



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

March 7, 2022

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

**RE: Notice of Exempt Modification for Verizon Wireless: 467706
Crown Site ID#876317
150 Mattatuck Heights, Waterbury, CT 06705
Latitude: 41° 32' 16.30" / Longitude: -72° 59' 6.10"**

Dear Ms. Bachman:

Verizon currently maintains nine (9) antennas at the 110-foot mount level on the existing 144-foot monopole tower, located at 150 Mattatuck Heights, Waterbury, CT. The property is owned by Waterbury Twin LLC & 150 MH LLC. The tower is owned by Crown Castle. Verizon now intends to add three (3) new antennas and ancillary equipment at the 110-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) Samsung - MT6407-77A Antenna
- (1) Hybrid Cable 1-1/4"
- (1) Mount Modification Per NB+C Mount Analysis dated 1.24.2022

Remove:

- (1) Coaxial Cable 1-5/8"

The facility was approved by the City of Waterbury Planning Commission and was constructed by Sprint in 1999.

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 R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Neil M O'Leary, Mayor City of Waterbury, Robert Nerney, City Planner, City of Waterbury. Waterbury Twin LLC & 150 MH LLC, 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, Verizon respectfully submits that the proposed modifications to the above-reference telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2). Please send approval/rejection letter to Attn: Jeffrey Barbadora.

Sincerely,



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

Melanie A. Bachman

Page 3

Attachments

cc:

Neil M O'Leary - Mayor
City of Waterbury
235 Grand Street
Waterbury, CT 06702
203-574-6712

Robert Nerey – City Planner
City of Waterbury
235 Grand Street
Waterbury, CT 06702
203-574-6817

Waterbury Twin LLC & 150 MH LLC
% Leonard Linsbker
12 Iselin Terrace
Larchmont, NY 10538

Crown Castle, Tower Owner.

Myl, Kimberly

From: Myl, Kimberly
Sent: Tuesday, May 17, 2016 3:38 PM
To: 'siting.council@ct.gov'
Subject: 150 Mattatuck Heights - Existing Telecommunications Tower Original Zoning Approval

To Whom It May Concern:

Please be advised both the township (email below) and Crown Castle as the tower owner, do not have the original zoning resolution on file. Please use this email as notification to waive this requirement as we will include this and the email from the township within our submission.

Please let me know if you have any questions or need additional information. Thank you in advance.

KIMBERLY MYL
Real Estate Specialist
T: (201) 238-9069 | M: (201) 993-3697

CROWN CASTLE
1200 MacArthur Blvd, Suite 200
Mahwah, NJ 07430

From: Margaret Rice [<mailto:mrice@waterburyct.org>]
Sent: Tuesday, May 17, 2016 1:03 PM
To: Myl, Kimberly
Subject: RE: 150 Mattatuck Heights - Existing Telecommunications Tower Original Zoning Approval

Hi Kimberly,

I checked our records and City Clerk's office and could not find anything. I then contacted the Town Clerk and I was told that there might be something on the Land Records and that you would need to contact the Town Clerk for them to do a Title Search. They're phone number is (203) 574-6806.

Cissie
Administrative Support Specialist III
203)574-6817 Ext.7296

VOL 2149 PAGE 142

Site Plan Decision for recording in the office of the Town Clerk, Land Records, in accordance with Chapter 126, Municipal Planning Commission, Section 8-26e, of the General Statutes of the State of Connecticut:-

15485

OWNER & DEVELOPER

Owner - Waterbury Renewal and Economic Development Agency
29 Leavenworth Street
Waterbury, CT 06702

Developer - R R & P Realty
Mattatuck Heights
Waterbury, CT 06705

NAME OF SITE PLAN

Site Plan of Parcel #14, Captain Neville Drive Industrial Park Prepared for R.R. & P Realty, Mattatuck Heights, Waterbury, Connecticut, Owner, Applicant: W.R.E.D.A., 29 Leavenworth St., Waterbury, Connecticut, Developer: R.R. & P. Realty, P.O. Box 214, Middlebury, CT, Dated: August 29, 1986, Revised to Sept. 16, 1986, DeCarlo & Doll, Inc., Hamden, CT, Meyers Associates, Waterbury, CT and Joseph Calabrese, Waterbury, CT.

LOCATION: Parcel #14, Captain Neville Drive Industrial Park

At a regular meeting of the City Plan Commission held November 10, 1986, the following vote was unanimously passed to wit:-

VOTED: That the City Plan Commission approves the Site Plan of Parcel #14, Captain Neville Drive Industrial Park, prepared for R.R. & P. Realty, Mattatuck Heights, Waterbury, Connecticut, Owner, Applicant: W.R.E.D.A., 29 Leavenworth St., Waterbury, Connecticut, Developer: R.R. & P. Realty, P.O. Box 214, Middlebury, CT, Dated: August 29, 1986, Revised to September 16, 1986, DeCarlo & Doll, Inc., Hamden, CT, Meyers Associates, Waterbury, CT and Joseph Calabrese, Waterbury, CT, as being in conformance with Article V, Section 5.14-7, Public Housing, Urban Renewal & Redevelopment Projects, of the Zoning Ordinance of the City of Waterbury, Connecticut. This approval is given because the character and appearance of the proposed use and buildings will be in the general harmony with the character and appearance surrounding neighborhood and will not adversely affect the general welfare of the neighborhood. This site plan meets all the requirements of the Bureau of Engineering as attested by the City Engineer, William D. Spallone. This site plan has been approved by the Fire Marshal's Office, Daniel Aybar, Inspector, and Acting Traffic Engineer, Danial Cashman.

DATES OF REQUIRED APPROVALS

Approved by the Zoning Administrator	September 23, 1986
Approved by the Fire Marshal	September 23, 1986
Approved by the Acting Traffic Engineer	September 24, 1986
Approved by the City Engineer	April 22, 1987
Approved by the City Plan Commission	May 13, 1987

ATTEST: *John J. Buckley*
JOHN J. BUCKLEY
CITY CLERK

RECEIVED FOR RECORD
1987 SEP -3 AM 10:37

TOWN CLERK
WATERBURY, CT.

36274

The Assessor's office is responsible for the maintenance of records on the ownership of properties. Assessments are computed at 70% of the estimated market value of real property at the time of the last revaluation which was 2017.

CITY OF WATERBURY

Information on the Property Records for the Municipality of Waterbury was last updated on 3/2/2022.



Parcel Information

Location:	150 MATTATUCK HEIGHTS	Property Use:	Industrial	Primary Use:	Industrial - Flex
Unique ID:	042401410001	Map Block Lot:	0424-0141-0001	Acres:	7.02
490 Acres:	0.00	Zone:	IP	Volume / Page:	4647/ 71
Developers Map / Lot:		Census:			

Value Information

	Appraised Value	Assessed Value
Land	287,048	200,930
Buildings	1,546,632	1,082,650
Detached Outbuildings	66,320	46,420

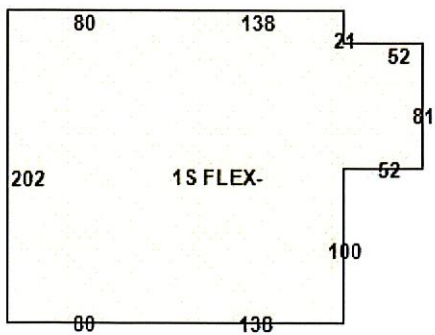
	Appraised Value	Assessed Value
Total	1,900,000	1,330,000

Owner's Information

Owner's Data

WATERBURY TWIN LLC & 150 MH LLC
 % LEONARD LINSBKER
 12 ISELIN TERRACE
 LARCHMONT, NY 10538

Building 1



Category:	Industrial	Use:	Industrial - Flex	GLA:	48,248
Stories:	1.00	Construction:	Average	Year Built:	1988
Heating:	Space Heater	Fuel:		Cooling Percent:	0%
Siding:	Brick, Solid	Roof Material:		Beds/Units:	0

Special Features

Sprinklers	48248
------------	-------

Attached Components

Detached Outbuildings

Type:	Year Built:	Length:	Width:	Area:
Asphalt Paving	1988			46,096
Concrete Paving	1988			40
Concrete Paving	1988			40
Concrete Paving	1996			390
Tanks Tanks	1996			1

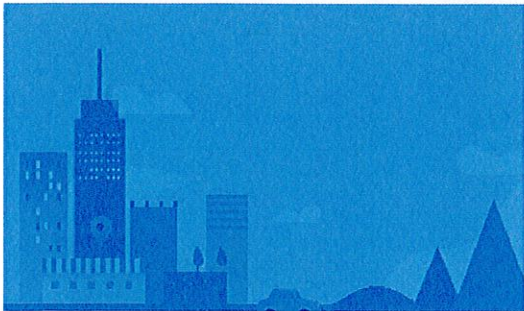
Owner History - Sales

Owner Name	Volume	Page	Sale Date	Deed Type	Sale Price
WATERBURY TWIN LLC & 150 MH LLC	4647	0071	05/15/2003	Warranty Sale	\$2,315,000

Building Permits

Permit Number	Permit Type	Date Opened	Reason
2020.0581	Plumbing	03/05/2020	remove old power vent water heater install new water heater
2019.3185	Electrical	11/06/2019	att new walk in cabinet for att equipment. third party for inspection.
2019.1540	Electrical	06/07/2019	install 25kw generator for cell site.
2019.0880	Electrical	04/29/2019	AT&T to install (9) antennae (12) remote radio units - (3) DC6s (2) fiber cables on existing teleco
2019.0374	Electrical	02/21/2019	Sprint to remove and replace 3 antennas and remove 3 remote radio heads (non-Antenna)
2019.0375	Electrical	02/21/2019	Verizon to remove 9 remote radio heads (non-Antenna) and replace with 6 new remote radio heads.
2018.3410	Electrical	12/05/2018	replace 3 existing antennas & 3 RRU's - replace 1 coax line with 1 hybrid fiber line
2017.1945	Electrical	07/26/2017	VERIZON WIRELESS ANTENNA SWAP
2017.0766	Electrical	03/30/2017	REPLACE 3 ANTENNAS
2016.1412	Electrical	06/13/2016	REMOVE AND REPLACE ANTENNA MOUNT
2015.1784	Electrical	08/31/2015	ADD OUTLET FOR CABLE BOX POWER
2014.0494	Electrical	03/13/2014	UPGRADE TELECOMM CABINETS AT CELL SITE
2014.0271	Electrical	02/10/2014	VERIZON WIRELESS UPGRADE AND ANTENNAE
2013.0461	Comm Renovations	02/23/2013	

Information Published With Permission From The Assessor



150 Mattatuck Heights Rd

Building



Directions



Save



Nearby



Send to your phone



Share



150 Mattatuck Heights Rd, Waterbury, CT 06705

Barbadora, Jeff

From: TrackingUpdates@fedex.com
Sent: Tuesday, March 8, 2022 9:57 AM
To: Barbadora, Jeff
Subject: FedEx Shipment 776226812954: Your package has been delivered

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Hi. Your package was
delivered Tue, 03/08/2022 at
9:55am.



Delivered to 235 GRAND ST, WATERBURY, CT 06702
Received by M.CHOZAK

[OBTAIN PROOF OF DELIVERY](#)

TRACKING NUMBER [776226812954](#)

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

TO City of Waterbury
Neil M O'Leary - Mayor
235 Grand Street
WATERBURY, CT, US, 06702

REFERENCE 799001.7680

SHIPPER REFERENCE 799001.7680

SHIP DATE Mon 3/07/2022 05:28 PM

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PACKAGING TYPE FedEx Envelope

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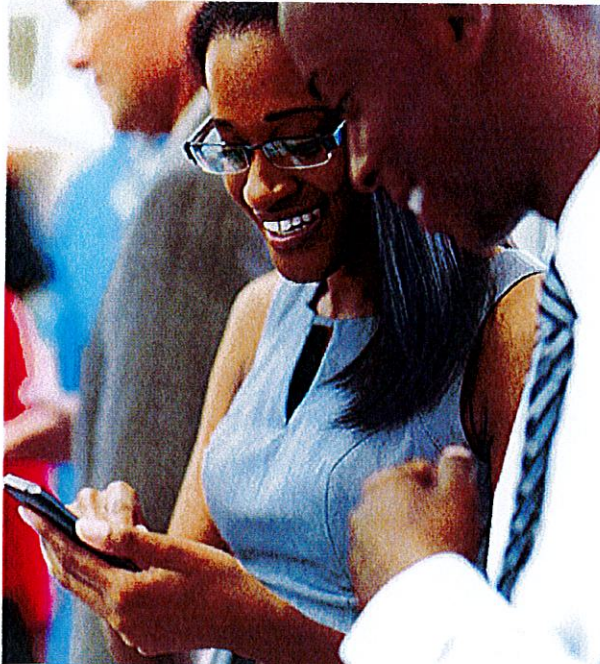
DESTINATION WATERBURY, CT, US, 06702

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NUMBER OF PIECES 1

TOTAL SHIPMENT WEIGHT 0.50 LB

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Delivered to 235 GRAND ST, WATERBURY, CT 06702
Received by M.CHOZAK

OBTAIN PROOF OF DELIVERY

TRACKING NUMBER [776226871210](https://www.fedex.com/track/776226871210)

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

TO City of Waterbury
Robert Nerney - City Planner
235 Grand Street
WATERBURY, CT, US, 06702

REFERENCE 799001.7680

SHIPPER REFERENCE 799001.7680

SHIP DATE Mon 3/07/2022 05:28 PM

DELIVERED TO Receptionist/Front Desk

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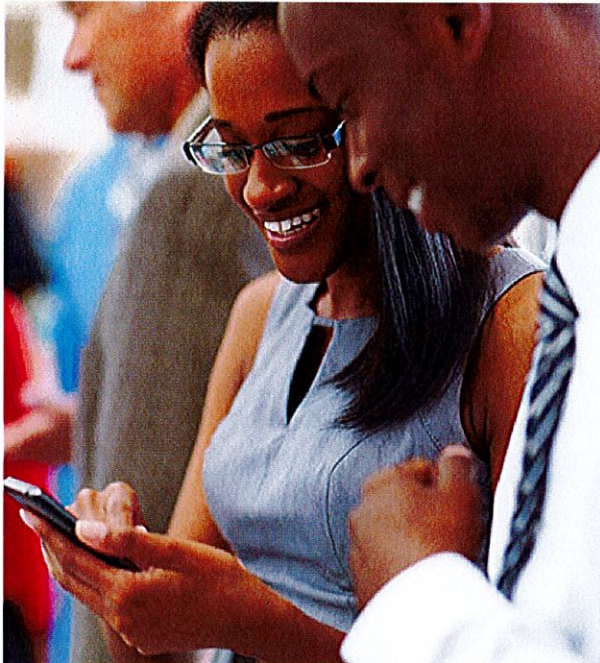
DESTINATION WATERBURY, CT, US, 06702

SPECIAL HANDLING Deliver Weekday

NUMBER OF PIECES 1

TOTAL SHIPMENT WEIGHT 1.00 LB

SERVICE TYPE FedEx Priority Overnight



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Delivered to 12 ISELIN TER, LARCHMONT, NY 10538

[OBTAIN PROOF OF DELIVERY](#)

TRACKING NUMBER [776227063125](#)
FROM Jeff Barbadora
1800 W. Park Drive
WESTBOROUGH, MA, US, 01581

TO Property Owner
Waterbury Twin LLC & 150 MH LLC
12 Iselin Terrace
LARCHMONT, NY, US, 10538

REFERENCE 799001.7680

SHIPPER REFERENCE 799001.7680

SHIP DATE Mon 3/07/2022 05:28 PM

DELIVERED TO Residence

PACKAGING TYPE FedEx Envelope

ORIGIN WESTBOROUGH, MA, US, 01581

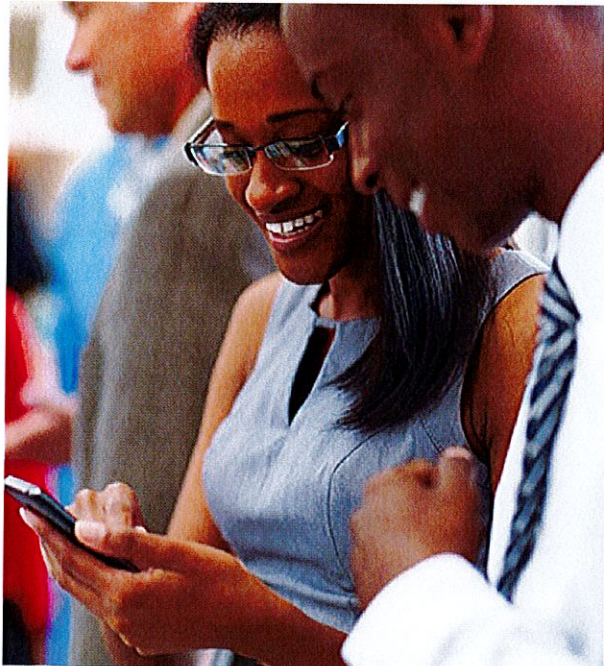
DESTINATION LARCHMONT, NY, US, 10538

SPECIAL HANDLING Deliver Weekday
Residential Delivery

NUMBER OF PIECES 1

TOTAL SHIPMENT WEIGHT 1.00 LB

SERVICE TYPE FedEx Priority Overnight



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Date: January 31, 2022



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

Subject: Structural Analysis Report

Carrier Designation: Verizon Wireless Co-Locate
Site Number: 467706
Site Name: Waterbury S CT

Crown Castle Designation: BU Number: 876317
Site Name: Waterbury
JDE Job Number: 702387
Work Order Number: 2068523
Order Number: 601536 Rev. 0

Engineering Firm Designation: B+T Group Project Number: 79982.005.01

Site Data: 150 Mattatuck Heights, Waterbury, New Haven County, CT
Latitude 41° 32' 16.3", Longitude -72° 59' 6.1"
144.25 Foot - Monopole Tower

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

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

LC7: Proposed Equipment Configuration

Sufficient Capacity – 96.2%

This analysis utilizes an ultimate 3-second gust wind speed of 118 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: Daniel Hast, E.I.

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



Chad E. Tuttle, P.E.

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1) INTRODUCTION

This tower is a 134.25 ft. Monopole tower designed by Valmont. A 10-ft tower extension has been considered in this analysis, bringing the total tower height to 144.25 ft.

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

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	118 mph
Exposure Category:	B
Topographic Factor:	1
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
110.0	113.0	1	Trimble	BULLET III	6 2 1	1-5/8 1-1/4 1/2
	110.0	6	Andrew	SBNHH-1D65B		
		3	Antel	BXA-80063/4CF		
		1	Raycap	RVZDC-6627-PF-48		
		3	Samsung Telecom.	MT6407-77A		
		3	Samsung Telecom.	RFV01U-D1A		
		3	Samsung Telecom.	RFV01U-D2A		
		1	--	Platform Mount [LP 602-1]		
		3	Commscope	BSAMNT-SBS-1-2		

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)
144.0	144.0	1	Site Pro 1	F3P-12W	6 2	3/4 3/8
		1	--	Miscellaneous [NA 507-1]		
	143.0	3	CCI Antennas	HPA65R-BU8A		
		3	Ericsson	RADIO 4415 B30		
		3	Ericsson	RRUS 4449 B5/B12		
		3	Ericsson	RRUS 4478 B14		
		3	Ericsson	RRUS 8843 B2/B66A		
		6	KMW Comm.	EPBQ-654L8H8-L2		
		3	Raycap	DC6-48-60-18-8F		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
130.0	133.0	1	Andrew	VHLP2-18	3 3 1	1-1/4 Elliptical 1-1/2
		2	Andrew	VHLP2-23		
	130.0	6	Alcatel Lucent	1900MHZ RRH (65MHZ)		
		3	Alcatel Lucent	800 EXTERNAL NOTCH FILTER		
		3	Alcatel Lucent	800MHZ RRH		
		3	Nokia	AAHC		
		4	RFS Celwave	APXVSP18-C-A20		
		4	RFS Celwave	IBC1900HB-2		
		2	RFS Celwave	PD2DE-700/2700		
		1	--	Pipe Mount [PM 601-3]		
		1	--	Platform Mount [LP 602-1]		
120.0	120.0	1	--	Commscope MC-PK8-DSH (1)	1	1-1/2
		3	Fujitsu	TA08025-B604		
		3	Fujitsu	TA08025-B605		
		3	Jma Wireless	MX08FRO665-21		
		1	Raycap	RDIDC-9181-PF-48		
100.0	103.0	3	Ericsson	RADIO 4449 B12/B71	6 5 2 1	1-1/4 7/8 1-1/2 1-5/8
		3	Ericsson	AIR -32 B2A/B66AA		
		3	Ericsson	AIR 21 B2A/B4P		
		3	RFS Celwave	APXVAARR24_43-U-NA20		
		3	RFS Celwave	ATMAA1412D-1A20		
	100.0	1	--	Platform Mount [LP 303-1]		
50.0	51.0	1	Lucent	KS24019-L112A	1	1/2
	50.0	1	--	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Tower Manufacturer Drawing	1530953	CCI Sites
Tower Modification Drawing	2381113	CCI Sites
Post Modification Inspection	2381112	CCI Sites
Tower Modification Drawing	3315244	CCI Sites
Post Modification Inspection	3770745	CCI Sites
Tower Modification Drawing	8142142	CCI Sites
Post Modification Inspection	8624542	CCI Sites
Foundation Drawing	1630930	CCI Sites
Geotech Report	1529737	CCI Sites
Crown CAD Package	Date: 01/17/2022	CCI Sites

3.1) Analysis Method

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

tnxTower was used to determine the loads on the modified structure. Additional calculations were performed to determine the stresses in the pole and in the reinforcing elements. These calculations are included 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. B+T Group should be notified to determine the effect on the structural integrity of the tower.

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L1	144.25 - 139.25	Pole	TP12.75x12.75x0.375	1	-4.510	--	12.4	Pass
L2	139.25 - 134.75	Pole	TP12.75x12.75x0.375	2	-4.793	--	25.6	Pass
L3	134.75 - 134.25	Pole	TP13.48x13.48x0.375	3	-4.828	--	24.2	Pass
L4	134.25 - 129.25	Pole	TP14.466x13.48x0.1875	4	-8.608	--	49.1	Pass
L5	129.25 - 124.25	Pole	TP15.452x14.466x0.1875	5	-8.883	--	67.9	Pass
L6	124.25 - 123.42	Pole	TP15.616x15.452x0.1875	6	-8.944	--	70.6	Pass
L7	123.42 - 123.17	Pole + Reinf.	TP15.665x15.616x0.5375	7	-8.982	--	46.1	Pass
L8	123.17 - 118.17	Pole + Reinf.	TP16.651x15.665x0.5125	8	-12.422	--	59.2	Pass
L9	118.17 - 113.17	Pole + Reinf.	TP17.637x16.651x0.4875	9	-13.025	--	72.5	Pass
L10	113.17 - 109.5	Pole + Reinf.	TP18.36x17.637x0.475	10	-16.653	--	82.0	Pass
L11	109.5 - 109.25	Pole + Reinf.	TP18.409x18.36x0.5875	11	-16.708	--	69.2	Pass
L12	109.25 - 104.75	Pole + Reinf.	TP19.296x18.409x0.5625	12	-17.438	--	81.0	Pass
L13	104.75 - 104.5	Pole + Reinf.	TP19.346x19.296x0.775	13	-17.503	--	65.4	Pass
L14	104.5 - 102.42	Pole + Reinf.	TP19.756x19.346x0.7625	14	-17.935	--	69.6	Pass
L15	102.42 - 102.17	Pole + Reinf.	TP19.806x19.756x0.5625	15	-17.994	--	86.8	Pass
L16	102.17 - 98.75	Pole + Reinf.	TP20.479x19.806x0.55	16	-22.016	--	95.6	Pass
L17	98.75 - 98.5	Pole + Reinf.	TP20.528x20.479x0.8375	17	-22.098	--	83.6	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L18	98.5 - 97.5	Pole + Reinf.	TP20.726x20.528x0.8375	18	-22.351	--	72.7	Pass
L19	97.5 - 97.25	Pole + Reinf.	TP20.775x20.726x0.75	19	-22.422	--	84.8	Pass
L20	97.25 - 95.55	Pole + Reinf.	TP21.81x20.775x0.7375	20	-22.837	--	88.5	Pass
L21	95.55 - 90.55	Pole + Reinf.	TP21.73x20.735x0.8	21	-24.893	--	92.1	Pass
L22	90.55 - 89.25	Pole + Reinf.	TP21.989x21.73x0.775	22	-25.253	--	94.3	Pass
L23	89.25 - 89	Pole + Reinf.	TP22.039x21.989x1	23	-25.346	--	81.5	Pass
L24	89 - 88.25	Pole + Reinf.	TP22.189x22.039x0.975	24	-25.575	--	68.1	Pass
L25	88.25 - 88	Pole + Reinf.	TP22.238x22.189x0.7625	25	-25.647	--	78.0	Pass
L26	88 - 87.83	Pole + Reinf.	TP22.272x22.238x0.7625	26	-25.694	--	78.2	Pass
L27	87.83 - 87.58	Pole + Reinf.	TP22.321x22.272x0.675	27	-25.754	--	82.9	Pass
L28	87.58 - 82.58	Pole + Reinf.	TP23.317x22.321x0.65	28	-26.997	--	89.5	Pass
L29	82.58 - 77.58	Pole + Reinf.	TP24.312x23.317x0.625	29	-28.278	--	95.3	Pass
L30	77.58 - 77	Pole + Reinf.	TP24.428x24.312x0.625	30	-28.437	--	96.0	Pass
L31	77 - 76.75	Pole + Reinf.	TP24.478x24.428x0.825	31	-28.520	--	90.0	Pass
L32	76.75 - 76.33	Pole + Reinf.	TP24.561x24.478x0.825	32	-28.644	--	90.5	Pass
L33	76.33 - 76.08	Pole + Reinf.	TP24.611x24.561x0.825	33	-28.718	--	91.6	Pass
L34	76.08 - 74.25	Pole + Reinf.	TP24.976x24.611x0.8	34	-29.230	--	93.5	Pass
L35	74.25 - 74	Pole + Reinf.	TP25.026x24.976x0.8875	35	-29.327	--	82.5	Pass
L36	74 - 73.75	Pole + Reinf.	TP25.076x25.026x0.8875	36	-29.403	--	82.8	Pass
L37	73.75 - 73.5	Pole + Reinf.	TP25.125x25.076x0.9125	37	-29.482	--	82.1	Pass
L38	73.5 - 68.5	Pole + Reinf.	TP26.121x25.125x0.875	38	-31.044	--	86.5	Pass
L39	68.5 - 63.5	Pole + Reinf.	TP27.116x26.121x0.85	39	-32.637	--	90.6	Pass
L40	63.5 - 60.5	Pole + Reinf.	TP27.714x27.116x0.825	40	-33.607	--	92.9	Pass
L41	60.5 - 60.25	Pole + Reinf.	TP27.763x27.714x0.825	41	-33.698	--	93.1	Pass
L42	60.25 - 59.5	Pole + Reinf.	TP27.913x27.763x0.825	42	-33.935	--	93.7	Pass
L43	59.5 - 59.25	Pole + Reinf.	TP27.962x27.913x0.8875	43	-34.027	--	87.6	Pass
L44	59.25 - 54.25	Pole + Reinf.	TP28.958x27.962x0.85	44	-35.723	--	91.1	Pass
L45	54.25 - 50	Pole + Reinf.	TP30.64x28.958x0.8375	45	-37.194	--	93.8	Pass
L46	50 - 44.8	Pole + Reinf.	TP30.333x29.304x0.8375	46	-40.327	--	95.5	Pass
L47	44.8 - 43.58	Pole + Reinf.	TP30.574x30.333x0.8375	47	-40.762	--	96.2	Pass
L48	43.58 - 43.33	Pole + Reinf.	TP30.624x30.574x0.85	48	-40.869	--	95.3	Pass
L49	43.33 - 43.17	Pole + Reinf.	TP30.657x30.624x0.85	49	-40.934	--	95.3	Pass
L50	43.17 - 42.92	Pole + Reinf.	TP30.706x30.657x0.9375	50	-41.032	--	90.3	Pass
L51	42.92 - 39	Pole + Reinf.	TP31.481x30.706x0.9125	51	-42.568	--	92.1	Pass
L52	39 - 38.75	Pole + Reinf.	TP31.531x31.481x0.95	52	-42.586	--	87.1	Pass
L53	38.75 - 37.17	Pole + Reinf.	TP31.844x31.531x0.9375	53	-42.704	--	87.7	Pass
L54	37.17 - 36.92	Pole + Reinf.	TP31.894x31.844x0.8875	54	-43.346	--	91.2	Pass
L55	36.92 - 34	Pole + Reinf.	TP32.471x31.894x0.8875	55	-43.462	--	92.5	Pass
L56	34 - 33.75	Pole + Reinf.	TP32.52x32.471x0.875	56	-44.629	--	92.5	Pass
L57	33.75 - 29.75	Pole + Reinf.	TP33.312x32.52x0.8625	57	-44.736	--	94.1	Pass
L58	29.75 - 29.5	Pole + Reinf.	TP33.361x33.312x0.8625	58	-46.295	--	93.0	Pass
L59	29.5 - 24.5	Pole + Reinf.	TP34.351x33.361x0.85	59	-46.404	--	94.8	Pass
L60	24.5 - 23	Pole + Reinf.	TP34.648x34.351x0.8375	60	-48.406	--	95.4	Pass
L61	23 - 22.75	Pole + Reinf.	TP34.697x34.648x0.9625	61	-48.997	--	88.4	Pass

Section No.	Elevation (ft)	Component Type	Size	Critical Element	P (K)	SF*P_allow (K)	% Capacity	Pass / Fail
L62	22.75 - 21.58	Pole + Reinf.	TP34.928x34.697x0.9625	62	-49.116	--	88.8	Pass
L63	21.58 - 21.33	Pole + Reinf.	TP34.978x34.928x0.85	63	-49.620	--	93.7	Pass
L64	21.33 - 16.33	Pole + Reinf.	TP35.967x34.978x0.8375	64	-49.735	--	95.3	Pass
L65	16.33 - 12.92	Pole + Reinf.	TP36.644x35.967x0.825	65	-51.856	--	96.2	Pass
L66	12.92 - 12.67	Pole + Reinf.	TP36.693x36.644x0.9125	66	-53.310	--	87.2	Pass
L67	12.67 - 12.5	Pole + Reinf.	TP36.726x36.693x0.9125	67	-53.426	--	87.3	Pass
L68	12.5 - 12.25	Pole + Reinf.	TP36.776x36.726x0.7625	68	-53.505	--	90.5	Pass
L69	12.25 - 12	Pole + Reinf.	TP36.825x36.776x0.7625	69	-53.610	--	90.6	Pass
L70	12 - 11.75	Pole + Reinf.	TP36.874x36.825x0.6625	70	-53.715	--	92.6	Pass
L71	11.75 - 8.5	Pole + Reinf.	TP37.518x36.874x0.65	71	-53.827	--	93.3	Pass
L72	8.5 - 8.25	Pole + Reinf.	TP37.567x37.518x0.925	72	-55.112	--	76.5	Pass
L73	8.25 - 7	Pole + Reinf.	TP37.815x37.567x0.9125	73	-55.242	--	76.8	Pass
L74	7 - 6.75	Pole + Reinf.	TP37.864x37.815x0.8125	74	-55.832	--	89.0	Pass
L75	6.75 - 1.75	Pole + Reinf.	TP38.854x37.864x0.7875	75	-55.950	--	90.1	Pass
L76	1.75 - 0	Pole + Reinf.	TP39.2x38.854x0.7875	76	-58.133	--	90.5	Pass
							Summary	
						Pole (L6)	82.9	Pass
						Reinforcement	96.2	Pass
						Rating =	96.2	Pass

Table 5 - Tower Component Stresses vs. Capacity – LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Flange Connection	134.25	38.3	Pass
1,2	Anchor Rods	Base	90.1	Pass
1,2	Base Plate	Base	62.6	Pass
1,2	Base Foundation (Structure)	Base	21.0	Pass
1,2	Base Foundation (Soil Interaction)	Base	88.1	Pass

Structure Rating (max from all components) =	96.2%
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Notes:

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

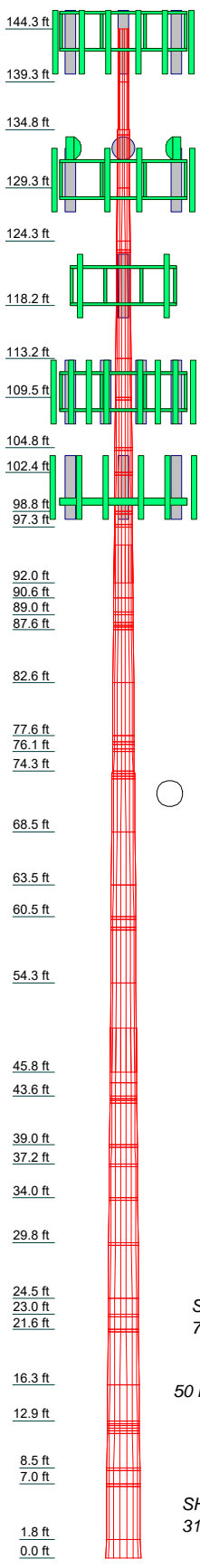
4.1) Recommendations

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

APPENDIX A

TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
2	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
3	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
4	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
5	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
6	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
7	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
8	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
9	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
10	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
11	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
12	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
13	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
14	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
15	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
16	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
17	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
18	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
19	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
20	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
21	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
22	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
23	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
24	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
25	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
26	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
27	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
28	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
29	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
30	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
31	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
32	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
33	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
34	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
35	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
36	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
37	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
38	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
39	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
40	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
41	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
42	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
43	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
44	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
45	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
46	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
47	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
48	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
49	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
50	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
51	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
52	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
53	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
54	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
55	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
56	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
57	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
58	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
59	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
60	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
61	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
62	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
63	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
64	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
65	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
66	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
67	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
68	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
69	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
70	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
71	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
72	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
73	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
74	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
75	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
76	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
77	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
78	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
79	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
80	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
81	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
82	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
83	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
84	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
85	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
86	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
87	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
88	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
89	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
90	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
91	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
92	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
93	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
94	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
95	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
96	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
97	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
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99	5.000	0	0.375	3.552	13.483	12.750	A500-46	0.2
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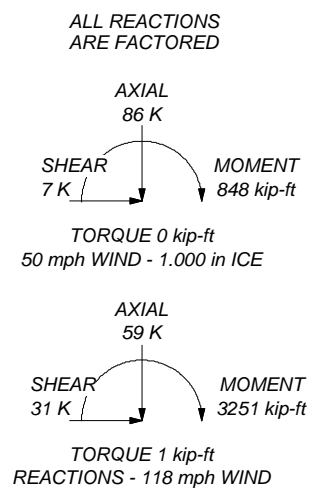


MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A500-46	46 ksi	62 ksi	A572-65	65 ksi	80 ksi

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 118 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TIA-222-H Annex S
9. TOWER RATING:96.2%



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

Job: 79982.005.01 - WATERBURY, CT (BU# 87631)		
Project:	Client: Crown Castle	Drawn by: Jayaraj B
Code: TIA-222-H	Date: 01/28/22	Scale: NTS
Path:	Dwg No. E-1	

Vx

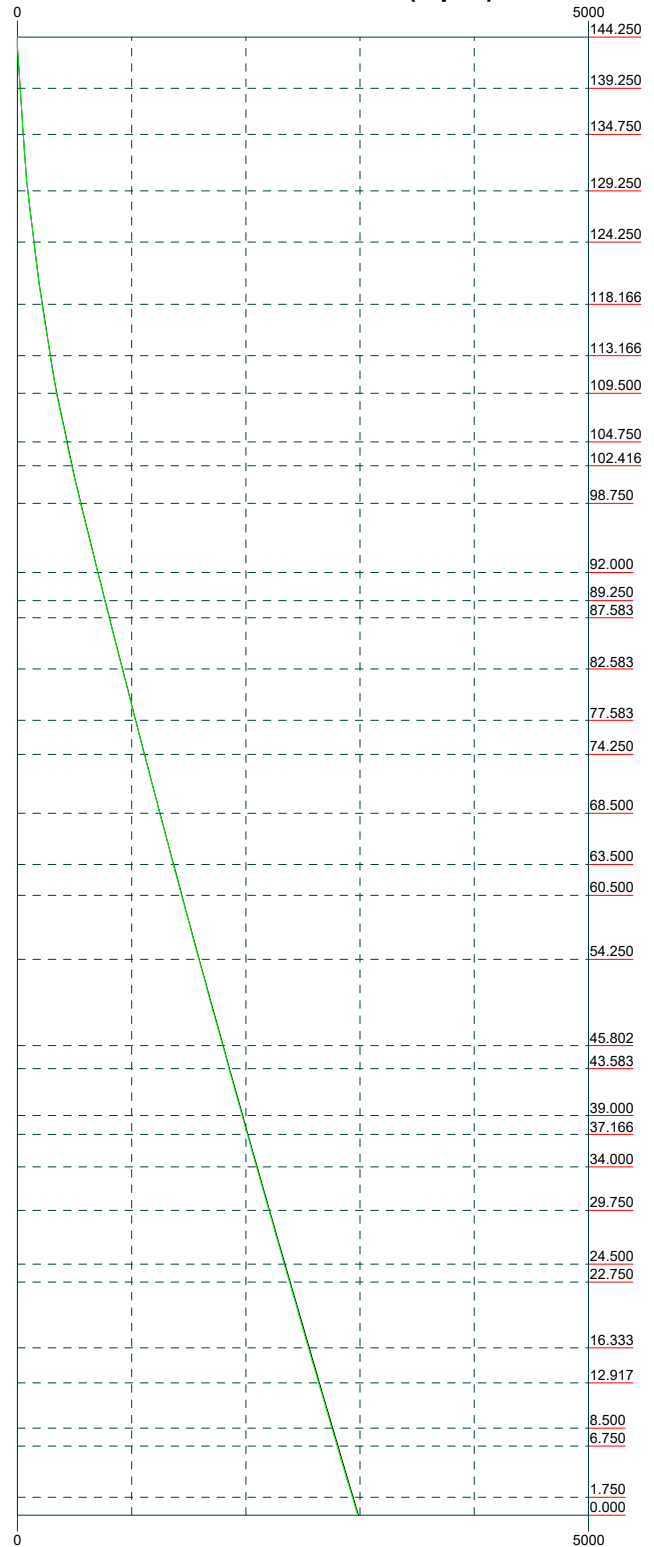
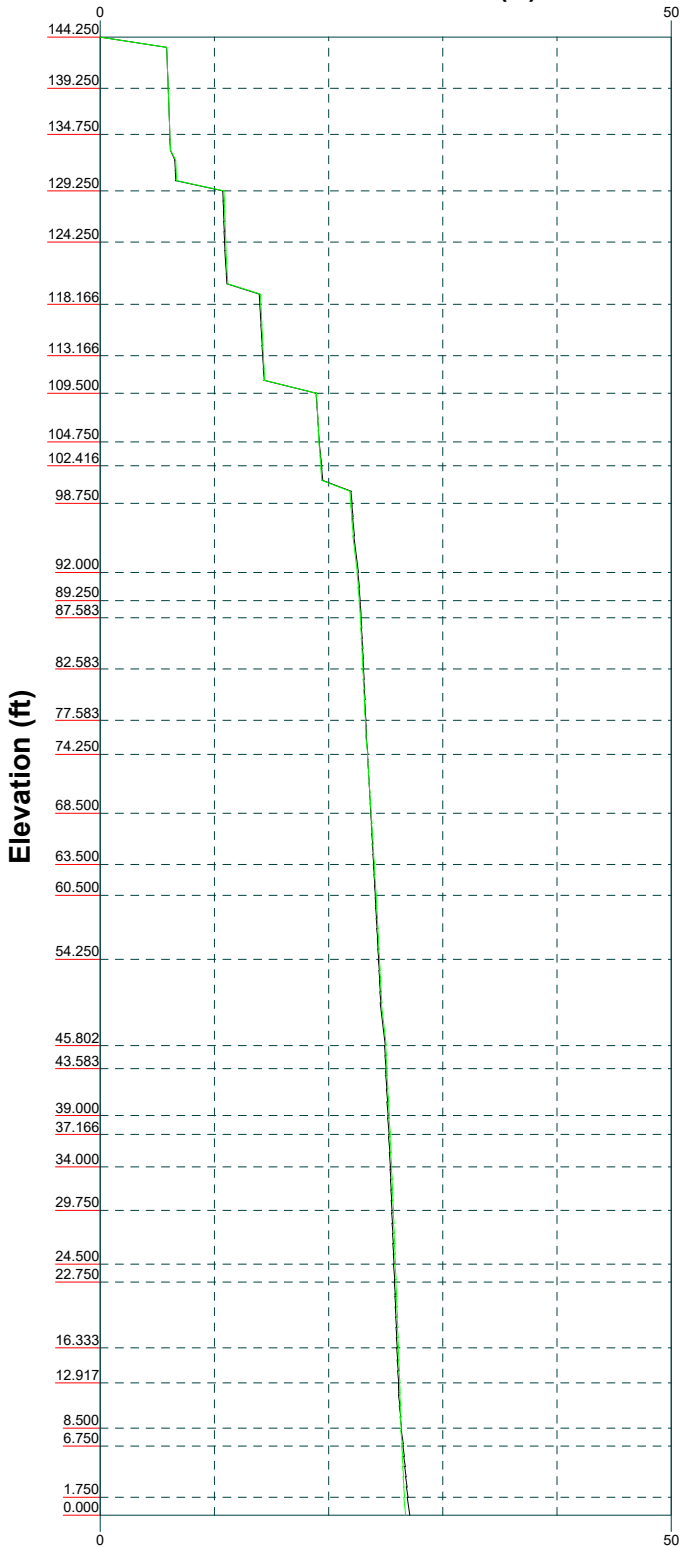
Vz


Mx

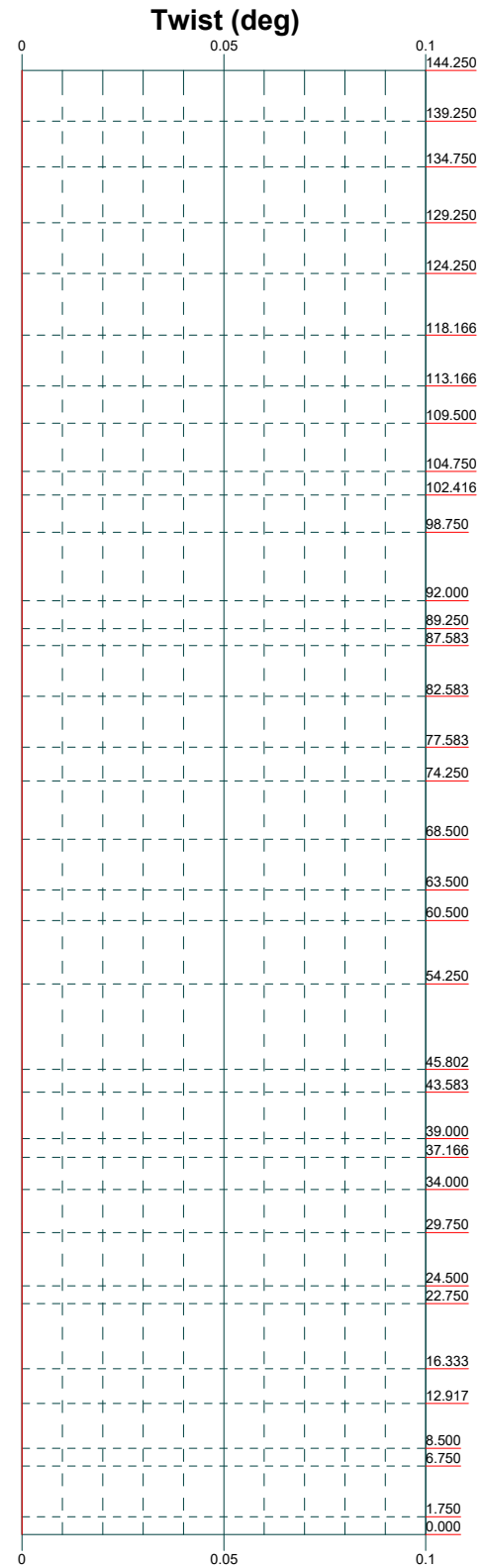
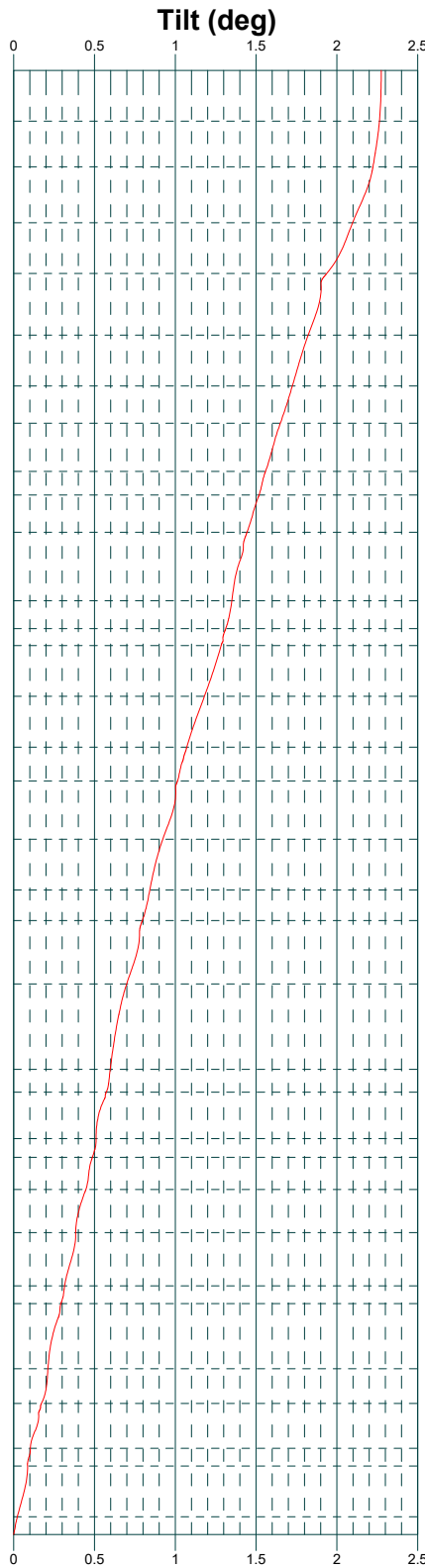
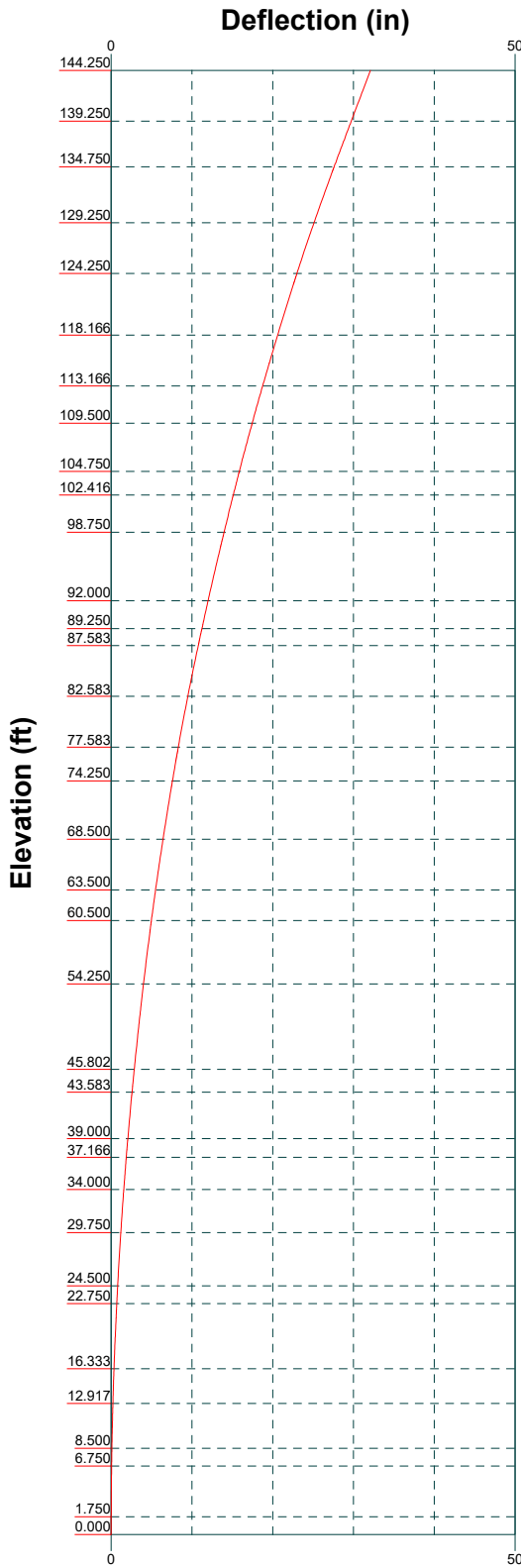
Mz

Global Mast Shear (K)

Global Mast Moment (kip-ft)



 <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job: 79982.005.01 - WATERBURY, CT (BU# 87631)		
	Project:		
	Client: Crown Castle	Drawn by: Jayaraj B	App'd:
	Code: TIA-222-H	Date: 01/28/22	Scale: NTS
	Path:	Dwg No. E-4	



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

Job: 79982.005.01 - WATERBURY, CT (BU# 87631)		
Project:		
Client: Crown Castle	Drawn by: Jayaraj B	App'd:
Code: TIA-222-H	Date: 01/28/22	Scale: NTS
Path:		Dwg No. E-5

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 79982.005.01 - WATERBURY,CT (BU# 876317)	Page 1 of 92
	Project	Date 15:48:22 01/28/22
	Client Crown Castle	Designed by Jayaraj B

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 New Haven County, Connecticut.

