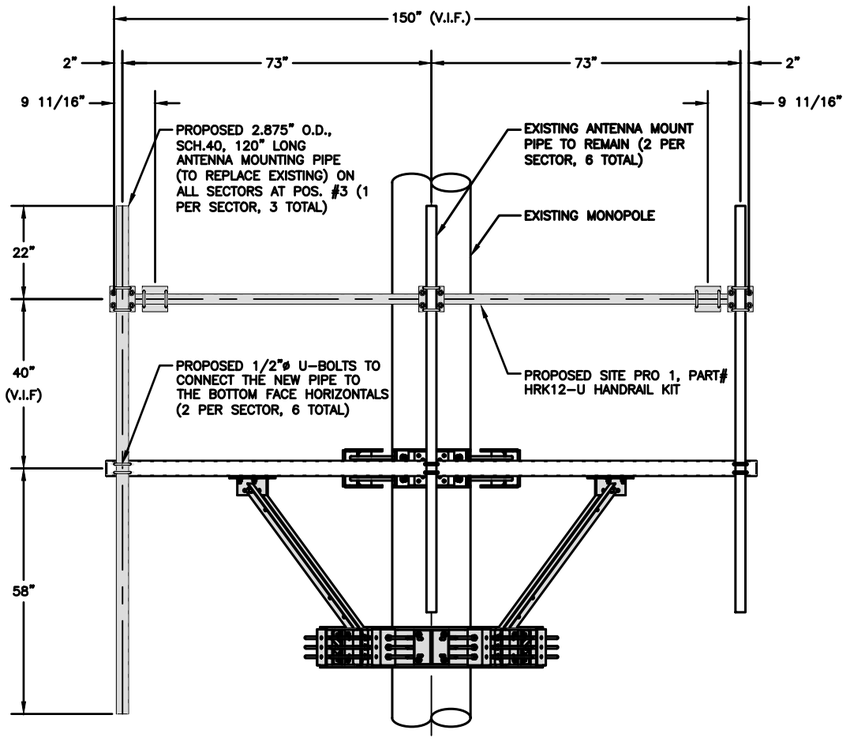
1 / S-1 PROPOSED TOP PLAN VIEW (ALL SECTORS)
SCALE: 3/4" = 1'-0"

0 0'-8" 1'-4" 2'-8" 4'-0"

BILL OF MATERIALS		
QTY.	KIT NO./PART NO.	DESCRIPTION
1 TOTAL	HRK12-U	HANDRAIL KIT
1 PER SECTOR, 3 TOTAL	–	2.875" O.D., SCH.40, 120" LONG PIPE
2 PER SECTOR, 6 TOTAL	–	1/2"ø U-BOLTS

GENERAL NOTES:

1. ALL STEEL ANGLE TO BE ASTM A36 (GR 36) OR BETTER.
2. ALL STEEL PLATE TO BE ASTM A36 (GR 36) OR BETTER.
3. ALL PIPES TO BE ASTM A53 (GR 35) OR BETTER.
4. HOT DIP GALVANIZE LEVEL 3 PARTS.
5. APPLY TWO COATS OF GALVICON TO ALL FIELD CUT OR DRILL EDGES.
6. ALL BOLTS TO MAINTAIN 1" EDGE DISTANCE.



EQUIPMENT NOT SHOWN FOR CLARITY.

2 / S-1 PROPOSED ELEVATION VIEW (ALL SECTORS)
SCALE: 3/4" = 1'-0"

0 0'-8" 1'-4" 2'-8" 4'-0"

CROWN CASTLE
1220 AUGUSTA DRIVE SUIT 500
HOUSTON, TX 77057

T-Mobile

Trylon
1825 W. WALNUT HILL LANE, SUITE 120
IRVING, TEXAS 75038
1-855-669-5421

STATE OF CONNECTICUT
JEFF ABERNATHY
No. 31022
LICENSED
PROFESSIONAL ENGINEER
7-24-22

DRAWING SCALES ARE INTENDED FOR 24"x36" SIZE PRINTED MEDIA ONLY. ALL OTHER PRINTED SIZES ARE DEEMED "NOT TO SCALE".

SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	05/16/22	FOR REVIEW	RC

SITE INFORMATION

SITE NAME:
POND MEADOW RD. STABLE

SITE NUMBER:
CT11032D

SITE ADDRESS:
782 OLD CLINTON ROAD,
WESTBROOK, CT
06498-1767

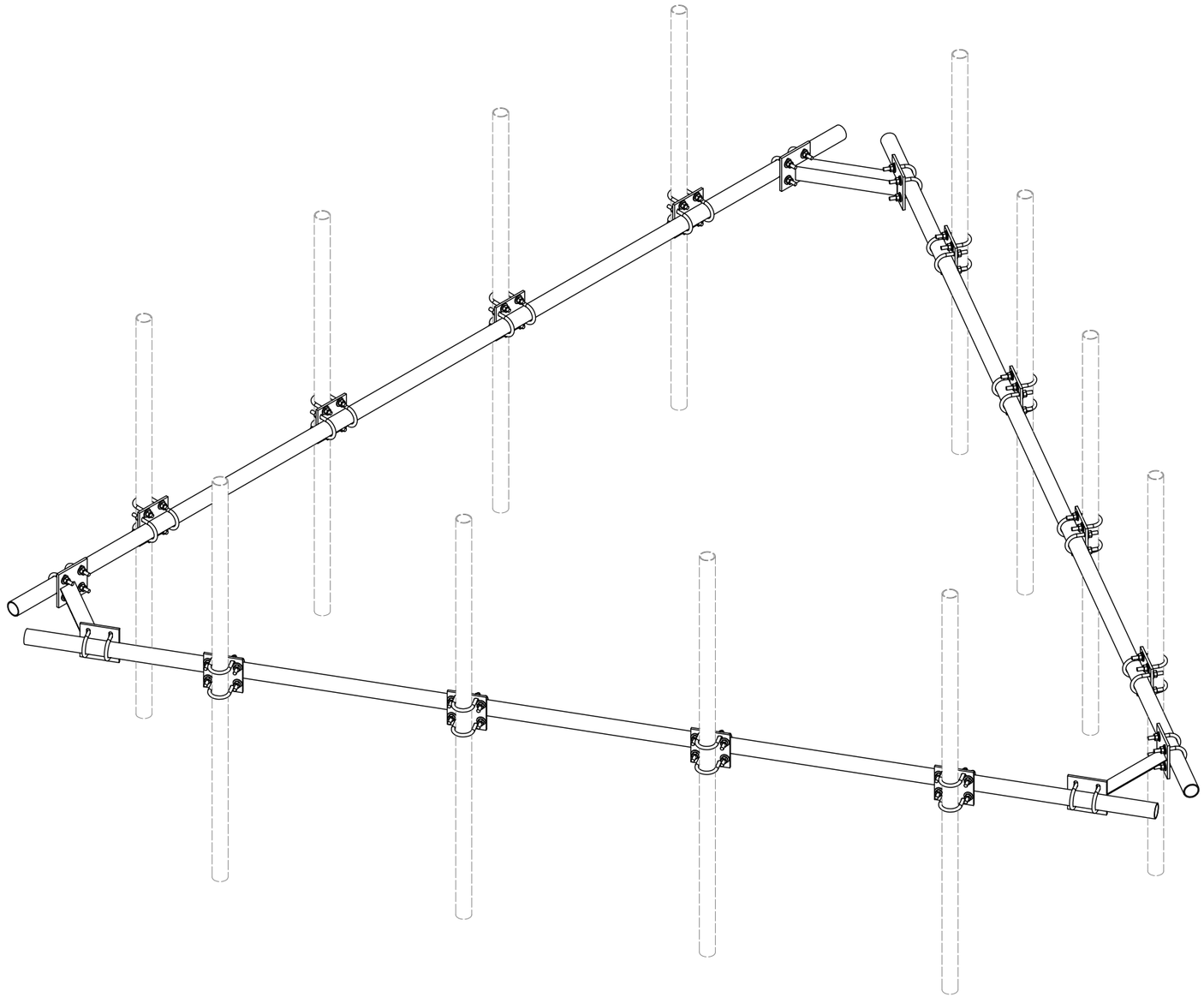
SHEET DESCRIPTION

MOUNT REINFORCEMENT

SHEET No.

S-1

MOUNT KIT	
PART NUMBER	DESCRIPTION
HRK12-U	HANDRAIL KIT



CROWN CASTLE

1220 AUGUSTA DRIVE SUIT 500
HOUSTON, TX 77057

T-Mobile

Trylon

1825 W. WALNUT HILL LANE, SUITE 120
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STATE OF CONNECTICUT
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SUBMITTALS

REV	DATE	DESCRIPTION	BY
0	05/16/22	FOR REVIEW	RC

SITE INFORMATION

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POND MEADOW RD. STABLE

SITE NUMBER:
CT11032D

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782 OLD CLINTON ROAD,
WESTBROOK, CT
06498-1767

SHEET DESCRIPTION

MOUNT REINFORCEMENT DETAIL

SHEET No.

S-2