Tower base elevation above sea level: 660.000 ft.

Basic wind speed of 118 mph.

Risk Category II.

Exposure Category B.

Simplified Topographic Factor Procedure for wind speed-up calculations is used.

Topographic Category: 1.

Crest Height: 0.000 ft.

Nominal ice thickness of 1.000 in.

Ice thickness is considered to increase with height.

Ice density of 56.000 pcf.

A wind speed of 50 mph is used in combination with ice.

Temperature drop of 50.000 °F.

Deflections calculated using a wind speed of 60 mph.

TIA-222-H Annex S.

TOWER RATING:96.2%.

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

<ul style="list-style-type: none"> Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification √ Use Code Stress Ratios √ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile Include Bolts In Member Capacity Leg Bolts Are At Top Of Section Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) SR Members Have Cut Ends SR Members Are Concentric 	<ul style="list-style-type: none"> Distribute Leg Loads As Uniform Assume Legs Pinned √ Assume Rigid Index Plate √ Use Clear Spans For Wind Area Use Clear Spans For KL/r Retension Guys To Initial Tension √ Bypass Mast Stability Checks √ Use Azimuth Dish Coefficients √ Project Wind Area of Appurt. Autocalc Torque Arm Areas Add IBC .6D+W Combination Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs 	<ul style="list-style-type: none"> Use ASCE 10 X-Brace Ly Rules Calculate Redundant Bracing Forces Ignore Redundant Members in FEA SR Leg Bolts Resist Compression All Leg Panels Have Same Allowable Offset Girt At Foundation √ Consider Feed Line Torque Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <li style="background-color: #e0e0e0;">Poles √ Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 79982.005.01 - WATERBURY,CT (BU# 876317)	Page 2 of 92
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	Client Crown Castle	Designed by Jayaraj B

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	144.250-139.250	5.000	0.000	Round	12.750	12.750	0.375		A500-46 (46 ksi)
L2	139.250-134.750	4.500	0.000	Round	12.750	12.750	0.375		A500-46 (46 ksi)
L3	134.750-134.250	0.500	0.000	Round	13.480	13.480	0.375		A500-46 (46 ksi)
L4	134.250-129.250	5.000	0.000	12	13.480	14.466	0.188	0.750	A572-65 (65 ksi)
L5	129.250-124.250	5.000	0.000	12	14.466	15.452	0.188	0.750	A572-65 (65 ksi)
L6	124.250-123.416	0.834	0.000	12	15.452	15.616	0.188	0.750	A572-65 (65 ksi)
L7	123.416-123.166	0.250	0.000	12	15.616	15.665	0.537	2.150	A572-65 (65 ksi)
L8	123.166-118.166	5.000	0.000	12	15.665	16.651	0.512	2.050	A572-65 (65 ksi)
L9	118.166-113.166	5.000	0.000	12	16.651	17.637	0.487	1.950	A572-65 (65 ksi)
L10	113.166-109.500	3.666	0.000	12	17.637	18.360	0.475	1.900	A572-65 (65 ksi)
L11	109.500-109.250	0.250	0.000	12	18.360	18.409	0.588	2.350	A572-65 (65 ksi)
L12	109.250-104.750	4.500	0.000	12	18.409	19.296	0.563	2.250	A572-65 (65 ksi)
L13	104.750-104.500	0.250	0.000	12	19.296	19.346	0.775	3.100	A572-65 (65 ksi)
L14	104.500-102.416	2.084	0.000	12	19.346	19.756	0.762	3.050	A572-65 (65 ksi)
L15	102.416-102.166	0.250	0.000	12	19.756	19.806	0.563	2.250	A572-65 (65 ksi)
L16	102.166-98.750	3.416	0.000	12	19.806	20.479	0.550	2.200	A572-65 (65 ksi)
L17	98.750-98.500	0.250	0.000	12	20.479	20.528	0.838	3.350	A572-65 (65 ksi)
L18	98.500-97.500	1.000	0.000	12	20.528	20.726	0.838	3.350	A572-65 (65 ksi)
L19	97.500-97.250	0.250	0.000	12	20.726	20.775	0.750	3.000	A572-65 (65 ksi)
L20	97.250-92.000	5.250	3.552	12	20.775	21.810	0.738	2.950	A572-65 (65 ksi)
L21	92.000-90.552	5.000	0.000	12	20.735	21.730	0.800	3.200	A572-65 (65 ksi)
L22	90.552-89.250	1.302	0.000	12	21.730	21.989	0.775	3.100	A572-65 (65 ksi)
L23	89.250-89.000	0.250	0.000	12	21.989	22.039	1.000	4.000	A572-65 (65 ksi)
L24	89.000-88.250	0.750	0.000	12	22.039	22.189	0.975	3.900	A572-65 (65 ksi)
L25	88.250-88.000	0.250	0.000	12	22.189	22.238	0.762	3.050	A572-65 (65 ksi)
L26	88.000-87.833	0.167	0.000	12	22.238	22.272	0.762	3.050	A572-65 (65 ksi)
L27	87.833-87.583	0.250	0.000	12	22.272	22.321	0.675	2.700	A572-65 (65 ksi)
L28	87.583-82.583	5.000	0.000	12	22.321	23.317	0.650	2.600	A572-65 (65 ksi)

tnxTower

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

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Client
 Crown Castle
Designed by
 Jayaraj B

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L29	82.583-77.583	5.000	0.000	12	23.317	24.312	0.625	2.500	A572-65 (65 ksi)
L30	77.583-77.000	0.583	0.000	12	24.312	24.428	0.625	2.500	A572-65 (65 ksi)
L31	77.000-76.750	0.250	0.000	12	24.428	24.478	0.825	3.300	A572-65 (65 ksi)
L32	76.750-76.333	0.417	0.000	12	24.478	24.561	0.825	3.300	A572-65 (65 ksi)
L33	76.333-76.083	0.250	0.000	12	24.561	24.611	0.825	3.300	A572-65 (65 ksi)
L34	76.083-74.250	1.833	0.000	12	24.611	24.976	0.800	3.200	A572-65 (65 ksi)
L35	74.250-74.000	0.250	0.000	12	24.976	25.026	0.887	3.550	A572-65 (65 ksi)
L36	74.000-73.750	0.250	0.000	12	25.026	25.076	0.887	3.550	A572-65 (65 ksi)
L37	73.750-73.500	0.250	0.000	12	25.076	25.125	0.912	3.650	A572-65 (65 ksi)
L38	73.500-68.500	5.000	0.000	12	25.125	26.121	0.875	3.500	A572-65 (65 ksi)
L39	68.500-63.500	5.000	0.000	12	26.121	27.116	0.850	3.400	A572-65 (65 ksi)
L40	63.500-60.500	3.000	0.000	12	27.116	27.714	0.825	3.300	A572-65 (65 ksi)
L41	60.500-60.250	0.250	0.000	12	27.714	27.763	0.825	3.300	A572-65 (65 ksi)
L42	60.250-59.500	0.750	0.000	12	27.763	27.913	0.825	3.300	A572-65 (65 ksi)
L43	59.500-59.250	0.250	0.000	12	27.913	27.962	0.887	3.550	A572-65 (65 ksi)
L44	59.250-54.250	5.000	0.000	12	27.962	28.958	0.850	3.400	A572-65 (65 ksi)
L45	54.250-45.802	8.448	4.198	12	28.958	30.640	0.838	3.350	A572-65 (65 ksi)
L46	45.802-44.802	5.198	0.000	12	29.304	30.333	0.838	3.350	A572-65 (65 ksi)
L47	44.802-43.583	1.219	0.000	12	30.333	30.574	0.838	3.350	A572-65 (65 ksi)
L48	43.583-43.333	0.250	0.000	12	30.574	30.624	0.850	3.400	A572-65 (65 ksi)
L49	43.333-43.166	0.167	0.000	12	30.624	30.657	0.850	3.400	A572-65 (65 ksi)
L50	43.166-42.916	0.250	0.000	12	30.657	30.706	0.938	3.750	A572-65 (65 ksi)
L51	42.916-39.000	3.916	0.000	12	30.706	31.481	0.912	3.650	A572-65 (65 ksi)
L52	39.000-38.750	0.250	0.000	12	31.481	31.531	0.950	3.800	A572-65 (65 ksi)
L53	38.750-37.166	1.584	0.000	12	31.531	31.844	0.938	3.750	A572-65 (65 ksi)
L54	37.166-36.916	0.250	0.000	12	31.844	31.894	0.887	3.550	A572-65 (65 ksi)
L55	36.916-34.000	2.916	0.000	12	31.894	32.471	0.887	3.550	A572-65 (65 ksi)
L56	34.000-33.750	0.250	0.000	12	32.471	32.520	0.875	3.500	A572-65 (65 ksi)
L57	33.750-29.750	4.000	0.000	12	32.520	33.312	0.863	3.450	A572-65 (65 ksi)
L58	29.750-29.500	0.250	0.000	12	33.312	33.361	0.863	3.450	A572-65 (65 ksi)
L59	29.500-24.500	5.000	0.000	12	33.361	34.351	0.850	3.400	A572-65

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	Client	Crown Castle		Designed by

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
L60	24.500-23.000	1.500	0.000	12	34.351	34.648	0.838	3.350	(65 ksi) A572-65
L61	23.000-22.750	0.250	0.000	12	34.648	34.697	0.963	3.850	(65 ksi) A572-65
L62	22.750-21.583	1.167	0.000	12	34.697	34.928	0.963	3.850	(65 ksi) A572-65
L63	21.583-21.333	0.250	0.000	12	34.928	34.978	0.850	3.400	(65 ksi) A572-65
L64	21.333-16.333	5.000	0.000	12	34.978	35.967	0.838	3.350	(65 ksi) A572-65
L65	16.333-12.917	3.416	0.000	12	35.967	36.644	0.825	3.300	(65 ksi) A572-65
L66	12.917-12.667	0.250	0.000	12	36.644	36.693	0.912	3.650	(65 ksi) A572-65
L67	12.667-12.500	0.167	0.000	12	36.693	36.726	0.912	3.650	(65 ksi) A572-65
L68	12.500-12.250	0.250	0.000	12	36.726	36.776	0.762	3.050	(65 ksi) A572-65
L69	12.250-12.000	0.250	0.000	12	36.776	36.825	0.762	3.050	(65 ksi) A572-65
L70	12.000-11.750	0.250	0.000	12	36.825	36.874	0.662	2.650	(65 ksi) A572-65
L71	11.750-8.500	3.250	0.000	12	36.874	37.518	0.650	2.600	(65 ksi) A572-65
L72	8.500-8.250	0.250	0.000	12	37.518	37.567	0.925	3.700	(65 ksi) A572-65
L73	8.250-7.000	1.250	0.000	12	37.567	37.815	0.912	3.650	(65 ksi) A572-65
L74	7.000-6.750	0.250	0.000	12	37.815	37.864	0.813	3.250	(65 ksi) A572-65
L75	6.750-1.750	5.000	0.000	12	37.864	38.854	0.787	3.150	(65 ksi) A572-65
L76	1.750-0.000	1.750		12	38.854	39.200	0.787	3.150	(65 ksi) A572-65

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L1	12.750	14.579	279.335	4.377	6.375	43.817	558.670	7.285	0.000	0
L2	12.750	14.579	279.335	4.377	6.375	43.817	558.670	7.285	0.000	0
L3	13.480	15.439	331.709	4.635	6.740	49.215	663.419	7.715	0.000	0
L4	13.889	8.025	180.994	4.759	6.983	25.921	366.742	3.950	3.110	16.587
L5	14.910	8.621	224.322	5.112	7.493	29.936	454.538	4.243	3.374	17.996
L6	15.931	9.216	274.067	5.465	8.004	34.242	555.334	4.536	3.639	19.405
L7	16.028	9.315	283.020	5.523	8.089	34.988	573.475	4.585	3.683	19.641
L8	16.037	26.097	757.351	5.398	8.089	93.626	1534.598	12.844	2.745	5.106
	17.058	26.182	764.802	5.416	8.115	94.250	1549.697	12.886	2.758	5.131
		25.006	732.852	5.425	8.115	90.312	1484.956	12.307	2.825	5.512
		26.633	885.390	5.778	8.625	102.651	1794.040	13.108	3.089	6.027

<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	Job	Page	
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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
L9	17.067	25.373	846.120	5.787	8.625	98.098	1714.469	12.488	3.156	6.474
	18.087	26.920	1010.566	6.139	9.136	110.615	2047.680	13.249	3.420	7.016
L10	18.092	26.249	986.808	6.144	9.136	108.014	1999.541	12.919	3.454	7.271
	18.840	27.355	1116.814	6.403	9.510	117.432	2262.967	13.463	3.647	7.679
L11	18.800	33.621	1355.419	6.362	9.510	142.521	2746.446	16.547	3.346	5.695
	18.851	33.714	1366.728	6.380	9.536	143.325	2769.361	16.593	3.359	5.718
L12	18.860	32.324	1314.084	6.389	9.536	137.804	2662.690	15.909	3.426	6.091
	19.778	33.931	1519.973	6.707	9.995	152.067	3079.878	16.700	3.664	6.514
L13	19.704	46.220	2023.726	6.631	9.995	202.465	4100.618	22.748	3.094	3.993
	19.755	46.343	2039.927	6.648	10.021	203.566	4133.444	22.808	3.108	4.01
L14	19.759	45.626	2011.080	6.653	10.021	200.687	4074.993	22.456	3.141	4.119
	20.184	46.635	2147.450	6.800	10.234	209.839	4351.315	22.952	3.251	4.264
L15	20.255	34.765	1634.756	6.871	10.234	159.741	3312.459	17.110	3.787	6.733
	20.306	34.854	1647.383	6.889	10.259	160.574	3338.044	17.154	3.800	6.756
L16	20.310	34.102	1613.915	6.894	10.259	157.312	3270.229	16.784	3.834	6.971
	21.008	35.295	1789.255	7.135	10.608	168.667	3625.516	17.371	4.014	7.299
L17	20.906	52.969	2608.327	7.032	10.608	245.878	5285.177	26.070	3.244	3.873
	20.957	53.102	2628.012	7.049	10.634	247.139	5325.066	26.135	3.257	3.889
L18	20.957	53.102	2628.012	7.049	10.634	247.139	5325.066	26.135	3.257	3.889
	21.161	53.633	2707.746	7.120	10.736	252.215	5486.627	26.397	3.310	3.952
L19	21.192	48.241	2456.993	7.151	10.736	228.858	4978.535	23.743	3.544	4.726
	21.243	48.360	2475.226	7.169	10.761	230.010	5015.479	23.801	3.558	4.744
L20	21.248	47.584	2438.533	7.173	10.761	226.600	4941.129	23.419	3.591	4.869
	22.319	50.042	2836.299	7.544	11.298	251.054	5747.111	24.629	3.869	5.246
L21	21.916	51.352	2604.715	7.137	10.741	242.512	5277.858	25.274	3.413	4.266
	22.215	53.916	3014.753	7.493	11.256	267.829	6108.707	26.536	3.680	4.6
L22	22.223	52.294	2931.020	7.502	11.256	260.391	5939.041	25.737	3.747	4.834
	22.492	52.941	3041.147	7.595	11.391	266.989	6162.189	26.056	3.816	4.924
L23	22.412	67.586	3800.525	7.514	11.391	333.657	7700.894	33.264	3.213	3.213
	22.464	67.746	3827.628	7.532	11.416	335.277	7755.811	33.343	3.227	3.227
L24	22.473	66.131	3745.256	7.541	11.416	328.062	7588.905	32.548	3.294	3.378
	22.627	66.600	3825.474	7.594	11.494	332.833	7751.447	32.778	3.334	3.419
L25	22.702	52.606	3082.526	7.671	11.494	268.194	6246.034	25.891	3.903	5.119
	22.754	52.728	3104.059	7.688	11.519	269.463	6289.666	25.951	3.916	5.136
L26	22.754	52.728	3104.059	7.688	11.519	269.463	6289.666	25.951	3.916	5.136
	22.788	52.810	3118.499	7.700	11.537	270.312	6318.925	25.992	3.925	5.148
L27	22.819	46.940	2794.467	7.732	11.537	242.225	5662.348	23.102	4.160	6.163
	22.871	47.048	2813.834	7.749	11.562	243.360	5701.590	23.156	4.173	6.182
L28	22.879	45.358	2719.017	7.758	11.562	235.159	5509.465	22.324	4.240	6.523
	23.910	47.442	3111.201	8.115	12.078	257.590	6304.137	23.349	4.507	6.934
L29	23.919	45.667	3001.449	8.124	12.078	248.503	6081.749	22.476	4.574	7.318
	24.950	47.671	3414.060	8.480	12.594	271.091	6917.811	23.462	4.841	7.745
L30	24.950	47.671	3414.060	8.480	12.594	271.091	6917.811	23.462	4.841	7.745
	25.070	47.904	3464.497	8.522	12.654	273.788	7020.009	23.577	4.872	7.795
L31	24.999	62.702	4458.829	8.450	12.654	352.367	9034.796	30.860	4.336	5.256
	25.051	62.835	4487.097	8.468	12.680	353.880	9092.075	30.925	4.349	5.272
L32	25.051	62.835	4487.097	8.468	12.680	353.880	9092.075	30.925	4.349	5.272
	25.137	63.055	4534.514	8.498	12.723	356.411	9188.154	31.034	4.371	5.299
L33	25.137	63.055	4534.514	8.498	12.723	356.411	9188.154	31.034	4.371	5.299
	25.188	63.188	4563.100	8.515	12.748	357.932	9246.079	31.099	4.385	5.315
L34	25.197	61.337	4438.791	8.524	12.748	348.182	8994.195	30.188	4.452	5.565
	25.575	62.277	4646.037	8.655	12.938	359.113	9414.130	30.651	4.550	5.687
L35	25.544	68.839	5098.436	8.624	12.938	394.081	10330.813	33.880	4.315	4.862
	25.595	68.981	5130.107	8.641	12.963	395.740	10394.987	33.950	4.328	4.877
L36	25.595	68.981	5130.107	8.641	12.963	395.740	10394.987	33.950	4.328	4.877
	25.647	69.123	5161.909	8.659	12.989	397.403	10459.426	34.020	4.342	4.892
L37	25.638	70.997	5290.875	8.650	12.989	407.332	10720.747	34.943	4.275	4.685
	25.690	71.143	5323.640	8.668	13.015	409.042	10787.138	35.015	4.288	4.699
L38	25.703	68.325	5128.616	8.682	13.015	394.057	10391.966	33.628	4.389	5.016
	26.734	71.130	5786.510	9.038	13.531	427.662	11725.038	35.008	4.655	5.32
L39	26.742	69.166	5637.897	9.047	13.531	416.679	11423.908	34.041	4.722	5.556
	27.773	71.891	6330.781	9.403	14.046	450.710	12827.880	35.382	4.989	5.87

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L40	27.782	69.843	6162.144	9.412	14.046	438.704	12486.174	34.375	5.056	6.129
	28.400	71.430	6591.746	9.626	14.356	459.174	13356.665	35.155	5.216	6.323
L41	28.400	71.430	6591.746	9.626	14.356	459.174	13356.665	35.155	5.216	6.323
	28.452	71.562	6628.421	9.644	14.381	460.901	13430.979	35.221	5.230	6.339
L42	28.452	71.562	6628.421	9.644	14.381	460.901	13430.979	35.221	5.230	6.339
	28.606	71.958	6739.263	9.697	14.459	466.102	13655.573	35.416	5.270	6.387
L43	28.584	77.231	7199.746	9.675	14.459	497.950	14588.636	38.011	5.102	5.749
	28.636	77.374	7239.601	9.693	14.485	499.815	14669.394	38.081	5.115	5.764
L44	28.649	74.207	6962.552	9.706	14.485	480.688	14108.019	36.522	5.216	6.136
	29.680	76.932	7758.005	10.063	15.000	517.192	15719.821	37.863	5.483	6.45
L45	29.684	75.834	7654.119	10.067	15.000	510.267	15509.321	37.323	5.516	6.587
	31.425	80.370	9111.392	10.669	15.872	574.072	18462.150	39.556	5.967	7.125
L46	30.903	76.767	7940.296	10.191	15.180	523.091	16089.192	37.783	5.609	6.697
	31.108	79.542	8832.656	10.559	15.712	562.143	17897.356	39.148	5.885	7.027
L47	31.108	79.542	8832.656	10.559	15.712	562.143	17897.356	39.148	5.885	7.027
	31.357	80.192	9051.176	10.646	15.837	571.505	18340.137	39.468	5.949	7.104
L48	31.353	81.355	9174.689	10.641	15.837	579.304	18590.407	40.041	5.916	6.96
	31.404	81.491	9220.582	10.659	15.863	581.261	18683.399	40.107	5.929	6.975
L49	31.404	81.491	9220.582	10.659	15.863	581.261	18683.399	40.107	5.929	6.975
	31.438	81.581	9251.324	10.671	15.880	582.570	18745.690	40.152	5.938	6.986
L50	31.407	89.715	10114.068	10.639	15.880	636.899	20493.844	44.155	5.704	6.084
	31.459	89.864	10164.669	10.657	15.906	639.054	20596.375	44.228	5.717	6.098
L51	31.468	87.541	9918.558	10.666	15.906	623.581	20097.688	43.085	5.784	6.338
	32.270	89.819	10712.920	10.944	16.307	656.941	21707.281	44.206	5.991	6.566
L52	32.257	93.395	11112.181	10.930	16.307	681.424	22516.292	45.966	5.891	6.201
	32.308	93.546	11166.294	10.948	16.333	683.668	22625.940	46.041	5.904	6.215
L53	32.312	92.353	11032.888	10.952	16.333	675.500	22355.622	45.453	5.938	6.334
	32.637	93.300	11375.549	11.065	16.495	689.623	23049.947	45.919	6.022	6.423
L54	32.654	88.467	10821.202	11.083	16.495	656.017	21926.690	43.541	6.156	6.936
	32.706	88.608	10873.173	11.100	16.521	658.145	22031.996	43.610	6.169	6.951
L55	32.706	88.608	10873.173	11.100	16.521	658.145	22031.996	43.610	6.169	6.951
	33.303	90.257	11491.698	11.307	16.820	683.221	23285.295	44.422	6.324	7.125
L56	33.308	89.021	11343.300	11.311	16.820	674.398	22984.602	43.814	6.357	7.265
	33.359	89.161	11396.675	11.329	16.846	676.540	23092.753	43.882	6.370	7.281
L57	33.363	87.922	11247.183	11.333	16.846	667.666	22789.841	43.272	6.404	7.425
	34.183	90.120	12112.233	11.617	17.256	701.930	24542.668	44.354	6.616	7.671
L58	34.183	90.120	12112.233	11.617	17.256	701.930	24542.668	44.354	6.616	7.671
	34.234	90.258	12167.724	11.635	17.281	704.100	24655.108	44.422	6.629	7.686
L59	34.238	88.984	12005.222	11.639	17.281	694.697	24325.835	43.795	6.663	7.839
	35.263	91.692	13135.172	11.993	17.794	738.186	26615.419	45.128	6.928	8.151
L60	35.267	90.378	12956.500	11.998	17.794	728.145	26253.381	44.481	6.962	8.312
	35.575	91.178	13303.879	12.104	17.948	741.261	26957.265	44.875	7.041	8.407
L61	35.531	104.400	15120.578	12.059	17.948	842.484	30638.391	51.382	6.706	6.967
	35.582	104.553	15187.306	12.077	17.973	844.995	30773.600	51.458	6.719	6.981
L62	35.582	104.553	15187.306	12.077	17.973	844.995	30773.600	51.458	6.719	6.981
	35.821	105.269	15501.390	12.160	18.093	856.767	31410.019	51.810	6.781	7.046
L63	35.861	93.272	13826.016	12.200	18.093	764.168	28015.257	45.906	7.083	8.333
	35.912	93.408	13886.326	12.218	18.119	766.416	28137.462	45.973	7.096	8.348
L64	35.916	92.068	13697.155	12.222	18.119	755.975	27754.150	45.313	7.130	8.513
	36.941	94.737	14923.079	12.577	18.631	800.976	30238.204	46.626	7.395	8.83
L65	36.945	93.356	14716.044	12.581	18.631	789.863	29818.695	45.947	7.428	9.004
	37.645	95.152	15581.827	12.823	18.981	820.902	31573.006	46.831	7.609	9.224
L66	37.614	104.987	17108.449	12.792	18.981	901.330	34666.355	51.671	7.375	8.082
	37.665	105.132	17179.621	12.809	19.007	903.859	34810.569	51.743	7.388	8.097
L67	37.665	105.132	17179.621	12.809	19.007	903.859	34810.569	51.743	7.388	8.097
	37.700	105.229	17227.273	12.821	19.024	905.550	34907.127	51.791	7.397	8.106
L68	37.753	88.299	14577.031	12.875	19.024	766.241	29537.016	43.458	7.799	10.228
	37.804	88.421	14637.279	12.893	19.050	768.372	29659.097	43.518	7.812	10.246
L69	37.804	88.421	14637.279	12.893	19.050	768.372	29659.097	43.518	7.812	10.246
	37.855	88.542	14697.694	12.910	19.075	770.507	29781.513	43.578	7.826	10.263
L70	37.890	77.144	12876.656	12.946	19.075	675.042	26091.595	37.968	8.094	12.217
	37.942	77.249	12929.583	12.964	19.101	676.907	26198.841	38.020	8.107	12.237

<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job 79982.005.01 - WATERBURY,CT (BU# 876317)</p>	<p>Page 7 of 92</p>
	<p>Project</p>	<p>Date 15:48:22 01/28/22</p>
	<p>Client Crown Castle</p>	<p>Designed by Jayaraj B</p>

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
L71	37.946	75.818	12698.770	12.968	19.101	664.823	25731.151	37.315	8.140	12.524
	38.612	77.164	13387.320	13.199	19.434	688.855	27126.339	37.978	8.313	12.789
L72	38.515	108.991	18628.043	13.100	19.434	958.520	37745.466	53.642	7.576	8.19
	38.566	109.139	18703.710	13.118	19.460	961.146	37898.787	53.715	7.589	8.204
L73	38.571	107.701	18469.846	13.122	19.460	949.128	37424.916	53.007	7.623	8.353
	38.827	108.428	18846.355	13.211	19.588	962.140	38187.825	53.365	7.689	8.426
L74	38.862	96.807	16917.794	13.247	19.588	863.684	34280.038	47.645	7.957	9.793
	38.913	96.936	16985.753	13.264	19.614	866.020	34417.740	47.709	7.970	9.809
L75	38.922	94.017	16496.461	13.273	19.614	841.073	33426.303	46.272	8.037	10.206
	39.946	96.526	17852.914	13.628	20.126	887.049	36174.844	47.507	8.302	10.543
L76	39.946	96.526	17852.914	13.628	20.126	887.049	36174.844	47.507	8.302	10.543
	40.305	97.404	18344.678	13.752	20.306	903.430	37171.292	47.940	8.395	10.66

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A _f	Adjust. Factor A _r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals	Double Angle Stitch Bolt Spacing Horizontals	Double Angle Stitch Bolt Spacing Redundants
ft	ft ²	in					in	in	in
L1				1	1	1			
144.250-139.2									
50									
L2				1	1	1			
139.250-134.7									
50									
L3				1	1	1			
134.750-134.2									
50									
L4				1	1	1			
134.250-129.2									
50									
L5				1	1	1			
129.250-124.2									
50									
L6				1	1	1			
124.250-123.4									
16									
L7				1	1	0.873259			
123.416-123.1									
66									
L8				1	1	0.880843			
123.166-118.1									
66									
L9				1	1	0.893543			
118.166-113.1									
66									
L10				1	1	0.895307			
113.166-109.5									
00									
L11				1	1	0.905539			
109.500-109.2									
50									
L12				1	1	0.915518			
109.250-104.7									
50									
L13				1	1	0.930283			
104.750-104.5									
00									
L14				1	1	0.929776			
104.500-102.4									
16									
L15				1	1	1.12278			

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	<p>Client</p> <p>Crown Castle</p>	<p>Designed by</p> <p>Jayaraj B</p>

Tower Elevation	Gusset Area (per face)	Gusset Thickness	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
ft	ft ²	in							
L44				1	1	0.936205			
59.250-54.250									
L45				1	1	0.930731			
54.250-45.802									
L46				1	1	0.938065			
45.802-44.802									
L47				1	1	0.933481			
44.802-43.583									
L48				1	1	0.974523			
43.583-43.333									
L49				1	1	0.97385			
43.333-43.166									
L50				1	1	0.934786			
43.166-42.916									
L51				1	1	0.943944			
42.916-39.000									
L52				1	1	0.949681			
39.000-38.750									
L53				1	1	0.955574			
38.750-37.166									
L54				1	1	0.972827			
37.166-36.916									
L55				1	1	0.961485			
36.916-34.000									
L56				1	1	0.928941			
34.000-33.750									
L57				1	1	0.927889			
33.750-29.750									
L58				1	1	0.93743			
29.750-29.500									
L59				1	1	0.933623			
29.500-24.500									
L60				1	1	0.942163			
24.500-23.000									
L61				1	1	0.90832			
23.000-22.750									
L62				1	1	0.904351			
22.750-21.583									
L63				1	1	0.971473			
21.583-21.333									
L64				1	1	0.968358			
21.333-16.333									
L65				1	1	0.971282			
16.333-12.917									
L66				1	1	0.961412			
12.917-12.667									
L67				1	1	0.96084			
12.667-12.500									
L68				1	1	1.00814			
12.500-12.250									
L69				1	1	1.00732			
12.250-12.000									
L70				1	1	1.07745			
12.000-11.750									
L71				1	1	1.08702			
11.750-8.500									
L72				1	1	0.961703			
8.500-8.250									
L73				1	1	0.970307			

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	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
ft	ft ²	in							
8.250-7.000 L74				1	1	0.961877			
7.000-6.750 L75				1	1	0.976278			
6.750-1.750 L76				1	1	0.971053			
1.750-0.000									

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
FB-L98B-034-XXX(3/8)	B	No	Surface Ar (CaAa)	144.000 - 0.000	2	2	0.000 0.020	0.394		0.000
WR-VG86ST-BRD(3/4)	B	No	Surface Ar (CaAa)	144.000 - 0.000	6	3	0.000 0.170	0.795		0.001
* 7983A(ELLIPTICAL)	B	No	Surface Ar (CaAa)	130.000 - 0.000	3	1	-0.380 -0.300	0.573		0.000
CU12PSM9P6XXX(1-1/2)	B	No	Surface Ar (CaAa)	120.000 - 0.000	1	1	-0.100 -0.080	1.600		0.002
MLC HYBRID 6X12 6AWGX6(1-1/2)	C	No	Surface Ar (CaAa)	100.000 - 0.000	2	2	0.370 0.400	1.530		0.001
* Safety Line 3/8	B	No	Surface Ar (CaAa)	144.250 - 0.000	1	1	-0.400 -0.370	0.375		0.000
* PL1.25x6.875 Reinforcement	A	No	Surface Af (CaAa)	29.750 - 0.000	1	1	0.250 0.250	6.875	16.250	0.000
PL1.25x6.875 Reinforcement	B	No	Surface Af (CaAa)	29.750 - 0.000	1	1	0.250 0.250	6.875	16.250	0.000
PL1.25x6.875 Reinforcement	C	No	Surface Af (CaAa)	29.750 - 9.170	1	1	0.250 0.250	6.875	16.250	0.000
PL1.25x6.875 Reinforcement	C	No	Surface Af (CaAa)	16.420 - 0.000	1	1	0.000 0.000	6.875	16.250	0.000
PL1.25x6.875 Reinforcement	C	No	Surface Af (CaAa)	16.420 - 0.000	1	1	0.500 0.500	6.875	16.250	0.000
*** PL1.25x6.625 Reinforcement	A	No	Surface Af (CaAa)	59.500 - 29.750	1	1	0.250 0.250	6.625	15.750	0.000
PL1.25x6.625 Reinforcement	B	No	Surface Af (CaAa)	59.500 - 29.750	1	1	0.250 0.250	6.625	15.750	0.000
PL1.25x6.625 Reinforcement	C	No	Surface Af (CaAa)	59.500 - 29.750	1	1	0.250 0.250	6.625	15.750	0.000
*** PL1.25x5.5 Reinforcement	A	No	Surface Af (CaAa)	89.250 - 59.500	1	1	0.250 0.250	5.500	13.500	0.000
PL1.25x5.5 Reinforcement	B	No	Surface Af (CaAa)	89.250 - 59.500	1	1	0.250 0.250	5.500	13.500	0.000
PL1.25x5.5 Reinforcement	C	No	Surface Af (CaAa)	89.250 - 59.500	1	1	0.250 0.250	5.500	13.500	0.000
*** PL1.25x3.625	A	No	Surface Af	100.000 -	1	1	0.250	3.625	9.750	0.000

tnxTower

B+T Group
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Crown Castle
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Jayaraj B

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
Reinforcement			(CaAa)	89.250			0.250			
PL1.25x3.625 Reinforcement	B	No	Surface Af	100.000 - 89.250	1	1	0.250	3.625	9.750	0.000
PL1.25x3.625 Reinforcement	C	No	Surface Af	100.000 - 89.250	1	1	0.250	3.625	9.750	0.000

PL1x4 Reinforcement	A	No	Surface Af	35.750 - 10.750	1	1	0.000	4.000	10.000	0.000
PL1x4 Reinforcement	B	No	Surface Af	35.750 - 10.750	1	1	-0.250	4.000	10.000	0.000
PL1x4 Reinforcement	C	No	Surface Af	40.750 - 10.750	1	1	-0.250	4.000	10.000	0.000

PL1x4 Reinforcement	A	No	Surface Af	62.250 - 32.250	1	1	0.500	4.000	10.000	0.000
PL1x4 Reinforcement	B	No	Surface Af	62.250 - 32.250	1	1	0.500	4.000	10.000	0.000
PL1x4 Reinforcement	C	No	Surface Af	62.250 - 32.250	1	1	0.500	4.000	10.000	0.000

PL1x4 Reinforcement	A	No	Surface Af	78.750 - 58.750	1	1	-0.250	4.000	10.000	0.000
PL1x4 Reinforcement	B	No	Surface Af	78.750 - 58.750	1	1	-0.250	4.000	10.000	0.000
PL1x4 Reinforcement	C	No	Surface Af	78.750 - 58.750	1	1	-0.250	4.000	10.000	0.000

PL1x4 Reinforcement	A	No	Surface Af	106.500 - 86.500	1	1	-0.250	4.000	10.000	0.000
PL1x4 Reinforcement	B	No	Surface Af	106.500 - 86.500	1	1	-0.250	4.000	10.000	0.000
PL1x4 Reinforcement	C	No	Surface Af	106.500 - 86.500	1	1	-0.250	4.000	10.000	0.000

Transition Stiffener 1x7	A	No	Surface Af	10.500 - 0.000	1	1	-0.500	1.000	16.000	0.000
Transition Stiffener 1x7	B	No	Surface Af	10.500 - 0.000	1	1	-0.250	1.000	16.000	0.000
Transition Stiffener 1x7	C	No	Surface Af	10.500 - 0.000	1	1	-0.250	1.000	16.000	0.000
*										
CCI-SFP-060100	B	No	Surface Af	25.000 - 5.000	1	1	-0.500	6.000	14.000	0.000
CCI-SFP-060100	C	No	Surface Af	25.000 - 5.000	1	1	0.000	6.000	14.000	0.000
*										
CCI-SFP-060100	C	No	Surface Af	25.000 - 10.000	1	1	-0.250	6.000	14.000	0.000
*										
CCI-SFP-045100	B	No	Surface Af	35.083 - 20.083	1	1	0.000	4.500	11.000	0.000
*										
CCI-SFP-045100	C	No	Surface Af	35.083 - 25.083	1	1	0.000	4.500	11.000	0.000
*										
CCI-SFP-045100	A	No	Surface Af	45.080 - 25.083	1	1	-0.250	4.500	11.000	0.000
*										
CCI-SFP-060100	B	No	Surface Af	45.167 - 35.167	1	1	0.000	6.000	14.000	0.000

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	Client Crown Castle	Designed by Jayaraj B

Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight klf
CCI-SFP-060100	C	No	Surface Af (CaAa)	45.167 - 35.167	1	1	0.000 0.000	6.000	14.000	0.000
*										
CCI-SFP-045100	A	No	Surface Af (CaAa)	75.250 - 45.250	1	1	0.000 0.000	4.500	11.000	0.000
CCI-SFP-045100	B	No	Surface Af (CaAa)	75.250 - 45.250	1	1	0.000 0.000	4.500	11.000	0.000
*										
CCI-SFP-040075	B	No	Surface Af (CaAa)	75.250 - 45.250	1	1	0.000 0.000	4.000	9.500	0.000
*										
CCI-SFP-040075	B	No	Surface Af (CaAa)	100.330 - 75.330	1	1	0.000 0.000	4.000	9.500	0.000
CCI-SFP-040075	C	No	Surface Af (CaAa)	100.330 - 75.330	1	1	0.000 0.000	4.000	9.500	0.000
*										
CCI-SFP-040075	A	No	Surface Af (CaAa)	90.333 - 75.333	1	1	-0.500 -0.500	4.000	9.500	0.000
*										
CCI-AFP-05012520	C	No	Surface Af (CaAa)	105.330 - 85.330	1	1	0.000 0.000	5.000	12.500	0.000
*										
CCI-AFP-045100	A	No	Surface Af (CaAa)	125.416 - 100.416	1	1	0.000 0.000	4.500	11.000	0.000
CCI-AFP-045100	B	No	Surface Af (CaAa)	125.416 - 100.416	1	1	0.000 0.000	4.500	11.000	0.000
CCI-AFP-045100	C	No	Surface Af (CaAa)	125.416 - 100.416	1	1	0.000 0.000	4.500	11.000	0.000
*										
CCI-AFP-040075	A	No	Surface Af (CaAa)	111.000 - 96.000	1	1	-0.500 -0.500	4.000	9.500	0.000
*										
CCI-AFP-040075	B	No	Surface Af (CaAa)	111.000 - 101.000	1	1	-0.500 -0.500	4.000	9.500	0.000
*										
*										
*										

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _A A _A ft ² /ft	Weight klf
MLC6C-06C-008R-008R(1-1/2)	B	No	No	Inside Pole	130.000 - 0.000	1	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.002 0.002 0.002
HB114-1-0813U4-M5J(1-1/4)	B	No	No	Inside Pole	130.000 - 0.000	3	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
*									
LDF7-50A(1-5/8)	B	No	No	Inside Pole	110.000 - 0.000	6	No Ice 1/2" Ice 1" Ice	0.000 0.000 0.000	0.001 0.001 0.001
HB114-U6S12-XXX	B	No	No	Inside Pole	110.000 - 0.000	2	No Ice	0.000	0.002

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 79982.005.01 - WATERBURY,CT (BU# 876317)	Page 13 of 92
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	Client Crown Castle	Designed by Jayaraj B

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight klf
-LI(1-1/4)							1/2" Ice	0.000	0.002
							1" Ice	0.000	0.002
LDF4-50A(1/2)	B	No	No	Inside Pole	110.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
*									
LDF5-50A(7/8)	C	No	No	Inside Pole	100.000 - 0.000	5	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
LDF6-50A(1-1/4)	C	No	No	Inside Pole	100.000 - 0.000	6	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
MLE HYBRID 9POWER/18FIBER RL 2(1-5/8)	C	No	No	Inside Pole	100.000 - 0.000	1	No Ice	0.000	0.001
							1/2" Ice	0.000	0.001
							1" Ice	0.000	0.001
*									
LDF4-50A(1/2)	B	No	No	Inside Pole	50.000 - 0.000	1	No Ice	0.000	0.000
							1/2" Ice	0.000	0.000
							1" Ice	0.000	0.000
*									
*									
*									
*									

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	144.250-139.250	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.694	0.000	0.018
		C	0.000	0.000	0.000	0.000	0.000
L2	139.250-134.750	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.596	0.000	0.017
		C	0.000	0.000	0.000	0.000	0.000
L3	134.750-134.250	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	0.177	0.000	0.002
		C	0.000	0.000	0.000	0.000	0.000
L4	134.250-129.250	A	0.000	0.000	0.000	0.000	0.000
		B	0.000	0.000	1.817	0.000	0.023
		C	0.000	0.000	0.000	0.000	0.000
L5	129.250-124.250	A	0.000	0.000	0.875	0.000	0.000
		B	0.000	0.000	2.935	0.000	0.046
		C	0.000	0.000	0.875	0.000	0.000
L6	124.250-123.416	A	0.000	0.000	0.625	0.000	0.000
		B	0.000	0.000	0.969	0.000	0.008
		C	0.000	0.000	0.625	0.000	0.000
L7	123.416-123.166	A	0.000	0.000	0.188	0.000	0.000
		B	0.000	0.000	0.291	0.000	0.002
		C	0.000	0.000	0.188	0.000	0.000
L8	123.166-118.166	A	0.000	0.000	3.750	0.000	0.000
		B	0.000	0.000	6.104	0.000	0.050
		C	0.000	0.000	3.750	0.000	0.000
L9	118.166-113.166	A	0.000	0.000	3.750	0.000	0.000

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
		B	0.000	0.000	6.610	0.000	0.058
		C	0.000	0.000	3.750	0.000	0.000
L10	113.166-109.500	A	0.000	0.000	3.749	0.000	0.000
		B	0.000	0.000	5.847	0.000	0.047
		C	0.000	0.000	2.749	0.000	0.000
L11	109.500-109.250	A	0.000	0.000	0.354	0.000	0.000
		B	0.000	0.000	0.497	0.000	0.005
		C	0.000	0.000	0.188	0.000	0.000
L12	109.250-104.750	A	0.000	0.000	7.542	0.000	0.000
		B	0.000	0.000	10.116	0.000	0.090
		C	0.000	0.000	5.025	0.000	0.000
L13	104.750-104.500	A	0.000	0.000	0.521	0.000	0.000
		B	0.000	0.000	0.664	0.000	0.005
		C	0.000	0.000	0.563	0.000	0.000
L14	104.500-102.416	A	0.000	0.000	4.342	0.000	0.000
		B	0.000	0.000	5.534	0.000	0.042
		C	0.000	0.000	4.689	0.000	0.000
L15	102.416-102.166	A	0.000	0.000	0.521	0.000	0.000
		B	0.000	0.000	0.664	0.000	0.005
		C	0.000	0.000	0.563	0.000	0.000
L16	102.166-98.750	A	0.000	0.000	6.622	0.000	0.000
		B	0.000	0.000	8.130	0.000	0.068
		C	0.000	0.000	8.628	0.000	0.009
L17	98.750-98.500	A	0.000	0.000	0.484	0.000	0.000
		B	0.000	0.000	0.627	0.000	0.005
		C	0.000	0.000	0.769	0.000	0.002
L18	98.500-97.500	A	0.000	0.000	1.938	0.000	0.000
		B	0.000	0.000	2.510	0.000	0.020
		C	0.000	0.000	3.077	0.000	0.007
L19	97.500-97.250	A	0.000	0.000	0.484	0.000	0.000
		B	0.000	0.000	0.627	0.000	0.005
		C	0.000	0.000	0.769	0.000	0.002
L20	97.250-92.000	A	0.000	0.000	7.505	0.000	0.000
		B	0.000	0.000	13.175	0.000	0.105
		C	0.000	0.000	16.153	0.000	0.039
L21	92.000-90.552	A	0.000	0.000	1.840	0.000	0.000
		B	0.000	0.000	3.634	0.000	0.029
		C	0.000	0.000	4.455	0.000	0.011
L22	90.552-89.250	A	0.000	0.000	2.377	0.000	0.000
		B	0.000	0.000	3.267	0.000	0.026
		C	0.000	0.000	4.006	0.000	0.010
L23	89.250-89.000	A	0.000	0.000	0.563	0.000	0.000
		B	0.000	0.000	0.706	0.000	0.005
		C	0.000	0.000	0.847	0.000	0.002
L24	89.000-88.250	A	0.000	0.000	1.688	0.000	0.000
		B	0.000	0.000	2.117	0.000	0.015
		C	0.000	0.000	2.542	0.000	0.006
L25	88.250-88.000	A	0.000	0.000	0.563	0.000	0.000
		B	0.000	0.000	0.706	0.000	0.005
		C	0.000	0.000	0.847	0.000	0.002
L26	88.000-87.833	A	0.000	0.000	0.376	0.000	0.000
		B	0.000	0.000	0.471	0.000	0.003
		C	0.000	0.000	0.566	0.000	0.001
L27	87.833-87.583	A	0.000	0.000	0.563	0.000	0.000
		B	0.000	0.000	0.706	0.000	0.005
		C	0.000	0.000	0.847	0.000	0.002
L28	87.583-82.583	A	0.000	0.000	8.639	0.000	0.000
		B	0.000	0.000	11.499	0.000	0.100
		C	0.000	0.000	12.046	0.000	0.037
L29	82.583-77.583	A	0.000	0.000	8.695	0.000	0.000
		B	0.000	0.000	11.555	0.000	0.100

tnxTower

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Client
 Crown Castle
 Designed by
 Jayaraj B

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L30	77.583-77.000	C	0.000	0.000	10.225	0.000	0.037
		A	0.000	0.000	1.312	0.000	0.000
		B	0.000	0.000	1.645	0.000	0.012
L31	77.000-76.750	C	0.000	0.000	1.490	0.000	0.004
		A	0.000	0.000	0.563	0.000	0.000
		B	0.000	0.000	0.706	0.000	0.005
L32	76.750-76.333	C	0.000	0.000	0.639	0.000	0.002
		A	0.000	0.000	0.938	0.000	0.000
		B	0.000	0.000	1.177	0.000	0.008
L33	76.333-76.083	C	0.000	0.000	1.066	0.000	0.003
		A	0.000	0.000	0.563	0.000	0.000
		B	0.000	0.000	0.706	0.000	0.005
L34	76.083-74.250	C	0.000	0.000	0.639	0.000	0.002
		A	0.000	0.000	4.152	0.000	0.000
		B	0.000	0.000	5.869	0.000	0.037
L35	74.250-74.000	C	0.000	0.000	3.965	0.000	0.014
		A	0.000	0.000	0.583	0.000	0.000
		B	0.000	0.000	0.893	0.000	0.005
L36	74.000-73.750	C	0.000	0.000	0.472	0.000	0.002
		A	0.000	0.000	0.583	0.000	0.000
		B	0.000	0.000	0.893	0.000	0.005
L37	73.750-73.500	C	0.000	0.000	0.472	0.000	0.002
		A	0.000	0.000	0.583	0.000	0.000
		B	0.000	0.000	0.893	0.000	0.005
L38	73.500-68.500	C	0.000	0.000	0.472	0.000	0.002
		A	0.000	0.000	11.667	0.000	0.000
		B	0.000	0.000	17.860	0.000	0.100
L39	68.500-63.500	C	0.000	0.000	9.447	0.000	0.037
		A	0.000	0.000	11.667	0.000	0.000
		B	0.000	0.000	17.860	0.000	0.100
L40	63.500-60.500	C	0.000	0.000	9.447	0.000	0.037
		A	0.000	0.000	8.167	0.000	0.000
		B	0.000	0.000	11.883	0.000	0.060
L41	60.500-60.250	C	0.000	0.000	6.835	0.000	0.022
		A	0.000	0.000	0.750	0.000	0.000
		B	0.000	0.000	1.060	0.000	0.005
L42	60.250-59.500	C	0.000	0.000	0.639	0.000	0.002
		A	0.000	0.000	2.250	0.000	0.000
		B	0.000	0.000	3.179	0.000	0.015
L43	59.500-59.250	C	0.000	0.000	1.917	0.000	0.006
		A	0.000	0.000	0.797	0.000	0.000
		B	0.000	0.000	1.107	0.000	0.005
L44	59.250-54.250	C	0.000	0.000	0.686	0.000	0.002
		A	0.000	0.000	12.938	0.000	0.000
		B	0.000	0.000	19.131	0.000	0.100
L45	54.250-45.802	C	0.000	0.000	10.717	0.000	0.037
		A	0.000	0.000	21.296	0.000	0.000
		B	0.000	0.000	31.761	0.000	0.170
L46	45.802-44.802	C	0.000	0.000	17.545	0.000	0.063
		A	0.000	0.000	2.393	0.000	0.000
		B	0.000	0.000	3.458	0.000	0.020
L47	44.802-43.583	C	0.000	0.000	2.410	0.000	0.007
		A	0.000	0.000	3.073	0.000	0.000
		B	0.000	0.000	3.968	0.000	0.025
L48	43.583-43.333	C	0.000	0.000	3.644	0.000	0.009
		A	0.000	0.000	0.630	0.000	0.000
		B	0.000	0.000	0.814	0.000	0.005
L49	43.333-43.166	C	0.000	0.000	0.747	0.000	0.002
		A	0.000	0.000	0.421	0.000	0.000
		B	0.000	0.000	0.544	0.000	0.003
		C	0.000	0.000	0.499	0.000	0.001

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L50	43.166-42.916	A	0.000	0.000	0.630	0.000	0.000
		B	0.000	0.000	0.814	0.000	0.005
		C	0.000	0.000	0.747	0.000	0.002
L51	42.916-39.000	A	0.000	0.000	9.872	0.000	0.000
		B	0.000	0.000	12.747	0.000	0.079
		C	0.000	0.000	12.871	0.000	0.029
L52	39.000-38.750	A	0.000	0.000	0.630	0.000	0.000
		B	0.000	0.000	0.814	0.000	0.005
		C	0.000	0.000	0.914	0.000	0.002
L53	38.750-37.166	A	0.000	0.000	3.993	0.000	0.000
		B	0.000	0.000	5.156	0.000	0.032
		C	0.000	0.000	5.791	0.000	0.012
L54	37.166-36.916	A	0.000	0.000	0.630	0.000	0.000
		B	0.000	0.000	0.814	0.000	0.005
		C	0.000	0.000	0.914	0.000	0.002
L55	36.916-34.000	A	0.000	0.000	8.517	0.000	0.000
		B	0.000	0.000	10.406	0.000	0.059
		C	0.000	0.000	10.408	0.000	0.022
L56	34.000-33.750	A	0.000	0.000	0.797	0.000	0.000
		B	0.000	0.000	0.940	0.000	0.005
		C	0.000	0.000	0.873	0.000	0.002
L57	33.750-29.750	A	0.000	0.000	11.083	0.000	0.000
		B	0.000	0.000	13.371	0.000	0.081
		C	0.000	0.000	12.307	0.000	0.030
L58	29.750-29.500	A	0.000	0.000	0.641	0.000	0.000
		B	0.000	0.000	0.784	0.000	0.005
		C	0.000	0.000	0.717	0.000	0.002
L59	29.500-24.500	A	0.000	0.000	12.375	0.000	0.000
		B	0.000	0.000	16.173	0.000	0.101
		C	0.000	0.000	14.905	0.000	0.037
L60	24.500-23.000	A	0.000	0.000	2.719	0.000	0.000
		B	0.000	0.000	6.202	0.000	0.030
		C	0.000	0.000	6.178	0.000	0.011
L61	23.000-22.750	A	0.000	0.000	0.453	0.000	0.000
		B	0.000	0.000	1.034	0.000	0.005
		C	0.000	0.000	1.030	0.000	0.002
L62	22.750-21.583	A	0.000	0.000	2.115	0.000	0.000
		B	0.000	0.000	4.825	0.000	0.024
		C	0.000	0.000	4.806	0.000	0.009
L63	21.583-21.333	A	0.000	0.000	0.453	0.000	0.000
		B	0.000	0.000	1.034	0.000	0.005
		C	0.000	0.000	1.030	0.000	0.002
L64	21.333-16.333	A	0.000	0.000	9.063	0.000	0.000
		B	0.000	0.000	17.860	0.000	0.101
		C	0.000	0.000	20.792	0.000	0.037
L65	16.333-12.917	A	0.000	0.000	6.191	0.000	0.000
		B	0.000	0.000	11.562	0.000	0.069
		C	0.000	0.000	21.897	0.000	0.026
L66	12.917-12.667	A	0.000	0.000	0.453	0.000	0.000
		B	0.000	0.000	0.846	0.000	0.005
		C	0.000	0.000	1.603	0.000	0.002
L67	12.667-12.500	A	0.000	0.000	0.303	0.000	0.000
		B	0.000	0.000	0.565	0.000	0.003
		C	0.000	0.000	1.070	0.000	0.001
L68	12.500-12.250	A	0.000	0.000	0.453	0.000	0.000
		B	0.000	0.000	0.846	0.000	0.005
		C	0.000	0.000	1.603	0.000	0.002
L69	12.250-12.000	A	0.000	0.000	0.453	0.000	0.000
		B	0.000	0.000	0.846	0.000	0.005
		C	0.000	0.000	1.603	0.000	0.002
L70	12.000-11.750	A	0.000	0.000	0.453	0.000	0.000

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	Project		Date	15:48:22 01/28/22
	Client	Crown Castle	Designed by	Jayaraj B

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L71	11.750-8.500	B	0.000	0.000	0.846	0.000	0.005
		C	0.000	0.000	1.603	0.000	0.002
		A	0.000	0.000	4.684	0.000	0.000
L72	8.500-8.250	B	0.000	0.000	9.793	0.000	0.066
		C	0.000	0.000	17.359	0.000	0.024
		A	0.000	0.000	0.323	0.000	0.000
L73	8.250-7.000	B	0.000	0.000	0.716	0.000	0.005
		C	0.000	0.000	0.936	0.000	0.002
		A	0.000	0.000	1.616	0.000	0.000
L74	7.000-6.750	B	0.000	0.000	3.581	0.000	0.025
		C	0.000	0.000	4.680	0.000	0.009
		A	0.000	0.000	0.323	0.000	0.000
L75	6.750-1.750	B	0.000	0.000	0.716	0.000	0.005
		C	0.000	0.000	0.936	0.000	0.002
		A	0.000	0.000	6.463	0.000	0.000
L76	1.750-0.000	B	0.000	0.000	11.073	0.000	0.101
		C	0.000	0.000	15.472	0.000	0.037
		A	0.000	0.000	2.262	0.000	0.000
		B	0.000	0.000	3.263	0.000	0.035
		C	0.000	0.000	4.803	0.000	0.013
		A	0.000	0.000			

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} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L1	144.250-139.250	A	0.983	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	5.390	0.000	0.056
		C		0.000	0.000	0.000	0.000	0.000
L2	139.250-134.750	A	0.980	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	5.040	0.000	0.052
		C		0.000	0.000	0.000	0.000	0.000
L3	134.750-134.250	A	0.978	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	0.559	0.000	0.006
		C		0.000	0.000	0.000	0.000	0.000
L4	134.250-129.250	A	0.976	0.000	0.000	0.000	0.000	0.000
		B		0.000	0.000	5.776	0.000	0.066
		C		0.000	0.000	0.000	0.000	0.000
L5	129.250-124.250	A	0.972	0.000	0.000	1.101	0.000	0.006
		B		0.000	0.000	7.934	0.000	0.119
		C		0.000	0.000	1.101	0.000	0.006
L6	124.250-123.416	A	0.970	0.000	0.000	0.787	0.000	0.005
		B		0.000	0.000	1.925	0.000	0.023
		C		0.000	0.000	0.787	0.000	0.005
L7	123.416-123.166	A	0.970	0.000	0.000	0.236	0.000	0.001
		B		0.000	0.000	0.577	0.000	0.007
		C		0.000	0.000	0.236	0.000	0.001
L8	123.166-118.166	A	0.968	0.000	0.000	4.718	0.000	0.028
		B		0.000	0.000	12.177	0.000	0.149
		C		0.000	0.000	4.718	0.000	0.028
L9	118.166-113.166	A	0.964	0.000	0.000	4.714	0.000	0.027
		B		0.000	0.000	13.270	0.000	0.165
		C		0.000	0.000	4.714	0.000	0.027
L10	113.166-109.500	A	0.960	0.000	0.000	4.741	0.000	0.027
		B		0.000	0.000	10.936	0.000	0.132
		C		0.000	0.000	3.453	0.000	0.020
L11	109.500-109.250	A	0.958	0.000	0.000	0.450	0.000	0.003
		B		0.000	0.000	0.866	0.000	0.012

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job	Page
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	Project	Date
		15:48:22 01/28/22
	Client	Designed by
	Crown Castle	Jayaraj B

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L12	109.250-104.750	C		0.000	0.000	0.235	0.000	0.001
		A	0.956	0.000	0.000	9.597	0.000	0.055
		B		0.000	0.000	17.072	0.000	0.217
		C		0.000	0.000	6.331	0.000	0.037
L13	104.750-104.500	A	0.954	0.000	0.000	0.664	0.000	0.004
		B		0.000	0.000	1.079	0.000	0.013
		C		0.000	0.000	0.706	0.000	0.004
L14	104.500-102.416	A	0.953	0.000	0.000	5.533	0.000	0.032
		B		0.000	0.000	8.988	0.000	0.107
		C		0.000	0.000	5.880	0.000	0.034
L15	102.416-102.166	A	0.952	0.000	0.000	0.664	0.000	0.004
		B		0.000	0.000	1.078	0.000	0.013
		C		0.000	0.000	0.705	0.000	0.004
L16	102.166-98.750	A	0.950	0.000	0.000	8.481	0.000	0.049
		B		0.000	0.000	13.654	0.000	0.168
		C		0.000	0.000	11.179	0.000	0.075
L17	98.750-98.500	A	0.948	0.000	0.000	0.625	0.000	0.004
		B		0.000	0.000	1.048	0.000	0.013
		C		0.000	0.000	1.035	0.000	0.008
L18	98.500-97.500	A	0.948	0.000	0.000	2.499	0.000	0.015
		B		0.000	0.000	4.192	0.000	0.050
		C		0.000	0.000	4.141	0.000	0.032
L19	97.500-97.250	A	0.947	0.000	0.000	0.625	0.000	0.004
		B		0.000	0.000	1.048	0.000	0.013
		C		0.000	0.000	1.035	0.000	0.008
L20	97.250-92.000	A	0.944	0.000	0.000	9.685	0.000	0.058
		B		0.000	0.000	21.981	0.000	0.264
		C		0.000	0.000	21.722	0.000	0.169
L21	92.000-90.552	A	0.941	0.000	0.000	2.377	0.000	0.014
		B		0.000	0.000	6.063	0.000	0.073
		C		0.000	0.000	5.991	0.000	0.047
L22	90.552-89.250	A	0.940	0.000	0.000	3.060	0.000	0.018
		B		0.000	0.000	5.441	0.000	0.065
		C		0.000	0.000	5.381	0.000	0.042
L23	89.250-89.000	A	0.939	0.000	0.000	0.703	0.000	0.004
		B		0.000	0.000	1.124	0.000	0.013
		C		0.000	0.000	1.113	0.000	0.008
L24	89.000-88.250	A	0.938	0.000	0.000	2.110	0.000	0.012
		B		0.000	0.000	3.372	0.000	0.039
		C		0.000	0.000	3.338	0.000	0.025
L25	88.250-88.000	A	0.938	0.000	0.000	0.703	0.000	0.004
		B		0.000	0.000	1.124	0.000	0.013
		C		0.000	0.000	1.113	0.000	0.008
L26	88.000-87.833	A	0.938	0.000	0.000	0.470	0.000	0.003
		B		0.000	0.000	0.751	0.000	0.009
		C		0.000	0.000	0.743	0.000	0.006
L27	87.833-87.583	A	0.937	0.000	0.000	0.703	0.000	0.004
		B		0.000	0.000	1.124	0.000	0.013
		C		0.000	0.000	1.112	0.000	0.008
L28	87.583-82.583	A	0.934	0.000	0.000	10.710	0.000	0.060
		B		0.000	0.000	19.106	0.000	0.237
		C		0.000	0.000	16.089	0.000	0.131
L29	82.583-77.583	A	0.929	0.000	0.000	10.769	0.000	0.060
		B		0.000	0.000	19.134	0.000	0.236
		C		0.000	0.000	13.842	0.000	0.118
L30	77.583-77.000	A	0.926	0.000	0.000	1.635	0.000	0.009
		B		0.000	0.000	2.609	0.000	0.030
		C		0.000	0.000	1.993	0.000	0.016
L31	77.000-76.750	A	0.925	0.000	0.000	0.701	0.000	0.004
		B		0.000	0.000	1.118	0.000	0.013
		C		0.000	0.000	0.855	0.000	0.007

tnxTower

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Project	Date 15:48:22 01/28/22
Client Crown Castle	Designed by Jayaraj B

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L32	76.750-76.333	A	0.925	0.000	0.000	1.170	0.000	0.007
		B		0.000	0.000	1.865	0.000	0.021
		C		0.000	0.000	1.425	0.000	0.011
L33	76.333-76.083	A	0.924	0.000	0.000	0.701	0.000	0.004
		B		0.000	0.000	1.118	0.000	0.013
		C		0.000	0.000	0.855	0.000	0.007
L34	76.083-74.250	A	0.923	0.000	0.000	5.152	0.000	0.029
		B		0.000	0.000	9.061	0.000	0.098
		C		0.000	0.000	5.344	0.000	0.045
L35	74.250-74.000	A	0.922	0.000	0.000	0.722	0.000	0.004
		B		0.000	0.000	1.351	0.000	0.014
		C		0.000	0.000	0.641	0.000	0.006
L36	74.000-73.750	A	0.921	0.000	0.000	0.722	0.000	0.004
		B		0.000	0.000	1.350	0.000	0.014
		C		0.000	0.000	0.641	0.000	0.006
L37	73.750-73.500	A	0.921	0.000	0.000	0.721	0.000	0.004
		B		0.000	0.000	1.350	0.000	0.014
		C		0.000	0.000	0.641	0.000	0.006
L38	73.500-68.500	A	0.918	0.000	0.000	14.420	0.000	0.080
		B		0.000	0.000	26.975	0.000	0.278
		C		0.000	0.000	12.812	0.000	0.112
L39	68.500-63.500	A	0.911	0.000	0.000	14.400	0.000	0.079
		B		0.000	0.000	26.911	0.000	0.276
		C		0.000	0.000	12.790	0.000	0.111
L40	63.500-60.500	A	0.905	0.000	0.000	10.113	0.000	0.056
		B		0.000	0.000	17.598	0.000	0.173
		C		0.000	0.000	9.146	0.000	0.075
L41	60.500-60.250	A	0.903	0.000	0.000	0.931	0.000	0.005
		B		0.000	0.000	1.554	0.000	0.015
		C		0.000	0.000	0.850	0.000	0.007
L42	60.250-59.500	A	0.902	0.000	0.000	2.791	0.000	0.015
		B		0.000	0.000	4.659	0.000	0.045
		C		0.000	0.000	2.550	0.000	0.020
L43	59.500-59.250	A	0.901	0.000	0.000	0.977	0.000	0.005
		B		0.000	0.000	1.600	0.000	0.015
		C		0.000	0.000	0.897	0.000	0.007
L44	59.250-54.250	A	0.897	0.000	0.000	15.719	0.000	0.084
		B		0.000	0.000	28.142	0.000	0.279
		C		0.000	0.000	14.106	0.000	0.116
L45	54.250-45.802	A	0.886	0.000	0.000	25.787	0.000	0.136
		B		0.000	0.000	46.653	0.000	0.463
		C		0.000	0.000	23.057	0.000	0.190
L46	45.802-44.802	A	0.877	0.000	0.000	2.895	0.000	0.015
		B		0.000	0.000	5.097	0.000	0.053
		C		0.000	0.000	3.097	0.000	0.025
L47	44.802-43.583	A	0.875	0.000	0.000	3.713	0.000	0.019
		B		0.000	0.000	5.780	0.000	0.062
		C		0.000	0.000	4.545	0.000	0.034
L48	43.583-43.333	A	0.874	0.000	0.000	0.761	0.000	0.004
		B		0.000	0.000	1.185	0.000	0.013
		C		0.000	0.000	0.932	0.000	0.007
L49	43.333-43.166	A	0.873	0.000	0.000	0.508	0.000	0.003
		B		0.000	0.000	0.791	0.000	0.009
		C		0.000	0.000	0.622	0.000	0.005
L50	43.166-42.916	A	0.873	0.000	0.000	0.761	0.000	0.004
		B		0.000	0.000	1.184	0.000	0.013
		C		0.000	0.000	0.932	0.000	0.007
L51	42.916-39.000	A	0.869	0.000	0.000	11.912	0.000	0.062
		B		0.000	0.000	18.525	0.000	0.199
		C		0.000	0.000	16.052	0.000	0.118
L52	39.000-38.750	A	0.864	0.000	0.000	0.760	0.000	0.004

tnxTower

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Job	79982.005.01 - WATERBURY,CT (BU# 876317)	Page	20 of 92
Project		Date	15:48:22 01/28/22
Client	Crown Castle	Designed by	Jayaraj B

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
		B		0.000	0.000	1.181	0.000	0.013
		C		0.000	0.000	1.140	0.000	0.008
L53	38.750-37.166	A	0.862	0.000	0.000	4.812	0.000	0.025
		B		0.000	0.000	7.477	0.000	0.080
		C		0.000	0.000	7.219	0.000	0.051
L54	37.166-36.916	A	0.860	0.000	0.000	0.759	0.000	0.004
		B		0.000	0.000	1.179	0.000	0.013
		C		0.000	0.000	1.139	0.000	0.008
L55	36.916-34.000	A	0.856	0.000	0.000	10.315	0.000	0.053
		B		0.000	0.000	15.028	0.000	0.152
		C		0.000	0.000	13.026	0.000	0.092
L56	34.000-33.750	A	0.852	0.000	0.000	0.967	0.000	0.005
		B		0.000	0.000	1.365	0.000	0.013
		C		0.000	0.000	1.099	0.000	0.008
L57	33.750-29.750	A	0.847	0.000	0.000	13.369	0.000	0.068
		B		0.000	0.000	19.700	0.000	0.201
		C		0.000	0.000	15.480	0.000	0.112
L58	29.750-29.500	A	0.841	0.000	0.000	0.767	0.000	0.004
		B		0.000	0.000	1.161	0.000	0.012
		C		0.000	0.000	0.898	0.000	0.007
L59	29.500-24.500	A	0.833	0.000	0.000	14.777	0.000	0.073
		B		0.000	0.000	23.734	0.000	0.244
		C		0.000	0.000	18.607	0.000	0.134
L60	24.500-23.000	A	0.822	0.000	0.000	3.212	0.000	0.016
		B		0.000	0.000	8.665	0.000	0.080
		C		0.000	0.000	7.581	0.000	0.049
L61	23.000-22.750	A	0.819	0.000	0.000	0.535	0.000	0.003
		B		0.000	0.000	1.443	0.000	0.013
		C		0.000	0.000	1.263	0.000	0.008
L62	22.750-21.583	A	0.817	0.000	0.000	2.496	0.000	0.012
		B		0.000	0.000	6.729	0.000	0.062
		C		0.000	0.000	5.891	0.000	0.038
L63	21.583-21.333	A	0.814	0.000	0.000	0.535	0.000	0.003
		B		0.000	0.000	1.440	0.000	0.013
		C		0.000	0.000	1.261	0.000	0.008
L64	21.333-16.333	A	0.804	0.000	0.000	10.670	0.000	0.051
		B		0.000	0.000	25.288	0.000	0.245
		C		0.000	0.000	25.398	0.000	0.160
L65	16.333-12.917	A	0.784	0.000	0.000	7.262	0.000	0.033
		B		0.000	0.000	16.383	0.000	0.161
		C		0.000	0.000	25.947	0.000	0.146
L66	12.917-12.667	A	0.773	0.000	0.000	0.530	0.000	0.002
		B		0.000	0.000	1.195	0.000	0.012
		C		0.000	0.000	1.896	0.000	0.011
L67	12.667-12.500	A	0.772	0.000	0.000	0.354	0.000	0.002
		B		0.000	0.000	0.798	0.000	0.008
		C		0.000	0.000	1.266	0.000	0.007
L68	12.500-12.250	A	0.771	0.000	0.000	0.530	0.000	0.002
		B		0.000	0.000	1.193	0.000	0.012
		C		0.000	0.000	1.895	0.000	0.011
L69	12.250-12.000	A	0.769	0.000	0.000	0.530	0.000	0.002
		B		0.000	0.000	1.193	0.000	0.012
		C		0.000	0.000	1.894	0.000	0.010
L70	12.000-11.750	A	0.767	0.000	0.000	0.530	0.000	0.002
		B		0.000	0.000	1.192	0.000	0.012
		C		0.000	0.000	1.894	0.000	0.010
L71	11.750-8.500	A	0.755	0.000	0.000	5.560	0.000	0.033
		B		0.000	0.000	14.118	0.000	0.151
		C		0.000	0.000	20.669	0.000	0.125
L72	8.500-8.250	A	0.741	0.000	0.000	0.389	0.000	0.003
		B		0.000	0.000	1.043	0.000	0.012

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	<p>Project</p>	<p>Date</p> <p>15:48:22 01/28/22</p>
	<p>Client</p> <p>Crown Castle</p>	<p>Designed by</p> <p>Jayaraj B</p>

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A _R ft ²	A _F ft ²	C _{AA} In Face ft ²	C _{AA} Out Face ft ²	Weight K
L73	8.250-7.000	C		0.000	0.000	1.138	0.000	0.008
		A	0.734	0.000	0.000	1.941	0.000	0.013
		B		0.000	0.000	5.199	0.000	0.058
L74	7.000-6.750	C		0.000	0.000	5.681	0.000	0.040
		A	0.727	0.000	0.000	0.388	0.000	0.003
		B		0.000	0.000	1.037	0.000	0.012
L75	6.750-1.750	C		0.000	0.000	1.135	0.000	0.008
		A	0.692	0.000	0.000	7.693	0.000	0.050
		B		0.000	0.000	16.750	0.000	0.209
L76	1.750-0.000	C		0.000	0.000	18.851	0.000	0.136
		A	0.591	0.000	0.000	2.631	0.000	0.015
		B		0.000	0.000	4.909	0.000	0.064
		C		0.000	0.000	5.765	0.000	0.040

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
L1	144.250-139.250	2.053	-1.044	1.816	-1.198
L2	139.250-134.750	2.101	-1.058	1.860	-1.206
L3	134.750-134.250	2.156	-1.086	1.914	-1.242
L4	134.250-129.250	1.549	-0.817	1.933	-1.320
L5	129.250-124.250	1.211	-0.783	1.734	-1.475
L6	124.250-123.416	0.688	-0.445	1.190	-1.013
L7	123.416-123.166	0.693	-0.448	1.198	-1.020
L8	123.166-118.166	0.795	-0.536	1.331	-1.134
L9	118.166-113.166	0.973	-0.688	1.561	-1.333
L10	113.166-109.500	0.167	-0.450	0.923	-1.095
L11	109.500-109.250	-0.747	-0.173	0.130	-0.782
L12	109.250-104.750	-0.658	0.017	0.116	-0.571
L13	104.750-104.500	-0.493	0.842	0.093	0.260
L14	104.500-102.416	-0.499	0.850	0.093	0.263
L15	102.416-102.166	-0.523	0.892	0.093	0.267
L16	102.166-98.750	0.202	1.727	0.660	1.007
L17	98.750-98.500	0.610	2.197	0.882	1.514
L18	98.500-97.500	0.613	2.208	0.886	1.521
L19	97.500-97.250	0.616	2.219	0.890	1.529
L20	97.250-92.000	0.902	1.566	1.155	0.926
L21	92.000-90.552	1.004	1.352	1.250	0.728
L22	90.552-89.250	0.702	2.168	0.980	1.462
L23	89.250-89.000	0.581	2.089	0.871	1.502
L24	89.000-88.250	0.583	2.099	0.874	1.509
L25	88.250-88.000	0.595	2.141	0.879	1.518
L26	88.000-87.833	0.596	2.144	0.881	1.521
L27	87.833-87.583	0.597	2.147	0.882	1.523
L28	87.583-82.583	0.769	2.104	1.079	1.332
L29	82.583-77.583	0.829	1.697	1.151	0.968
L30	77.583-77.000	0.698	1.429	1.012	0.853
L31	77.000-76.750	0.701	1.434	1.015	0.856
L32	76.750-76.333	0.702	1.437	1.017	0.858
L33	76.333-76.083	0.704	1.441	1.019	0.860
L34	76.083-74.250	0.870	-0.257	1.168	-0.617
L35	74.250-74.000	1.026	-1.525	1.305	-1.720
L36	74.000-73.750	1.028	-1.527	1.307	-1.723
L37	73.750-73.500	1.030	-1.530	1.309	-1.726
L38	73.500-68.500	1.047	-1.556	1.330	-1.753

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Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
L39	68.500-63.500	1.080	-1.605	1.368	-1.804
L40	63.500-60.500	0.993	-1.475	1.271	-1.676
L41	60.500-60.250	0.935	-1.388	1.204	-1.588
L42	60.250-59.500	0.937	-1.393	1.207	-1.592
L43	59.500-59.250	0.899	-1.336	1.172	-1.547
L44	59.250-54.250	1.079	-1.603	1.362	-1.797
L45	54.250-45.802	1.137	-1.690	1.431	-1.889
L46	45.802-44.802	0.902	-0.626	1.199	-1.009
L47	44.802-43.583	0.364	0.993	0.656	0.394
L48	43.583-43.333	0.366	0.997	0.658	0.396
L49	43.333-43.166	0.366	0.998	0.659	0.397
L50	43.166-42.916	0.366	1.000	0.659	0.398
L51	42.916-39.000	0.740	1.242	0.993	0.628
L52	39.000-38.750	1.178	1.525	1.388	0.899
L53	38.750-37.166	1.184	1.532	1.393	0.904
L54	37.166-36.916	1.189	1.539	1.399	0.909
L55	36.916-34.000	0.632	0.578	0.917	0.056
L56	34.000-33.750	0.270	-0.025	0.634	-0.485
L57	33.750-29.750	0.301	-0.028	0.699	-0.533
L58	29.750-29.500	0.321	-0.030	0.739	-0.563
L59	29.500-24.500	0.449	-0.134	0.849	-0.647
L60	24.500-23.000	1.256	-0.705	1.534	-1.087
L61	23.000-22.750	1.261	-0.708	1.539	-1.090
L62	22.750-21.583	1.265	-0.710	1.543	-1.093
L63	21.583-21.333	1.268	-0.712	1.546	-1.095
L64	21.333-16.333	0.578	-0.317	0.949	-0.760
L65	16.333-12.917	-1.660	0.804	-1.007	0.253
L66	12.917-12.667	-1.674	0.810	-1.021	0.260
L67	12.667-12.500	-1.675	0.811	-1.023	0.261
L68	12.500-12.250	-1.676	0.811	-1.024	0.262
L69	12.250-12.000	-1.678	0.812	-1.026	0.263
L70	12.000-11.750	-1.679	0.812	-1.028	0.264
L71	11.750-8.500	-2.206	1.068	-1.400	0.539
L72	8.500-8.250	-1.934	0.132	-1.094	-0.246
L73	8.250-7.000	-1.940	0.132	-1.103	-0.243
L74	7.000-6.750	-1.946	0.133	-1.113	-0.240
L75	6.750-1.750	-0.995	0.150	-0.232	-0.249
L76	1.750-0.000	-0.376	0.162	0.267	-0.210

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	FB-L98B-034-XXX(3/8)	139.25 - 144.00	1.0000	1.0000
L1	2	WR-VG86ST-BRD(3/4)	139.25 - 144.00	1.0000	1.0000
L1	23	Safety Line 3/8	139.25 - 144.25	1.0000	1.0000
L2	1	FB-L98B-034-XXX(3/8)	134.75 - 139.25	1.0000	1.0000
L2	2	WR-VG86ST-BRD(3/4)	134.75 -	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			139.25		
L2	23	Safety Line 3/8	134.75 - 139.25	1.0000	1.0000
L3	1	FB-L98B-034-XXX(3/8)	134.25 - 134.75	1.0000	1.0000
L3	2	WR-VG86ST-BRD(3/4)	134.25 - 134.75	1.0000	1.0000
L3	23	Safety Line 3/8	134.25 - 134.75	1.0000	1.0000
L4	1	FB-L98B-034-XXX(3/8)	129.25 - 134.25	1.0000	1.0000
L4	2	WR-VG86ST-BRD(3/4)	129.25 - 134.25	1.0000	1.0000
L4	4	7983A(ELLIPTICAL)	129.25 - 130.00	1.0000	1.0000
L4	23	Safety Line 3/8	129.25 - 134.25	1.0000	1.0000
L5	1	FB-L98B-034-XXX(3/8)	124.25 - 129.25	1.0000	1.0000
L5	2	WR-VG86ST-BRD(3/4)	124.25 - 129.25	1.0000	1.0000
L5	4	7983A(ELLIPTICAL)	124.25 - 129.25	1.0000	1.0000
L5	23	Safety Line 3/8	124.25 - 129.25	1.0000	1.0000
L5	89	CCI-AFP-045100	124.25 - 125.42	1.0000	1.0000
L5	90	CCI-AFP-045100	124.25 - 125.42	1.0000	1.0000
L5	91	CCI-AFP-045100	124.25 - 125.42	1.0000	1.0000
L6	1	FB-L98B-034-XXX(3/8)	123.42 - 124.25	1.0000	1.0000
L6	2	WR-VG86ST-BRD(3/4)	123.42 - 124.25	1.0000	1.0000
L6	4	7983A(ELLIPTICAL)	123.42 - 124.25	1.0000	1.0000
L6	23	Safety Line 3/8	123.42 - 124.25	1.0000	1.0000
L6	89	CCI-AFP-045100	123.42 - 124.25	1.0000	1.0000
L6	90	CCI-AFP-045100	123.42 - 124.25	1.0000	1.0000
L6	91	CCI-AFP-045100	123.42 - 124.25	1.0000	1.0000
L7	1	FB-L98B-034-XXX(3/8)	123.17 - 123.42	1.0000	1.0000
L7	2	WR-VG86ST-BRD(3/4)	123.17 - 123.42	1.0000	1.0000
L7	4	7983A(ELLIPTICAL)	123.17 - 123.42	1.0000	1.0000
L7	23	Safety Line 3/8	123.17 - 123.42	1.0000	1.0000
L7	89	CCI-AFP-045100	123.17 - 123.42	1.0000	1.0000
L7	90	CCI-AFP-045100	123.17 - 123.42	1.0000	1.0000
L7	91	CCI-AFP-045100	123.17 - 123.42	1.0000	1.0000
L8	1	FB-L98B-034-XXX(3/8)	118.17 - 123.17	1.0000	1.0000
L8	2	WR-VG86ST-BRD(3/4)	118.17 -	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L8	4	7983A(ELLIPTICAL)	123.17 118.17 - 123.17	1.0000	1.0000
L8	9	CU12PSM9P6XXX(1-1/2)	118.17 - 120.00	1.0000	1.0000
L8	23	Safety Line 3/8	118.17 - 123.17	1.0000	1.0000
L8	89	CCI-AFP-045100	118.17 - 123.17	1.0000	1.0000
L8	90	CCI-AFP-045100	118.17 - 123.17	1.0000	1.0000
L8	91	CCI-AFP-045100	118.17 - 123.17	1.0000	1.0000
L9	1	FB-L98B-034-XXX(3/8)	113.17 - 118.17	1.0000	1.0000
L9	2	WR-VG86ST-BRD(3/4)	113.17 - 118.17	1.0000	1.0000
L9	4	7983A(ELLIPTICAL)	113.17 - 118.17	1.0000	1.0000
L9	9	CU12PSM9P6XXX(1-1/2)	113.17 - 118.17	1.0000	1.0000
L9	23	Safety Line 3/8	113.17 - 118.17	1.0000	1.0000
L9	89	CCI-AFP-045100	113.17 - 118.17	1.0000	1.0000
L9	90	CCI-AFP-045100	113.17 - 118.17	1.0000	1.0000
L9	91	CCI-AFP-045100	113.17 - 118.17	1.0000	1.0000
L10	1	FB-L98B-034-XXX(3/8)	109.50 - 113.17	1.0000	1.0000
L10	2	WR-VG86ST-BRD(3/4)	109.50 - 113.17	1.0000	1.0000
L10	4	7983A(ELLIPTICAL)	109.50 - 113.17	1.0000	1.0000
L10	9	CU12PSM9P6XXX(1-1/2)	109.50 - 113.17	1.0000	1.0000
L10	23	Safety Line 3/8	109.50 - 113.17	1.0000	1.0000
L10	89	CCI-AFP-045100	109.50 - 113.17	1.0000	1.0000
L10	90	CCI-AFP-045100	109.50 - 113.17	1.0000	1.0000
L10	91	CCI-AFP-045100	109.50 - 113.17	1.0000	1.0000
L10	93	CCI-AFP-040075	109.50 - 111.00	1.0000	1.0000
L10	95	CCI-AFP-040075	109.50 - 111.00	1.0000	1.0000
L11	1	FB-L98B-034-XXX(3/8)	109.25 - 109.50	1.0000	1.0000
L11	2	WR-VG86ST-BRD(3/4)	109.25 - 109.50	1.0000	1.0000
L11	4	7983A(ELLIPTICAL)	109.25 - 109.50	1.0000	1.0000
L11	9	CU12PSM9P6XXX(1-1/2)	109.25 - 109.50	1.0000	1.0000
L11	23	Safety Line 3/8	109.25 - 109.50	1.0000	1.0000
L11	89	CCI-AFP-045100	109.25 - 109.50	1.0000	1.0000
L11	90	CCI-AFP-045100	109.25 -	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L11	91	CCI-AFP-045100	109.50 109.25 - 109.50	1.0000	1.0000
L11	93	CCI-AFP-040075	109.25 - 109.50	1.0000	1.0000
L11	95	CCI-AFP-040075	109.25 - 109.50	1.0000	1.0000
L12	1	FB-L98B-034-XXX(3/8)	104.75 - 109.25	1.0000	1.0000
L12	2	WR-VG86ST-BRD(3/4)	104.75 - 109.25	1.0000	1.0000
L12	4	7983A(ELLIPTICAL)	104.75 - 109.25	1.0000	1.0000
L12	9	CU12PSM9P6XXX(1-1/2)	104.75 - 109.25	1.0000	1.0000
L12	23	Safety Line 3/8	104.75 - 109.25	1.0000	1.0000
L12	55	PL1x4 Reinforcement	104.75 - 106.50	1.0000	1.0000
L12	56	PL1x4 Reinforcement	104.75 - 106.50	1.0000	1.0000
L12	57	PL1x4 Reinforcement	104.75 - 106.50	1.0000	1.0000
L12	87	CCI-AFP-05012520	104.75 - 105.33	1.0000	1.0000
L12	89	CCI-AFP-045100	104.75 - 109.25	1.0000	1.0000
L12	90	CCI-AFP-045100	104.75 - 109.25	1.0000	1.0000
L12	91	CCI-AFP-045100	104.75 - 109.25	1.0000	1.0000
L12	93	CCI-AFP-040075	104.75 - 109.25	1.0000	1.0000
L12	95	CCI-AFP-040075	104.75 - 109.25	1.0000	1.0000
L13	1	FB-L98B-034-XXX(3/8)	104.50 - 104.75	1.0000	1.0000
L13	2	WR-VG86ST-BRD(3/4)	104.50 - 104.75	1.0000	1.0000
L13	4	7983A(ELLIPTICAL)	104.50 - 104.75	1.0000	1.0000
L13	9	CU12PSM9P6XXX(1-1/2)	104.50 - 104.75	1.0000	1.0000
L13	23	Safety Line 3/8	104.50 - 104.75	1.0000	1.0000
L13	55	PL1x4 Reinforcement	104.50 - 104.75	1.0000	1.0000
L13	56	PL1x4 Reinforcement	104.50 - 104.75	1.0000	1.0000
L13	57	PL1x4 Reinforcement	104.50 - 104.75	1.0000	1.0000
L13	87	CCI-AFP-05012520	104.50 - 104.75	1.0000	1.0000
L13	89	CCI-AFP-045100	104.50 - 104.75	1.0000	1.0000
L13	90	CCI-AFP-045100	104.50 - 104.75	1.0000	1.0000
L13	91	CCI-AFP-045100	104.50 - 104.75	1.0000	1.0000
L13	93	CCI-AFP-040075	104.50 - 104.75	1.0000	1.0000
L13	95	CCI-AFP-040075	104.50 -	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
			104.75		
L14	1	FB-L98B-034-XXX(3/8)	102.42 - 104.50	1.0000	1.0000
L14	2	WR-VG86ST-BRD(3/4)	102.42 - 104.50	1.0000	1.0000
L14	4	7983A(ELLIPTICAL)	102.42 - 104.50	1.0000	1.0000
L14	9	CU12PSM9P6XXX(1-1/2)	102.42 - 104.50	1.0000	1.0000
L14	23	Safety Line 3/8	102.42 - 104.50	1.0000	1.0000
L14	55	PL1x4 Reinforcement	102.42 - 104.50	1.0000	1.0000
L14	56	PL1x4 Reinforcement	102.42 - 104.50	1.0000	1.0000
L14	57	PL1x4 Reinforcement	102.42 - 104.50	1.0000	1.0000
L14	87	CCI-AFP-05012520	102.42 - 104.50	1.0000	1.0000
L14	89	CCI-AFP-045100	102.42 - 104.50	1.0000	1.0000
L14	90	CCI-AFP-045100	102.42 - 104.50	1.0000	1.0000
L14	91	CCI-AFP-045100	102.42 - 104.50	1.0000	1.0000
L14	93	CCI-AFP-040075	102.42 - 104.50	1.0000	1.0000
L14	95	CCI-AFP-040075	102.42 - 104.50	1.0000	1.0000
L15	1	FB-L98B-034-XXX(3/8)	102.17 - 102.42	1.0000	1.0000
L15	2	WR-VG86ST-BRD(3/4)	102.17 - 102.42	1.0000	1.0000
L15	4	7983A(ELLIPTICAL)	102.17 - 102.42	1.0000	1.0000
L15	9	CU12PSM9P6XXX(1-1/2)	102.17 - 102.42	1.0000	1.0000
L15	23	Safety Line 3/8	102.17 - 102.42	1.0000	1.0000
L15	55	PL1x4 Reinforcement	102.17 - 102.42	1.0000	1.0000
L15	56	PL1x4 Reinforcement	102.17 - 102.42	1.0000	1.0000
L15	57	PL1x4 Reinforcement	102.17 - 102.42	1.0000	1.0000
L15	87	CCI-AFP-05012520	102.17 - 102.42	1.0000	1.0000
L15	89	CCI-AFP-045100	102.17 - 102.42	1.0000	1.0000
L15	90	CCI-AFP-045100	102.17 - 102.42	1.0000	1.0000
L15	91	CCI-AFP-045100	102.17 - 102.42	1.0000	1.0000
L15	93	CCI-AFP-040075	102.17 - 102.42	1.0000	1.0000
L15	95	CCI-AFP-040075	102.17 - 102.42	1.0000	1.0000
L16	1	FB-L98B-034-XXX(3/8)	98.75 - 102.17	1.0000	1.0000
L16	2	WR-VG86ST-BRD(3/4)	98.75 - 102.17	1.0000	1.0000
L16	4	7983A(ELLIPTICAL)	98.75 - 102.17	1.0000	1.0000
L16	9	CU12PSM9P6XXX(1-1/2)	98.75 - 102.17	1.0000	1.0000
L16	18	MLC HYBRID 6X12	98.75 - 100.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L16	23	6AWGX6(1-1/2) Safety Line 3/8	98.75 - 102.17	1.0000	1.0000
L16	39	PL1.25x3.625 Reinforcement	98.75 - 100.00	1.0000	1.0000
L16	40	PL1.25x3.625 Reinforcement	98.75 - 100.00	1.0000	1.0000
L16	41	PL1.25x3.625 Reinforcement	98.75 - 100.00	1.0000	1.0000
L16	55	PL1x4 Reinforcement	98.75 - 102.17	1.0000	1.0000
L16	56	PL1x4 Reinforcement	98.75 - 102.17	1.0000	1.0000
L16	57	PL1x4 Reinforcement	98.75 - 102.17	1.0000	1.0000
L16	82	CCI-SFP-040075	98.75 - 100.33	1.0000	1.0000
L16	83	CCI-SFP-040075	98.75 - 100.33	1.0000	1.0000
L16	87	CCI-AFP-05012520	98.75 - 102.17	1.0000	1.0000
L16	89	CCI-AFP-045100	100.42 - 102.17	1.0000	1.0000
L16	90	CCI-AFP-045100	100.42 - 102.17	1.0000	1.0000
L16	91	CCI-AFP-045100	100.42 - 102.17	1.0000	1.0000
L16	93	CCI-AFP-040075	98.75 - 102.17	1.0000	1.0000
L16	95	CCI-AFP-040075	101.00 - 102.17	1.0000	1.0000
L17	1	FB-L98B-034-XXX(3/8)	98.50 - 98.75	1.0000	1.0000
L17	2	WR-VG86ST-BRD(3/4)	98.50 - 98.75	1.0000	1.0000
L17	4	7983A(ELLIPTICAL)	98.50 - 98.75	1.0000	1.0000
L17	9	CU12PSM9P6XXX(1-1/2)	98.50 - 98.75	1.0000	1.0000
L17	18	MLC HYBRID 6X12	98.50 - 98.75	1.0000	1.0000
L17	23	6AWGX6(1-1/2) Safety Line 3/8	98.50 - 98.75	1.0000	1.0000
L17	39	PL1.25x3.625 Reinforcement	98.50 - 98.75	1.0000	1.0000
L17	40	PL1.25x3.625 Reinforcement	98.50 - 98.75	1.0000	1.0000
L17	41	PL1.25x3.625 Reinforcement	98.50 - 98.75	1.0000	1.0000
L17	55	PL1x4 Reinforcement	98.50 - 98.75	1.0000	1.0000
L17	56	PL1x4 Reinforcement	98.50 - 98.75	1.0000	1.0000
L17	57	PL1x4 Reinforcement	98.50 - 98.75	1.0000	1.0000
L17	82	CCI-SFP-040075	98.50 - 98.75	1.0000	1.0000
L17	83	CCI-SFP-040075	98.50 - 98.75	1.0000	1.0000
L17	87	CCI-AFP-05012520	98.50 - 98.75	1.0000	1.0000
L17	93	CCI-AFP-040075	98.50 - 98.75	1.0000	1.0000
L18	1	FB-L98B-034-XXX(3/8)	97.50 - 98.50	1.0000	1.0000
L18	2	WR-VG86ST-BRD(3/4)	97.50 - 98.50	1.0000	1.0000
L18	4	7983A(ELLIPTICAL)	97.50 - 98.50	1.0000	1.0000
L18	9	CU12PSM9P6XXX(1-1/2)	97.50 - 98.50	1.0000	1.0000
L18	18	MLC HYBRID 6X12	97.50 - 98.50	1.0000	1.0000
L18	23	6AWGX6(1-1/2) Safety Line 3/8	97.50 - 98.50	1.0000	1.0000
L18	39	PL1.25x3.625 Reinforcement	97.50 - 98.50	1.0000	1.0000
L18	40	PL1.25x3.625 Reinforcement	97.50 - 98.50	1.0000	1.0000
L18	41	PL1.25x3.625 Reinforcement	97.50 - 98.50	1.0000	1.0000
L18	55	PL1x4 Reinforcement	97.50 - 98.50	1.0000	1.0000
L18	56	PL1x4 Reinforcement	97.50 - 98.50	1.0000	1.0000
L18	57	PL1x4 Reinforcement	97.50 - 98.50	1.0000	1.0000
L18	82	CCI-SFP-040075	97.50 - 98.50	1.0000	1.0000
L18	83	CCI-SFP-040075	97.50 - 98.50	1.0000	1.0000
L18	87	CCI-AFP-05012520	97.50 - 98.50	1.0000	1.0000
L18	93	CCI-AFP-040075	97.50 - 98.50	1.0000	1.0000
L19	1	FB-L98B-034-XXX(3/8)	97.25 - 97.50	1.0000	1.0000
L19	2	WR-VG86ST-BRD(3/4)	97.25 - 97.50	1.0000	1.0000
L19	4	7983A(ELLIPTICAL)	97.25 - 97.50	1.0000	1.0000
L19	9	CU12PSM9P6XXX(1-1/2)	97.25 - 97.50	1.0000	1.0000
L19	18	MLC HYBRID 6X12	97.25 - 97.50	1.0000	1.0000
L19	23	6AWGX6(1-1/2) Safety Line 3/8	97.25 - 97.50	1.0000	1.0000
L19	39	PL1.25x3.625 Reinforcement	97.25 - 97.50	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L19	40	PL1.25x3.625 Reinforcement	97.25 - 97.50	1.0000	1.0000
L19	41	PL1.25x3.625 Reinforcement	97.25 - 97.50	1.0000	1.0000
L19	55	PL1x4 Reinforcement	97.25 - 97.50	1.0000	1.0000
L19	56	PL1x4 Reinforcement	97.25 - 97.50	1.0000	1.0000
L19	57	PL1x4 Reinforcement	97.25 - 97.50	1.0000	1.0000
L19	82	CCI-SFP-040075	97.25 - 97.50	1.0000	1.0000
L19	83	CCI-SFP-040075	97.25 - 97.50	1.0000	1.0000
L19	87	CCI-AFP-05012520	97.25 - 97.50	1.0000	1.0000
L19	93	CCI-AFP-040075	97.25 - 97.50	1.0000	1.0000
L20	1	FB-L98B-034-XXX(3/8)	92.00 - 97.25	1.0000	1.0000
L20	2	WR-VG86ST-BRD(3/4)	92.00 - 97.25	1.0000	1.0000
L20	4	7983A(ELLIPTICAL)	92.00 - 97.25	1.0000	1.0000
L20	9	CU12PSM9P6XXX(1-1/2)	92.00 - 97.25	1.0000	1.0000
L20	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	92.00 - 97.25	1.0000	1.0000
L20	23	Safety Line 3/8	92.00 - 97.25	1.0000	1.0000
L20	39	PL1.25x3.625 Reinforcement	92.00 - 97.25	1.0000	1.0000
L20	40	PL1.25x3.625 Reinforcement	92.00 - 97.25	1.0000	1.0000
L20	41	PL1.25x3.625 Reinforcement	92.00 - 97.25	1.0000	1.0000
L20	55	PL1x4 Reinforcement	92.00 - 97.25	1.0000	1.0000
L20	56	PL1x4 Reinforcement	92.00 - 97.25	1.0000	1.0000
L20	57	PL1x4 Reinforcement	92.00 - 97.25	1.0000	1.0000
L20	82	CCI-SFP-040075	92.00 - 97.25	1.0000	1.0000
L20	83	CCI-SFP-040075	92.00 - 97.25	1.0000	1.0000
L20	87	CCI-AFP-05012520	92.00 - 97.25	1.0000	1.0000
L20	93	CCI-AFP-040075	96.00 - 97.25	1.0000	1.0000
L21	1	FB-L98B-034-XXX(3/8)	90.55 - 92.00	1.0000	1.0000
L21	2	WR-VG86ST-BRD(3/4)	90.55 - 92.00	1.0000	1.0000
L21	4	7983A(ELLIPTICAL)	90.55 - 92.00	1.0000	1.0000
L21	9	CU12PSM9P6XXX(1-1/2)	90.55 - 92.00	1.0000	1.0000
L21	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	90.55 - 92.00	1.0000	1.0000
L21	23	Safety Line 3/8	90.55 - 92.00	1.0000	1.0000
L21	39	PL1.25x3.625 Reinforcement	90.55 - 92.00	1.0000	1.0000
L21	40	PL1.25x3.625 Reinforcement	90.55 - 92.00	1.0000	1.0000
L21	41	PL1.25x3.625 Reinforcement	90.55 - 92.00	1.0000	1.0000
L21	55	PL1x4 Reinforcement	90.55 - 92.00	1.0000	1.0000
L21	56	PL1x4 Reinforcement	90.55 - 92.00	1.0000	1.0000
L21	57	PL1x4 Reinforcement	90.55 - 92.00	1.0000	1.0000
L21	82	CCI-SFP-040075	90.55 - 92.00	1.0000	1.0000
L21	83	CCI-SFP-040075	90.55 - 92.00	1.0000	1.0000
L21	87	CCI-AFP-05012520	90.55 - 92.00	1.0000	1.0000
L22	1	FB-L98B-034-XXX(3/8)	89.25 - 90.55	1.0000	1.0000
L22	2	WR-VG86ST-BRD(3/4)	89.25 - 90.55	1.0000	1.0000
L22	4	7983A(ELLIPTICAL)	89.25 - 90.55	1.0000	1.0000
L22	9	CU12PSM9P6XXX(1-1/2)	89.25 - 90.55	1.0000	1.0000
L22	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	89.25 - 90.55	1.0000	1.0000
L22	23	Safety Line 3/8	89.25 - 90.55	1.0000	1.0000
L22	39	PL1.25x3.625 Reinforcement	89.25 - 90.55	1.0000	1.0000
L22	40	PL1.25x3.625 Reinforcement	89.25 - 90.55	1.0000	1.0000
L22	41	PL1.25x3.625 Reinforcement	89.25 - 90.55	1.0000	1.0000
L22	55	PL1x4 Reinforcement	89.25 - 90.55	1.0000	1.0000
L22	56	PL1x4 Reinforcement	89.25 - 90.55	1.0000	1.0000
L22	57	PL1x4 Reinforcement	89.25 - 90.55	1.0000	1.0000
L22	82	CCI-SFP-040075	89.25 - 90.55	1.0000	1.0000
L22	83	CCI-SFP-040075	89.25 - 90.55	1.0000	1.0000
L22	85	CCI-SFP-040075	89.25 - 90.33	1.0000	1.0000
L22	87	CCI-AFP-05012520	89.25 - 90.55	1.0000	1.0000
L23	1	FB-L98B-034-XXX(3/8)	89.00 - 89.25	1.0000	1.0000
L23	2	WR-VG86ST-BRD(3/4)	89.00 - 89.25	1.0000	1.0000
L23	4	7983A(ELLIPTICAL)	89.00 - 89.25	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L23	9	CU12PSM9P6XXX(1-1/2)	89.00 - 89.25	1.0000	1.0000
L23	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	89.00 - 89.25	1.0000	1.0000
L23	23	Safety Line 3/8	89.00 - 89.25	1.0000	1.0000
L23	35	PL1.25x5.5 Reinforcement	89.00 - 89.25	1.0000	1.0000
L23	36	PL1.25x5.5 Reinforcement	89.00 - 89.25	1.0000	1.0000
L23	37	PL1.25x5.5 Reinforcement	89.00 - 89.25	1.0000	1.0000
L23	55	PL1x4 Reinforcement	89.00 - 89.25	1.0000	1.0000
L23	56	PL1x4 Reinforcement	89.00 - 89.25	1.0000	1.0000
L23	57	PL1x4 Reinforcement	89.00 - 89.25	1.0000	1.0000
L23	82	CCI-SFP-040075	89.00 - 89.25	1.0000	1.0000
L23	83	CCI-SFP-040075	89.00 - 89.25	1.0000	1.0000
L23	85	CCI-SFP-040075	89.00 - 89.25	1.0000	1.0000
L23	87	CCI-AFP-05012520	89.00 - 89.25	1.0000	1.0000
L24	1	FB-L98B-034-XXX(3/8)	88.25 - 89.00	1.0000	1.0000
L24	2	WR-VG86ST-BRD(3/4)	88.25 - 89.00	1.0000	1.0000
L24	4	7983A(ELLIPTICAL)	88.25 - 89.00	1.0000	1.0000
L24	9	CU12PSM9P6XXX(1-1/2)	88.25 - 89.00	1.0000	1.0000
L24	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	88.25 - 89.00	1.0000	1.0000
L24	23	Safety Line 3/8	88.25 - 89.00	1.0000	1.0000
L24	35	PL1.25x5.5 Reinforcement	88.25 - 89.00	1.0000	1.0000
L24	36	PL1.25x5.5 Reinforcement	88.25 - 89.00	1.0000	1.0000
L24	37	PL1.25x5.5 Reinforcement	88.25 - 89.00	1.0000	1.0000
L24	55	PL1x4 Reinforcement	88.25 - 89.00	1.0000	1.0000
L24	56	PL1x4 Reinforcement	88.25 - 89.00	1.0000	1.0000
L24	57	PL1x4 Reinforcement	88.25 - 89.00	1.0000	1.0000
L24	82	CCI-SFP-040075	88.25 - 89.00	1.0000	1.0000
L24	83	CCI-SFP-040075	88.25 - 89.00	1.0000	1.0000
L24	85	CCI-SFP-040075	88.25 - 89.00	1.0000	1.0000
L24	87	CCI-AFP-05012520	88.25 - 89.00	1.0000	1.0000
L25	1	FB-L98B-034-XXX(3/8)	88.00 - 88.25	1.0000	1.0000
L25	2	WR-VG86ST-BRD(3/4)	88.00 - 88.25	1.0000	1.0000
L25	4	7983A(ELLIPTICAL)	88.00 - 88.25	1.0000	1.0000
L25	9	CU12PSM9P6XXX(1-1/2)	88.00 - 88.25	1.0000	1.0000
L25	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	88.00 - 88.25	1.0000	1.0000
L25	23	Safety Line 3/8	88.00 - 88.25	1.0000	1.0000
L25	35	PL1.25x5.5 Reinforcement	88.00 - 88.25	1.0000	1.0000
L25	36	PL1.25x5.5 Reinforcement	88.00 - 88.25	1.0000	1.0000
L25	37	PL1.25x5.5 Reinforcement	88.00 - 88.25	1.0000	1.0000
L25	55	PL1x4 Reinforcement	88.00 - 88.25	1.0000	1.0000
L25	56	PL1x4 Reinforcement	88.00 - 88.25	1.0000	1.0000
L25	57	PL1x4 Reinforcement	88.00 - 88.25	1.0000	1.0000
L25	82	CCI-SFP-040075	88.00 - 88.25	1.0000	1.0000
L25	83	CCI-SFP-040075	88.00 - 88.25	1.0000	1.0000
L25	85	CCI-SFP-040075	88.00 - 88.25	1.0000	1.0000
L25	87	CCI-AFP-05012520	88.00 - 88.25	1.0000	1.0000
L26	1	FB-L98B-034-XXX(3/8)	87.83 - 88.00	1.0000	1.0000
L26	2	WR-VG86ST-BRD(3/4)	87.83 - 88.00	1.0000	1.0000
L26	4	7983A(ELLIPTICAL)	87.83 - 88.00	1.0000	1.0000
L26	9	CU12PSM9P6XXX(1-1/2)	87.83 - 88.00	1.0000	1.0000
L26	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	87.83 - 88.00	1.0000	1.0000
L26	23	Safety Line 3/8	87.83 - 88.00	1.0000	1.0000
L26	35	PL1.25x5.5 Reinforcement	87.83 - 88.00	1.0000	1.0000
L26	36	PL1.25x5.5 Reinforcement	87.83 - 88.00	1.0000	1.0000
L26	37	PL1.25x5.5 Reinforcement	87.83 - 88.00	1.0000	1.0000
L26	55	PL1x4 Reinforcement	87.83 - 88.00	1.0000	1.0000
L26	56	PL1x4 Reinforcement	87.83 - 88.00	1.0000	1.0000
L26	57	PL1x4 Reinforcement	87.83 - 88.00	1.0000	1.0000
L26	82	CCI-SFP-040075	87.83 - 88.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L26	83	CCI-SFP-040075	87.83 - 88.00	1.0000	1.0000
L26	85	CCI-SFP-040075	87.83 - 88.00	1.0000	1.0000
L26	87	CCI-AFP-05012520	87.83 - 88.00	1.0000	1.0000
L27	1	FB-L98B-034-XXX(3/8)	87.58 - 87.83	1.0000	1.0000
L27	2	WR-VG86ST-BRD(3/4)	87.58 - 87.83	1.0000	1.0000
L27	4	7983A(ELLIPTICAL)	87.58 - 87.83	1.0000	1.0000
L27	9	CU12PSM9P6XXX(1-1/2)	87.58 - 87.83	1.0000	1.0000
L27	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	87.58 - 87.83	1.0000	1.0000
L27	23	Safety Line 3/8	87.58 - 87.83	1.0000	1.0000
L27	35	PL1.25x5.5 Reinforcement	87.58 - 87.83	1.0000	1.0000
L27	36	PL1.25x5.5 Reinforcement	87.58 - 87.83	1.0000	1.0000
L27	37	PL1.25x5.5 Reinforcement	87.58 - 87.83	1.0000	1.0000
L27	55	PL1x4 Reinforcement	87.58 - 87.83	1.0000	1.0000
L27	56	PL1x4 Reinforcement	87.58 - 87.83	1.0000	1.0000
L27	57	PL1x4 Reinforcement	87.58 - 87.83	1.0000	1.0000
L27	82	CCI-SFP-040075	87.58 - 87.83	1.0000	1.0000
L27	83	CCI-SFP-040075	87.58 - 87.83	1.0000	1.0000
L27	85	CCI-SFP-040075	87.58 - 87.83	1.0000	1.0000
L27	87	CCI-AFP-05012520	87.58 - 87.83	1.0000	1.0000
L28	1	FB-L98B-034-XXX(3/8)	82.58 - 87.58	1.0000	1.0000
L28	2	WR-VG86ST-BRD(3/4)	82.58 - 87.58	1.0000	1.0000
L28	4	7983A(ELLIPTICAL)	82.58 - 87.58	1.0000	1.0000
L28	9	CU12PSM9P6XXX(1-1/2)	82.58 - 87.58	1.0000	1.0000
L28	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	82.58 - 87.58	1.0000	1.0000
L28	23	Safety Line 3/8	82.58 - 87.58	1.0000	1.0000
L28	35	PL1.25x5.5 Reinforcement	82.58 - 87.58	1.0000	1.0000
L28	36	PL1.25x5.5 Reinforcement	82.58 - 87.58	1.0000	1.0000
L28	37	PL1.25x5.5 Reinforcement	82.58 - 87.58	1.0000	1.0000
L28	55	PL1x4 Reinforcement	86.50 - 87.58	1.0000	1.0000
L28	56	PL1x4 Reinforcement	86.50 - 87.58	1.0000	1.0000
L28	57	PL1x4 Reinforcement	86.50 - 87.58	1.0000	1.0000
L28	82	CCI-SFP-040075	82.58 - 87.58	1.0000	1.0000
L28	83	CCI-SFP-040075	82.58 - 87.58	1.0000	1.0000
L28	85	CCI-SFP-040075	82.58 - 87.58	1.0000	1.0000
L28	87	CCI-AFP-05012520	85.33 - 87.58	1.0000	1.0000
L29	1	FB-L98B-034-XXX(3/8)	77.58 - 82.58	1.0000	1.0000
L29	2	WR-VG86ST-BRD(3/4)	77.58 - 82.58	1.0000	1.0000
L29	4	7983A(ELLIPTICAL)	77.58 - 82.58	1.0000	1.0000
L29	9	CU12PSM9P6XXX(1-1/2)	77.58 - 82.58	1.0000	1.0000
L29	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	77.58 - 82.58	1.0000	1.0000
L29	23	Safety Line 3/8	77.58 - 82.58	1.0000	1.0000
L29	35	PL1.25x5.5 Reinforcement	77.58 - 82.58	1.0000	1.0000
L29	36	PL1.25x5.5 Reinforcement	77.58 - 82.58	1.0000	1.0000
L29	37	PL1.25x5.5 Reinforcement	77.58 - 82.58	1.0000	1.0000
L29	51	PL1x4 Reinforcement	77.58 - 78.75	1.0000	1.0000
L29	52	PL1x4 Reinforcement	77.58 - 78.75	1.0000	1.0000
L29	53	PL1x4 Reinforcement	77.58 - 78.75	1.0000	1.0000
L29	82	CCI-SFP-040075	77.58 - 82.58	1.0000	1.0000
L29	83	CCI-SFP-040075	77.58 - 82.58	1.0000	1.0000
L29	85	CCI-SFP-040075	77.58 - 82.58	1.0000	1.0000
L30	1	FB-L98B-034-XXX(3/8)	77.00 - 77.58	1.0000	1.0000
L30	2	WR-VG86ST-BRD(3/4)	77.00 - 77.58	1.0000	1.0000
L30	4	7983A(ELLIPTICAL)	77.00 - 77.58	1.0000	1.0000
L30	9	CU12PSM9P6XXX(1-1/2)	77.00 - 77.58	1.0000	1.0000
L30	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	77.00 - 77.58	1.0000	1.0000
L30	23	Safety Line 3/8	77.00 - 77.58	1.0000	1.0000
L30	35	PL1.25x5.5 Reinforcement	77.00 - 77.58	1.0000	1.0000
L30	36	PL1.25x5.5 Reinforcement	77.00 - 77.58	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L30	37	PL1.25x5.5 Reinforcement	77.00 - 77.58	1.0000	1.0000
L30	51	PL1x4 Reinforcement	77.00 - 77.58	1.0000	1.0000
L30	52	PL1x4 Reinforcement	77.00 - 77.58	1.0000	1.0000
L30	53	PL1x4 Reinforcement	77.00 - 77.58	1.0000	1.0000
L30	82	CCI-SFP-040075	77.00 - 77.58	1.0000	1.0000
L30	83	CCI-SFP-040075	77.00 - 77.58	1.0000	1.0000
L30	85	CCI-SFP-040075	77.00 - 77.58	1.0000	1.0000
L31	1	FB-L98B-034-XXX(3/8)	76.75 - 77.00	1.0000	1.0000
L31	2	WR-VG86ST-BRD(3/4)	76.75 - 77.00	1.0000	1.0000
L31	4	7983A(ELLIPTICAL)	76.75 - 77.00	1.0000	1.0000
L31	9	CU12PSM9P6XXX(1-1/2)	76.75 - 77.00	1.0000	1.0000
L31	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	76.75 - 77.00	1.0000	1.0000
L31	23	Safety Line 3/8	76.75 - 77.00	1.0000	1.0000
L31	35	PL1.25x5.5 Reinforcement	76.75 - 77.00	1.0000	1.0000
L31	36	PL1.25x5.5 Reinforcement	76.75 - 77.00	1.0000	1.0000
L31	37	PL1.25x5.5 Reinforcement	76.75 - 77.00	1.0000	1.0000
L31	51	PL1x4 Reinforcement	76.75 - 77.00	1.0000	1.0000
L31	52	PL1x4 Reinforcement	76.75 - 77.00	1.0000	1.0000
L31	53	PL1x4 Reinforcement	76.75 - 77.00	1.0000	1.0000
L31	82	CCI-SFP-040075	76.75 - 77.00	1.0000	1.0000
L31	83	CCI-SFP-040075	76.75 - 77.00	1.0000	1.0000
L31	85	CCI-SFP-040075	76.75 - 77.00	1.0000	1.0000
L32	1	FB-L98B-034-XXX(3/8)	76.33 - 76.75	1.0000	1.0000
L32	2	WR-VG86ST-BRD(3/4)	76.33 - 76.75	1.0000	1.0000
L32	4	7983A(ELLIPTICAL)	76.33 - 76.75	1.0000	1.0000
L32	9	CU12PSM9P6XXX(1-1/2)	76.33 - 76.75	1.0000	1.0000
L32	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	76.33 - 76.75	1.0000	1.0000
L32	23	Safety Line 3/8	76.33 - 76.75	1.0000	1.0000
L32	35	PL1.25x5.5 Reinforcement	76.33 - 76.75	1.0000	1.0000
L32	36	PL1.25x5.5 Reinforcement	76.33 - 76.75	1.0000	1.0000
L32	37	PL1.25x5.5 Reinforcement	76.33 - 76.75	1.0000	1.0000
L32	51	PL1x4 Reinforcement	76.33 - 76.75	1.0000	1.0000
L32	52	PL1x4 Reinforcement	76.33 - 76.75	1.0000	1.0000
L32	53	PL1x4 Reinforcement	76.33 - 76.75	1.0000	1.0000
L32	82	CCI-SFP-040075	76.33 - 76.75	1.0000	1.0000
L32	83	CCI-SFP-040075	76.33 - 76.75	1.0000	1.0000
L32	85	CCI-SFP-040075	76.33 - 76.75	1.0000	1.0000
L33	1	FB-L98B-034-XXX(3/8)	76.08 - 76.33	1.0000	1.0000
L33	2	WR-VG86ST-BRD(3/4)	76.08 - 76.33	1.0000	1.0000
L33	4	7983A(ELLIPTICAL)	76.08 - 76.33	1.0000	1.0000
L33	9	CU12PSM9P6XXX(1-1/2)	76.08 - 76.33	1.0000	1.0000
L33	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	76.08 - 76.33	1.0000	1.0000
L33	23	Safety Line 3/8	76.08 - 76.33	1.0000	1.0000
L33	35	PL1.25x5.5 Reinforcement	76.08 - 76.33	1.0000	1.0000
L33	36	PL1.25x5.5 Reinforcement	76.08 - 76.33	1.0000	1.0000
L33	37	PL1.25x5.5 Reinforcement	76.08 - 76.33	1.0000	1.0000
L33	51	PL1x4 Reinforcement	76.08 - 76.33	1.0000	1.0000
L33	52	PL1x4 Reinforcement	76.08 - 76.33	1.0000	1.0000
L33	53	PL1x4 Reinforcement	76.08 - 76.33	1.0000	1.0000
L33	82	CCI-SFP-040075	76.08 - 76.33	1.0000	1.0000
L33	83	CCI-SFP-040075	76.08 - 76.33	1.0000	1.0000
L33	85	CCI-SFP-040075	76.08 - 76.33	1.0000	1.0000
L34	1	FB-L98B-034-XXX(3/8)	74.25 - 76.08	1.0000	1.0000
L34	2	WR-VG86ST-BRD(3/4)	74.25 - 76.08	1.0000	1.0000
L34	4	7983A(ELLIPTICAL)	74.25 - 76.08	1.0000	1.0000
L34	9	CU12PSM9P6XXX(1-1/2)	74.25 - 76.08	1.0000	1.0000
L34	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	74.25 - 76.08	1.0000	1.0000
L34	23	Safety Line 3/8	74.25 - 76.08	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L34	35	PL1.25x5.5 Reinforcement	74.25 - 76.08	1.0000	1.0000
L34	36	PL1.25x5.5 Reinforcement	74.25 - 76.08	1.0000	1.0000
L34	37	PL1.25x5.5 Reinforcement	74.25 - 76.08	1.0000	1.0000
L34	51	PL1x4 Reinforcement	74.25 - 76.08	1.0000	1.0000
L34	52	PL1x4 Reinforcement	74.25 - 76.08	1.0000	1.0000
L34	53	PL1x4 Reinforcement	74.25 - 76.08	1.0000	1.0000
L34	77	CCI-SFP-045100	74.25 - 75.25	1.0000	1.0000
L34	78	CCI-SFP-045100	74.25 - 75.25	1.0000	1.0000
L34	80	CCI-SFP-040075	74.25 - 75.25	1.0000	1.0000
L34	82	CCI-SFP-040075	75.33 - 76.08	1.0000	1.0000
L34	83	CCI-SFP-040075	75.33 - 76.08	1.0000	1.0000
L34	85	CCI-SFP-040075	75.33 - 76.08	1.0000	1.0000
L35	1	FB-L98B-034-XXX(3/8)	74.00 - 74.25	1.0000	1.0000
L35	2	WR-VG86ST-BRD(3/4)	74.00 - 74.25	1.0000	1.0000
L35	4	7983A(ELLIPTICAL)	74.00 - 74.25	1.0000	1.0000
L35	9	CU12PSM9P6XXX(1-1/2)	74.00 - 74.25	1.0000	1.0000
L35	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	74.00 - 74.25	1.0000	1.0000
L35	23	Safety Line 3/8	74.00 - 74.25	1.0000	1.0000
L35	35	PL1.25x5.5 Reinforcement	74.00 - 74.25	1.0000	1.0000
L35	36	PL1.25x5.5 Reinforcement	74.00 - 74.25	1.0000	1.0000
L35	37	PL1.25x5.5 Reinforcement	74.00 - 74.25	1.0000	1.0000
L35	51	PL1x4 Reinforcement	74.00 - 74.25	1.0000	1.0000
L35	52	PL1x4 Reinforcement	74.00 - 74.25	1.0000	1.0000
L35	53	PL1x4 Reinforcement	74.00 - 74.25	1.0000	1.0000
L35	77	CCI-SFP-045100	74.00 - 74.25	1.0000	1.0000
L35	78	CCI-SFP-045100	74.00 - 74.25	1.0000	1.0000
L35	80	CCI-SFP-040075	74.00 - 74.25	1.0000	1.0000
L36	1	FB-L98B-034-XXX(3/8)	73.75 - 74.00	1.0000	1.0000
L36	2	WR-VG86ST-BRD(3/4)	73.75 - 74.00	1.0000	1.0000
L36	4	7983A(ELLIPTICAL)	73.75 - 74.00	1.0000	1.0000
L36	9	CU12PSM9P6XXX(1-1/2)	73.75 - 74.00	1.0000	1.0000
L36	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	73.75 - 74.00	1.0000	1.0000
L36	23	Safety Line 3/8	73.75 - 74.00	1.0000	1.0000
L36	35	PL1.25x5.5 Reinforcement	73.75 - 74.00	1.0000	1.0000
L36	36	PL1.25x5.5 Reinforcement	73.75 - 74.00	1.0000	1.0000
L36	37	PL1.25x5.5 Reinforcement	73.75 - 74.00	1.0000	1.0000
L36	51	PL1x4 Reinforcement	73.75 - 74.00	1.0000	1.0000
L36	52	PL1x4 Reinforcement	73.75 - 74.00	1.0000	1.0000
L36	53	PL1x4 Reinforcement	73.75 - 74.00	1.0000	1.0000
L36	77	CCI-SFP-045100	73.75 - 74.00	1.0000	1.0000
L36	78	CCI-SFP-045100	73.75 - 74.00	1.0000	1.0000
L36	80	CCI-SFP-040075	73.75 - 74.00	1.0000	1.0000
L37	1	FB-L98B-034-XXX(3/8)	73.50 - 73.75	1.0000	1.0000
L37	2	WR-VG86ST-BRD(3/4)	73.50 - 73.75	1.0000	1.0000
L37	4	7983A(ELLIPTICAL)	73.50 - 73.75	1.0000	1.0000
L37	9	CU12PSM9P6XXX(1-1/2)	73.50 - 73.75	1.0000	1.0000
L37	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	73.50 - 73.75	1.0000	1.0000
L37	23	Safety Line 3/8	73.50 - 73.75	1.0000	1.0000
L37	35	PL1.25x5.5 Reinforcement	73.50 - 73.75	1.0000	1.0000
L37	36	PL1.25x5.5 Reinforcement	73.50 - 73.75	1.0000	1.0000
L37	37	PL1.25x5.5 Reinforcement	73.50 - 73.75	1.0000	1.0000
L37	51	PL1x4 Reinforcement	73.50 - 73.75	1.0000	1.0000
L37	52	PL1x4 Reinforcement	73.50 - 73.75	1.0000	1.0000
L37	53	PL1x4 Reinforcement	73.50 - 73.75	1.0000	1.0000
L37	77	CCI-SFP-045100	73.50 - 73.75	1.0000	1.0000
L37	78	CCI-SFP-045100	73.50 - 73.75	1.0000	1.0000
L37	80	CCI-SFP-040075	73.50 - 73.75	1.0000	1.0000
L38	1	FB-L98B-034-XXX(3/8)	68.50 - 73.50	1.0000	1.0000
L38	2	WR-VG86ST-BRD(3/4)	68.50 - 73.50	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L38	4	7983A(ELLIPTICAL)	68.50 - 73.50	1.0000	1.0000
L38	9	CU12PSM9P6XXX(1-1/2)	68.50 - 73.50	1.0000	1.0000
L38	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	68.50 - 73.50	1.0000	1.0000
L38	23	Safety Line 3/8	68.50 - 73.50	1.0000	1.0000
L38	35	PL1.25x5.5 Reinforcement	68.50 - 73.50	1.0000	1.0000
L38	36	PL1.25x5.5 Reinforcement	68.50 - 73.50	1.0000	1.0000
L38	37	PL1.25x5.5 Reinforcement	68.50 - 73.50	1.0000	1.0000
L38	51	PL1x4 Reinforcement	68.50 - 73.50	1.0000	1.0000
L38	52	PL1x4 Reinforcement	68.50 - 73.50	1.0000	1.0000
L38	53	PL1x4 Reinforcement	68.50 - 73.50	1.0000	1.0000
L38	77	CCI-SFP-045100	68.50 - 73.50	1.0000	1.0000
L38	78	CCI-SFP-045100	68.50 - 73.50	1.0000	1.0000
L38	80	CCI-SFP-040075	68.50 - 73.50	1.0000	1.0000
L39	1	FB-L98B-034-XXX(3/8)	63.50 - 68.50	1.0000	1.0000
L39	2	WR-VG86ST-BRD(3/4)	63.50 - 68.50	1.0000	1.0000
L39	4	7983A(ELLIPTICAL)	63.50 - 68.50	1.0000	1.0000
L39	9	CU12PSM9P6XXX(1-1/2)	63.50 - 68.50	1.0000	1.0000
L39	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	63.50 - 68.50	1.0000	1.0000
L39	23	Safety Line 3/8	63.50 - 68.50	1.0000	1.0000
L39	35	PL1.25x5.5 Reinforcement	63.50 - 68.50	1.0000	1.0000
L39	36	PL1.25x5.5 Reinforcement	63.50 - 68.50	1.0000	1.0000
L39	37	PL1.25x5.5 Reinforcement	63.50 - 68.50	1.0000	1.0000
L39	51	PL1x4 Reinforcement	63.50 - 68.50	1.0000	1.0000
L39	52	PL1x4 Reinforcement	63.50 - 68.50	1.0000	1.0000
L39	53	PL1x4 Reinforcement	63.50 - 68.50	1.0000	1.0000
L39	77	CCI-SFP-045100	63.50 - 68.50	1.0000	1.0000
L39	78	CCI-SFP-045100	63.50 - 68.50	1.0000	1.0000
L39	80	CCI-SFP-040075	63.50 - 68.50	1.0000	1.0000
L40	1	FB-L98B-034-XXX(3/8)	60.50 - 63.50	1.0000	1.0000
L40	2	WR-VG86ST-BRD(3/4)	60.50 - 63.50	1.0000	1.0000
L40	4	7983A(ELLIPTICAL)	60.50 - 63.50	1.0000	1.0000
L40	9	CU12PSM9P6XXX(1-1/2)	60.50 - 63.50	1.0000	1.0000
L40	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	60.50 - 63.50	1.0000	1.0000
L40	23	Safety Line 3/8	60.50 - 63.50	1.0000	1.0000
L40	35	PL1.25x5.5 Reinforcement	60.50 - 63.50	1.0000	1.0000
L40	36	PL1.25x5.5 Reinforcement	60.50 - 63.50	1.0000	1.0000
L40	37	PL1.25x5.5 Reinforcement	60.50 - 63.50	1.0000	1.0000
L40	47	PL1x4 Reinforcement	60.50 - 62.25	1.0000	1.0000
L40	48	PL1x4 Reinforcement	60.50 - 62.25	1.0000	1.0000
L40	49	PL1x4 Reinforcement	60.50 - 62.25	1.0000	1.0000
L40	51	PL1x4 Reinforcement	60.50 - 63.50	1.0000	1.0000
L40	52	PL1x4 Reinforcement	60.50 - 63.50	1.0000	1.0000
L40	53	PL1x4 Reinforcement	60.50 - 63.50	1.0000	1.0000
L40	77	CCI-SFP-045100	60.50 - 63.50	1.0000	1.0000
L40	78	CCI-SFP-045100	60.50 - 63.50	1.0000	1.0000
L40	80	CCI-SFP-040075	60.50 - 63.50	1.0000	1.0000
L41	1	FB-L98B-034-XXX(3/8)	60.25 - 60.50	1.0000	1.0000
L41	2	WR-VG86ST-BRD(3/4)	60.25 - 60.50	1.0000	1.0000
L41	4	7983A(ELLIPTICAL)	60.25 - 60.50	1.0000	1.0000
L41	9	CU12PSM9P6XXX(1-1/2)	60.25 - 60.50	1.0000	1.0000
L41	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	60.25 - 60.50	1.0000	1.0000
L41	23	Safety Line 3/8	60.25 - 60.50	1.0000	1.0000
L41	35	PL1.25x5.5 Reinforcement	60.25 - 60.50	1.0000	1.0000
L41	36	PL1.25x5.5 Reinforcement	60.25 - 60.50	1.0000	1.0000
L41	37	PL1.25x5.5 Reinforcement	60.25 - 60.50	1.0000	1.0000
L41	47	PL1x4 Reinforcement	60.25 - 60.50	1.0000	1.0000
L41	48	PL1x4 Reinforcement	60.25 - 60.50	1.0000	1.0000
L41	49	PL1x4 Reinforcement	60.25 - 60.50	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L41	51	PL1x4 Reinforcement	60.25 - 60.50	1.0000	1.0000
L41	52	PL1x4 Reinforcement	60.25 - 60.50	1.0000	1.0000
L41	53	PL1x4 Reinforcement	60.25 - 60.50	1.0000	1.0000
L41	77	CCI-SFP-045100	60.25 - 60.50	1.0000	1.0000
L41	78	CCI-SFP-045100	60.25 - 60.50	1.0000	1.0000
L41	80	CCI-SFP-040075	60.25 - 60.50	1.0000	1.0000
L42	1	FB-L98B-034-XXX(3/8)	59.50 - 60.25	1.0000	1.0000
L42	2	WR-VG86ST-BRD(3/4)	59.50 - 60.25	1.0000	1.0000
L42	4	7983A(ELLIPTICAL)	59.50 - 60.25	1.0000	1.0000
L42	9	CU12PSM9P6XXX(1-1/2)	59.50 - 60.25	1.0000	1.0000
L42	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	59.50 - 60.25	1.0000	1.0000
L42	23	Safety Line 3/8	59.50 - 60.25	1.0000	1.0000
L42	35	PL1.25x5.5 Reinforcement	59.50 - 60.25	1.0000	1.0000
L42	36	PL1.25x5.5 Reinforcement	59.50 - 60.25	1.0000	1.0000
L42	37	PL1.25x5.5 Reinforcement	59.50 - 60.25	1.0000	1.0000
L42	47	PL1x4 Reinforcement	59.50 - 60.25	1.0000	1.0000
L42	48	PL1x4 Reinforcement	59.50 - 60.25	1.0000	1.0000
L42	49	PL1x4 Reinforcement	59.50 - 60.25	1.0000	1.0000
L42	51	PL1x4 Reinforcement	59.50 - 60.25	1.0000	1.0000
L42	52	PL1x4 Reinforcement	59.50 - 60.25	1.0000	1.0000
L42	53	PL1x4 Reinforcement	59.50 - 60.25	1.0000	1.0000
L42	77	CCI-SFP-045100	59.50 - 60.25	1.0000	1.0000
L42	78	CCI-SFP-045100	59.50 - 60.25	1.0000	1.0000
L42	80	CCI-SFP-040075	59.50 - 60.25	1.0000	1.0000
L43	1	FB-L98B-034-XXX(3/8)	59.25 - 59.50	1.0000	1.0000
L43	2	WR-VG86ST-BRD(3/4)	59.25 - 59.50	1.0000	1.0000
L43	4	7983A(ELLIPTICAL)	59.25 - 59.50	1.0000	1.0000
L43	9	CU12PSM9P6XXX(1-1/2)	59.25 - 59.50	1.0000	1.0000
L43	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	59.25 - 59.50	1.0000	1.0000
L43	23	Safety Line 3/8	59.25 - 59.50	1.0000	1.0000
L43	31	PL1.25x6.625 Reinforcement	59.25 - 59.50	1.0000	1.0000
L43	32	PL1.25x6.625 Reinforcement	59.25 - 59.50	1.0000	1.0000
L43	33	PL1.25x6.625 Reinforcement	59.25 - 59.50	1.0000	1.0000
L43	47	PL1x4 Reinforcement	59.25 - 59.50	1.0000	1.0000
L43	48	PL1x4 Reinforcement	59.25 - 59.50	1.0000	1.0000
L43	49	PL1x4 Reinforcement	59.25 - 59.50	1.0000	1.0000
L43	51	PL1x4 Reinforcement	59.25 - 59.50	1.0000	1.0000
L43	52	PL1x4 Reinforcement	59.25 - 59.50	1.0000	1.0000
L43	53	PL1x4 Reinforcement	59.25 - 59.50	1.0000	1.0000
L43	77	CCI-SFP-045100	59.25 - 59.50	1.0000	1.0000
L43	78	CCI-SFP-045100	59.25 - 59.50	1.0000	1.0000
L43	80	CCI-SFP-040075	59.25 - 59.50	1.0000	1.0000
L44	1	FB-L98B-034-XXX(3/8)	54.25 - 59.25	1.0000	1.0000
L44	2	WR-VG86ST-BRD(3/4)	54.25 - 59.25	1.0000	1.0000
L44	4	7983A(ELLIPTICAL)	54.25 - 59.25	1.0000	1.0000
L44	9	CU12PSM9P6XXX(1-1/2)	54.25 - 59.25	1.0000	1.0000
L44	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	54.25 - 59.25	1.0000	1.0000
L44	23	Safety Line 3/8	54.25 - 59.25	1.0000	1.0000
L44	31	PL1.25x6.625 Reinforcement	54.25 - 59.25	1.0000	1.0000
L44	32	PL1.25x6.625 Reinforcement	54.25 - 59.25	1.0000	1.0000
L44	33	PL1.25x6.625 Reinforcement	54.25 - 59.25	1.0000	1.0000
L44	47	PL1x4 Reinforcement	54.25 - 59.25	1.0000	1.0000
L44	48	PL1x4 Reinforcement	54.25 - 59.25	1.0000	1.0000
L44	49	PL1x4 Reinforcement	54.25 - 59.25	1.0000	1.0000
L44	51	PL1x4 Reinforcement	58.75 - 59.25	1.0000	1.0000
L44	52	PL1x4 Reinforcement	58.75 - 59.25	1.0000	1.0000
L44	53	PL1x4 Reinforcement	58.75 - 59.25	1.0000	1.0000
L44	77	CCI-SFP-045100	54.25 - 59.25	1.0000	1.0000
L44	78	CCI-SFP-045100	54.25 - 59.25	1.0000	1.0000

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Client	Crown Castle	Designed by	Jayaraj B

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L44	80	CCI-SFP-040075	54.25 - 59.25	1.0000	1.0000
L45	1	FB-L98B-034-XXX(3/8)	45.80 - 54.25	1.0000	1.0000
L45	2	WR-VG86ST-BRD(3/4)	45.80 - 54.25	1.0000	1.0000
L45	4	7983A(ELLIPTICAL)	45.80 - 54.25	1.0000	1.0000
L45	9	CU12PSM9P6XXX(1-1/2)	45.80 - 54.25	1.0000	1.0000
L45	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	45.80 - 54.25	1.0000	1.0000
L45	23	Safety Line 3/8	45.80 - 54.25	1.0000	1.0000
L45	31	PL1.25x6.625 Reinforcement	45.80 - 54.25	1.0000	1.0000
L45	32	PL1.25x6.625 Reinforcement	45.80 - 54.25	1.0000	1.0000
L45	33	PL1.25x6.625 Reinforcement	45.80 - 54.25	1.0000	1.0000
L45	47	PL1x4 Reinforcement	45.80 - 54.25	1.0000	1.0000
L45	48	PL1x4 Reinforcement	45.80 - 54.25	1.0000	1.0000
L45	49	PL1x4 Reinforcement	45.80 - 54.25	1.0000	1.0000
L45	77	CCI-SFP-045100	45.80 - 54.25	1.0000	1.0000
L45	78	CCI-SFP-045100	45.80 - 54.25	1.0000	1.0000
L45	80	CCI-SFP-040075	45.80 - 54.25	1.0000	1.0000
L46	1	FB-L98B-034-XXX(3/8)	44.80 - 45.80	1.0000	1.0000
L46	2	WR-VG86ST-BRD(3/4)	44.80 - 45.80	1.0000	1.0000
L46	4	7983A(ELLIPTICAL)	44.80 - 45.80	1.0000	1.0000
L46	9	CU12PSM9P6XXX(1-1/2)	44.80 - 45.80	1.0000	1.0000
L46	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	44.80 - 45.80	1.0000	1.0000
L46	23	Safety Line 3/8	44.80 - 45.80	1.0000	1.0000
L46	31	PL1.25x6.625 Reinforcement	44.80 - 45.80	1.0000	1.0000
L46	32	PL1.25x6.625 Reinforcement	44.80 - 45.80	1.0000	1.0000
L46	33	PL1.25x6.625 Reinforcement	44.80 - 45.80	1.0000	1.0000
L46	47	PL1x4 Reinforcement	44.80 - 45.80	1.0000	1.0000
L46	48	PL1x4 Reinforcement	44.80 - 45.80	1.0000	1.0000
L46	49	PL1x4 Reinforcement	44.80 - 45.80	1.0000	1.0000
L46	72	CCI-SFP-045100	44.80 - 45.08	1.0000	1.0000
L46	74	CCI-SFP-060100	44.80 - 45.17	1.0000	1.0000
L46	75	CCI-SFP-060100	44.80 - 45.17	1.0000	1.0000
L46	77	CCI-SFP-045100	45.25 - 45.80	1.0000	1.0000
L46	78	CCI-SFP-045100	45.25 - 45.80	1.0000	1.0000
L46	80	CCI-SFP-040075	45.25 - 45.80	1.0000	1.0000
L47	1	FB-L98B-034-XXX(3/8)	43.58 - 44.80	1.0000	1.0000
L47	2	WR-VG86ST-BRD(3/4)	43.58 - 44.80	1.0000	1.0000
L47	4	7983A(ELLIPTICAL)	43.58 - 44.80	1.0000	1.0000
L47	9	CU12PSM9P6XXX(1-1/2)	43.58 - 44.80	1.0000	1.0000
L47	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	43.58 - 44.80	1.0000	1.0000
L47	23	Safety Line 3/8	43.58 - 44.80	1.0000	1.0000
L47	31	PL1.25x6.625 Reinforcement	43.58 - 44.80	1.0000	1.0000
L47	32	PL1.25x6.625 Reinforcement	43.58 - 44.80	1.0000	1.0000
L47	33	PL1.25x6.625 Reinforcement	43.58 - 44.80	1.0000	1.0000
L47	47	PL1x4 Reinforcement	43.58 - 44.80	1.0000	1.0000
L47	48	PL1x4 Reinforcement	43.58 - 44.80	1.0000	1.0000
L47	49	PL1x4 Reinforcement	43.58 - 44.80	1.0000	1.0000
L47	72	CCI-SFP-045100	43.58 - 44.80	1.0000	1.0000
L47	74	CCI-SFP-060100	43.58 - 44.80	1.0000	1.0000
L47	75	CCI-SFP-060100	43.58 - 44.80	1.0000	1.0000
L48	1	FB-L98B-034-XXX(3/8)	43.33 - 43.58	1.0000	1.0000
L48	2	WR-VG86ST-BRD(3/4)	43.33 - 43.58	1.0000	1.0000
L48	4	7983A(ELLIPTICAL)	43.33 - 43.58	1.0000	1.0000
L48	9	CU12PSM9P6XXX(1-1/2)	43.33 - 43.58	1.0000	1.0000
L48	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	43.33 - 43.58	1.0000	1.0000
L48	23	Safety Line 3/8	43.33 - 43.58	1.0000	1.0000
L48	31	PL1.25x6.625 Reinforcement	43.33 - 43.58	1.0000	1.0000
L48	32	PL1.25x6.625 Reinforcement	43.33 - 43.58	1.0000	1.0000
L48	33	PL1.25x6.625 Reinforcement	43.33 - 43.58	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L48	47	PL1x4 Reinforcement	43.33 - 43.58	1.0000	1.0000
L48	48	PL1x4 Reinforcement	43.33 - 43.58	1.0000	1.0000
L48	49	PL1x4 Reinforcement	43.33 - 43.58	1.0000	1.0000
L48	72	CCI-SFP-045100	43.33 - 43.58	1.0000	1.0000
L48	74	CCI-SFP-060100	43.33 - 43.58	1.0000	1.0000
L48	75	CCI-SFP-060100	43.33 - 43.58	1.0000	1.0000
L49	1	FB-L98B-034-XXX(3/8)	43.17 - 43.33	1.0000	1.0000
L49	2	WR-VG86ST-BRD(3/4)	43.17 - 43.33	1.0000	1.0000
L49	4	7983A(ELLIPTICAL)	43.17 - 43.33	1.0000	1.0000
L49	9	CU12PSM9P6XXX(1-1/2)	43.17 - 43.33	1.0000	1.0000
L49	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	43.17 - 43.33	1.0000	1.0000
L49	23	Safety Line 3/8	43.17 - 43.33	1.0000	1.0000
L49	31	PL1.25x6.625 Reinforcement	43.17 - 43.33	1.0000	1.0000
L49	32	PL1.25x6.625 Reinforcement	43.17 - 43.33	1.0000	1.0000
L49	33	PL1.25x6.625 Reinforcement	43.17 - 43.33	1.0000	1.0000
L49	47	PL1x4 Reinforcement	43.17 - 43.33	1.0000	1.0000
L49	48	PL1x4 Reinforcement	43.17 - 43.33	1.0000	1.0000
L49	49	PL1x4 Reinforcement	43.17 - 43.33	1.0000	1.0000
L49	72	CCI-SFP-045100	43.17 - 43.33	1.0000	1.0000
L49	74	CCI-SFP-060100	43.17 - 43.33	1.0000	1.0000
L49	75	CCI-SFP-060100	43.17 - 43.33	1.0000	1.0000
L50	1	FB-L98B-034-XXX(3/8)	42.92 - 43.17	1.0000	1.0000
L50	2	WR-VG86ST-BRD(3/4)	42.92 - 43.17	1.0000	1.0000
L50	4	7983A(ELLIPTICAL)	42.92 - 43.17	1.0000	1.0000
L50	9	CU12PSM9P6XXX(1-1/2)	42.92 - 43.17	1.0000	1.0000
L50	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	42.92 - 43.17	1.0000	1.0000
L50	23	Safety Line 3/8	42.92 - 43.17	1.0000	1.0000
L50	31	PL1.25x6.625 Reinforcement	42.92 - 43.17	1.0000	1.0000
L50	32	PL1.25x6.625 Reinforcement	42.92 - 43.17	1.0000	1.0000
L50	33	PL1.25x6.625 Reinforcement	42.92 - 43.17	1.0000	1.0000
L50	47	PL1x4 Reinforcement	42.92 - 43.17	1.0000	1.0000
L50	48	PL1x4 Reinforcement	42.92 - 43.17	1.0000	1.0000
L50	49	PL1x4 Reinforcement	42.92 - 43.17	1.0000	1.0000
L50	72	CCI-SFP-045100	42.92 - 43.17	1.0000	1.0000
L50	74	CCI-SFP-060100	42.92 - 43.17	1.0000	1.0000
L50	75	CCI-SFP-060100	42.92 - 43.17	1.0000	1.0000
L51	1	FB-L98B-034-XXX(3/8)	39.00 - 42.92	1.0000	1.0000
L51	2	WR-VG86ST-BRD(3/4)	39.00 - 42.92	1.0000	1.0000
L51	4	7983A(ELLIPTICAL)	39.00 - 42.92	1.0000	1.0000
L51	9	CU12PSM9P6XXX(1-1/2)	39.00 - 42.92	1.0000	1.0000
L51	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	39.00 - 42.92	1.0000	1.0000
L51	23	Safety Line 3/8	39.00 - 42.92	1.0000	1.0000
L51	31	PL1.25x6.625 Reinforcement	39.00 - 42.92	1.0000	1.0000
L51	32	PL1.25x6.625 Reinforcement	39.00 - 42.92	1.0000	1.0000
L51	33	PL1.25x6.625 Reinforcement	39.00 - 42.92	1.0000	1.0000
L51	45	PL1x4 Reinforcement	39.00 - 40.75	1.0000	1.0000
L51	47	PL1x4 Reinforcement	39.00 - 42.92	1.0000	1.0000
L51	48	PL1x4 Reinforcement	39.00 - 42.92	1.0000	1.0000
L51	49	PL1x4 Reinforcement	39.00 - 42.92	1.0000	1.0000
L51	72	CCI-SFP-045100	39.00 - 42.92	1.0000	1.0000
L51	74	CCI-SFP-060100	39.00 - 42.92	1.0000	1.0000
L51	75	CCI-SFP-060100	39.00 - 42.92	1.0000	1.0000
L52	1	FB-L98B-034-XXX(3/8)	38.75 - 39.00	1.0000	1.0000
L52	2	WR-VG86ST-BRD(3/4)	38.75 - 39.00	1.0000	1.0000
L52	4	7983A(ELLIPTICAL)	38.75 - 39.00	1.0000	1.0000
L52	9	CU12PSM9P6XXX(1-1/2)	38.75 - 39.00	1.0000	1.0000
L52	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	38.75 - 39.00	1.0000	1.0000
L52	23	Safety Line 3/8	38.75 - 39.00	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L52	31	PL1.25x6.625 Reinforcement	38.75 - 39.00	1.0000	1.0000
L52	32	PL1.25x6.625 Reinforcement	38.75 - 39.00	1.0000	1.0000
L52	33	PL1.25x6.625 Reinforcement	38.75 - 39.00	1.0000	1.0000
L52	45	PL1x4 Reinforcement	38.75 - 39.00	1.0000	1.0000
L52	47	PL1x4 Reinforcement	38.75 - 39.00	1.0000	1.0000
L52	48	PL1x4 Reinforcement	38.75 - 39.00	1.0000	1.0000
L52	49	PL1x4 Reinforcement	38.75 - 39.00	1.0000	1.0000
L52	72	CCI-SFP-045100	38.75 - 39.00	1.0000	1.0000
L52	74	CCI-SFP-060100	38.75 - 39.00	1.0000	1.0000
L52	75	CCI-SFP-060100	38.75 - 39.00	1.0000	1.0000
L53	1	FB-L98B-034-XXX(3/8)	37.17 - 38.75	1.0000	1.0000
L53	2	WR-VG86ST-BRD(3/4)	37.17 - 38.75	1.0000	1.0000
L53	4	7983A(ELLIPTICAL)	37.17 - 38.75	1.0000	1.0000
L53	9	CU12PSM9P6XXX(1-1/2)	37.17 - 38.75	1.0000	1.0000
L53	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	37.17 - 38.75	1.0000	1.0000
L53	23	Safety Line 3/8	37.17 - 38.75	1.0000	1.0000
L53	31	PL1.25x6.625 Reinforcement	37.17 - 38.75	1.0000	1.0000
L53	32	PL1.25x6.625 Reinforcement	37.17 - 38.75	1.0000	1.0000
L53	33	PL1.25x6.625 Reinforcement	37.17 - 38.75	1.0000	1.0000
L53	45	PL1x4 Reinforcement	37.17 - 38.75	1.0000	1.0000
L53	47	PL1x4 Reinforcement	37.17 - 38.75	1.0000	1.0000
L53	48	PL1x4 Reinforcement	37.17 - 38.75	1.0000	1.0000
L53	49	PL1x4 Reinforcement	37.17 - 38.75	1.0000	1.0000
L53	72	CCI-SFP-045100	37.17 - 38.75	1.0000	1.0000
L53	74	CCI-SFP-060100	37.17 - 38.75	1.0000	1.0000
L53	75	CCI-SFP-060100	37.17 - 38.75	1.0000	1.0000
L54	1	FB-L98B-034-XXX(3/8)	36.92 - 37.17	1.0000	1.0000
L54	2	WR-VG86ST-BRD(3/4)	36.92 - 37.17	1.0000	1.0000
L54	4	7983A(ELLIPTICAL)	36.92 - 37.17	1.0000	1.0000
L54	9	CU12PSM9P6XXX(1-1/2)	36.92 - 37.17	1.0000	1.0000
L54	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	36.92 - 37.17	1.0000	1.0000
L54	23	Safety Line 3/8	36.92 - 37.17	1.0000	1.0000
L54	31	PL1.25x6.625 Reinforcement	36.92 - 37.17	1.0000	1.0000
L54	32	PL1.25x6.625 Reinforcement	36.92 - 37.17	1.0000	1.0000
L54	33	PL1.25x6.625 Reinforcement	36.92 - 37.17	1.0000	1.0000
L54	45	PL1x4 Reinforcement	36.92 - 37.17	1.0000	1.0000
L54	47	PL1x4 Reinforcement	36.92 - 37.17	1.0000	1.0000
L54	48	PL1x4 Reinforcement	36.92 - 37.17	1.0000	1.0000
L54	49	PL1x4 Reinforcement	36.92 - 37.17	1.0000	1.0000
L54	72	CCI-SFP-045100	36.92 - 37.17	1.0000	1.0000
L54	74	CCI-SFP-060100	36.92 - 37.17	1.0000	1.0000
L54	75	CCI-SFP-060100	36.92 - 37.17	1.0000	1.0000
L55	1	FB-L98B-034-XXX(3/8)	34.00 - 36.92	1.0000	1.0000
L55	2	WR-VG86ST-BRD(3/4)	34.00 - 36.92	1.0000	1.0000
L55	4	7983A(ELLIPTICAL)	34.00 - 36.92	1.0000	1.0000
L55	9	CU12PSM9P6XXX(1-1/2)	34.00 - 36.92	1.0000	1.0000
L55	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	34.00 - 36.92	1.0000	1.0000
L55	23	Safety Line 3/8	34.00 - 36.92	1.0000	1.0000
L55	31	PL1.25x6.625 Reinforcement	34.00 - 36.92	1.0000	1.0000
L55	32	PL1.25x6.625 Reinforcement	34.00 - 36.92	1.0000	1.0000
L55	33	PL1.25x6.625 Reinforcement	34.00 - 36.92	1.0000	1.0000
L55	43	PL1x4 Reinforcement	34.00 - 35.75	1.0000	1.0000
L55	44	PL1x4 Reinforcement	34.00 - 35.75	1.0000	1.0000
L55	45	PL1x4 Reinforcement	34.00 - 36.92	1.0000	1.0000
L55	47	PL1x4 Reinforcement	34.00 - 36.92	1.0000	1.0000
L55	48	PL1x4 Reinforcement	34.00 - 36.92	1.0000	1.0000
L55	49	PL1x4 Reinforcement	34.00 - 36.92	1.0000	1.0000
L55	68	CCI-SFP-045100	34.00 - 35.08	1.0000	1.0000
L55	70	CCI-SFP-045100	34.00 - 35.08	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L55	72	CCI-SFP-045100	34.00 - 36.92	1.0000	1.0000
L55	74	CCI-SFP-060100	35.17 - 36.92	1.0000	1.0000
L55	75	CCI-SFP-060100	35.17 - 36.92	1.0000	1.0000
L56	1	FB-L98B-034-XXX(3/8)	33.75 - 34.00	1.0000	1.0000
L56	2	WR-VG86ST-BRD(3/4)	33.75 - 34.00	1.0000	1.0000
L56	4	7983A(ELLIPTICAL)	33.75 - 34.00	1.0000	1.0000
L56	9	CU12PSM9P6XXX(1-1/2)	33.75 - 34.00	1.0000	1.0000
L56	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	33.75 - 34.00	1.0000	1.0000
L56	23	Safety Line 3/8	33.75 - 34.00	1.0000	1.0000
L56	31	PL1.25x6.625 Reinforcement	33.75 - 34.00	1.0000	1.0000
L56	32	PL1.25x6.625 Reinforcement	33.75 - 34.00	1.0000	1.0000
L56	33	PL1.25x6.625 Reinforcement	33.75 - 34.00	1.0000	1.0000
L56	43	PL1x4 Reinforcement	33.75 - 34.00	1.0000	1.0000
L56	44	PL1x4 Reinforcement	33.75 - 34.00	1.0000	1.0000
L56	45	PL1x4 Reinforcement	33.75 - 34.00	1.0000	1.0000
L56	47	PL1x4 Reinforcement	33.75 - 34.00	1.0000	1.0000
L56	48	PL1x4 Reinforcement	33.75 - 34.00	1.0000	1.0000
L56	49	PL1x4 Reinforcement	33.75 - 34.00	1.0000	1.0000
L56	68	CCI-SFP-045100	33.75 - 34.00	1.0000	1.0000
L56	70	CCI-SFP-045100	33.75 - 34.00	1.0000	1.0000
L56	72	CCI-SFP-045100	33.75 - 34.00	1.0000	1.0000
L57	1	FB-L98B-034-XXX(3/8)	29.75 - 33.75	1.0000	1.0000
L57	2	WR-VG86ST-BRD(3/4)	29.75 - 33.75	1.0000	1.0000
L57	4	7983A(ELLIPTICAL)	29.75 - 33.75	1.0000	1.0000
L57	9	CU12PSM9P6XXX(1-1/2)	29.75 - 33.75	1.0000	1.0000
L57	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	29.75 - 33.75	1.0000	1.0000
L57	23	Safety Line 3/8	29.75 - 33.75	1.0000	1.0000
L57	31	PL1.25x6.625 Reinforcement	29.75 - 33.75	1.0000	1.0000
L57	32	PL1.25x6.625 Reinforcement	29.75 - 33.75	1.0000	1.0000
L57	33	PL1.25x6.625 Reinforcement	29.75 - 33.75	1.0000	1.0000
L57	43	PL1x4 Reinforcement	29.75 - 33.75	1.0000	1.0000
L57	44	PL1x4 Reinforcement	29.75 - 33.75	1.0000	1.0000
L57	45	PL1x4 Reinforcement	29.75 - 33.75	1.0000	1.0000
L57	47	PL1x4 Reinforcement	32.25 - 33.75	1.0000	1.0000
L57	48	PL1x4 Reinforcement	32.25 - 33.75	1.0000	1.0000
L57	49	PL1x4 Reinforcement	32.25 - 33.75	1.0000	1.0000
L57	68	CCI-SFP-045100	29.75 - 33.75	1.0000	1.0000
L57	70	CCI-SFP-045100	29.75 - 33.75	1.0000	1.0000
L57	72	CCI-SFP-045100	29.75 - 33.75	1.0000	1.0000
L58	1	FB-L98B-034-XXX(3/8)	29.50 - 29.75	1.0000	1.0000
L58	2	WR-VG86ST-BRD(3/4)	29.50 - 29.75	1.0000	1.0000
L58	4	7983A(ELLIPTICAL)	29.50 - 29.75	1.0000	1.0000
L58	9	CU12PSM9P6XXX(1-1/2)	29.50 - 29.75	1.0000	1.0000
L58	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	29.50 - 29.75	1.0000	1.0000
L58	23	Safety Line 3/8	29.50 - 29.75	1.0000	1.0000
L58	25	PL1.25x6.875 Reinforcement	29.50 - 29.75	1.0000	1.0000
L58	26	PL1.25x6.875 Reinforcement	29.50 - 29.75	1.0000	1.0000
L58	27	PL1.25x6.875 Reinforcement	29.50 - 29.75	1.0000	1.0000
L58	43	PL1x4 Reinforcement	29.50 - 29.75	1.0000	1.0000
L58	44	PL1x4 Reinforcement	29.50 - 29.75	1.0000	1.0000
L58	45	PL1x4 Reinforcement	29.50 - 29.75	1.0000	1.0000
L58	68	CCI-SFP-045100	29.50 - 29.75	1.0000	1.0000
L58	70	CCI-SFP-045100	29.50 - 29.75	1.0000	1.0000
L58	72	CCI-SFP-045100	29.50 - 29.75	1.0000	1.0000
L59	1	FB-L98B-034-XXX(3/8)	24.50 - 29.50	1.0000	1.0000
L59	2	WR-VG86ST-BRD(3/4)	24.50 - 29.50	1.0000	1.0000
L59	4	7983A(ELLIPTICAL)	24.50 - 29.50	1.0000	1.0000
L59	9	CU12PSM9P6XXX(1-1/2)	24.50 - 29.50	1.0000	1.0000
L59	18	MLC HYBRID 6X12	24.50 - 29.50	1.0000	1.0000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L59	23	6AWGX6(1-1/2) Safety Line 3/8	24.50 - 29.50	1.0000	1.0000
L59	25	PL1.25x6.875 Reinforcement	24.50 - 29.50	1.0000	1.0000
L59	26	PL1.25x6.875 Reinforcement	24.50 - 29.50	1.0000	1.0000
L59	27	PL1.25x6.875 Reinforcement	24.50 - 29.50	1.0000	1.0000
L59	43	PL1x4 Reinforcement	24.50 - 29.50	1.0000	1.0000
L59	44	PL1x4 Reinforcement	24.50 - 29.50	1.0000	1.0000
L59	45	PL1x4 Reinforcement	24.50 - 29.50	1.0000	1.0000
L59	63	CCI-SFP-060100	24.50 - 25.00	1.0000	1.0000
L59	64	CCI-SFP-060100	24.50 - 25.00	1.0000	1.0000
L59	66	CCI-SFP-060100	24.50 - 25.00	1.0000	1.0000
L59	68	CCI-SFP-045100	24.50 - 29.50	1.0000	1.0000
L59	70	CCI-SFP-045100	25.08 - 29.50	1.0000	1.0000
L59	72	CCI-SFP-045100	25.08 - 29.50	1.0000	1.0000
L60	1	FB-L98B-034-XXX(3/8)	23.00 - 24.50	1.0000	1.0000
L60	2	WR-VG86ST-BRD(3/4)	23.00 - 24.50	1.0000	1.0000
L60	4	7983A(ELLIPTICAL)	23.00 - 24.50	1.0000	1.0000
L60	9	CU12PSM9P6XXX(1-1/2)	23.00 - 24.50	1.0000	1.0000
L60	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	23.00 - 24.50	1.0000	1.0000
L60	23	Safety Line 3/8	23.00 - 24.50	1.0000	1.0000
L60	25	PL1.25x6.875 Reinforcement	23.00 - 24.50	1.0000	1.0000
L60	26	PL1.25x6.875 Reinforcement	23.00 - 24.50	1.0000	1.0000
L60	27	PL1.25x6.875 Reinforcement	23.00 - 24.50	1.0000	1.0000
L60	43	PL1x4 Reinforcement	23.00 - 24.50	1.0000	1.0000
L60	44	PL1x4 Reinforcement	23.00 - 24.50	1.0000	1.0000
L60	45	PL1x4 Reinforcement	23.00 - 24.50	1.0000	1.0000
L60	63	CCI-SFP-060100	23.00 - 24.50	1.0000	1.0000
L60	64	CCI-SFP-060100	23.00 - 24.50	1.0000	1.0000
L60	66	CCI-SFP-060100	23.00 - 24.50	1.0000	1.0000
L60	68	CCI-SFP-045100	23.00 - 24.50	1.0000	1.0000
L61	1	FB-L98B-034-XXX(3/8)	22.75 - 23.00	1.0000	1.0000
L61	2	WR-VG86ST-BRD(3/4)	22.75 - 23.00	1.0000	1.0000
L61	4	7983A(ELLIPTICAL)	22.75 - 23.00	1.0000	1.0000
L61	9	CU12PSM9P6XXX(1-1/2)	22.75 - 23.00	1.0000	1.0000
L61	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	22.75 - 23.00	1.0000	1.0000
L61	23	Safety Line 3/8	22.75 - 23.00	1.0000	1.0000
L61	25	PL1.25x6.875 Reinforcement	22.75 - 23.00	1.0000	1.0000
L61	26	PL1.25x6.875 Reinforcement	22.75 - 23.00	1.0000	1.0000
L61	27	PL1.25x6.875 Reinforcement	22.75 - 23.00	1.0000	1.0000
L61	43	PL1x4 Reinforcement	22.75 - 23.00	1.0000	1.0000
L61	44	PL1x4 Reinforcement	22.75 - 23.00	1.0000	1.0000
L61	45	PL1x4 Reinforcement	22.75 - 23.00	1.0000	1.0000
L61	63	CCI-SFP-060100	22.75 - 23.00	1.0000	1.0000
L61	64	CCI-SFP-060100	22.75 - 23.00	1.0000	1.0000
L61	66	CCI-SFP-060100	22.75 - 23.00	1.0000	1.0000
L61	68	CCI-SFP-045100	22.75 - 23.00	1.0000	1.0000
L62	1	FB-L98B-034-XXX(3/8)	21.58 - 22.75	1.0000	1.0000
L62	2	WR-VG86ST-BRD(3/4)	21.58 - 22.75	1.0000	1.0000
L62	4	7983A(ELLIPTICAL)	21.58 - 22.75	1.0000	1.0000
L62	9	CU12PSM9P6XXX(1-1/2)	21.58 - 22.75	1.0000	1.0000
L62	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	21.58 - 22.75	1.0000	1.0000
L62	23	Safety Line 3/8	21.58 - 22.75	1.0000	1.0000
L62	25	PL1.25x6.875 Reinforcement	21.58 - 22.75	1.0000	1.0000
L62	26	PL1.25x6.875 Reinforcement	21.58 - 22.75	1.0000	1.0000
L62	27	PL1.25x6.875 Reinforcement	21.58 - 22.75	1.0000	1.0000
L62	43	PL1x4 Reinforcement	21.58 - 22.75	1.0000	1.0000
L62	44	PL1x4 Reinforcement	21.58 - 22.75	1.0000	1.0000
L62	45	PL1x4 Reinforcement	21.58 - 22.75	1.0000	1.0000
L62	63	CCI-SFP-060100	21.58 - 22.75	1.0000	1.0000

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Jayaraj B

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L62	64	CCI-SFP-060100	21.58 - 22.75	1.0000	1.0000
L62	66	CCI-SFP-060100	21.58 - 22.75	1.0000	1.0000
L62	68	CCI-SFP-045100	21.58 - 22.75	1.0000	1.0000
L63	1	FB-L98B-034-XXX(3/8)	21.33 - 21.58	1.0000	1.0000
L63	2	WR-VG86ST-BRD(3/4)	21.33 - 21.58	1.0000	1.0000
L63	4	7983A(ELLIPTICAL)	21.33 - 21.58	1.0000	1.0000
L63	9	CU12PSM9P6XXX(1-1/2)	21.33 - 21.58	1.0000	1.0000
L63	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	21.33 - 21.58	1.0000	1.0000
L63	23	Safety Line 3/8	21.33 - 21.58	1.0000	1.0000
L63	25	PL1.25x6.875 Reinforcement	21.33 - 21.58	1.0000	1.0000
L63	26	PL1.25x6.875 Reinforcement	21.33 - 21.58	1.0000	1.0000
L63	27	PL1.25x6.875 Reinforcement	21.33 - 21.58	1.0000	1.0000
L63	43	PL1x4 Reinforcement	21.33 - 21.58	1.0000	1.0000
L63	44	PL1x4 Reinforcement	21.33 - 21.58	1.0000	1.0000
L63	45	PL1x4 Reinforcement	21.33 - 21.58	1.0000	1.0000
L63	63	CCI-SFP-060100	21.33 - 21.58	1.0000	1.0000
L63	64	CCI-SFP-060100	21.33 - 21.58	1.0000	1.0000
L63	66	CCI-SFP-060100	21.33 - 21.58	1.0000	1.0000
L63	68	CCI-SFP-045100	21.33 - 21.58	1.0000	1.0000
L64	1	FB-L98B-034-XXX(3/8)	16.33 - 21.33	1.0000	1.0000
L64	2	WR-VG86ST-BRD(3/4)	16.33 - 21.33	1.0000	1.0000
L64	4	7983A(ELLIPTICAL)	16.33 - 21.33	1.0000	1.0000
L64	9	CU12PSM9P6XXX(1-1/2)	16.33 - 21.33	1.0000	1.0000
L64	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	16.33 - 21.33	1.0000	1.0000
L64	23	Safety Line 3/8	16.33 - 21.33	1.0000	1.0000
L64	25	PL1.25x6.875 Reinforcement	16.33 - 21.33	1.0000	1.0000
L64	26	PL1.25x6.875 Reinforcement	16.33 - 21.33	1.0000	1.0000
L64	27	PL1.25x6.875 Reinforcement	16.33 - 21.33	1.0000	1.0000
L64	28	PL1.25x6.875 Reinforcement	16.33 - 16.42	1.0000	1.0000
L64	29	PL1.25x6.875 Reinforcement	16.33 - 16.42	1.0000	1.0000
L64	43	PL1x4 Reinforcement	16.33 - 21.33	1.0000	1.0000
L64	44	PL1x4 Reinforcement	16.33 - 21.33	1.0000	1.0000
L64	45	PL1x4 Reinforcement	16.33 - 21.33	1.0000	1.0000
L64	63	CCI-SFP-060100	16.33 - 21.33	1.0000	1.0000
L64	64	CCI-SFP-060100	16.33 - 21.33	1.0000	1.0000
L64	66	CCI-SFP-060100	16.33 - 21.33	1.0000	1.0000
L64	68	CCI-SFP-045100	20.08 - 21.33	1.0000	1.0000
L65	1	FB-L98B-034-XXX(3/8)	12.92 - 16.33	1.0000	1.0000
L65	2	WR-VG86ST-BRD(3/4)	12.92 - 16.33	1.0000	1.0000
L65	4	7983A(ELLIPTICAL)	12.92 - 16.33	1.0000	1.0000
L65	9	CU12PSM9P6XXX(1-1/2)	12.92 - 16.33	1.0000	1.0000
L65	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	12.92 - 16.33	1.0000	1.0000
L65	23	Safety Line 3/8	12.92 - 16.33	1.0000	1.0000
L65	25	PL1.25x6.875 Reinforcement	12.92 - 16.33	1.0000	1.0000
L65	26	PL1.25x6.875 Reinforcement	12.92 - 16.33	1.0000	1.0000
L65	27	PL1.25x6.875 Reinforcement	12.92 - 16.33	1.0000	1.0000
L65	28	PL1.25x6.875 Reinforcement	12.92 - 16.33	1.0000	1.0000
L65	29	PL1.25x6.875 Reinforcement	12.92 - 16.33	1.0000	1.0000
L65	43	PL1x4 Reinforcement	12.92 - 16.33	1.0000	1.0000
L65	44	PL1x4 Reinforcement	12.92 - 16.33	1.0000	1.0000
L65	45	PL1x4 Reinforcement	12.92 - 16.33	1.0000	1.0000
L65	63	CCI-SFP-060100	12.92 - 16.33	1.0000	1.0000
L65	64	CCI-SFP-060100	12.92 - 16.33	1.0000	1.0000
L65	66	CCI-SFP-060100	12.92 - 16.33	1.0000	1.0000
L66	1	FB-L98B-034-XXX(3/8)	12.67 - 12.92	1.0000	1.0000
L66	2	WR-VG86ST-BRD(3/4)	12.67 - 12.92	1.0000	1.0000
L66	4	7983A(ELLIPTICAL)	12.67 - 12.92	1.0000	1.0000
L66	9	CU12PSM9P6XXX(1-1/2)	12.67 - 12.92	1.0000	1.0000
L66	18	MLC HYBRID 6X12	12.67 - 12.92	1.0000	1.0000

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L66	23	6AWGX6(1-1/2) Safety Line 3/8	12.67 - 12.92	1.0000	1.0000
L66	25	PL1.25x6.875 Reinforcement	12.67 - 12.92	1.0000	1.0000
L66	26	PL1.25x6.875 Reinforcement	12.67 - 12.92	1.0000	1.0000
L66	27	PL1.25x6.875 Reinforcement	12.67 - 12.92	1.0000	1.0000
L66	28	PL1.25x6.875 Reinforcement	12.67 - 12.92	1.0000	1.0000
L66	29	PL1.25x6.875 Reinforcement	12.67 - 12.92	1.0000	1.0000
L66	43	PL1x4 Reinforcement	12.67 - 12.92	1.0000	1.0000
L66	44	PL1x4 Reinforcement	12.67 - 12.92	1.0000	1.0000
L66	45	PL1x4 Reinforcement	12.67 - 12.92	1.0000	1.0000
L66	63	CCI-SFP-060100	12.67 - 12.92	1.0000	1.0000
L66	64	CCI-SFP-060100	12.67 - 12.92	1.0000	1.0000
L66	66	CCI-SFP-060100	12.67 - 12.92	1.0000	1.0000
L67	1	FB-L98B-034-XXX(3/8)	12.50 - 12.67	1.0000	1.0000
L67	2	WR-VG86ST-BRD(3/4)	12.50 - 12.67	1.0000	1.0000
L67	4	7983A(ELLIPTICAL)	12.50 - 12.67	1.0000	1.0000
L67	9	CU12PSM9P6XXX(1-1/2)	12.50 - 12.67	1.0000	1.0000
L67	18	MLC HYBRID 6X12	12.50 - 12.67	1.0000	1.0000
L67	23	6AWGX6(1-1/2) Safety Line 3/8	12.50 - 12.67	1.0000	1.0000
L67	25	PL1.25x6.875 Reinforcement	12.50 - 12.67	1.0000	1.0000
L67	26	PL1.25x6.875 Reinforcement	12.50 - 12.67	1.0000	1.0000
L67	27	PL1.25x6.875 Reinforcement	12.50 - 12.67	1.0000	1.0000
L67	28	PL1.25x6.875 Reinforcement	12.50 - 12.67	1.0000	1.0000
L67	29	PL1.25x6.875 Reinforcement	12.50 - 12.67	1.0000	1.0000
L67	43	PL1x4 Reinforcement	12.50 - 12.67	1.0000	1.0000
L67	44	PL1x4 Reinforcement	12.50 - 12.67	1.0000	1.0000
L67	45	PL1x4 Reinforcement	12.50 - 12.67	1.0000	1.0000
L67	63	CCI-SFP-060100	12.50 - 12.67	1.0000	1.0000
L67	64	CCI-SFP-060100	12.50 - 12.67	1.0000	1.0000
L67	66	CCI-SFP-060100	12.50 - 12.67	1.0000	1.0000
L68	1	FB-L98B-034-XXX(3/8)	12.25 - 12.50	1.0000	1.0000
L68	2	WR-VG86ST-BRD(3/4)	12.25 - 12.50	1.0000	1.0000
L68	4	7983A(ELLIPTICAL)	12.25 - 12.50	1.0000	1.0000
L68	9	CU12PSM9P6XXX(1-1/2)	12.25 - 12.50	1.0000	1.0000
L68	18	MLC HYBRID 6X12	12.25 - 12.50	1.0000	1.0000
L68	23	6AWGX6(1-1/2) Safety Line 3/8	12.25 - 12.50	1.0000	1.0000
L68	25	PL1.25x6.875 Reinforcement	12.25 - 12.50	1.0000	1.0000
L68	26	PL1.25x6.875 Reinforcement	12.25 - 12.50	1.0000	1.0000
L68	27	PL1.25x6.875 Reinforcement	12.25 - 12.50	1.0000	1.0000
L68	28	PL1.25x6.875 Reinforcement	12.25 - 12.50	1.0000	1.0000
L68	29	PL1.25x6.875 Reinforcement	12.25 - 12.50	1.0000	1.0000
L68	43	PL1x4 Reinforcement	12.25 - 12.50	1.0000	1.0000
L68	44	PL1x4 Reinforcement	12.25 - 12.50	1.0000	1.0000
L68	45	PL1x4 Reinforcement	12.25 - 12.50	1.0000	1.0000
L68	63	CCI-SFP-060100	12.25 - 12.50	1.0000	1.0000
L68	64	CCI-SFP-060100	12.25 - 12.50	1.0000	1.0000
L68	66	CCI-SFP-060100	12.25 - 12.50	1.0000	1.0000
L69	1	FB-L98B-034-XXX(3/8)	12.00 - 12.25	1.0000	1.0000
L69	2	WR-VG86ST-BRD(3/4)	12.00 - 12.25	1.0000	1.0000
L69	4	7983A(ELLIPTICAL)	12.00 - 12.25	1.0000	1.0000
L69	9	CU12PSM9P6XXX(1-1/2)	12.00 - 12.25	1.0000	1.0000
L69	18	MLC HYBRID 6X12	12.00 - 12.25	1.0000	1.0000
L69	23	6AWGX6(1-1/2) Safety Line 3/8	12.00 - 12.25	1.0000	1.0000
L69	25	PL1.25x6.875 Reinforcement	12.00 - 12.25	1.0000	1.0000
L69	26	PL1.25x6.875 Reinforcement	12.00 - 12.25	1.0000	1.0000
L69	27	PL1.25x6.875 Reinforcement	12.00 - 12.25	1.0000	1.0000
L69	28	PL1.25x6.875 Reinforcement	12.00 - 12.25	1.0000	1.0000
L69	29	PL1.25x6.875 Reinforcement	12.00 - 12.25	1.0000	1.0000
L69	43	PL1x4 Reinforcement	12.00 - 12.25	1.0000	1.0000

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Client
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Jayaraj B

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L69	44	PL1x4 Reinforcement	12.00 - 12.25	1.0000	1.0000
L69	45	PL1x4 Reinforcement	12.00 - 12.25	1.0000	1.0000
L69	63	CCI-SFP-060100	12.00 - 12.25	1.0000	1.0000
L69	64	CCI-SFP-060100	12.00 - 12.25	1.0000	1.0000
L69	66	CCI-SFP-060100	12.00 - 12.25	1.0000	1.0000
L70	1	FB-L98B-034-XXX(3/8)	11.75 - 12.00	1.0000	1.0000
L70	2	WR-VG86ST-BRD(3/4)	11.75 - 12.00	1.0000	1.0000
L70	4	7983A(ELLIPTICAL)	11.75 - 12.00	1.0000	1.0000
L70	9	CU12PSM9P6XXX(1-1/2)	11.75 - 12.00	1.0000	1.0000
L70	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	11.75 - 12.00	1.0000	1.0000
L70	23	Safety Line 3/8	11.75 - 12.00	1.0000	1.0000
L70	25	PL1.25x6.875 Reinforcement	11.75 - 12.00	1.0000	1.0000
L70	26	PL1.25x6.875 Reinforcement	11.75 - 12.00	1.0000	1.0000
L70	27	PL1.25x6.875 Reinforcement	11.75 - 12.00	1.0000	1.0000
L70	28	PL1.25x6.875 Reinforcement	11.75 - 12.00	1.0000	1.0000
L70	29	PL1.25x6.875 Reinforcement	11.75 - 12.00	1.0000	1.0000
L70	43	PL1x4 Reinforcement	11.75 - 12.00	1.0000	1.0000
L70	44	PL1x4 Reinforcement	11.75 - 12.00	1.0000	1.0000
L70	45	PL1x4 Reinforcement	11.75 - 12.00	1.0000	1.0000
L70	63	CCI-SFP-060100	11.75 - 12.00	1.0000	1.0000
L70	64	CCI-SFP-060100	11.75 - 12.00	1.0000	1.0000
L70	66	CCI-SFP-060100	11.75 - 12.00	1.0000	1.0000
L71	1	FB-L98B-034-XXX(3/8)	8.50 - 11.75	1.0000	1.0000
L71	2	WR-VG86ST-BRD(3/4)	8.50 - 11.75	1.0000	1.0000
L71	4	7983A(ELLIPTICAL)	8.50 - 11.75	1.0000	1.0000
L71	9	CU12PSM9P6XXX(1-1/2)	8.50 - 11.75	1.0000	1.0000
L71	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	8.50 - 11.75	1.0000	1.0000
L71	23	Safety Line 3/8	8.50 - 11.75	1.0000	1.0000
L71	25	PL1.25x6.875 Reinforcement	8.50 - 11.75	1.0000	1.0000
L71	26	PL1.25x6.875 Reinforcement	8.50 - 11.75	1.0000	1.0000
L71	27	PL1.25x6.875 Reinforcement	9.17 - 11.75	1.0000	1.0000
L71	28	PL1.25x6.875 Reinforcement	8.50 - 11.75	1.0000	1.0000
L71	29	PL1.25x6.875 Reinforcement	8.50 - 11.75	1.0000	1.0000
L71	43	PL1x4 Reinforcement	10.75 - 11.75	1.0000	1.0000
L71	44	PL1x4 Reinforcement	10.75 - 11.75	1.0000	1.0000
L71	45	PL1x4 Reinforcement	10.75 - 11.75	1.0000	1.0000
L71	59	Transition Stiffener 1x7	8.50 - 10.50	1.0000	1.0000
L71	60	Transition Stiffener 1x7	8.50 - 10.50	1.0000	1.0000
L71	61	Transition Stiffener 1x7	8.50 - 10.50	1.0000	1.0000
L71	63	CCI-SFP-060100	8.50 - 11.75	1.0000	1.0000
L71	64	CCI-SFP-060100	8.50 - 11.75	1.0000	1.0000
L71	66	CCI-SFP-060100	10.00 - 11.75	1.0000	1.0000
L72	1	FB-L98B-034-XXX(3/8)	8.25 - 8.50	1.0000	1.0000
L72	2	WR-VG86ST-BRD(3/4)	8.25 - 8.50	1.0000	1.0000
L72	4	7983A(ELLIPTICAL)	8.25 - 8.50	1.0000	1.0000
L72	9	CU12PSM9P6XXX(1-1/2)	8.25 - 8.50	1.0000	1.0000
L72	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	8.25 - 8.50	1.0000	1.0000
L72	23	Safety Line 3/8	8.25 - 8.50	1.0000	1.0000
L72	25	PL1.25x6.875 Reinforcement	8.25 - 8.50	1.0000	1.0000
L72	26	PL1.25x6.875 Reinforcement	8.25 - 8.50	1.0000	1.0000
L72	28	PL1.25x6.875 Reinforcement	8.25 - 8.50	1.0000	1.0000
L72	29	PL1.25x6.875 Reinforcement	8.25 - 8.50	1.0000	1.0000
L72	59	Transition Stiffener 1x7	8.25 - 8.50	1.0000	1.0000
L72	60	Transition Stiffener 1x7	8.25 - 8.50	1.0000	1.0000
L72	61	Transition Stiffener 1x7	8.25 - 8.50	1.0000	1.0000
L72	63	CCI-SFP-060100	8.25 - 8.50	1.0000	1.0000
L72	64	CCI-SFP-060100	8.25 - 8.50	1.0000	1.0000
L73	1	FB-L98B-034-XXX(3/8)	7.00 - 8.25	1.0000	1.0000
L73	2	WR-VG86ST-BRD(3/4)	7.00 - 8.25	1.0000	1.0000

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Client
 Crown Castle
 Designed by
 Jayaraj B

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
L73	4	7983A(ELLIPTICAL)	7.00 - 8.25	1.0000	1.0000
L73	9	CU12PSM9P6XXX(1-1/2)	7.00 - 8.25	1.0000	1.0000
L73	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	7.00 - 8.25	1.0000	1.0000
L73	23	Safety Line 3/8	7.00 - 8.25	1.0000	1.0000
L73	25	PL1.25x6.875 Reinforcement	7.00 - 8.25	1.0000	1.0000
L73	26	PL1.25x6.875 Reinforcement	7.00 - 8.25	1.0000	1.0000
L73	28	PL1.25x6.875 Reinforcement	7.00 - 8.25	1.0000	1.0000
L73	29	PL1.25x6.875 Reinforcement	7.00 - 8.25	1.0000	1.0000
L73	59	Transition Stiffener 1x7	7.00 - 8.25	1.0000	1.0000
L73	60	Transition Stiffener 1x7	7.00 - 8.25	1.0000	1.0000
L73	61	Transition Stiffener 1x7	7.00 - 8.25	1.0000	1.0000
L73	63	CCI-SFP-060100	7.00 - 8.25	1.0000	1.0000
L73	64	CCI-SFP-060100	7.00 - 8.25	1.0000	1.0000
L74	1	FB-L98B-034-XXX(3/8)	6.75 - 7.00	1.0000	1.0000
L74	2	WR-VG86ST-BRD(3/4)	6.75 - 7.00	1.0000	1.0000
L74	4	7983A(ELLIPTICAL)	6.75 - 7.00	1.0000	1.0000
L74	9	CU12PSM9P6XXX(1-1/2)	6.75 - 7.00	1.0000	1.0000
L74	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	6.75 - 7.00	1.0000	1.0000
L74	23	Safety Line 3/8	6.75 - 7.00	1.0000	1.0000
L74	25	PL1.25x6.875 Reinforcement	6.75 - 7.00	1.0000	1.0000
L74	26	PL1.25x6.875 Reinforcement	6.75 - 7.00	1.0000	1.0000
L74	28	PL1.25x6.875 Reinforcement	6.75 - 7.00	1.0000	1.0000
L74	29	PL1.25x6.875 Reinforcement	6.75 - 7.00	1.0000	1.0000
L74	59	Transition Stiffener 1x7	6.75 - 7.00	1.0000	1.0000
L74	60	Transition Stiffener 1x7	6.75 - 7.00	1.0000	1.0000
L74	61	Transition Stiffener 1x7	6.75 - 7.00	1.0000	1.0000
L74	63	CCI-SFP-060100	6.75 - 7.00	1.0000	1.0000
L74	64	CCI-SFP-060100	6.75 - 7.00	1.0000	1.0000
L75	1	FB-L98B-034-XXX(3/8)	1.75 - 6.75	1.0000	1.0000
L75	2	WR-VG86ST-BRD(3/4)	1.75 - 6.75	1.0000	1.0000
L75	4	7983A(ELLIPTICAL)	1.75 - 6.75	1.0000	1.0000
L75	9	CU12PSM9P6XXX(1-1/2)	1.75 - 6.75	1.0000	1.0000
L75	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	1.75 - 6.75	1.0000	1.0000
L75	23	Safety Line 3/8	1.75 - 6.75	1.0000	1.0000
L75	25	PL1.25x6.875 Reinforcement	1.75 - 6.75	1.0000	1.0000
L75	26	PL1.25x6.875 Reinforcement	1.75 - 6.75	1.0000	1.0000
L75	28	PL1.25x6.875 Reinforcement	1.75 - 6.75	1.0000	1.0000
L75	29	PL1.25x6.875 Reinforcement	1.75 - 6.75	1.0000	1.0000
L75	59	Transition Stiffener 1x7	1.75 - 6.75	1.0000	1.0000
L75	60	Transition Stiffener 1x7	1.75 - 6.75	1.0000	1.0000
L75	61	Transition Stiffener 1x7	1.75 - 6.75	1.0000	1.0000
L75	63	CCI-SFP-060100	5.00 - 6.75	1.0000	1.0000
L75	64	CCI-SFP-060100	5.00 - 6.75	1.0000	1.0000
L76	1	FB-L98B-034-XXX(3/8)	0.00 - 1.75	1.0000	1.0000
L76	2	WR-VG86ST-BRD(3/4)	0.00 - 1.75	1.0000	1.0000
L76	4	7983A(ELLIPTICAL)	0.00 - 1.75	1.0000	1.0000
L76	9	CU12PSM9P6XXX(1-1/2)	0.00 - 1.75	1.0000	1.0000
L76	18	MLC HYBRID 6X12 6AWGX6(1-1/2)	0.00 - 1.75	1.0000	1.0000
L76	23	Safety Line 3/8	0.00 - 1.75	1.0000	1.0000
L76	25	PL1.25x6.875 Reinforcement	0.00 - 1.75	1.0000	1.0000
L76	26	PL1.25x6.875 Reinforcement	0.00 - 1.75	1.0000	1.0000
L76	28	PL1.25x6.875 Reinforcement	0.00 - 1.75	1.0000	1.0000
L76	29	PL1.25x6.875 Reinforcement	0.00 - 1.75	1.0000	1.0000
L76	59	Transition Stiffener 1x7	0.00 - 1.75	1.0000	1.0000
L76	60	Transition Stiffener 1x7	0.00 - 1.75	1.0000	1.0000
L76	61	Transition Stiffener 1x7	0.00 - 1.75	1.0000	1.0000

tnxTower B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265	Job 79982.005.01 - WATERBURY, CT (BU# 876317)	Page 44 of 92
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Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L5	89	CCI-AFP-045100	124.25 - 125.42	Auto	0.1983
L5	90	CCI-AFP-045100	124.25 - 125.42	Auto	0.1983
L5	91	CCI-AFP-045100	124.25 - 125.42	Auto	0.1983
L6	89	CCI-AFP-045100	123.42 - 124.25	Auto	0.1865
L6	90	CCI-AFP-045100	123.42 - 124.25	Auto	0.1865
L6	91	CCI-AFP-045100	123.42 - 124.25	Auto	0.1865
L7	89	CCI-AFP-045100	123.17 - 123.42	Auto	0.3886
L7	90	CCI-AFP-045100	123.17 - 123.42	Auto	0.3886
L7	91	CCI-AFP-045100	123.17 - 123.42	Auto	0.3886
L8	89	CCI-AFP-045100	118.17 - 123.17	Auto	0.3429
L8	90	CCI-AFP-045100	118.17 - 123.17	Auto	0.3429
L8	91	CCI-AFP-045100	118.17 - 123.17	Auto	0.3429
L9	89	CCI-AFP-045100	113.17 - 118.17	Auto	0.2693
L9	90	CCI-AFP-045100	113.17 - 118.17	Auto	0.2693
L9	91	CCI-AFP-045100	113.17 - 118.17	Auto	0.2693
L10	89	CCI-AFP-045100	109.50 - 113.17	Auto	0.2110
L10	90	CCI-AFP-045100	109.50 - 113.17	Auto	0.2110
L10	91	CCI-AFP-045100	109.50 - 113.17	Auto	0.2110
L10	93	CCI-AFP-040075	109.50 - 111.00	Auto	0.0981
L10	95	CCI-AFP-040075	109.50 - 111.00	Auto	0.0981
L11	89	CCI-AFP-045100	109.25 - 109.50	Auto	0.2550
L11	90	CCI-AFP-045100	109.25 - 109.50	Auto	0.2550
L11	91	CCI-AFP-045100	109.25 - 109.50	Auto	0.2550
L11	93	CCI-AFP-040075	109.25 - 109.50	Auto	0.1619
L11	95	CCI-AFP-040075	109.25 - 109.50	Auto	0.1619
L12	55	PL1x4 Reinforcement	104.75 -	Auto	0.0956

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L12	56	PL1x4 Reinforcement	106.50 104.75 - 106.50	Auto	0.0956
L12	57	PL1x4 Reinforcement	104.75 - 106.50	Auto	0.0956
L12	87	CCI-AFP-05012520	104.75 - 105.33	Auto	0.2703
L12	89	CCI-AFP-045100	104.75 - 109.25	Auto	0.2122
L12	90	CCI-AFP-045100	104.75 - 109.25	Auto	0.2122
L12	91	CCI-AFP-045100	104.75 - 109.25	Auto	0.2122
L12	93	CCI-AFP-040075	104.75 - 109.25	Auto	0.1138
L12	95	CCI-AFP-040075	104.75 - 109.25	Auto	0.1138
L13	55	PL1x4 Reinforcement	104.50 - 104.75	Auto	0.2248
L13	56	PL1x4 Reinforcement	104.50 - 104.75	Auto	0.2248
L13	57	PL1x4 Reinforcement	104.50 - 104.75	Auto	0.2248
L13	87	CCI-AFP-05012520	104.50 - 104.75	Auto	0.3798
L13	89	CCI-AFP-045100	104.50 - 104.75	Auto	0.3109
L13	90	CCI-AFP-045100	104.50 - 104.75	Auto	0.3109
L13	91	CCI-AFP-045100	104.50 - 104.75	Auto	0.3109
L13	93	CCI-AFP-040075	104.50 - 104.75	Auto	0.2248
L13	95	CCI-AFP-040075	104.50 - 104.75	Auto	0.2248
L14	55	PL1x4 Reinforcement	102.42 - 104.50	Auto	0.2010
L14	56	PL1x4 Reinforcement	102.42 - 104.50	Auto	0.2010
L14	57	PL1x4 Reinforcement	102.42 - 104.50	Auto	0.2010
L14	87	CCI-AFP-05012520	102.42 - 104.50	Auto	0.3608
L14	89	CCI-AFP-045100	102.42 - 104.50	Auto	0.2897
L14	90	CCI-AFP-045100	102.42 - 104.50	Auto	0.2897
L14	91	CCI-AFP-045100	102.42 - 104.50	Auto	0.2897
L14	93	CCI-AFP-040075	102.42 - 104.50	Auto	0.2010
L14	95	CCI-AFP-040075	102.42 - 104.50	Auto	0.2010
L15	55	PL1x4 Reinforcement	102.17 - 102.42	Auto	0.0515
L15	56	PL1x4 Reinforcement	102.17 - 102.42	Auto	0.0515
L15	57	PL1x4 Reinforcement	102.17 - 102.42	Auto	0.0515
L15	87	CCI-AFP-05012520	102.17 - 102.42	Auto	0.2412

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L15	89	CCI-AFP-045100	102.17 - 102.42	Auto	0.1569
L15	90	CCI-AFP-045100	102.17 - 102.42	Auto	0.1569
L15	91	CCI-AFP-045100	102.17 - 102.42	Auto	0.1569
L15	93	CCI-AFP-040075	102.17 - 102.42	Auto	0.0515
L15	95	CCI-AFP-040075	102.17 - 102.42	Auto	0.0515
L16	39	PL1.25x3.625 Reinforcement	98.75 - 100.00	Auto	0.0000
L16	40	PL1.25x3.625 Reinforcement	98.75 - 100.00	Auto	0.0000
L16	41	PL1.25x3.625 Reinforcement	98.75 - 100.00	Auto	0.0000
L16	55	PL1x4 Reinforcement	98.75 - 102.17	Auto	0.0191
L16	56	PL1x4 Reinforcement	98.75 - 102.17	Auto	0.0191
L16	57	PL1x4 Reinforcement	98.75 - 102.17	Auto	0.0191
L16	82	CCI-SFP-040075	98.75 - 100.33	Auto	0.0071
L16	83	CCI-SFP-040075	98.75 - 100.33	Auto	0.0071
L16	87	CCI-AFP-05012520	98.75 - 102.17	Auto	0.2152
L16	89	CCI-AFP-045100	100.42 - 102.17	Auto	0.1377
L16	90	CCI-AFP-045100	100.42 - 102.17	Auto	0.1377
L16	91	CCI-AFP-045100	100.42 - 102.17	Auto	0.1377
L16	93	CCI-AFP-040075	98.75 - 102.17	Auto	0.0191
L16	95	CCI-AFP-040075	101.00 - 102.17	Auto	0.0338
L17	39	PL1.25x3.625 Reinforcement	98.50 - 98.75	Auto	0.1033
L17	40	PL1.25x3.625 Reinforcement	98.50 - 98.75	Auto	0.1033
L17	41	PL1.25x3.625 Reinforcement	98.50 - 98.75	Auto	0.1033
L17	55	PL1x4 Reinforcement	98.50 - 98.75	Auto	0.1874
L17	56	PL1x4 Reinforcement	98.50 - 98.75	Auto	0.1874
L17	57	PL1x4 Reinforcement	98.50 - 98.75	Auto	0.1874
L17	82	CCI-SFP-040075	98.50 - 98.75	Auto	0.1874
L17	83	CCI-SFP-040075	98.50 - 98.75	Auto	0.1874
L17	87	CCI-AFP-05012520	98.50 - 98.75	Auto	0.3499
L17	93	CCI-AFP-040075	98.50 - 98.75	Auto	0.1874
L18	39	PL1.25x3.625 Reinforcement	97.50 - 98.50	Auto	0.0942
L18	40	PL1.25x3.625 Reinforcement	97.50 - 98.50	Auto	0.0942
L18	41	PL1.25x3.625 Reinforcement	97.50 - 98.50	Auto	0.0942
L18	55	PL1x4 Reinforcement	97.50 - 98.50	Auto	0.1791
L18	56	PL1x4 Reinforcement	97.50 - 98.50	Auto	0.1791
L18	57	PL1x4 Reinforcement	97.50 - 98.50	Auto	0.1791
L18	82	CCI-SFP-040075	97.50 - 98.50	Auto	0.1791
L18	83	CCI-SFP-040075	97.50 - 98.50	Auto	0.1791
L18	87	CCI-AFP-05012520	97.50 - 98.50	Auto	0.3433
L18	93	CCI-AFP-040075	97.50 - 98.50	Auto	0.1791
L19	39	PL1.25x3.625 Reinforcement	97.25 - 97.50	Auto	0.0204
L19	40	PL1.25x3.625 Reinforcement	97.25 - 97.50	Auto	0.0204
L19	41	PL1.25x3.625 Reinforcement	97.25 - 97.50	Auto	0.0204
L19	55	PL1x4 Reinforcement	97.25 - 97.50	Auto	0.1122
L19	56	PL1x4 Reinforcement	97.25 - 97.50	Auto	0.1122
L19	57	PL1x4 Reinforcement	97.25 - 97.50	Auto	0.1122
L19	82	CCI-SFP-040075	97.25 - 97.50	Auto	0.1122
L19	83	CCI-SFP-040075	97.25 - 97.50	Auto	0.1122
L19	87	CCI-AFP-05012520	97.25 - 97.50	Auto	0.2898
L19	93	CCI-AFP-040075	97.25 - 97.50	Auto	0.1122
L20	39	PL1.25x3.625 Reinforcement	92.00 - 97.25	Auto	0.0006
L20	40	PL1.25x3.625 Reinforcement	92.00 - 97.25	Auto	0.0006
L20	41	PL1.25x3.625 Reinforcement	92.00 - 97.25	Auto	0.0006

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L20	55	PL1x4 Reinforcement	92.00 - 97.25	Auto	0.0675
L20	56	PL1x4 Reinforcement	92.00 - 97.25	Auto	0.0675
L20	57	PL1x4 Reinforcement	92.00 - 97.25	Auto	0.0675
L20	82	CCI-SFP-040075	92.00 - 97.25	Auto	0.0675
L20	83	CCI-SFP-040075	92.00 - 97.25	Auto	0.0675
L20	87	CCI-AFP-05012520	92.00 - 97.25	Auto	0.2540
L20	93	CCI-AFP-040075	96.00 - 97.25	Auto	0.0939
L21	39	PL1.25x3.625 Reinforcement	90.55 - 92.00	Auto	0.0009
L21	40	PL1.25x3.625 Reinforcement	90.55 - 92.00	Auto	0.0009
L21	41	PL1.25x3.625 Reinforcement	90.55 - 92.00	Auto	0.0009
L21	55	PL1x4 Reinforcement	90.55 - 92.00	Auto	0.0897
L21	56	PL1x4 Reinforcement	90.55 - 92.00	Auto	0.0897
L21	57	PL1x4 Reinforcement	90.55 - 92.00	Auto	0.0897
L21	82	CCI-SFP-040075	90.55 - 92.00	Auto	0.0897
L21	83	CCI-SFP-040075	90.55 - 92.00	Auto	0.0897
L21	87	CCI-AFP-05012520	90.55 - 92.00	Auto	0.2718
L22	39	PL1.25x3.625 Reinforcement	89.25 - 90.55	Auto	0.0000
L22	40	PL1.25x3.625 Reinforcement	89.25 - 90.55	Auto	0.0000
L22	41	PL1.25x3.625 Reinforcement	89.25 - 90.55	Auto	0.0000
L22	55	PL1x4 Reinforcement	89.25 - 90.55	Auto	0.0546
L22	56	PL1x4 Reinforcement	89.25 - 90.55	Auto	0.0546
L22	57	PL1x4 Reinforcement	89.25 - 90.55	Auto	0.0546
L22	82	CCI-SFP-040075	89.25 - 90.55	Auto	0.0546
L22	83	CCI-SFP-040075	89.25 - 90.55	Auto	0.0546
L22	85	CCI-SFP-040075	89.25 - 90.33	Auto	0.0532
L22	87	CCI-AFP-05012520	89.25 - 90.55	Auto	0.2437
L23	35	PL1.25x5.5 Reinforcement	89.00 - 89.25	Auto	0.4146
L23	36	PL1.25x5.5 Reinforcement	89.00 - 89.25	Auto	0.4146
L23	37	PL1.25x5.5 Reinforcement	89.00 - 89.25	Auto	0.4146
L23	55	PL1x4 Reinforcement	89.00 - 89.25	Auto	0.1950
L23	56	PL1x4 Reinforcement	89.00 - 89.25	Auto	0.1950
L23	57	PL1x4 Reinforcement	89.00 - 89.25	Auto	0.1950
L23	82	CCI-SFP-040075	89.00 - 89.25	Auto	0.1950
L23	83	CCI-SFP-040075	89.00 - 89.25	Auto	0.1950
L23	85	CCI-SFP-040075	89.00 - 89.25	Auto	0.1950
L23	87	CCI-AFP-05012520	89.00 - 89.25	Auto	0.3560
L24	35	PL1.25x5.5 Reinforcement	88.25 - 89.00	Auto	0.3975
L24	36	PL1.25x5.5 Reinforcement	88.25 - 89.00	Auto	0.3975
L24	37	PL1.25x5.5 Reinforcement	88.25 - 89.00	Auto	0.3975
L24	55	PL1x4 Reinforcement	88.25 - 89.00	Auto	0.1716
L24	56	PL1x4 Reinforcement	88.25 - 89.00	Auto	0.1716
L24	57	PL1x4 Reinforcement	88.25 - 89.00	Auto	0.1716
L24	82	CCI-SFP-040075	88.25 - 89.00	Auto	0.1716
L24	83	CCI-SFP-040075	88.25 - 89.00	Auto	0.1716
L24	85	CCI-SFP-040075	88.25 - 89.00	Auto	0.1716
L24	87	CCI-AFP-05012520	88.25 - 89.00	Auto	0.3373
L25	35	PL1.25x5.5 Reinforcement	88.00 - 88.25	Auto	0.2891
L25	36	PL1.25x5.5 Reinforcement	88.00 - 88.25	Auto	0.2891
L25	37	PL1.25x5.5 Reinforcement	88.00 - 88.25	Auto	0.2891
L25	55	PL1x4 Reinforcement	88.00 - 88.25	Auto	0.0226
L25	56	PL1x4 Reinforcement	88.00 - 88.25	Auto	0.0226
L25	57	PL1x4 Reinforcement	88.00 - 88.25	Auto	0.0226
L25	82	CCI-SFP-040075	88.00 - 88.25	Auto	0.0226
L25	83	CCI-SFP-040075	88.00 - 88.25	Auto	0.0226
L25	85	CCI-SFP-040075	88.00 - 88.25	Auto	0.0226
L25	87	CCI-AFP-05012520	88.00 - 88.25	Auto	0.2181
L26	35	PL1.25x5.5 Reinforcement	87.83 - 88.00	Auto	0.2871
L26	36	PL1.25x5.5 Reinforcement	87.83 - 88.00	Auto	0.2871
L26	37	PL1.25x5.5 Reinforcement	87.83 - 88.00	Auto	0.2871
L26	55	PL1x4 Reinforcement	87.83 - 88.00	Auto	0.0198
L26	56	PL1x4 Reinforcement	87.83 - 88.00	Auto	0.0198

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L26	57	PL1x4 Reinforcement	87.83 - 88.00	Auto	0.0198
L26	82	CCI-SFP-040075	87.83 - 88.00	Auto	0.0198
L26	83	CCI-SFP-040075	87.83 - 88.00	Auto	0.0198
L26	85	CCI-SFP-040075	87.83 - 88.00	Auto	0.0198
L26	87	CCI-AFP-05012520	87.83 - 88.00	Auto	0.2158
L27	35	PL1.25x5.5 Reinforcement	87.58 - 87.83	Auto	0.2425
L27	36	PL1.25x5.5 Reinforcement	87.58 - 87.83	Auto	0.2425
L27	37	PL1.25x5.5 Reinforcement	87.58 - 87.83	Auto	0.2425
L27	55	PL1x4 Reinforcement	87.58 - 87.83	Auto	0.0000
L27	56	PL1x4 Reinforcement	87.58 - 87.83	Auto	0.0000
L27	57	PL1x4 Reinforcement	87.58 - 87.83	Auto	0.0000
L27	82	CCI-SFP-040075	87.58 - 87.83	Auto	0.0000
L27	83	CCI-SFP-040075	87.58 - 87.83	Auto	0.0000
L27	85	CCI-SFP-040075	87.58 - 87.83	Auto	0.0000
L27	87	CCI-AFP-05012520	87.58 - 87.83	Auto	0.1667
L28	35	PL1.25x5.5 Reinforcement	82.58 - 87.58	Auto	0.2048
L28	36	PL1.25x5.5 Reinforcement	82.58 - 87.58	Auto	0.2048
L28	37	PL1.25x5.5 Reinforcement	82.58 - 87.58	Auto	0.2048
L28	55	PL1x4 Reinforcement	86.50 - 87.58	Auto	0.0000
L28	56	PL1x4 Reinforcement	86.50 - 87.58	Auto	0.0000
L28	57	PL1x4 Reinforcement	86.50 - 87.58	Auto	0.0000
L28	82	CCI-SFP-040075	82.58 - 87.58	Auto	0.0000
L28	83	CCI-SFP-040075	82.58 - 87.58	Auto	0.0000
L28	85	CCI-SFP-040075	82.58 - 87.58	Auto	0.0000
L28	87	CCI-AFP-05012520	85.33 - 87.58	Auto	0.1400
L29	35	PL1.25x5.5 Reinforcement	77.58 - 82.58	Auto	0.1441
L29	36	PL1.25x5.5 Reinforcement	77.58 - 82.58	Auto	0.1441
L29	37	PL1.25x5.5 Reinforcement	77.58 - 82.58	Auto	0.1441
L29	51	PL1x4 Reinforcement	77.58 - 78.75	Auto	0.0000
L29	52	PL1x4 Reinforcement	77.58 - 78.75	Auto	0.0000
L29	53	PL1x4 Reinforcement	77.58 - 78.75	Auto	0.0000
L29	82	CCI-SFP-040075	77.58 - 82.58	Auto	0.0000
L29	83	CCI-SFP-040075	77.58 - 82.58	Auto	0.0000
L29	85	CCI-SFP-040075	77.58 - 82.58	Auto	0.0000
L30	35	PL1.25x5.5 Reinforcement	77.00 - 77.58	Auto	0.1170
L30	36	PL1.25x5.5 Reinforcement	77.00 - 77.58	Auto	0.1170
L30	37	PL1.25x5.5 Reinforcement	77.00 - 77.58	Auto	0.1170
L30	51	PL1x4 Reinforcement	77.00 - 77.58	Auto	0.0000
L30	52	PL1x4 Reinforcement	77.00 - 77.58	Auto	0.0000
L30	53	PL1x4 Reinforcement	77.00 - 77.58	Auto	0.0000
L30	82	CCI-SFP-040075	77.00 - 77.58	Auto	0.0000
L30	83	CCI-SFP-040075	77.00 - 77.58	Auto	0.0000
L30	85	CCI-SFP-040075	77.00 - 77.58	Auto	0.0000
L31	35	PL1.25x5.5 Reinforcement	76.75 - 77.00	Auto	0.2105
L31	36	PL1.25x5.5 Reinforcement	76.75 - 77.00	Auto	0.2105
L31	37	PL1.25x5.5 Reinforcement	76.75 - 77.00	Auto	0.2105
L31	51	PL1x4 Reinforcement	76.75 - 77.00	Auto	0.0000
L31	52	PL1x4 Reinforcement	76.75 - 77.00	Auto	0.0000
L31	53	PL1x4 Reinforcement	76.75 - 77.00	Auto	0.0000
L31	82	CCI-SFP-040075	76.75 - 77.00	Auto	0.0000
L31	83	CCI-SFP-040075	76.75 - 77.00	Auto	0.0000
L31	85	CCI-SFP-040075	76.75 - 77.00	Auto	0.0000
L32	35	PL1.25x5.5 Reinforcement	76.33 - 76.75	Auto	0.2072
L32	36	PL1.25x5.5 Reinforcement	76.33 - 76.75	Auto	0.2072
L32	37	PL1.25x5.5 Reinforcement	76.33 - 76.75	Auto	0.2072
L32	51	PL1x4 Reinforcement	76.33 - 76.75	Auto	0.0000
L32	52	PL1x4 Reinforcement	76.33 - 76.75	Auto	0.0000
L32	53	PL1x4 Reinforcement	76.33 - 76.75	Auto	0.0000
L32	82	CCI-SFP-040075	76.33 - 76.75	Auto	0.0000
L32	83	CCI-SFP-040075	76.33 - 76.75	Auto	0.0000
L32	85	CCI-SFP-040075	76.33 - 76.75	Auto	0.0000

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L33	35	PL1.25x5.5 Reinforcement	76.08 - 76.33	Auto	0.2040
L33	36	PL1.25x5.5 Reinforcement	76.08 - 76.33	Auto	0.2040
L33	37	PL1.25x5.5 Reinforcement	76.08 - 76.33	Auto	0.2040
L33	51	PL1x4 Reinforcement	76.08 - 76.33	Auto	0.0000
L33	52	PL1x4 Reinforcement	76.08 - 76.33	Auto	0.0000
L33	53	PL1x4 Reinforcement	76.08 - 76.33	Auto	0.0000
L33	82	CCI-SFP-040075	76.08 - 76.33	Auto	0.0000
L33	83	CCI-SFP-040075	76.08 - 76.33	Auto	0.0000
L33	85	CCI-SFP-040075	76.08 - 76.33	Auto	0.0000
L34	35	PL1.25x5.5 Reinforcement	74.25 - 76.08	Auto	0.1817
L34	36	PL1.25x5.5 Reinforcement	74.25 - 76.08	Auto	0.1817
L34	37	PL1.25x5.5 Reinforcement	74.25 - 76.08	Auto	0.1817
L34	51	PL1x4 Reinforcement	74.25 - 76.08	Auto	0.0000
L34	52	PL1x4 Reinforcement	74.25 - 76.08	Auto	0.0000
L34	53	PL1x4 Reinforcement	74.25 - 76.08	Auto	0.0000
L34	77	CCI-SFP-045100	74.25 - 75.25	Auto	0.0000
L34	78	CCI-SFP-045100	74.25 - 75.25	Auto	0.0000
L34	80	CCI-SFP-040075	74.25 - 75.25	Auto	0.0000
L34	82	CCI-SFP-040075	75.33 - 76.08	Auto	0.0000
L34	83	CCI-SFP-040075	75.33 - 76.08	Auto	0.0000
L34	85	CCI-SFP-040075	75.33 - 76.08	Auto	0.0000
L35	35	PL1.25x5.5 Reinforcement	74.00 - 74.25	Auto	0.2142
L35	36	PL1.25x5.5 Reinforcement	74.00 - 74.25	Auto	0.2142
L35	37	PL1.25x5.5 Reinforcement	74.00 - 74.25	Auto	0.2142
L35	51	PL1x4 Reinforcement	74.00 - 74.25	Auto	0.0000
L35	52	PL1x4 Reinforcement	74.00 - 74.25	Auto	0.0000
L35	53	PL1x4 Reinforcement	74.00 - 74.25	Auto	0.0000
L35	77	CCI-SFP-045100	74.00 - 74.25	Auto	0.0396
L35	78	CCI-SFP-045100	74.00 - 74.25	Auto	0.0396
L35	80	CCI-SFP-040075	74.00 - 74.25	Auto	0.0000
L36	35	PL1.25x5.5 Reinforcement	73.75 - 74.00	Auto	0.2118
L36	36	PL1.25x5.5 Reinforcement	73.75 - 74.00	Auto	0.2118
L36	37	PL1.25x5.5 Reinforcement	73.75 - 74.00	Auto	0.2118
L36	51	PL1x4 Reinforcement	73.75 - 74.00	Auto	0.0000
L36	52	PL1x4 Reinforcement	73.75 - 74.00	Auto	0.0000
L36	53	PL1x4 Reinforcement	73.75 - 74.00	Auto	0.0000
L36	77	CCI-SFP-045100	73.75 - 74.00	Auto	0.0367
L36	78	CCI-SFP-045100	73.75 - 74.00	Auto	0.0367
L36	80	CCI-SFP-040075	73.75 - 74.00	Auto	0.0000
L37	35	PL1.25x5.5 Reinforcement	73.50 - 73.75	Auto	0.2216
L37	36	PL1.25x5.5 Reinforcement	73.50 - 73.75	Auto	0.2216
L37	37	PL1.25x5.5 Reinforcement	73.50 - 73.75	Auto	0.2216
L37	51	PL1x4 Reinforcement	73.50 - 73.75	Auto	0.0000
L37	52	PL1x4 Reinforcement	73.50 - 73.75	Auto	0.0000
L37	53	PL1x4 Reinforcement	73.50 - 73.75	Auto	0.0000
L37	77	CCI-SFP-045100	73.50 - 73.75	Auto	0.0486
L37	78	CCI-SFP-045100	73.50 - 73.75	Auto	0.0486
L37	80	CCI-SFP-040075	73.50 - 73.75	Auto	0.0000
L38	35	PL1.25x5.5 Reinforcement	68.50 - 73.50	Auto	0.1778
L38	36	PL1.25x5.5 Reinforcement	68.50 - 73.50	Auto	0.1778
L38	37	PL1.25x5.5 Reinforcement	68.50 - 73.50	Auto	0.1778
L38	51	PL1x4 Reinforcement	68.50 - 73.50	Auto	0.0000
L38	52	PL1x4 Reinforcement	68.50 - 73.50	Auto	0.0000
L38	53	PL1x4 Reinforcement	68.50 - 73.50	Auto	0.0000
L38	77	CCI-SFP-045100	68.50 - 73.50	Auto	0.0052
L38	78	CCI-SFP-045100	68.50 - 73.50	Auto	0.0052
L38	80	CCI-SFP-040075	68.50 - 73.50	Auto	0.0000
L39	35	PL1.25x5.5 Reinforcement	63.50 - 68.50	Auto	0.1171
L39	36	PL1.25x5.5 Reinforcement	63.50 - 68.50	Auto	0.1171
L39	37	PL1.25x5.5 Reinforcement	63.50 - 68.50	Auto	0.1171
L39	51	PL1x4 Reinforcement	63.50 - 68.50	Auto	0.0000

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L39	52	PL1x4 Reinforcement	63.50 - 68.50	Auto	0.0000
L39	53	PL1x4 Reinforcement	63.50 - 68.50	Auto	0.0000
L39	77	CCI-SFP-045100	63.50 - 68.50	Auto	0.0000
L39	78	CCI-SFP-045100	63.50 - 68.50	Auto	0.0000
L39	80	CCI-SFP-040075	63.50 - 68.50	Auto	0.0000
L40	35	PL1.25x5.5 Reinforcement	60.50 - 63.50	Auto	0.0661
L40	36	PL1.25x5.5 Reinforcement	60.50 - 63.50	Auto	0.0661
L40	37	PL1.25x5.5 Reinforcement	60.50 - 63.50	Auto	0.0661
L40	47	PL1x4 Reinforcement	60.50 - 62.25	Auto	0.0000
L40	48	PL1x4 Reinforcement	60.50 - 62.25	Auto	0.0000
L40	49	PL1x4 Reinforcement	60.50 - 62.25	Auto	0.0000
L40	51	PL1x4 Reinforcement	60.50 - 63.50	Auto	0.0000
L40	52	PL1x4 Reinforcement	60.50 - 63.50	Auto	0.0000
L40	53	PL1x4 Reinforcement	60.50 - 63.50	Auto	0.0000
L40	77	CCI-SFP-045100	60.50 - 63.50	Auto	0.0000
L40	78	CCI-SFP-045100	60.50 - 63.50	Auto	0.0000
L40	80	CCI-SFP-040075	60.50 - 63.50	Auto	0.0000
L41	35	PL1.25x5.5 Reinforcement	60.25 - 60.50	Auto	0.0504
L41	36	PL1.25x5.5 Reinforcement	60.25 - 60.50	Auto	0.0504
L41	37	PL1.25x5.5 Reinforcement	60.25 - 60.50	Auto	0.0504
L41	47	PL1x4 Reinforcement	60.25 - 60.50	Auto	0.0000
L41	48	PL1x4 Reinforcement	60.25 - 60.50	Auto	0.0000
L41	49	PL1x4 Reinforcement	60.25 - 60.50	Auto	0.0000
L41	51	PL1x4 Reinforcement	60.25 - 60.50	Auto	0.0000
L41	52	PL1x4 Reinforcement	60.25 - 60.50	Auto	0.0000
L41	53	PL1x4 Reinforcement	60.25 - 60.50	Auto	0.0000
L41	77	CCI-SFP-045100	60.25 - 60.50	Auto	0.0000
L41	78	CCI-SFP-045100	60.25 - 60.50	Auto	0.0000
L41	80	CCI-SFP-040075	60.25 - 60.50	Auto	0.0000
L42	35	PL1.25x5.5 Reinforcement	59.50 - 60.25	Auto	0.0455
L42	36	PL1.25x5.5 Reinforcement	59.50 - 60.25	Auto	0.0455
L42	37	PL1.25x5.5 Reinforcement	59.50 - 60.25	Auto	0.0455
L42	47	PL1x4 Reinforcement	59.50 - 60.25	Auto	0.0000
L42	48	PL1x4 Reinforcement	59.50 - 60.25	Auto	0.0000
L42	49	PL1x4 Reinforcement	59.50 - 60.25	Auto	0.0000
L42	51	PL1x4 Reinforcement	59.50 - 60.25	Auto	0.0000
L42	52	PL1x4 Reinforcement	59.50 - 60.25	Auto	0.0000
L42	53	PL1x4 Reinforcement	59.50 - 60.25	Auto	0.0000
L42	77	CCI-SFP-045100	59.50 - 60.25	Auto	0.0000
L42	78	CCI-SFP-045100	59.50 - 60.25	Auto	0.0000
L42	80	CCI-SFP-040075	59.50 - 60.25	Auto	0.0000
L43	31	PL1.25x6.625 Reinforcement	59.25 - 59.50	Auto	0.2289
L43	32	PL1.25x6.625 Reinforcement	59.25 - 59.50	Auto	0.2289
L43	33	PL1.25x6.625 Reinforcement	59.25 - 59.50	Auto	0.2289
L43	47	PL1x4 Reinforcement	59.25 - 59.50	Auto	0.0000
L43	48	PL1x4 Reinforcement	59.25 - 59.50	Auto	0.0000
L43	49	PL1x4 Reinforcement	59.25 - 59.50	Auto	0.0000
L43	51	PL1x4 Reinforcement	59.25 - 59.50	Auto	0.0000
L43	52	PL1x4 Reinforcement	59.25 - 59.50	Auto	0.0000
L43	53	PL1x4 Reinforcement	59.25 - 59.50	Auto	0.0000
L43	77	CCI-SFP-045100	59.25 - 59.50	Auto	0.0000
L43	78	CCI-SFP-045100	59.25 - 59.50	Auto	0.0000
L43	80	CCI-SFP-040075	59.25 - 59.50	Auto	0.0000
L44	31	PL1.25x6.625 Reinforcement	54.25 - 59.25	Auto	0.1926
L44	32	PL1.25x6.625 Reinforcement	54.25 - 59.25	Auto	0.1926
L44	33	PL1.25x6.625 Reinforcement	54.25 - 59.25	Auto	0.1926
L44	47	PL1x4 Reinforcement	54.25 - 59.25	Auto	0.0000
L44	48	PL1x4 Reinforcement	54.25 - 59.25	Auto	0.0000
L44	49	PL1x4 Reinforcement	54.25 - 59.25	Auto	0.0000
L44	51	PL1x4 Reinforcement	58.75 - 59.25	Auto	0.0000
L44	52	PL1x4 Reinforcement	58.75 - 59.25	Auto	0.0000

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L44	53	PL1x4 Reinforcement	58.75 - 59.25	Auto	0.0000
L44	77	CCI-SFP-045100	54.25 - 59.25	Auto	0.0000
L44	78	CCI-SFP-045100	54.25 - 59.25	Auto	0.0000
L44	80	CCI-SFP-040075	54.25 - 59.25	Auto	0.0000
L45	31	PL1.25x6.625 Reinforcement	45.80 - 54.25	Auto	0.1333
L45	32	PL1.25x6.625 Reinforcement	45.80 - 54.25	Auto	0.1333
L45	33	PL1.25x6.625 Reinforcement	45.80 - 54.25	Auto	0.1333
L45	47	PL1x4 Reinforcement	45.80 - 54.25	Auto	0.0000
L45	48	PL1x4 Reinforcement	45.80 - 54.25	Auto	0.0000
L45	49	PL1x4 Reinforcement	45.80 - 54.25	Auto	0.0000
L45	77	CCI-SFP-045100	45.80 - 54.25	Auto	0.0000
L45	78	CCI-SFP-045100	45.80 - 54.25	Auto	0.0000
L45	80	CCI-SFP-040075	45.80 - 54.25	Auto	0.0000
L46	31	PL1.25x6.625 Reinforcement	44.80 - 45.80	Auto	0.1157
L46	32	PL1.25x6.625 Reinforcement	44.80 - 45.80	Auto	0.1157
L46	33	PL1.25x6.625 Reinforcement	44.80 - 45.80	Auto	0.1157
L46	47	PL1x4 Reinforcement	44.80 - 45.80	Auto	0.0000
L46	48	PL1x4 Reinforcement	44.80 - 45.80	Auto	0.0000
L46	49	PL1x4 Reinforcement	44.80 - 45.80	Auto	0.0000
L46	72	CCI-SFP-045100	44.80 - 45.08	Auto	0.0000
L46	74	CCI-SFP-060100	44.80 - 45.17	Auto	0.0208
L46	75	CCI-SFP-060100	44.80 - 45.17	Auto	0.0208
L46	77	CCI-SFP-045100	45.25 - 45.80	Auto	0.0000
L46	78	CCI-SFP-045100	45.25 - 45.80	Auto	0.0000
L46	80	CCI-SFP-040075	45.25 - 45.80	Auto	0.0000
L47	31	PL1.25x6.625 Reinforcement	43.58 - 44.80	Auto	0.1069
L47	32	PL1.25x6.625 Reinforcement	43.58 - 44.80	Auto	0.1069
L47	33	PL1.25x6.625 Reinforcement	43.58 - 44.80	Auto	0.1069
L47	47	PL1x4 Reinforcement	43.58 - 44.80	Auto	0.0000
L47	48	PL1x4 Reinforcement	43.58 - 44.80	Auto	0.0000
L47	49	PL1x4 Reinforcement	43.58 - 44.80	Auto	0.0000
L47	72	CCI-SFP-045100	43.58 - 44.80	Auto	0.0000
L47	74	CCI-SFP-060100	43.58 - 44.80	Auto	0.0138
L47	75	CCI-SFP-060100	43.58 - 44.80	Auto	0.0138
L48	31	PL1.25x6.625 Reinforcement	43.33 - 43.58	Auto	0.1060
L48	32	PL1.25x6.625 Reinforcement	43.33 - 43.58	Auto	0.1060
L48	33	PL1.25x6.625 Reinforcement	43.33 - 43.58	Auto	0.1060
L48	47	PL1x4 Reinforcement	43.33 - 43.58	Auto	0.0000
L48	48	PL1x4 Reinforcement	43.33 - 43.58	Auto	0.0000
L48	49	PL1x4 Reinforcement	43.33 - 43.58	Auto	0.0000
L48	72	CCI-SFP-045100	43.33 - 43.58	Auto	0.0000
L48	74	CCI-SFP-060100	43.33 - 43.58	Auto	0.0129
L48	75	CCI-SFP-060100	43.33 - 43.58	Auto	0.0129
L49	31	PL1.25x6.625 Reinforcement	43.17 - 43.33	Auto	0.1044
L49	32	PL1.25x6.625 Reinforcement	43.17 - 43.33	Auto	0.1044
L49	33	PL1.25x6.625 Reinforcement	43.17 - 43.33	Auto	0.1044
L49	47	PL1x4 Reinforcement	43.17 - 43.33	Auto	0.0000
L49	48	PL1x4 Reinforcement	43.17 - 43.33	Auto	0.0000
L49	49	PL1x4 Reinforcement	43.17 - 43.33	Auto	0.0000
L49	72	CCI-SFP-045100	43.17 - 43.33	Auto	0.0000
L49	74	CCI-SFP-060100	43.17 - 43.33	Auto	0.0111
L49	75	CCI-SFP-060100	43.17 - 43.33	Auto	0.0111
L50	31	PL1.25x6.625 Reinforcement	42.92 - 43.17	Auto	0.1381
L50	32	PL1.25x6.625 Reinforcement	42.92 - 43.17	Auto	0.1381
L50	33	PL1.25x6.625 Reinforcement	42.92 - 43.17	Auto	0.1381
L50	47	PL1x4 Reinforcement	42.92 - 43.17	Auto	0.0000
L50	48	PL1x4 Reinforcement	42.92 - 43.17	Auto	0.0000
L50	49	PL1x4 Reinforcement	42.92 - 43.17	Auto	0.0000
L50	72	CCI-SFP-045100	42.92 - 43.17	Auto	0.0000
L50	74	CCI-SFP-060100	42.92 - 43.17	Auto	0.0483
L50	75	CCI-SFP-060100	42.92 - 43.17	Auto	0.0483

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L51	31	PL1.25x6.625 Reinforcement	39.00 - 42.92	Auto	0.1113
L51	32	PL1.25x6.625 Reinforcement	39.00 - 42.92	Auto	0.1113
L51	33	PL1.25x6.625 Reinforcement	39.00 - 42.92	Auto	0.1113
L51	45	PL1x4 Reinforcement	39.00 - 40.75	Auto	0.0000
L51	47	PL1x4 Reinforcement	39.00 - 42.92	Auto	0.0000
L51	48	PL1x4 Reinforcement	39.00 - 42.92	Auto	0.0000
L51	49	PL1x4 Reinforcement	39.00 - 42.92	Auto	0.0000
L51	72	CCI-SFP-045100	39.00 - 42.92	Auto	0.0000
L51	74	CCI-SFP-060100	39.00 - 42.92	Auto	0.0187
L51	75	CCI-SFP-060100	39.00 - 42.92	Auto	0.0187
L52	31	PL1.25x6.625 Reinforcement	38.75 - 39.00	Auto	0.1098
L52	32	PL1.25x6.625 Reinforcement	38.75 - 39.00	Auto	0.1098
L52	33	PL1.25x6.625 Reinforcement	38.75 - 39.00	Auto	0.1098
L52	45	PL1x4 Reinforcement	38.75 - 39.00	Auto	0.0000
L52	47	PL1x4 Reinforcement	38.75 - 39.00	Auto	0.0000
L52	48	PL1x4 Reinforcement	38.75 - 39.00	Auto	0.0000
L52	49	PL1x4 Reinforcement	38.75 - 39.00	Auto	0.0000
L52	72	CCI-SFP-045100	38.75 - 39.00	Auto	0.0000
L52	74	CCI-SFP-060100	38.75 - 39.00	Auto	0.0171
L52	75	CCI-SFP-060100	38.75 - 39.00	Auto	0.0171
L53	31	PL1.25x6.625 Reinforcement	37.17 - 38.75	Auto	0.0974
L53	32	PL1.25x6.625 Reinforcement	37.17 - 38.75	Auto	0.0974
L53	33	PL1.25x6.625 Reinforcement	37.17 - 38.75	Auto	0.0974
L53	45	PL1x4 Reinforcement	37.17 - 38.75	Auto	0.0000
L53	47	PL1x4 Reinforcement	37.17 - 38.75	Auto	0.0000
L53	48	PL1x4 Reinforcement	37.17 - 38.75	Auto	0.0000
L53	49	PL1x4 Reinforcement	37.17 - 38.75	Auto	0.0000
L53	72	CCI-SFP-045100	37.17 - 38.75	Auto	0.0000
L53	74	CCI-SFP-060100	37.17 - 38.75	Auto	0.0038
L53	75	CCI-SFP-060100	37.17 - 38.75	Auto	0.0038
L54	31	PL1.25x6.625 Reinforcement	36.92 - 37.17	Auto	0.0698
L54	32	PL1.25x6.625 Reinforcement	36.92 - 37.17	Auto	0.0698
L54	33	PL1.25x6.625 Reinforcement	36.92 - 37.17	Auto	0.0698
L54	45	PL1x4 Reinforcement	36.92 - 37.17	Auto	0.0000
L54	47	PL1x4 Reinforcement	36.92 - 37.17	Auto	0.0000
L54	48	PL1x4 Reinforcement	36.92 - 37.17	Auto	0.0000
L54	49	PL1x4 Reinforcement	36.92 - 37.17	Auto	0.0000
L54	72	CCI-SFP-045100	36.92 - 37.17	Auto	0.0000
L54	74	CCI-SFP-060100	36.92 - 37.17	Auto	0.0000
L54	75	CCI-SFP-060100	36.92 - 37.17	Auto	0.0000
L55	31	PL1.25x6.625 Reinforcement	34.00 - 36.92	Auto	0.0572
L55	32	PL1.25x6.625 Reinforcement	34.00 - 36.92	Auto	0.0572
L55	33	PL1.25x6.625 Reinforcement	34.00 - 36.92	Auto	0.0572
L55	43	PL1x4 Reinforcement	34.00 - 35.75	Auto	0.0000
L55	44	PL1x4 Reinforcement	34.00 - 35.75	Auto	0.0000
L55	45	PL1x4 Reinforcement	34.00 - 36.92	Auto	0.0000
L55	47	PL1x4 Reinforcement	34.00 - 36.92	Auto	0.0000
L55	48	PL1x4 Reinforcement	34.00 - 36.92	Auto	0.0000
L55	49	PL1x4 Reinforcement	34.00 - 36.92	Auto	0.0000
L55	68	CCI-SFP-045100	34.00 - 35.08	Auto	0.0000
L55	70	CCI-SFP-045100	34.00 - 35.08	Auto	0.0000
L55	72	CCI-SFP-045100	34.00 - 36.92	Auto	0.0000
L55	74	CCI-SFP-060100	35.17 - 36.92	Auto	0.0000
L55	75	CCI-SFP-060100	35.17 - 36.92	Auto	0.0000
L56	31	PL1.25x6.625 Reinforcement	33.75 - 34.00	Auto	0.0394
L56	32	PL1.25x6.625 Reinforcement	33.75 - 34.00	Auto	0.0394
L56	33	PL1.25x6.625 Reinforcement	33.75 - 34.00	Auto	0.0394
L56	43	PL1x4 Reinforcement	33.75 - 34.00	Auto	0.0000
L56	44	PL1x4 Reinforcement	33.75 - 34.00	Auto	0.0000
L56	45	PL1x4 Reinforcement	33.75 - 34.00	Auto	0.0000
L56	47	PL1x4 Reinforcement	33.75 - 34.00	Auto	0.0000

tnxTower

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L56	48	PL1x4 Reinforcement	33.75 - 34.00	Auto	0.0000
L56	49	PL1x4 Reinforcement	33.75 - 34.00	Auto	0.0000
L56	68	CCI-SFP-045100	33.75 - 34.00	Auto	0.0000
L56	70	CCI-SFP-045100	33.75 - 34.00	Auto	0.0000
L56	72	CCI-SFP-045100	33.75 - 34.00	Auto	0.0000
L57	31	PL1.25x6.625 Reinforcement	29.75 - 33.75	Auto	0.0174
L57	32	PL1.25x6.625 Reinforcement	29.75 - 33.75	Auto	0.0174
L57	33	PL1.25x6.625 Reinforcement	29.75 - 33.75	Auto	0.0174
L57	43	PL1x4 Reinforcement	29.75 - 33.75	Auto	0.0000
L57	44	PL1x4 Reinforcement	29.75 - 33.75	Auto	0.0000
L57	45	PL1x4 Reinforcement	29.75 - 33.75	Auto	0.0000
L57	47	PL1x4 Reinforcement	32.25 - 33.75	Auto	0.0000
L57	48	PL1x4 Reinforcement	32.25 - 33.75	Auto	0.0000
L57	49	PL1x4 Reinforcement	32.25 - 33.75	Auto	0.0000
L57	68	CCI-SFP-045100	29.75 - 33.75	Auto	0.0000
L57	70	CCI-SFP-045100	29.75 - 33.75	Auto	0.0000
L57	72	CCI-SFP-045100	29.75 - 33.75	Auto	0.0000
L58	25	PL1.25x6.875 Reinforcement	29.50 - 29.75	Auto	0.0367
L58	26	PL1.25x6.875 Reinforcement	29.50 - 29.75	Auto	0.0367
L58	27	PL1.25x6.875 Reinforcement	29.50 - 29.75	Auto	0.0367
L58	43	PL1x4 Reinforcement	29.50 - 29.75	Auto	0.0000
L58	44	PL1x4 Reinforcement	29.50 - 29.75	Auto	0.0000
L58	45	PL1x4 Reinforcement	29.50 - 29.75	Auto	0.0000
L58	68	CCI-SFP-045100	29.50 - 29.75	Auto	0.0000
L58	70	CCI-SFP-045100	29.50 - 29.75	Auto	0.0000
L58	72	CCI-SFP-045100	29.50 - 29.75	Auto	0.0000
L59	25	PL1.25x6.875 Reinforcement	24.50 - 29.50	Auto	0.0123
L59	26	PL1.25x6.875 Reinforcement	24.50 - 29.50	Auto	0.0123
L59	27	PL1.25x6.875 Reinforcement	24.50 - 29.50	Auto	0.0123
L59	43	PL1x4 Reinforcement	24.50 - 29.50	Auto	0.0000
L59	44	PL1x4 Reinforcement	24.50 - 29.50	Auto	0.0000
L59	45	PL1x4 Reinforcement	24.50 - 29.50	Auto	0.0000
L59	63	CCI-SFP-060100	24.50 - 25.00	Auto	0.0000
L59	64	CCI-SFP-060100	24.50 - 25.00	Auto	0.0000
L59	66	CCI-SFP-060100	24.50 - 25.00	Auto	0.0000
L59	68	CCI-SFP-045100	24.50 - 29.50	Auto	0.0000
L59	70	CCI-SFP-045100	25.08 - 29.50	Auto	0.0000
L59	72	CCI-SFP-045100	25.08 - 29.50	Auto	0.0000
L60	25	PL1.25x6.875 Reinforcement	23.00 - 24.50	Auto	0.0000
L60	26	PL1.25x6.875 Reinforcement	23.00 - 24.50	Auto	0.0000
L60	27	PL1.25x6.875 Reinforcement	23.00 - 24.50	Auto	0.0000
L60	43	PL1x4 Reinforcement	23.00 - 24.50	Auto	0.0000
L60	44	PL1x4 Reinforcement	23.00 - 24.50	Auto	0.0000
L60	45	PL1x4 Reinforcement	23.00 - 24.50	Auto	0.0000
L60	63	CCI-SFP-060100	23.00 - 24.50	Auto	0.0000
L60	64	CCI-SFP-060100	23.00 - 24.50	Auto	0.0000
L60	66	CCI-SFP-060100	23.00 - 24.50	Auto	0.0000
L60	68	CCI-SFP-045100	23.00 - 24.50	Auto	0.0000
L61	25	PL1.25x6.875 Reinforcement	22.75 - 23.00	Auto	0.0236
L61	26	PL1.25x6.875 Reinforcement	22.75 - 23.00	Auto	0.0236
L61	27	PL1.25x6.875 Reinforcement	22.75 - 23.00	Auto	0.0236
L61	43	PL1x4 Reinforcement	22.75 - 23.00	Auto	0.0000
L61	44	PL1x4 Reinforcement	22.75 - 23.00	Auto	0.0000
L61	45	PL1x4 Reinforcement	22.75 - 23.00	Auto	0.0000
L61	63	CCI-SFP-060100	22.75 - 23.00	Auto	0.0000
L61	64	CCI-SFP-060100	22.75 - 23.00	Auto	0.0000
L61	66	CCI-SFP-060100	22.75 - 23.00	Auto	0.0000
L61	68	CCI-SFP-045100	22.75 - 23.00	Auto	0.0000
L62	25	PL1.25x6.875 Reinforcement	21.58 - 22.75	Auto	0.0181
L62	26	PL1.25x6.875 Reinforcement	21.58 - 22.75	Auto	0.0181
L62	27	PL1.25x6.875 Reinforcement	21.58 - 22.75	Auto	0.0181

tnxTower

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L62	43	PL1x4 Reinforcement	21.58 - 22.75	Auto	0.0000
L62	44	PL1x4 Reinforcement	21.58 - 22.75	Auto	0.0000
L62	45	PL1x4 Reinforcement	21.58 - 22.75	Auto	0.0000
L62	63	CCI-SFP-060100	21.58 - 22.75	Auto	0.0000
L62	64	CCI-SFP-060100	21.58 - 22.75	Auto	0.0000
L62	66	CCI-SFP-060100	21.58 - 22.75	Auto	0.0000
L62	68	CCI-SFP-045100	21.58 - 22.75	Auto	0.0000
L63	25	PL1.25x6.875 Reinforcement	21.33 - 21.58	Auto	0.0000
L63	26	PL1.25x6.875 Reinforcement	21.33 - 21.58	Auto	0.0000
L63	27	PL1.25x6.875 Reinforcement	21.33 - 21.58	Auto	0.0000
L63	43	PL1x4 Reinforcement	21.33 - 21.58	Auto	0.0000
L63	44	PL1x4 Reinforcement	21.33 - 21.58	Auto	0.0000
L63	45	PL1x4 Reinforcement	21.33 - 21.58	Auto	0.0000
L63	63	CCI-SFP-060100	21.33 - 21.58	Auto	0.0000
L63	64	CCI-SFP-060100	21.33 - 21.58	Auto	0.0000
L63	66	CCI-SFP-060100	21.33 - 21.58	Auto	0.0000
L63	68	CCI-SFP-045100	21.33 - 21.58	Auto	0.0000
L64	25	PL1.25x6.875 Reinforcement	16.33 - 21.33	Auto	0.0000
L64	26	PL1.25x6.875 Reinforcement	16.33 - 21.33	Auto	0.0000
L64	27	PL1.25x6.875 Reinforcement	16.33 - 21.33	Auto	0.0000
L64	28	PL1.25x6.875 Reinforcement	16.33 - 16.42	Auto	0.0000
L64	29	PL1.25x6.875 Reinforcement	16.33 - 16.42	Auto	0.0000
L64	43	PL1x4 Reinforcement	16.33 - 21.33	Auto	0.0000
L64	44	PL1x4 Reinforcement	16.33 - 21.33	Auto	0.0000
L64	45	PL1x4 Reinforcement	16.33 - 21.33	Auto	0.0000
L64	63	CCI-SFP-060100	16.33 - 21.33	Auto	0.0000
L64	64	CCI-SFP-060100	16.33 - 21.33	Auto	0.0000
L64	66	CCI-SFP-060100	16.33 - 21.33	Auto	0.0000
L64	68	CCI-SFP-045100	20.08 - 21.33	Auto	0.0000
L65	25	PL1.25x6.875 Reinforcement	12.92 - 16.33	Auto	0.0000
L65	26	PL1.25x6.875 Reinforcement	12.92 - 16.33	Auto	0.0000
L65	27	PL1.25x6.875 Reinforcement	12.92 - 16.33	Auto	0.0000
L65	28	PL1.25x6.875 Reinforcement	12.92 - 16.33	Auto	0.0000
L65	29	PL1.25x6.875 Reinforcement	12.92 - 16.33	Auto	0.0000
L65	43	PL1x4 Reinforcement	12.92 - 16.33	Auto	0.0000
L65	44	PL1x4 Reinforcement	12.92 - 16.33	Auto	0.0000
L65	45	PL1x4 Reinforcement	12.92 - 16.33	Auto	0.0000
L65	63	CCI-SFP-060100	12.92 - 16.33	Auto	0.0000
L65	64	CCI-SFP-060100	12.92 - 16.33	Auto	0.0000
L65	66	CCI-SFP-060100	12.92 - 16.33	Auto	0.0000
L66	25	PL1.25x6.875 Reinforcement	12.67 - 12.92	Auto	0.0000
L66	26	PL1.25x6.875 Reinforcement	12.67 - 12.92	Auto	0.0000
L66	27	PL1.25x6.875 Reinforcement	12.67 - 12.92	Auto	0.0000
L66	28	PL1.25x6.875 Reinforcement	12.67 - 12.92	Auto	0.0000
L66	29	PL1.25x6.875 Reinforcement	12.67 - 12.92	Auto	0.0000
L66	43	PL1x4 Reinforcement	12.67 - 12.92	Auto	0.0000
L66	44	PL1x4 Reinforcement	12.67 - 12.92	Auto	0.0000
L66	45	PL1x4 Reinforcement	12.67 - 12.92	Auto	0.0000
L66	63	CCI-SFP-060100	12.67 - 12.92	Auto	0.0000
L66	64	CCI-SFP-060100	12.67 - 12.92	Auto	0.0000
L66	66	CCI-SFP-060100	12.67 - 12.92	Auto	0.0000
L67	25	PL1.25x6.875 Reinforcement	12.50 - 12.67	Auto	0.0000
L67	26	PL1.25x6.875 Reinforcement	12.50 - 12.67	Auto	0.0000
L67	27	PL1.25x6.875 Reinforcement	12.50 - 12.67	Auto	0.0000
L67	28	PL1.25x6.875 Reinforcement	12.50 - 12.67	Auto	0.0000
L67	29	PL1.25x6.875 Reinforcement	12.50 - 12.67	Auto	0.0000
L67	43	PL1x4 Reinforcement	12.50 - 12.67	Auto	0.0000
L67	44	PL1x4 Reinforcement	12.50 - 12.67	Auto	0.0000
L67	45	PL1x4 Reinforcement	12.50 - 12.67	Auto	0.0000
L67	63	CCI-SFP-060100	12.50 - 12.67	Auto	0.0000
L67	64	CCI-SFP-060100	12.50 - 12.67	Auto	0.0000

tnxTower

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Client
Crown Castle
Designed by
Jayaraj B

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L67	66	CCI-SFP-060100	12.50 - 12.67	Auto	0.0000
L68	25	PL1.25x6.875 Reinforcement	12.25 - 12.50	Auto	0.0000
L68	26	PL1.25x6.875 Reinforcement	12.25 - 12.50	Auto	0.0000
L68	27	PL1.25x6.875 Reinforcement	12.25 - 12.50	Auto	0.0000
L68	28	PL1.25x6.875 Reinforcement	12.25 - 12.50	Auto	0.0000
L68	29	PL1.25x6.875 Reinforcement	12.25 - 12.50	Auto	0.0000
L68	43	PL1x4 Reinforcement	12.25 - 12.50	Auto	0.0000
L68	44	PL1x4 Reinforcement	12.25 - 12.50	Auto	0.0000
L68	45	PL1x4 Reinforcement	12.25 - 12.50	Auto	0.0000
L68	63	CCI-SFP-060100	12.25 - 12.50	Auto	0.0000
L68	64	CCI-SFP-060100	12.25 - 12.50	Auto	0.0000
L68	66	CCI-SFP-060100	12.25 - 12.50	Auto	0.0000
L69	25	PL1.25x6.875 Reinforcement	12.00 - 12.25	Auto	0.0000
L69	26	PL1.25x6.875 Reinforcement	12.00 - 12.25	Auto	0.0000
L69	27	PL1.25x6.875 Reinforcement	12.00 - 12.25	Auto	0.0000
L69	28	PL1.25x6.875 Reinforcement	12.00 - 12.25	Auto	0.0000
L69	29	PL1.25x6.875 Reinforcement	12.00 - 12.25	Auto	0.0000
L69	43	PL1x4 Reinforcement	12.00 - 12.25	Auto	0.0000
L69	44	PL1x4 Reinforcement	12.00 - 12.25	Auto	0.0000
L69	45	PL1x4 Reinforcement	12.00 - 12.25	Auto	0.0000
L69	63	CCI-SFP-060100	12.00 - 12.25	Auto	0.0000
L69	64	CCI-SFP-060100	12.00 - 12.25	Auto	0.0000
L69	66	CCI-SFP-060100	12.00 - 12.25	Auto	0.0000
L70	25	PL1.25x6.875 Reinforcement	11.75 - 12.00	Auto	0.0000
L70	26	PL1.25x6.875 Reinforcement	11.75 - 12.00	Auto	0.0000
L70	27	PL1.25x6.875 Reinforcement	11.75 - 12.00	Auto	0.0000
L70	28	PL1.25x6.875 Reinforcement	11.75 - 12.00	Auto	0.0000
L70	29	PL1.25x6.875 Reinforcement	11.75 - 12.00	Auto	0.0000
L70	43	PL1x4 Reinforcement	11.75 - 12.00	Auto	0.0000
L70	44	PL1x4 Reinforcement	11.75 - 12.00	Auto	0.0000
L70	45	PL1x4 Reinforcement	11.75 - 12.00	Auto	0.0000
L70	63	CCI-SFP-060100	11.75 - 12.00	Auto	0.0000
L70	64	CCI-SFP-060100	11.75 - 12.00	Auto	0.0000
L70	66	CCI-SFP-060100	11.75 - 12.00	Auto	0.0000
L71	25	PL1.25x6.875 Reinforcement	8.50 - 11.75	Auto	0.0000
L71	26	PL1.25x6.875 Reinforcement	8.50 - 11.75	Auto	0.0000
L71	27	PL1.25x6.875 Reinforcement	9.17 - 11.75	Auto	0.0000
L71	28	PL1.25x6.875 Reinforcement	8.50 - 11.75	Auto	0.0000
L71	29	PL1.25x6.875 Reinforcement	8.50 - 11.75	Auto	0.0000
L71	43	PL1x4 Reinforcement	10.75 - 11.75	Auto	0.0000
L71	44	PL1x4 Reinforcement	10.75 - 11.75	Auto	0.0000
L71	45	PL1x4 Reinforcement	10.75 - 11.75	Auto	0.0000
L71	59	Transition Stiffener 1x7	8.50 - 10.50	Auto	0.0000
L71	60	Transition Stiffener 1x7	8.50 - 10.50	Auto	0.0000
L71	61	Transition Stiffener 1x7	8.50 - 10.50	Auto	0.0000
L71	63	CCI-SFP-060100	8.50 - 11.75	Auto	0.0000
L71	64	CCI-SFP-060100	8.50 - 11.75	Auto	0.0000
L71	66	CCI-SFP-060100	10.00 - 11.75	Auto	0.0000
L72	25	PL1.25x6.875 Reinforcement	8.25 - 8.50	Auto	0.0000
L72	26	PL1.25x6.875 Reinforcement	8.25 - 8.50	Auto	0.0000
L72	28	PL1.25x6.875 Reinforcement	8.25 - 8.50	Auto	0.0000
L72	29	PL1.25x6.875 Reinforcement	8.25 - 8.50	Auto	0.0000
L72	59	Transition Stiffener 1x7	8.25 - 8.50	Auto	0.0000
L72	60	Transition Stiffener 1x7	8.25 - 8.50	Auto	0.0000
L72	61	Transition Stiffener 1x7	8.25 - 8.50	Auto	0.0000
L72	63	CCI-SFP-060100	8.25 - 8.50	Auto	0.0000
L72	64	CCI-SFP-060100	8.25 - 8.50	Auto	0.0000
L73	25	PL1.25x6.875 Reinforcement	7.00 - 8.25	Auto	0.0000
L73	26	PL1.25x6.875 Reinforcement	7.00 - 8.25	Auto	0.0000
L73	28	PL1.25x6.875 Reinforcement	7.00 - 8.25	Auto	0.0000
L73	29	PL1.25x6.875 Reinforcement	7.00 - 8.25	Auto	0.0000

<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job 79982.005.01 - WATERBURY,CT (BU# 876317)</p>	<p>Page 56 of 92</p>
	<p>Project</p>	<p>Date 15:48:22 01/28/22</p>
	<p>Client Crown Castle</p>	<p>Designed by Jayaraj B</p>

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L73	59	Transition Stiffener 1x7	7.00 - 8.25	Auto	0.0000
L73	60	Transition Stiffener 1x7	7.00 - 8.25	Auto	0.0000
L73	61	Transition Stiffener 1x7	7.00 - 8.25	Auto	0.0000
L73	63	CCI-SFP-060100	7.00 - 8.25	Auto	0.0000
L73	64	CCI-SFP-060100	7.00 - 8.25	Auto	0.0000
L74	25	PL1.25x6.875 Reinforcement	6.75 - 7.00	Auto	0.0000
L74	26	PL1.25x6.875 Reinforcement	6.75 - 7.00	Auto	0.0000
L74	28	PL1.25x6.875 Reinforcement	6.75 - 7.00	Auto	0.0000
L74	29	PL1.25x6.875 Reinforcement	6.75 - 7.00	Auto	0.0000
L74	59	Transition Stiffener 1x7	6.75 - 7.00	Auto	0.0000
L74	60	Transition Stiffener 1x7	6.75 - 7.00	Auto	0.0000
L74	61	Transition Stiffener 1x7	6.75 - 7.00	Auto	0.0000
L74	63	CCI-SFP-060100	6.75 - 7.00	Auto	0.0000
L74	64	CCI-SFP-060100	6.75 - 7.00	Auto	0.0000
L75	25	PL1.25x6.875 Reinforcement	1.75 - 6.75	Auto	0.0000
L75	26	PL1.25x6.875 Reinforcement	1.75 - 6.75	Auto	0.0000
L75	28	PL1.25x6.875 Reinforcement	1.75 - 6.75	Auto	0.0000
L75	29	PL1.25x6.875 Reinforcement	1.75 - 6.75	Auto	0.0000
L75	59	Transition Stiffener 1x7	1.75 - 6.75	Auto	0.0000
L75	60	Transition Stiffener 1x7	1.75 - 6.75	Auto	0.0000
L75	61	Transition Stiffener 1x7	1.75 - 6.75	Auto	0.0000
L75	63	CCI-SFP-060100	5.00 - 6.75	Auto	0.0000
L75	64	CCI-SFP-060100	5.00 - 6.75	Auto	0.0000
L76	25	PL1.25x6.875 Reinforcement	0.00 - 1.75	Auto	0.0000
L76	26	PL1.25x6.875 Reinforcement	0.00 - 1.75	Auto	0.0000
L76	28	PL1.25x6.875 Reinforcement	0.00 - 1.75	Auto	0.0000
L76	29	PL1.25x6.875 Reinforcement	0.00 - 1.75	Auto	0.0000
L76	59	Transition Stiffener 1x7	0.00 - 1.75	Auto	0.0000
L76	60	Transition Stiffener 1x7	0.00 - 1.75	Auto	0.0000
L76	61	Transition Stiffener 1x7	0.00 - 1.75	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _{Front} ft ²	C _A A _{Side} ft ²	Weight K	
(2) EPBQ-654L8H8-L2 w/ Mount Pipe	A	From Leg	4.000	0.000	144.000	No Ice	14.860	6.250	0.119
			0.000			1/2" Ice	15.720	7.020	0.228
			-1.000			1" Ice	16.590	7.800	0.351
(2) EPBQ-654L8H8-L2 w/ Mount Pipe	B	From Leg	4.000	0.000	144.000	No Ice	14.860	6.250	0.119
			0.000			1/2" Ice	15.720	7.020	0.228
			-1.000			1" Ice	16.590	7.800	0.351
(2) EPBQ-654L8H8-L2 w/ Mount Pipe	C	From Leg	4.000	0.000	144.000	No Ice	14.860	6.250	0.119
			0.000			1/2" Ice	15.720	7.020	0.228
			-1.000			1" Ice	16.590	7.800	0.351
HPA65R-BU8A w/ Mount Pipe	A	From Leg	4.000	0.000	144.000	No Ice	8.100	6.940	0.087
			0.000			1/2" Ice	8.860	7.690	0.170
			-1.000			1" Ice	9.640	8.450	0.266
HPA65R-BU8A w/ Mount Pipe	B	From Leg	4.000	0.000	144.000	No Ice	8.100	6.940	0.087
			0.000			1/2" Ice	8.860	7.690	0.170

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Client	Crown Castle	Designed by
		Jayaraj B

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						
			Vert		°	ft	ft ²	ft ²	K	
			ft	ft						
			ft							
HPA65R-BU8A w/ Mount Pipe	C	From Leg	-1.000		0.000	144.000	1" Ice	9.640	8.450	0.266
			4.000				No Ice	8.100	6.940	0.087
			0.000				1/2" Ice	8.860	7.690	0.170
RRUS 4478 B14	A	From Leg	-1.000		0.000	144.000	1" Ice	9.640	8.450	0.266
			4.000				No Ice	1.843	1.059	0.060
			0.000				1/2" Ice	2.012	1.197	0.076
RRUS 4478 B14	B	From Leg	-1.000		0.000	144.000	1" Ice	2.190	1.342	0.094
			4.000				No Ice	1.843	1.059	0.060
			0.000				1/2" Ice	2.012	1.197	0.076
RRUS 4478 B14	C	From Leg	-1.000		0.000	144.000	1" Ice	2.190	1.342	0.094
			4.000				No Ice	1.843	1.059	0.060
			0.000				1/2" Ice	2.012	1.197	0.076
RADIO 4415 B30	A	From Leg	-1.000		0.000	144.000	1" Ice	2.190	1.342	0.094
			4.000				No Ice	1.643	0.639	0.043
			0.000				1/2" Ice	1.803	0.750	0.055
RADIO 4415 B30	B	From Leg	-1.000		0.000	144.000	1" Ice	1.971	0.867	0.069
			4.000				No Ice	1.643	0.639	0.043
			0.000				1/2" Ice	1.803	0.750	0.055
RADIO 4415 B30	C	From Leg	-1.000		0.000	144.000	1" Ice	1.971	0.867	0.069
			4.000				No Ice	1.643	0.639	0.043
			0.000				1/2" Ice	1.803	0.750	0.055
RRUS 4449 B5/B12	A	From Leg	-1.000		0.000	144.000	1" Ice	1.971	0.867	0.069
			4.000				No Ice	1.968	1.408	0.071
			0.000				1/2" Ice	2.144	1.564	0.090
RRUS 4449 B5/B12	B	From Leg	-1.000		0.000	144.000	1" Ice	2.328	1.727	0.111
			4.000				No Ice	1.968	1.408	0.071
			0.000				1/2" Ice	2.144	1.564	0.090
RRUS 4449 B5/B12	C	From Leg	-1.000		0.000	144.000	1" Ice	2.328	1.727	0.111
			4.000				No Ice	1.968	1.408	0.071
			0.000				1/2" Ice	2.144	1.564	0.090
RRUS 8843 B2/B66A	A	From Leg	-1.000		0.000	144.000	1" Ice	2.328	1.727	0.111
			4.000				No Ice	1.639	1.353	0.072
			0.000				1/2" Ice	1.799	1.500	0.090
RRUS 8843 B2/B66A	B	From Leg	-1.000		0.000	144.000	1" Ice	1.966	1.655	0.110
			4.000				No Ice	1.639	1.353	0.072
			0.000				1/2" Ice	1.799	1.500	0.090
RRUS 8843 B2/B66A	C	From Leg	-1.000		0.000	144.000	1" Ice	1.966	1.655	0.110
			4.000				No Ice	1.639	1.353	0.072
			0.000				1/2" Ice	1.799	1.500	0.090
DC6-48-60-18-8F	A	From Leg	-1.000		0.000	144.000	1" Ice	1.966	1.655	0.110
			4.000				No Ice	0.850	0.850	0.019
			0.000				1/2" Ice	1.356	1.356	0.036
DC6-48-60-18-8F	B	From Leg	-1.000		0.000	144.000	1" Ice	1.532	1.532	0.055
			4.000				No Ice	0.850	0.850	0.019
			0.000				1/2" Ice	1.356	1.356	0.036
DC6-48-60-18-8F	C	From Leg	-1.000		0.000	144.000	1" Ice	1.532	1.532	0.055
			4.000				No Ice	0.850	0.850	0.019
			0.000				1/2" Ice	1.356	1.356	0.036
(2) 8' x 2" Mount Pipe	A	From Leg	-1.000		0.000	144.000	1" Ice	1.900	1.900	0.029
			4.000				No Ice	1.900	1.900	0.029
			0.000				1/2" Ice	2.728	2.728	0.044
(2) 8' x 2" Mount Pipe	B	From Leg	-1.000		0.000	144.000	1" Ice	3.401	3.401	0.063
			4.000				No Ice	1.900	1.900	0.029
			0.000				1/2" Ice	2.728	2.728	0.044
(2) 8' x 2" Mount Pipe	C	From Leg	-1.000		0.000	144.000	1" Ice	3.401	3.401	0.063
			4.000				No Ice	1.900	1.900	0.029
			0.000				1/2" Ice	2.728	2.728	0.044

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		Jayaraj B	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
			ft	ft	°	ft	ft ²	ft ²	K
			-1.000						
F3P-12W	C	None			0.000	144.000	1" Ice 3.401	3.401	0.063
							No Ice 25.520	25.520	1.999
							1/2" Ice 31.740	31.740	2.599
							1" Ice 40.100	40.100	3.414
Miscellaneous [NA 507-1]	C	None			0.000	144.000	No Ice 4.560	4.560	0.245
							1/2" Ice 6.390	6.390	0.311
							1" Ice 8.180	8.180	0.402
*									
(2) APXVSP18-C-A20 w/ Mount Pipe	A	From Leg	4.000		0.000	130.000	No Ice 4.600	4.010	0.095
			0.000				1/2" Ice 5.050	4.450	0.160
			0.000				1" Ice 5.500	4.890	0.235
APXVSP18-C-A20 w/ Mount Pipe	B	From Leg	4.000		0.000	130.000	No Ice 4.600	4.010	0.095
			0.000				1/2" Ice 5.050	4.450	0.160
			0.000				1" Ice 5.500	4.890	0.235
APXVSP18-C-A20 w/ Mount Pipe	C	From Leg	4.000		0.000	130.000	No Ice 4.600	4.010	0.095
			0.000				1/2" Ice 5.050	4.450	0.160
			0.000				1" Ice 5.500	4.890	0.235
AAHC w/ Mount Pipe	A	From Leg	4.000		0.000	130.000	No Ice 4.409	2.691	0.115
			0.000				1/2" Ice 4.727	3.079	0.156
			0.000				1" Ice 5.055	3.486	0.202
(2) AAHC w/ Mount Pipe	B	From Leg	4.000		0.000	130.000	No Ice 4.409	2.691	0.115
			0.000				1/2" Ice 4.727	3.079	0.156
			0.000				1" Ice 5.055	3.486	0.202
(2) IBC1900HB-2	A	From Leg	4.000		0.000	130.000	No Ice 1.125	0.713	0.040
			0.000				1/2" Ice 1.270	0.837	0.049
			0.000				1" Ice 1.423	0.968	0.060
IBC1900HB-2	B	From Leg	4.000		0.000	130.000	No Ice 1.125	0.713	0.040
			0.000				1/2" Ice 1.270	0.837	0.049
			0.000				1" Ice 1.423	0.968	0.060
IBC1900HB-2	C	From Leg	4.000		0.000	130.000	No Ice 1.125	0.713	0.040
			0.000				1/2" Ice 1.270	0.837	0.049
			0.000				1" Ice 1.423	0.968	0.060
800 EXTERNAL NOTCH FILTER	A	From Leg	4.000		0.000	130.000	No Ice 0.660	0.321	0.011
			0.000				1/2" Ice 0.763	0.398	0.017
			0.000				1" Ice 0.873	0.483	0.024
800 EXTERNAL NOTCH FILTER	B	From Leg	4.000		0.000	130.000	No Ice 0.660	0.321	0.011
			0.000				1/2" Ice 0.763	0.398	0.017
			0.000				1" Ice 0.873	0.483	0.024
800 EXTERNAL NOTCH FILTER	C	From Leg	4.000		0.000	130.000	No Ice 0.660	0.321	0.011
			0.000				1/2" Ice 0.763	0.398	0.017
			0.000				1" Ice 0.873	0.483	0.024
(2) 1900MHZ RRH (65MHZ)	A	From Leg	4.000		0.000	130.000	No Ice 2.313	2.375	0.060
			0.000				1/2" Ice 2.517	2.581	0.084
			0.000				1" Ice 2.728	2.794	0.111
(2) 1900MHZ RRH (65MHZ)	B	From Leg	4.000		0.000	130.000	No Ice 2.313	2.375	0.060
			0.000				1/2" Ice 2.517	2.581	0.084
			0.000				1" Ice 2.728	2.794	0.111
(2) 1900MHZ RRH (65MHZ)	C	From Leg	4.000		0.000	130.000	No Ice 2.313	2.375	0.060
			0.000				1/2" Ice 2.517	2.581	0.084
			0.000				1" Ice 2.728	2.794	0.111
800MHZ RRH	A	From Leg	4.000		0.000	130.000	No Ice 2.134	1.773	0.053
			0.000				1/2" Ice 2.320	1.946	0.074
			0.000				1" Ice 2.512	2.127	0.098
800MHZ RRH	B	From Leg	4.000		0.000	130.000	No Ice 2.134	1.773	0.053
			0.000				1/2" Ice 2.320	1.946	0.074
			0.000				1" Ice 2.512	2.127	0.098
800MHZ RRH	C	From Leg	4.000		0.000	130.000	No Ice 2.134	1.773	0.053

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	Client		Crown Castle		Designed by		Jayaraj B	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Lateral					
			0.000						
			0.000			1/2" Ice	2.320	1.946	0.074
			0.000			1" Ice	2.512	2.127	0.098
(2) PD2DE-700/2700	A	From Leg	4.000	0.000	130.000	No Ice	0.114	0.114	0.001
			0.000			1/2" Ice	0.179	0.179	0.002
			0.000			1" Ice	0.250	0.250	0.004
(3) 6' x 2" Mount Pipe	A	From Leg	4.000	0.000	130.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
(3) 6' x 2" Mount Pipe	B	From Leg	4.000	0.000	130.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
(3) 6' x 2" Mount Pipe	C	From Leg	4.000	0.000	130.000	No Ice	1.425	1.425	0.022
			0.000			1/2" Ice	1.925	1.925	0.033
			0.000			1" Ice	2.294	2.294	0.048
(3) 5' x 2" Pipe Mount	A	From Leg	4.000	0.000	130.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			0.000			1" Ice	1.807	1.807	0.040
(3) 5' x 2" Pipe Mount	B	From Leg	4.000	0.000	130.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			0.000			1" Ice	1.807	1.807	0.040
(4) 5' x 2" Pipe Mount	C	From Leg	4.000	0.000	130.000	No Ice	1.188	1.188	0.018
			0.000			1/2" Ice	1.496	1.496	0.027
			0.000			1" Ice	1.807	1.807	0.040
Pipe Mount [PM 601-3]	C	None		0.000	130.000	No Ice	3.170	3.170	0.195
						1/2" Ice	3.790	3.790	0.232
						1" Ice	4.420	4.420	0.279
Platform Mount [LP 602-1]	C	None		0.000	130.000	No Ice	31.070	31.070	1.343
						1/2" Ice	34.820	34.820	1.967
						1" Ice	38.480	38.480	2.669
*									
MX08FRO665-21 w/ Mount Pipe	A	From Leg	4.000	0.000	120.000	No Ice	8.010	4.230	0.108
			0.000			1/2" Ice	8.520	4.690	0.194
			0.000			1" Ice	9.040	5.160	0.292
MX08FRO665-21 w/ Mount Pipe	B	From Leg	4.000	0.000	120.000	No Ice	8.010	4.230	0.108
			0.000			1/2" Ice	8.520	4.690	0.194
			0.000			1" Ice	9.040	5.160	0.292
MX08FRO665-21 w/ Mount Pipe	C	From Leg	4.000	0.000	120.000	No Ice	8.010	4.230	0.108
			0.000			1/2" Ice	8.520	4.690	0.194
			0.000			1" Ice	9.040	5.160	0.292
TA08025-B604	A	From Leg	4.000	0.000	120.000	No Ice	1.964	0.981	0.064
			0.000			1/2" Ice	2.138	1.112	0.081
			0.000			1" Ice	2.320	1.250	0.100
TA08025-B604	B	From Leg	4.000	0.000	120.000	No Ice	1.964	0.981	0.064
			0.000			1/2" Ice	2.138	1.112	0.081
			0.000			1" Ice	2.320	1.250	0.100
TA08025-B604	C	From Leg	4.000	0.000	120.000	No Ice	1.964	0.981	0.064
			0.000			1/2" Ice	2.138	1.112	0.081
			0.000			1" Ice	2.320	1.250	0.100
TA08025-B605	A	From Leg	4.000	0.000	120.000	No Ice	1.964	1.129	0.075
			0.000			1/2" Ice	2.138	1.267	0.093
			0.000			1" Ice	2.320	1.411	0.114
TA08025-B605	B	From Leg	4.000	0.000	120.000	No Ice	1.964	1.129	0.075
			0.000			1/2" Ice	2.138	1.267	0.093
			0.000			1" Ice	2.320	1.411	0.114
TA08025-B605	C	From Leg	4.000	0.000	120.000	No Ice	1.964	1.129	0.075
			0.000			1/2" Ice	2.138	1.267	0.093
			0.000			1" Ice	2.320	1.411	0.114

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	Client	Crown Castle	Designed by	Jayaraj B

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz Lateral	Vert					
RDIDC-9181-PF-48	A	From Leg	4.000	0.000	0.000	120.000	No Ice 2.012	1.168	0.022
			0.000				1/2" Ice 2.189	1.311	0.040
			0.000				1" Ice 2.373	1.461	0.060
(2) 8' x 2" Mount Pipe	A	From Leg	4.000	0.000	0.000	120.000	No Ice 1.900	1.900	0.029
			0.000				1/2" Ice 2.728	2.728	0.044
			0.000				1" Ice 3.401	3.401	0.063
(2) 8' x 2" Mount Pipe	B	From Leg	4.000	0.000	0.000	120.000	No Ice 1.900	1.900	0.029
			0.000				1/2" Ice 2.728	2.728	0.044
			0.000				1" Ice 3.401	3.401	0.063
(2) 8' x 2" Mount Pipe	C	From Leg	4.000	0.000	0.000	120.000	No Ice 1.900	1.900	0.029
			0.000				1/2" Ice 2.728	2.728	0.044
			0.000				1" Ice 3.401	3.401	0.063
Commscope MC-PK8-DSH	C	None		0.000	0.000	120.000	No Ice 34.240	34.240	1.749
							1/2" Ice 62.950	62.950	2.099
							1" Ice 91.660	91.660	2.450
*									
SBNHH-1D65B w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	110.000	No Ice 4.090	3.300	0.066
			0.000				1/2" Ice 4.490	3.680	0.130
			0.000				1" Ice 4.890	4.070	0.204
SBNHH-1D65B w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	110.000	No Ice 4.090	3.300	0.066
			0.000				1/2" Ice 4.490	3.680	0.130
			0.000				1" Ice 4.890	4.070	0.204
SBNHH-1D65B w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	110.000	No Ice 4.090	3.300	0.066
			0.000				1/2" Ice 4.490	3.680	0.130
			0.000				1" Ice 4.890	4.070	0.204
SBNHH-1D65B	A	From Leg	4.000	0.000	0.000	110.000	No Ice 4.160	2.490	0.041
			0.000				1/2" Ice 4.570	2.880	0.091
			0.000				1" Ice 4.990	3.270	0.148
SBNHH-1D65B	B	From Leg	4.000	0.000	0.000	110.000	No Ice 4.160	2.490	0.041
			0.000				1/2" Ice 4.570	2.880	0.091
			0.000				1" Ice 4.990	3.270	0.148
SBNHH-1D65B	C	From Leg	4.000	0.000	0.000	110.000	No Ice 4.160	2.490	0.041
			0.000				1/2" Ice 4.570	2.880	0.091
			0.000				1" Ice 4.990	3.270	0.148
BXA-80063/4CF w/ Mount Pipe	A	From Leg	4.000	0.000	0.000	110.000	No Ice 4.830	3.650	0.028
			0.000				1/2" Ice 5.350	4.140	0.065
			0.000				1" Ice 5.880	4.640	0.109
BXA-80063/4CF w/ Mount Pipe	B	From Leg	4.000	0.000	0.000	110.000	No Ice 4.830	3.650	0.028
			0.000				1/2" Ice 5.350	4.140	0.065
			0.000				1" Ice 5.880	4.640	0.109
BXA-80063/4CF w/ Mount Pipe	C	From Leg	4.000	0.000	0.000	110.000	No Ice 4.830	3.650	0.028
			0.000				1/2" Ice 5.350	4.140	0.065
			0.000				1" Ice 5.880	4.640	0.109
BULLET III	C	From Leg	4.000	0.000	0.000	110.000	No Ice 0.066	0.066	0.000
			0.000				1/2" Ice 0.101	0.101	0.002
			3.000				1" Ice 0.144	0.144	0.003
RFV01U-D1A	A	From Leg	4.000	0.000	0.000	110.000	No Ice 1.875	1.250	0.084
			0.000				1/2" Ice 2.045	1.393	0.103
			0.000				1" Ice 2.223	1.543	0.124
RFV01U-D1A	B	From Leg	4.000	0.000	0.000	110.000	No Ice 1.875	1.250	0.084
			0.000				1/2" Ice 2.045	1.393	0.103
			0.000				1" Ice 2.223	1.543	0.124
RFV01U-D1A	C	From Leg	4.000	0.000	0.000	110.000	No Ice 1.875	1.250	0.084
			0.000				1/2" Ice 2.045	1.393	0.103
			0.000				1" Ice 2.223	1.543	0.124
RFV01U-D2A	A	From Leg	4.000	0.000	0.000	110.000	No Ice 1.875	1.013	0.070
			0.000				1/2" Ice 2.045	1.145	0.087

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	Project		Date
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	Client	Designed by	
	Crown Castle	Jayaraj B	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						
			Vert							
			ft	ft	°	ft	ft ²	ft ²	K	
			ft							
RFV01U-D2A	B	From Leg	0.000		0.000	110.000	1" Ice	2.223	1.284	0.106
			4.000				No Ice	1.875	1.013	0.070
			0.000				1/2" Ice	2.045	1.145	0.087
RFV01U-D2A	C	From Leg	0.000		0.000	110.000	1" Ice	2.223	1.284	0.106
			4.000				No Ice	1.875	1.013	0.070
			0.000				1/2" Ice	2.045	1.145	0.087
RVZDC-6627-PF-48	C	From Leg	0.000		0.000	110.000	1" Ice	2.223	1.284	0.106
			4.000				No Ice	3.792	2.514	0.032
			0.000				1/2" Ice	4.044	2.727	0.063
MT6407-77A w/ Mount Pipe	A	From Leg	0.000		0.000	110.000	1" Ice	4.303	2.947	0.099
			4.000				No Ice	4.907	2.682	0.096
			0.000				1/2" Ice	5.256	3.145	0.136
MT6407-77A w/ Mount Pipe	B	From Leg	0.000		0.000	110.000	1" Ice	5.615	3.624	0.180
			4.000				No Ice	4.907	2.682	0.096
			0.000				1/2" Ice	5.256	3.145	0.136
MT6407-77A w/ Mount Pipe	C	From Leg	0.000		0.000	110.000	1" Ice	5.615	3.624	0.180
			4.000				No Ice	4.907	2.682	0.096
			0.000				1/2" Ice	5.256	3.145	0.136
(3) 3' x 2" Pipe Mount	A	From Leg	0.000		0.000	110.000	1" Ice	5.615	3.624	0.180
			4.000				No Ice	0.583	0.583	0.011
			0.000				1/2" Ice	0.770	0.770	0.017
(3) 3' x 2" Pipe Mount	B	From Leg	0.000		0.000	110.000	1" Ice	0.967	0.967	0.024
			4.000				No Ice	0.583	0.583	0.011
			0.000				1/2" Ice	0.770	0.770	0.017
(3) 3' x 2" Pipe Mount	C	From Leg	0.000		0.000	110.000	1" Ice	0.967	0.967	0.024
			4.000				No Ice	0.583	0.583	0.011
			0.000				1/2" Ice	0.770	0.770	0.017
6' x 2" Mount Pipe	A	From Leg	0.000		0.000	110.000	1" Ice	0.967	0.967	0.024
			4.000				No Ice	1.425	1.425	0.022
			0.000				1/2" Ice	1.925	1.925	0.033
6' x 2" Mount Pipe	B	From Leg	0.000		0.000	110.000	1" Ice	2.294	2.294	0.048
			4.000				No Ice	1.425	1.425	0.022
			0.000				1/2" Ice	1.925	1.925	0.033
6' x 2" Mount Pipe	C	From Leg	0.000		0.000	110.000	1" Ice	2.294	2.294	0.048
			4.000				No Ice	1.425	1.425	0.022
			0.000				1/2" Ice	1.925	1.925	0.033
Side Arm Mount [SO 102-3]	C	None	0.000		0.000	110.000	1" Ice	2.294	2.294	0.048
							No Ice	0.000	3.600	0.075
							1/2" Ice	0.000	4.180	0.105
Mount Reinforcement Specifications	C	None			0.000	110.000	1" Ice	0.000	4.750	0.135
							No Ice	28.630	28.630	0.280
							1/2" Ice	37.310	37.310	0.670
Platform Mount [LP 602-1]	C	None			0.000	110.000	1" Ice	45.800	45.800	0.940
							No Ice	31.070	31.070	1.343
							1/2" Ice	34.820	34.820	1.967
*	A	From Leg			0.000	100.000	1" Ice	38.480	38.480	2.669
							No Ice	14.690	6.870	0.186
							1/2" Ice	15.460	7.550	0.315
APXVAARR24_43-U-NA20 w/ Mount Pipe	B	From Leg	1.000		0.000	100.000	1" Ice	16.230	8.250	0.458
			4.000				No Ice	14.690	6.870	0.186
			0.000				1/2" Ice	15.460	7.550	0.315
APXVAARR24_43-U-NA20 w/ Mount Pipe	C	From Leg	1.000		0.000	100.000	1" Ice	16.230	8.250	0.458
			4.000				No Ice	14.690	6.870	0.186
			0.000				1/2" Ice	15.460	7.550	0.315
AIR 21 B2A/B4P w/ Mount	A	From Leg	1.000		0.000	100.000	1" Ice	16.230	8.250	0.458
			4.000				No Ice	3.140	2.580	0.103

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Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz Lateral ft	Vert ft					
Pipe			0.000						
			1.000			1/2" Ice	3.450	2.880	0.154
			1.000			1" Ice	3.760	3.180	0.214
AIR 21 B2A/B4P w/ Mount Pipe	B	From Leg	4.000	0.000	100.000	No Ice	3.140	2.580	0.103
			0.000			1/2" Ice	3.450	2.880	0.154
			1.000			1" Ice	3.760	3.180	0.214
AIR 21 B2A/B4P w/ Mount Pipe	C	From Leg	4.000	0.000	100.000	No Ice	3.140	2.580	0.103
			0.000			1/2" Ice	3.450	2.880	0.154
			1.000			1" Ice	3.760	3.180	0.214
AIR -32 B2A/B66AA w/ Mount Pipe	A	From Leg	4.000	0.000	100.000	No Ice	3.760	3.150	0.194
			0.000			1/2" Ice	4.120	3.490	0.252
			1.000			1" Ice	4.480	3.840	0.320
AIR -32 B2A/B66AA w/ Mount Pipe	B	From Leg	4.000	0.000	100.000	No Ice	3.760	3.150	0.194
			0.000			1/2" Ice	4.120	3.490	0.252
			1.000			1" Ice	4.480	3.840	0.320
AIR -32 B2A/B66AA w/ Mount Pipe	C	From Leg	4.000	0.000	100.000	No Ice	3.760	3.150	0.194
			0.000			1/2" Ice	4.120	3.490	0.252
			1.000			1" Ice	4.480	3.840	0.320
ATMAA1412D-1A20	A	From Leg	4.000	0.000	100.000	No Ice	0.407	1.000	0.013
			0.000			1/2" Ice	0.497	1.126	0.021
			1.000			1" Ice	0.593	1.259	0.030
ATMAA1412D-1A20	B	From Leg	4.000	0.000	100.000	No Ice	0.407	1.000	0.013
			0.000			1/2" Ice	0.497	1.126	0.021
			1.000			1" Ice	0.593	1.259	0.030
ATMAA1412D-1A20	C	From Leg	4.000	0.000	100.000	No Ice	0.407	1.000	0.013
			0.000			1/2" Ice	0.497	1.126	0.021
			1.000			1" Ice	0.593	1.259	0.030
RADIO 4449 B12/B71	A	From Leg	4.000	0.000	100.000	No Ice	1.650	1.163	0.074
			0.000			1/2" Ice	1.810	1.301	0.090
			3.000			1" Ice	1.978	1.447	0.109
RADIO 4449 B12/B71	B	From Leg	4.000	0.000	100.000	No Ice	1.650	1.163	0.074
			0.000			1/2" Ice	1.810	1.301	0.090
			3.000			1" Ice	1.978	1.447	0.109
RADIO 4449 B12/B71	C	From Leg	4.000	0.000	100.000	No Ice	1.650	1.163	0.074
			0.000			1/2" Ice	1.810	1.301	0.090
			3.000			1" Ice	1.978	1.447	0.109
Platform Mount [LP 303-1]	C	None		0.000	100.000	No Ice	14.690	14.690	1.250
						1/2" Ice	18.010	18.010	1.569
						1" Ice	21.340	21.340	1.942
*									
KS24019-L112A	C	From Leg	4.000	0.000	50.000	No Ice	0.141	0.141	0.005
			0.000			1/2" Ice	0.198	0.198	0.007
			1.000			1" Ice	0.262	0.262	0.009
Side Arm Mount [SO 701-1]	C	From Leg	2.000	0.000	50.000	No Ice	0.850	1.670	0.065
			0.000			1/2" Ice	1.140	2.340	0.079
			0.000			1" Ice	1.430	3.010	0.093
*									
*									
*									

Dishes

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Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K	
VHLP2-23	A	Paraboloid w/Shroud (HP)	From Leg	4.000 0.000 3.000	0.000		130.000	2.175	No Ice 1/2" Ice 1" Ice	3.715 4.006 4.296	0.031 0.052 0.072
VHLP2-23	B	Paraboloid w/Shroud (HP)	From Leg	4.000 0.000 3.000	-50.000		130.000	2.175	No Ice 1/2" Ice 1" Ice	3.715 4.006 4.296	0.031 0.052 0.072
VHLP2-18	C	Paraboloid w/Shroud (HP)	From Leg	4.000 0.000 3.000	-60.000		130.000	2.175	No Ice 1/2" Ice 1" Ice	3.715 4.006 4.296	0.031 0.052 0.072
	*										
	*										
	*										

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

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Comb. No.	Description
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	144.25 - 139.25	Pole	Max Tension	21	0.000	-0.000	-0.000
			Max. Compression	26	-9.623	-0.062	0.045
			Max. Mx	8	-4.468	-24.052	0.013
			Max. My	2	-4.464	-0.023	24.062
			Max. Vy	8	5.955	-24.052	0.013
			Max. Vx	2	-5.959	-0.023	24.062
			Max. Torque	6			-0.000
L2	139.25 - 134.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-10.021	-0.121	0.088
			Max. Mx	8	-4.752	-51.167	0.027
			Max. My	2	-4.748	-0.046	51.197
			Max. Vy	8	6.093	-51.167	0.027
			Max. Vx	2	-6.100	-0.046	51.197
			Max. Torque	6			-0.000
L3	134.75 - 134.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-10.067	-0.128	0.093
			Max. Mx	8	-4.788	-54.218	0.028
			Max. My	2	-4.784	-0.048	54.251
			Max. Vy	8	6.107	-54.218	0.028
			Max. Vx	2	-6.114	-0.048	54.251
			Max. Torque	6			-0.000
L4	134.25 - 129.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-17.818	-1.802	1.550
			Max. Mx	8	-8.537	-90.503	0.771
			Max. My	2	-8.511	-1.181	90.666
			Max. Vy	20	-10.743	88.539	0.607
			Max. Vx	2	-10.850	-1.181	90.666
			Max. Torque	23			0.724
L5	129.25 - 124.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-18.238	-1.905	1.625
			Max. Mx	8	-8.863	-144.416	0.705
			Max. My	2	-8.839	-1.219	145.269
			Max. Vy	20	-10.901	142.595	0.666
			Max. Vx	2	-11.005	-1.219	145.269
			Max. Torque	15			0.444
L6	124.25 - 123.416	Pole	Max Tension	1	0.000	0.000	0.000

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L7	123.416 - 123.166	Pole	Max. Compression	26	-18.320	-1.921	1.636
			Max. Mx	8	-8.923	-153.484	0.694
			Max. My	2	-8.901	-1.225	154.449
			Max. Vy	20	-10.929	151.687	0.675
			Max. Vx	2	-11.027	-1.225	154.449
			Max. Torque	15			0.444
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-18.359	-1.927	1.640
			Max. Mx	8	-8.961	-156.207	0.690
			Max. My	2	-8.938	-1.227	157.206
L8	123.166 - 118.166	Pole	Max. Vy	20	-10.935	154.418	0.678
			Max. Vx	2	-11.031	-1.227	157.206
			Max. Torque	15			0.444
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-24.026	-2.031	2.008
			Max. Mx	8	-12.404	-216.484	0.727
			Max. My	2	-12.382	-1.267	218.233
			Max. Vy	20	-13.985	214.835	0.841
			Max. Vx	2	-14.077	-1.267	218.233
			Max. Torque	7			0.575
L9	118.166 - 113.166	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-24.844	-2.153	2.091
			Max. Mx	8	-13.006	-286.844	0.664
			Max. My	2	-12.989	-1.315	289.163
			Max. Vy	20	-14.237	285.322	0.904
			Max. Vx	2	-14.305	-1.315	289.163
			Max. Torque	7			0.575
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-32.747	-1.802	1.905
			Max. Mx	8	-16.639	-341.333	0.552
L10	113.166 - 109.5	Pole	Max. My	2	-16.625	-1.231	344.039
			Max. Vy	20	-18.927	340.222	0.869
			Max. Vx	2	-18.953	-1.231	344.039
			Max. Torque	7			0.575
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-32.801	-1.808	1.911
			Max. Mx	8	-16.694	-346.055	0.553
			Max. My	2	-16.681	-1.237	348.776
			Max. Vy	20	-18.929	344.950	0.869
			Max. Vx	2	-18.953	-1.237	348.776
L11	109.5 - 109.25	Pole	Max. Torque	7			0.574
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.792	-1.907	2.004
			Max. Mx	8	-17.429	-431.655	0.567
			Max. My	2	-17.422	-1.353	434.527
			Max. Vy	20	-19.194	430.664	0.856
			Max. Vx	2	-19.169	-1.353	434.527
			Max. Torque	7			0.574
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.864	-1.913	2.008
L12	109.25 - 104.75	Pole	Max. Mx	8	-17.494	-436.446	0.568
			Max. My	2	-17.488	-1.359	439.319
			Max. Vy	20	-19.206	435.461	0.855
			Max. Vx	2	-19.176	-1.359	439.319
			Max. Torque	7			0.574
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.792	-1.907	2.004
			Max. Mx	8	-17.429	-431.655	0.567
			Max. My	2	-17.422	-1.353	434.527
			Max. Vy	20	-19.194	430.664	0.856
L13	104.75 - 104.5	Pole	Max. Vx	2	-19.169	-1.353	434.527
			Max. Torque	7			0.574
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.864	-1.913	2.008
			Max. Mx	8	-17.494	-436.446	0.568
			Max. My	2	-17.488	-1.359	439.319
			Max. Vy	20	-19.206	435.461	0.855
			Max. Vx	2	-19.176	-1.359	439.319
			Max. Torque	7			0.574
			Max Tension	1	0.000	0.000	0.000
L14	104.5 -	Pole	Max. Compression	26	-33.792	-1.907	2.004
			Max. Mx	8	-17.429	-431.655	0.567
			Max. My	2	-17.422	-1.353	434.527
			Max. Vy	20	-19.194	430.664	0.856
			Max. Vx	2	-19.169	-1.353	434.527
			Max. Torque	7			0.574
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-33.864	-1.913	2.008
			Max. Mx	8	-17.494	-436.446	0.568
			Max. My	2	-17.488	-1.359	439.319

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
	102.416		Max. Compression	26	-34.461	-1.959	2.041
			Max. Mx	8	-17.922	-476.593	0.574
			Max. My	2	-17.921	-1.413	479.436
			Max. Vy	20	-19.398	475.660	0.850
			Max. Vx	2	-19.330	-1.413	479.436
			Max. Torque	7			0.574
L15	102.416 - 102.166	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-34.528	-1.964	2.045
			Max. Mx	8	-17.980	-481.434	0.575
			Max. My	2	-17.979	-1.419	484.268
			Max. Vy	20	-19.412	480.508	0.849
			Max. Vx	2	-19.337	-1.419	484.268
			Max. Torque	7			0.573
L16	102.166 - 98.75	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-41.264	-2.043	2.078
			Max. Mx	8	-22.005	-552.814	0.584
			Max. My	2	-22.006	-1.508	555.467
			Max. Vy	20	-22.052	551.972	0.838
			Max. Vx	2	-21.954	-1.508	555.467
			Max. Torque	7			0.573
L17	98.75 - 98.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-41.351	-2.050	2.079
			Max. Mx	8	-22.087	-558.317	0.585
			Max. My	2	-22.088	-1.515	560.953
			Max. Vy	20	-22.054	557.481	0.837
			Max. Vx	2	-21.956	-1.515	560.953
			Max. Torque	7			0.572
L18	98.5 - 97.5	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-41.696	-2.075	2.082
			Max. Mx	8	-22.344	-580.369	0.586
			Max. My	2	-22.344	-1.541	582.942
			Max. Vy	20	-22.129	579.558	0.833
			Max. Vx	2	-22.033	-1.541	582.942
			Max. Torque	7			0.572
L19	97.5 - 97.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-41.779	-2.082	2.084
			Max. Mx	8	-22.416	-585.893	0.587
			Max. My	2	-22.417	-1.548	588.450
			Max. Vy	20	-22.137	585.088	0.832
			Max. Vx	2	-22.042	-1.548	588.450
			Max. Torque	7			0.572
L20	97.25 - 92	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-42.340	-2.133	2.091
			Max. Mx	8	-22.833	-623.511	0.590
			Max. My	2	-22.833	-1.593	625.967
			Max. Vy	20	-22.261	622.748	0.825
			Max. Vx	2	-22.170	-1.593	625.967
			Max. Torque	7			0.572
L21	92 - 90.552	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-44.905	-2.286	2.113
			Max. Mx	8	-24.894	-735.710	0.600
			Max. My	2	-24.893	-1.726	737.907
			Max. Vy	20	-22.689	735.069	0.805
			Max. Vx	2	-22.610	-1.726	737.907
			Max. Torque	7			0.572
L22	90.552 - 89.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.365	-2.321	2.117
			Max. Mx	8	-25.258	-765.233	0.602

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L23	89.25 - 89	Pole	Max. My	2	-25.257	-1.761	767.372
			Max. Vy	20	-22.764	764.623	0.800
			Max. Vx	2	-22.689	-1.761	767.372
			Max. Torque	7			0.572
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.465	-2.328	2.119
			Max. Mx	8	-25.352	-770.914	0.603
			Max. My	2	-25.351	-1.768	773.043
			Max. Vy	20	-22.765	770.310	0.799
			Max. Vx	2	-22.692	-1.768	773.043
L24	89 - 88.25	Pole	Max. Torque	7			0.572
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.765	-2.347	2.120
			Max. Mx	8	-25.583	-787.982	0.604
			Max. My	2	-25.581	-1.788	790.081
			Max. Vy	20	-22.822	787.395	0.796
			Max. Vx	2	-22.755	-1.788	790.081
			Max. Torque	7			0.572
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.853	-2.354	2.122
L25	88.25 - 88	Pole	Max. Mx	8	-25.657	-793.679	0.605
			Max. My	2	-25.655	-1.795	795.770
			Max. Vy	20	-22.832	793.098	0.795
			Max. Vx	2	-22.765	-1.795	795.770
			Max. Torque	7			0.572
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.912	-2.359	2.122
			Max. Mx	8	-25.703	-797.488	0.605
			Max. My	2	-25.702	-1.799	799.572
			Max. Vy	20	-22.841	796.910	0.794
L26	88 - 87.833	Pole	Max. Vx	2	-22.775	-1.799	799.572
			Max. Torque	7			0.572
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-45.994	-2.365	2.123
			Max. Mx	8	-25.765	-803.191	0.606
			Max. My	2	-25.763	-1.806	805.267
			Max. Vy	20	-22.854	802.619	0.793
			Max. Vx	2	-22.788	-1.806	805.267
			Max. Torque	7			0.572
			Max Tension	1	0.000	0.000	0.000
L27	87.833 - 87.583	Pole	Max. Compression	26	-47.551	-2.493	2.150
			Max. Mx	8	-27.018	-917.824	0.615
			Max. My	2	-27.016	-1.940	919.747
			Max. Vy	20	-23.082	917.362	0.772
			Max. Vx	2	-23.024	-1.940	919.747
			Max. Torque	7			0.572
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.117	-2.622	2.188
			Max. Mx	8	-28.311	-1033.461	0.624
			Max. My	2	-28.307	-2.074	1035.289
L28	87.583 - 82.583	Pole	Max. Vy	20	-23.271	1033.107	0.751
			Max. Vx	2	-23.229	-2.074	1035.289
			Max. Torque	7			0.571
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.308	-2.637	2.192
			Max. Mx	8	-28.471	-1047.005	0.625
			Max. My	2	-28.467	-2.090	1048.828
			Max. Vy	20	-23.284	1046.664	0.749
			Max. Vx	2	-23.284	-2.090	1048.828
			Max. Torque	7			0.571
L29	82.583 - 77.583	Pole	Max. Torque	7			0.571
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.308	-2.637	2.192
			Max. Mx	8	-28.471	-1047.005	0.625
			Max. My	2	-28.467	-2.090	1048.828
			Max. Vy	20	-23.284	1046.664	0.749
			Max. Vx	2	-23.284	-2.090	1048.828
			Max. Torque	7			0.571
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.308	-2.637	2.192
L30	77.583 - 77	Pole	Max. Mx	8	-28.471	-1047.005	0.625
			Max. My	2	-28.467	-2.090	1048.828
			Max. Vy	20	-23.284	1046.664	0.749
			Max. Vx	2	-23.284	-2.090	1048.828
			Max. Torque	7			0.571
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.308	-2.637	2.192
			Max. Mx	8	-28.471	-1047.005	0.625
			Max. My	2	-28.467	-2.090	1048.828
			Max. Vy	20	-23.284	1046.664	0.749

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L31	77 - 76.75	Pole	Max. Vx	2	-23.247	-2.090	1048.828
			Max. Torque	7			0.571
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.403	-2.644	2.195
			Max. Mx	8	-28.554	-1052.817	0.625
			Max. My	2	-28.550	-2.096	1054.639
			Max. Vy	20	-23.289	1052.481	0.748
L32	76.75 - 76.333	Pole	Max. Vx	2	-23.254	-2.096	1054.639
			Max. Torque	7			0.571
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.561	-2.655	2.197
			Max. Mx	8	-28.679	-1062.519	0.626
			Max. My	2	-28.675	-2.108	1064.340
			Max. Vy	20	-23.312	1062.192	0.746
L33	76.333 - 76.083	Pole	Max. Vx	2	-23.280	-2.108	1064.340
			Max. Torque	7			0.571
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-49.652	-2.661	2.199
			Max. Mx	8	-28.754	-1068.340	0.626
			Max. My	2	-28.750	-2.114	1070.160
			Max. Vy	20	-23.322	1068.018	0.745
L34	76.083 - 74.25	Pole	Max. Vx	2	-23.292	-2.114	1070.160
			Max. Torque	7			0.571
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.323	-2.715	2.224
			Max. Mx	8	-29.269	-1111.108	0.630
			Max. My	2	-29.263	-2.163	1112.945
			Max. Vy	20	-23.436	1110.825	0.737
L35	74.25 - 74	Pole	Max. Vx	2	-23.422	-2.163	1112.945
			Max. Torque	7			0.570
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.419	-2.724	2.230
			Max. Mx	8	-29.367	-1116.953	0.630
			Max. My	2	-29.361	-2.170	1118.796
			Max. Vy	20	-23.423	1116.676	0.736
L36	74 - 73.75	Pole	Max. Vx	2	-23.410	-2.170	1118.796
			Max. Torque	7			0.570
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.514	-2.732	2.235
			Max. Mx	8	-29.443	-1122.802	0.630
			Max. My	2	-29.437	-2.177	1124.649
			Max. Vy	20	-23.435	1122.530	0.735
L37	73.75 - 73.5	Pole	Max. Vx	2	-23.425	-2.177	1124.649
			Max. Torque	7			0.570
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-50.612	-2.740	2.240
			Max. Mx	8	-29.522	-1128.654	0.631
			Max. My	2	-29.517	-2.184	1130.507
			Max. Vy	20	-23.448	1128.387	0.734
L38	73.5 - 68.5	Pole	Max. Vx	2	-23.440	-2.184	1130.507
			Max. Torque	7			0.570
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-52.574	-2.903	2.336
			Max. Mx	8	-31.092	-1246.360	0.640
			Max. My	2	-31.084	-2.318	1248.419
			Max. Vy	20	-23.713	1246.197	0.713
L39	68.5 - 63.5	Pole	Max. Vx	2	-23.742	-2.318	1248.419
			Max. Torque	7			0.570
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-54.554	-3.069	2.433

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L40	63.5 - 60.5	Pole	Max. Mx	8	-32.692	-1365.305	0.649
			Max. My	2	-32.683	-2.453	1367.744
			Max. Vy	20	-23.956	1365.243	0.691
			Max. Vx	2	-24.018	-2.453	1367.744
			Max. Torque	7			0.570
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.779	-3.169	2.492
			Max. Mx	8	-33.667	-1437.246	0.654
			Max. My	2	-33.657	-2.534	1439.990
			Max. Vy	20	-24.097	1437.244	0.679
L41	60.5 - 60.25	Pole	Max. Vx	2	-24.176	-2.534	1439.990
			Max. Torque	7			0.570
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-55.884	-3.178	2.497
			Max. Mx	20	-33.756	1443.263	0.678
			Max. My	2	-33.749	-2.541	1446.032
			Max. Vy	20	-24.096	1443.263	0.678
			Max. Vx	2	-24.176	-2.541	1446.032
			Max. Torque	7			0.570
			Max Tension	1	0.000	0.000	0.000
L42	60.25 - 59.5	Pole	Max. Compression	26	-56.197	-3.202	2.511
			Max. Mx	20	-33.995	1461.338	0.674
			Max. My	2	-33.988	-2.562	1464.177
			Max. Vy	20	-24.139	1461.338	0.674
			Max. Vx	2	-24.223	-2.562	1464.177
			Max. Torque	7			0.570
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-56.306	-3.211	2.517
			Max. Mx	20	-34.088	1467.369	0.673
			Max. My	2	-34.080	-2.568	1470.232
L43	59.5 - 59.25	Pole	Max. Vy	20	-24.143	1467.369	0.673
			Max. Vx	2	-24.229	-2.568	1470.232
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-58.423	-3.374	2.611
			Max. Mx	20	-35.795	1588.598	0.652
			Max. My	2	-35.788	-2.704	1591.949
			Max. Vy	20	-24.390	1588.598	0.652
			Max. Vx	2	-24.476	-2.704	1591.949
			Max. Torque	7			0.569
L44	59.25 - 54.25	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-60.232	-3.499	2.681
			Max. Mx	20	-37.269	1692.540	0.635
			Max. My	2	-37.263	-2.820	1696.306
			Max. Vy	20	-24.580	1692.540	0.635
			Max. Vx	2	-24.665	-2.820	1696.306
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.999	-3.320	2.570
			Max. Mx	20	-40.406	1821.601	0.527
L45	54.25 - 45.802	Pole	Max. My	2	-40.400	-2.671	1825.547
			Max. Vy	20	-24.973	1821.601	0.527
			Max. Vx	2	-25.070	-2.671	1825.547
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.535	-3.350	2.575
			Max. Mx	20	-40.842	1852.037	0.534
			Max. My	2	-40.836	-2.692	1856.118
			Max. Vy	20	-25.026	1852.037	0.534
			Max. Vx	2	-25.026	-2.692	1856.118
L46	45.802 - 44.802	Pole	Max. Mx	20	-40.406	1821.601	0.527
			Max. My	2	-40.400	-2.671	1825.547
			Max. Vy	20	-24.973	1821.601	0.527
			Max. Vx	2	-25.070	-2.671	1825.547
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-63.999	-3.320	2.570
			Max. Mx	20	-40.406	1821.601	0.527
			Max. My	2	-40.400	-2.671	1825.547
			Max. Vy	20	-24.973	1821.601	0.527
L47	44.802 - 43.583	Pole	Max. Vx	2	-25.070	-2.671	1825.547
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.535	-3.350	2.575
			Max. Mx	20	-40.842	1852.037	0.534
			Max. My	2	-40.836	-2.692	1856.118
			Max. Vy	20	-25.026	1852.037	0.534
			Max. Vx	2	-25.026	-2.692	1856.118
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000

tnxTower

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Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L48	43.583 - 43.333	Pole	Max. Vx	2	-25.126	-2.692	1856.118
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.650	-3.357	2.576
			Max. Mx	20	-40.949	1858.286	0.535
			Max. My	2	-40.943	-2.696	1862.395
			Max. Vy	20	-25.018	1858.286	0.535
L49	43.333 - 43.166	Pole	Max. Vx	2	-25.118	-2.696	1862.395
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.726	-3.361	2.577
			Max. Mx	20	-41.014	1862.462	0.536
			Max. My	2	-41.008	-2.699	1866.590
			Max. Vy	20	-25.024	1862.462	0.536
L50	43.166 - 42.916	Pole	Max. Vx	2	-25.125	-2.699	1866.590
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-64.846	-3.367	2.578
			Max. Mx	20	-41.112	1868.716	0.538
			Max. My	2	-41.106	-2.704	1872.872
			Max. Vy	20	-25.035	1868.716	0.538
L51	42.916 - 39	Pole	Max. Vx	2	-25.136	-2.704	1872.872
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-66.720	-3.469	2.583
			Max. Mx	20	-42.649	1967.021	0.561
			Max. My	2	-42.643	-2.772	1971.635
			Max. Vy	20	-25.221	1967.021	0.561
L52	39 - 38.75	Pole	Max. Vx	2	-25.329	-2.772	1971.635
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-66.845	-3.476	2.583
			Max. Mx	20	-42.765	1973.319	0.562
			Max. My	2	-42.759	-2.777	1977.963
			Max. Vy	20	-25.212	1973.319	0.562
L53	38.75 - 37.166	Pole	Max. Vx	2	-25.321	-2.777	1977.963
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.639	-3.520	2.580
			Max. Mx	20	-43.407	2013.284	0.572
			Max. My	2	-43.401	-2.805	2018.124
			Max. Vy	20	-25.304	2013.284	0.572
L54	37.166 - 36.916	Pole	Max. Vx	2	-25.416	-2.805	2018.124
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-67.762	-3.528	2.580
			Max. Mx	20	-43.523	2019.602	0.573
			Max. My	2	-43.518	-2.809	2024.473
			Max. Vy	20	-25.290	2019.602	0.573
L55	36.916 - 34	Pole	Max. Vx	2	-25.402	-2.809	2024.473
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-69.203	-3.605	2.590
			Max. Mx	20	-44.691	2093.464	0.590
			Max. My	2	-44.685	-2.860	2098.707
			Max. Vy	20	-25.424	2093.464	0.590
			Max. Vx	2	-25.542	-2.860	2098.707

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L56	34 - 33.75	Pole	Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-69.323	-3.612	2.593
			Max. Mx	20	-44.803	2099.811	0.592
			Max. My	2	-44.798	-2.865	2105.087
			Max. Vy	20	-25.410	2099.811	0.592
			Max. Vx	2	-25.528	-2.865	2105.087
L57	33.75 - 29.75	Pole	Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-71.219	-3.715	2.622
			Max. Mx	20	-46.362	2201.660	0.616
			Max. My	2	-46.357	-2.936	2207.474
			Max. Vy	20	-25.562	2201.660	0.616
			Max. Vx	2	-25.686	-2.936	2207.474
L58	29.75 - 29.5	Pole	Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-71.338	-3.722	2.625
			Max. Mx	20	-46.470	2208.044	0.617
			Max. My	2	-46.465	-2.940	2213.892
			Max. Vy	20	-25.555	2208.044	0.617
			Max. Vx	2	-25.680	-2.940	2213.892
L59	29.5 - 24.5	Pole	Max. Torque	7			0.568
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-73.720	-3.861	2.663
			Max. Mx	20	-48.457	2336.148	0.647
			Max. My	2	-48.453	-3.029	2342.688
			Max. Vy	20	-25.734	2336.148	0.647
			Max. Vx	2	-25.859	-3.029	2342.688
L60	24.5 - 23	Pole	Max. Torque	7			0.568
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-74.451	-3.922	2.676
			Max. Mx	20	-49.057	2374.738	0.657
			Max. My	2	-49.053	-3.055	2381.487
			Max. Vy	20	-25.794	2374.738	0.657
			Max. Vx	2	-25.919	-3.055	2381.487
L61	23 - 22.75	Pole	Max. Torque	7			0.568
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-74.582	-3.933	2.679
			Max. Mx	20	-49.181	2381.177	0.658
			Max. My	2	-49.177	-3.060	2387.961
			Max. Vy	20	-25.777	2381.177	0.658
			Max. Vx	2	-25.902	-3.060	2387.961
L62	22.75 - 21.583	Pole	Max. Torque	7			0.568
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-75.195	-3.980	2.688
			Max. Mx	20	-49.684	2411.266	0.665
			Max. My	2	-49.680	-3.081	2418.212
			Max. Vy	20	-25.838	2411.266	0.665
			Max. Vx	2	-25.963	-3.081	2418.212
L63	21.583 - 21.333	Pole	Max. Torque	7			0.568
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-75.322	-3.991	2.691
			Max. Mx	20	-49.799	2417.719	0.667
			Max. My	2	-49.795	-3.085	2424.700
			Max. Vy	20	-25.830	2417.719	0.667
			Max. Vx	2	-25.955	-3.085	2424.700
L64	21.333 - 16.333	Pole	Max. Torque	7			0.568
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-77.834	-4.173	2.719

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	Client Crown Castle	Designed by Jayaraj B

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L65	16.333 - 12.917	Pole	Max. Mx	20	-51.909	2547.194	0.697
			Max. My	2	-51.906	-3.174	2554.869
			Max. Vy	20	-26.008	2547.194	0.697
			Max. Vx	2	-26.133	-3.174	2554.869
			Max. Torque	7			0.568
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-79.594	-4.263	2.674
			Max. Mx	20	-53.370	2636.141	0.718
			Max. My	2	-53.368	-3.235	2644.263
			Max. Vy	20	-26.137	2636.141	0.718
L66	12.917 - 12.667	Pole	Max. Vx	2	-26.245	-3.235	2644.263
			Max. Torque	7			0.568
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-79.732	-4.270	2.671
			Max. Mx	20	-53.497	2642.668	0.720
			Max. My	2	-53.495	-3.240	2650.820
			Max. Vy	20	-26.128	2642.668	0.720
			Max. Vx	2	-26.234	-3.240	2650.820
			Max. Torque	7			0.568
			Max Tension	1	0.000	0.000	0.000
L67	12.667 - 12.5	Pole	Max. Compression	26	-79.824	-4.274	2.669
			Max. Mx	20	-53.575	2647.029	0.721
			Max. My	2	-53.573	-3.243	2655.201
			Max. Vy	20	-26.134	2647.029	0.721
			Max. Vx	2	-26.239	-3.243	2655.201
			Max. Torque	7			0.568
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-79.950	-4.281	2.666
			Max. Mx	20	-53.679	2653.560	0.722
			Max. My	2	-53.677	-3.247	2661.761
L68	12.5 - 12.25	Pole	Max. Vy	20	-26.144	2653.560	0.722
			Max. Vx	2	-26.248	-3.247	2661.761
			Max. Torque	7			0.568
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-80.076	-4.287	2.663
			Max. Mx	20	-53.784	2660.092	0.724
			Max. My	2	-53.782	-3.252	2668.323
			Max. Vy	20	-26.152	2660.092	0.724
			Max. Vx	2	-26.255	-3.252	2668.323
			Max. Torque	7			0.568
L69	12.25 - 12	Pole	Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.196	-4.294	2.659
			Max. Mx	20	-53.883	2666.627	0.725
			Max. My	2	-53.881	-3.256	2674.887
			Max. Vy	20	-26.159	2666.627	0.725
			Max. Vx	2	-26.261	-3.256	2674.887
			Max. Torque	7			0.568
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.744	-4.368	2.622
			Max. Mx	20	-55.168	2751.936	0.745
L70	12 - 11.75	Pole	Max. My	2	-55.167	-3.314	2760.360
			Max. Vy	20	-26.398	2751.936	0.745
			Max. Vx	2	-26.368	-3.314	2760.360
			Max. Torque	7			0.568
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-81.884	-4.374	2.622
			Max. Mx	20	-55.300	2758.528	0.747
			Max. My	2	-55.300	-3.319	2766.947
			Max. Vy	20	-26.396	2758.528	0.747
			L71	11.75 - 8.5	Pole	Max. Vy	20
Max. Vx	2	-26.396				-3.319	2766.947
Max. Torque	7						0.568
Max Tension	1	0.000				0.000	0.000
Max. Compression	26	-81.884				-4.374	2.622
L72	8.5 - 8.25	Pole	Max. Mx	20	-55.300	2758.528	0.747
			Max. My	2	-55.300	-3.319	2766.947
			Max. Vy	20	-26.396	2758.528	0.747
			Max. Vx	2	-26.396	-3.319	2766.947
			Max. Torque	7			0.568

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	Client	Designed by	
	Crown Castle	Jayaraj B	

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L73	8.25 - 7	Pole	Max. Vx	2	-26.355	-3.319	2766.947
			Max. Torque	7			0.569
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-82.581	-4.402	2.619
			Max. Mx	20	-55.890	2791.573	0.755
			Max. My	2	-55.890	-3.341	2799.927
			Max. Vy	20	-26.530	2791.573	0.755
L74	7 - 6.75	Pole	Max. Vx	2	-26.437	-3.341	2799.927
			Max. Torque	7			0.572
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-82.709	-4.408	2.619
			Max. Mx	20	-56.008	2798.199	0.756
			Max. My	2	-56.008	-3.346	2806.533
			Max. Vy	20	-26.531	2798.199	0.756
L75	6.75 - 1.75	Pole	Max. Vx	2	-26.428	-3.346	2806.533
			Max. Torque	7			0.573
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-85.200	-4.510	2.602
			Max. Mx	20	-58.173	2931.776	0.787
			Max. My	2	-58.174	-3.435	2939.189
			Max. Vy	20	-26.952	2931.776	0.787
L76	1.75 - 0	Pole	Max. Vx	2	-26.657	-3.435	2939.189
			Max. Torque	7			0.578
			Max Tension	1	0.000	0.000	0.000
			Max. Compression	26	-86.052	-4.541	2.596
			Max. Mx	20	-58.934	2979.003	0.798
			Max. My	2	-58.934	-3.466	2985.869
			Max. Vy	20	-27.109	2979.003	0.798
			Max. Vx	2	-26.748	-3.466	2985.869
			Max. Torque	7			0.579

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	30	86.052	-6.615	-0.002
	Max. H _x	21	44.215	27.068	0.002
	Max. H _z	3	44.215	-0.007	26.707
	Max. M _x	2	2985.869	-0.007	26.707
	Max. M _z	8	2977.518	-27.032	-0.012
	Max. Torsion	7	0.579	-22.919	13.385
	Min. Vert	5	44.215	-13.034	22.739
	Min. H _x	9	44.215	-27.032	-0.012
	Min. H _z	15	44.215	0.026	-26.673
	Min. M _x	14	-2979.914	0.026	-26.673
	Min. M _z	20	-2979.003	27.068	0.002
	Min. Torsion	10	-0.220	-25.161	-14.664

Tower Mast Reaction Summary

<p style="text-align: center;">tnxTower</p> <p style="text-align: center;">B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p style="text-align: center;">Job</p> <p style="text-align: center;">79982.005.01 - WATERBURY,CT (BU# 876317)</p>	<p style="text-align: center;">Page</p> <p style="text-align: center;">74 of 92</p>
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	<p style="text-align: center;">Client</p> <p style="text-align: center;">Crown Castle</p>	<p style="text-align: center;">Designed by</p> <p style="text-align: center;">Jayaraj B</p>

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	49.128	0.000	-0.000	-0.898	-1.446	0.000
1.2 Dead+1.0 Wind 0 deg - No Ice	58.953	0.007	-26.707	-2985.869	-3.466	-0.156
0.9 Dead+1.0 Wind 0 deg - No Ice	44.215	0.007	-26.707	-2926.788	-2.916	-0.150
1.2 Dead+1.0 Wind 30 deg - No Ice	58.953	13.034	-22.739	-2562.977	-1468.232	-0.374
0.9 Dead+1.0 Wind 30 deg - No Ice	44.215	13.034	-22.739	-2512.068	-1438.787	-0.372
1.2 Dead+1.0 Wind 60 deg - No Ice	58.953	22.919	-13.385	-1488.188	-2539.353	-0.578
0.9 Dead+1.0 Wind 60 deg - No Ice	44.215	22.919	-13.385	-1458.500	-2488.809	-0.579
1.2 Dead+1.0 Wind 90 deg - No Ice	58.953	27.032	0.012	-0.143	-2977.518	-0.192
0.9 Dead+1.0 Wind 90 deg - No Ice	44.215	27.032	0.012	0.160	-2918.444	-0.195
1.2 Dead+1.0 Wind 120 deg - No Ice	58.953	25.161	14.664	1570.543	-2691.435	0.220
0.9 Dead+1.0 Wind 120 deg - No Ice	44.215	25.161	14.664	1540.418	-2638.894	0.215
1.2 Dead+1.0 Wind 150 deg - No Ice	58.953	15.295	26.630	2819.163	-1618.732	0.046
0.9 Dead+1.0 Wind 150 deg - No Ice	44.215	15.295	26.630	2765.289	-1587.180	0.040
1.2 Dead+1.0 Wind 180 deg - No Ice	58.953	-0.026	26.673	2979.914	2.600	0.011
0.9 Dead+1.0 Wind 180 deg - No Ice	44.215	-0.026	26.673	2921.533	3.009	0.006
1.2 Dead+1.0 Wind 210 deg - No Ice	58.953	-13.026	22.696	2556.904	1464.728	0.142
0.9 Dead+1.0 Wind 210 deg - No Ice	44.215	-13.026	22.696	2506.677	1436.276	0.139
1.2 Dead+1.0 Wind 240 deg - No Ice	58.953	-22.908	13.372	1484.988	2535.910	0.217
0.9 Dead+1.0 Wind 240 deg - No Ice	44.215	-22.908	13.372	1455.939	2486.347	0.217
1.2 Dead+1.0 Wind 270 deg - No Ice	58.953	-27.068	-0.002	-0.798	2979.003	0.162
0.9 Dead+1.0 Wind 270 deg - No Ice	44.215	-27.068	-0.002	-0.487	2920.825	0.165
1.2 Dead+1.0 Wind 300 deg - No Ice	58.953	-25.190	-14.652	-1571.253	2691.985	-0.362
0.9 Dead+1.0 Wind 300 deg - No Ice	44.215	-25.190	-14.652	-1540.510	2640.369	-0.357
1.2 Dead+1.0 Wind 330 deg - No Ice	58.953	-15.285	-26.632	-2821.746	1613.648	-0.157
0.9 Dead+1.0 Wind 330 deg - No Ice	44.215	-15.285	-26.632	-2767.221	1583.149	-0.151
1.2 Dead+1.0 Ice+1.0 Temp	86.052	0.000	-0.000	-2.596	-4.541	0.000
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	86.052	0.002	-6.539	-789.905	-5.239	-0.044
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	86.052	3.250	-5.664	-684.653	-395.732	-0.090
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	86.052	5.664	-3.303	-398.305	-681.305	-0.129
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	86.052	6.615	0.002	-2.659	-790.076	-0.046
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	86.052	6.034	3.512	408.325	-709.576	0.024
1.2 Dead+1.0 Wind 150	86.052	3.668	6.382	732.903	-426.765	-0.049

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	<p>Client</p> <p>Crown Castle</p>	<p>Designed by</p> <p>Jayaraj B</p>

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 180	86.052	-0.006	6.539	784.436	-3.526	0.013
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 210	86.052	-3.255	5.667	679.721	387.132	0.040
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 240	86.052	-5.671	3.305	393.285	672.962	0.052
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 270	86.052	-6.623	-0.000	-2.432	781.873	0.040
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 300	86.052	-6.040	-3.510	-413.357	701.117	-0.053
deg+1.0 Ice+1.0 Temp						
1.2 Dead+1.0 Wind 330	86.052	-3.666	-6.383	-738.352	417.067	0.026
deg+1.0 Ice+1.0 Temp						
Dead+Wind 0 deg - Service	49.128	0.002	-6.519	-722.185	-1.915	-0.037
Dead+Wind 30 deg - Service	49.128	3.181	-5.550	-619.953	-355.852	-0.092
Dead+Wind 60 deg - Service	49.128	5.594	-3.267	-360.245	-614.663	-0.144
Dead+Wind 90 deg - Service	49.128	6.598	0.003	-0.710	-720.541	-0.049
Dead+Wind 120 deg - Service	49.128	6.140	3.578	378.853	-651.505	0.053
Dead+Wind 150 deg - Service	49.128	3.733	6.499	680.905	-392.447	0.010
Dead+Wind 180 deg - Service	49.128	-0.006	6.511	719.391	-0.457	0.001
Dead+Wind 210 deg - Service	49.128	-3.180	5.540	617.129	352.841	0.034
Dead+Wind 240 deg - Service	49.128	-5.592	3.264	358.117	611.665	0.054
Dead+Wind 270 deg - Service	49.128	-6.606	-0.001	-0.869	718.735	0.041
Dead+Wind 300 deg - Service	49.128	-6.147	-3.576	-380.372	649.475	-0.088
Dead+Wind 330 deg - Service	49.128	-3.731	-6.500	-682.877	389.060	-0.037

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
1	0.000	-49.128	0.000	-0.000	49.128	0.000	0.000%
2	0.007	-58.953	-26.707	-0.007	58.953	26.707	0.000%
3	0.007	-44.215	-26.707	-0.007	44.215	26.707	0.000%
4	13.034	-58.953	-22.739	-13.034	58.953	22.739	0.000%
5	13.034	-44.215	-22.739	-13.034	44.215	22.739	0.000%
6	22.919	-58.953	-13.385	-22.919	58.953	13.385	0.000%
7	22.919	-44.215	-13.385	-22.919	44.215	13.385	0.000%
8	27.032	-58.953	0.012	-27.032	58.953	-0.012	0.000%
9	27.032	-44.215	0.012	-27.032	44.215	-0.012	0.000%
10	25.161	-58.953	14.664	-25.161	58.953	-14.664	0.000%
11	25.161	-44.215	14.664	-25.161	44.215	-14.664	0.000%
12	15.295	-58.953	26.630	-15.295	58.953	-26.630	0.000%
13	15.295	-44.215	26.630	-15.295	44.215	-26.630	0.000%
14	-0.026	-58.953	26.673	0.026	58.953	-26.673	0.000%
15	-0.026	-44.215	26.673	0.026	44.215	-26.673	0.000%
16	-13.026	-58.953	22.696	13.026	58.953	-22.696	0.000%
17	-13.026	-44.215	22.696	13.026	44.215	-22.696	0.000%
18	-22.908	-58.953	13.372	22.908	58.953	-13.372	0.000%
19	-22.908	-44.215	13.372	22.908	44.215	-13.372	0.000%
20	-27.068	-58.953	-0.002	27.068	58.953	0.002	0.000%
21	-27.068	-44.215	-0.002	27.068	44.215	0.002	0.000%
22	-25.190	-58.953	-14.652	25.190	58.953	14.652	0.000%
23	-25.190	-44.215	-14.652	25.190	44.215	14.652	0.000%
24	-15.285	-58.953	-26.632	15.285	58.953	26.632	0.000%
25	-15.285	-44.215	-26.632	15.285	44.215	26.632	0.000%
26	0.000	-86.052	0.000	-0.000	86.052	0.000	0.000%
27	0.002	-86.052	-6.539	-0.002	86.052	6.539	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX K	PY K	PZ K	PX K	PY K	PZ K	
28	3.250	-86.052	-5.664	-3.250	86.052	5.664	0.000%
29	5.664	-86.052	-3.303	-5.664	86.052	3.303	0.000%
30	6.615	-86.052	0.002	-6.615	86.052	-0.002	0.000%
31	6.034	-86.052	3.512	-6.034	86.052	-3.512	0.000%
32	3.668	-86.052	6.382	-3.668	86.052	-6.382	0.000%
33	-0.006	-86.052	6.539	0.006	86.052	-6.539	0.000%
34	-3.255	-86.052	5.667	3.255	86.052	-5.667	0.000%
35	-5.671	-86.052	3.305	5.671	86.052	-3.305	0.000%
36	-6.623	-86.052	-0.000	6.623	86.052	0.000	0.000%
37	-6.040	-86.052	-3.510	6.040	86.052	3.510	0.000%
38	-3.666	-86.052	-6.383	3.666	86.052	6.383	0.000%
39	0.002	-49.128	-6.519	-0.002	49.128	6.519	0.000%
40	3.181	-49.128	-5.550	-3.181	49.128	5.550	0.000%
41	5.594	-49.128	-3.267	-5.594	49.128	3.267	0.000%
42	6.598	-49.128	0.003	-6.598	49.128	-0.003	0.000%
43	6.140	-49.128	3.578	-6.140	49.128	-3.578	0.000%
44	3.733	-49.128	6.499	-3.733	49.128	-6.499	0.000%
45	-0.006	-49.128	6.511	0.006	49.128	-6.511	0.000%
46	-3.180	-49.128	5.540	3.180	49.128	-5.540	0.000%
47	-5.592	-49.128	3.264	5.592	49.128	-3.264	0.000%
48	-6.606	-49.128	-0.001	6.606	49.128	0.001	0.000%
49	-6.147	-49.128	-3.576	6.147	49.128	3.576	0.000%
50	-3.731	-49.128	-6.500	3.731	49.128	6.500	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.0000001	0.00001256
2	Yes	6	0.0000001	0.00014151
3	Yes	5	0.0000001	0.00057894
4	Yes	8	0.0000001	0.00013147
5	Yes	7	0.0000001	0.00035539
6	Yes	8	0.0000001	0.00013347
7	Yes	7	0.0000001	0.00036140
8	Yes	6	0.0000001	0.00018660
9	Yes	5	0.0000001	0.00086882
10	Yes	8	0.0000001	0.00013952
11	Yes	7	0.0000001	0.00037395
12	Yes	8	0.0000001	0.00014567
13	Yes	7	0.0000001	0.00038748
14	Yes	6	0.0000001	0.00013453
15	Yes	5	0.0000001	0.00055029
16	Yes	8	0.0000001	0.00013208
17	Yes	7	0.0000001	0.00035748
18	Yes	8	0.0000001	0.00013151
19	Yes	7	0.0000001	0.00035587
20	Yes	6	0.0000001	0.00018103
21	Yes	5	0.0000001	0.00083339
22	Yes	8	0.0000001	0.00013888
23	Yes	7	0.0000001	0.00037211
24	Yes	8	0.0000001	0.00014543
25	Yes	7	0.0000001	0.00038675
26	Yes	5	0.0000001	0.00041672
27	Yes	7	0.0000001	0.00090125
28	Yes	8	0.0000001	0.00021608

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29	Yes	8	0.00000001	0.00021678
30	Yes	7	0.00000001	0.00089918
31	Yes	8	0.00000001	0.00022086
32	Yes	8	0.00000001	0.00023108
33	Yes	7	0.00000001	0.00088704
34	Yes	8	0.00000001	0.00020886
35	Yes	8	0.00000001	0.00020858
36	Yes	7	0.00000001	0.00088355
37	Yes	8	0.00000001	0.00022045
38	Yes	8	0.00000001	0.00022908
39	Yes	5	0.00000001	0.00028868
40	Yes	6	0.00000001	0.00024446
41	Yes	6	0.00000001	0.00025394
42	Yes	5	0.00000001	0.00030052
43	Yes	6	0.00000001	0.00026997
44	Yes	6	0.00000001	0.00029524
45	Yes	5	0.00000001	0.00028877
46	Yes	6	0.00000001	0.00024192
47	Yes	6	0.00000001	0.00023920
48	Yes	5	0.00000001	0.00029643
49	Yes	6	0.00000001	0.00026634
50	Yes	6	0.00000001	0.00029261

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	144.25 - 139.25	32.096	50	2.277	0.001
L2	139.25 - 134.75	29.717	50	2.265	0.001
L3	134.75 - 134.25	27.600	50	2.223	0.001
L4	134.25 - 129.25	27.368	50	2.218	0.001
L5	129.25 - 124.25	25.107	50	2.097	0.001
L6	124.25 - 123.416	22.993	50	1.934	0.001
L7	123.416 - 123.166	22.658	50	1.903	0.001
L8	123.166 - 118.166	22.559	50	1.900	0.001
L9	118.166 - 113.166	20.611	50	1.820	0.001
L10	113.166 - 109.5	18.754	50	1.725	0.001
L11	109.5 - 109.25	17.459	50	1.648	0.000
L12	109.25 - 104.75	17.373	50	1.644	0.000
L13	104.75 - 104.5	15.865	50	1.556	0.000
L14	104.5 - 102.416	15.784	50	1.553	0.000
L15	102.416 - 102.166	15.113	50	1.520	0.000
L16	102.166 - 98.75	15.034	50	1.515	0.000
L17	98.75 - 98.5	13.976	50	1.442	0.000
L18	98.5 - 97.5	13.901	50	1.438	0.000
L19	97.5 - 97.25	13.601	50	1.423	0.000
L20	97.25 - 92	13.527	50	1.419	0.000
L21	95.552 - 90.552	13.027	50	1.390	0.000
L22	90.552 - 89.25	11.596	50	1.334	0.000
L23	89.25 - 89	11.236	50	1.311	0.000
L24	89 - 88.25	11.167	50	1.308	0.000
L25	88.25 - 88	10.962	50	1.297	0.000
L26	88 - 87.833	10.895	50	1.292	0.000
L27	87.833 - 87.583	10.849	50	1.289	0.000
L28	87.583 - 82.583	10.782	50	1.284	0.000
L29	82.583 - 77.583	9.492	50	1.179	0.000
L30	77.583 - 77	8.315	50	1.071	0.000
L31	77 - 76.75	8.185	50	1.058	0.000
L32	76.75 - 76.333	8.129	50	1.054	0.000

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L33	76.333 - 76.083	8.038	50	1.047	0.000
L34	76.083 - 74.25	7.983	50	1.043	0.000
L35	74.25 - 74	7.588	50	1.012	0.000
L36	74 - 73.75	7.536	50	1.008	0.000
L37	73.75 - 73.5	7.483	50	1.004	0.000
L38	73.5 - 68.5	7.430	50	1.000	0.000
L39	68.5 - 63.5	6.424	50	0.922	0.000
L40	63.5 - 60.5	5.499	50	0.844	0.000
L41	60.5 - 60.25	4.984	50	0.796	0.000
L42	60.25 - 59.5	4.943	50	0.792	0.000
L43	59.5 - 59.25	4.819	50	0.781	0.000
L44	59.25 - 54.25	4.778	50	0.777	0.000
L45	54.25 - 45.802	4.004	50	0.702	0.000
L46	50 - 44.802	3.408	50	0.638	0.000
L47	44.802 - 43.583	2.735	50	0.592	0.000
L48	43.583 - 43.333	2.586	50	0.574	0.000
L49	43.333 - 43.166	2.556	50	0.570	0.000
L50	43.166 - 42.916	2.536	50	0.568	0.000
L51	42.916 - 39	2.507	50	0.564	0.000
L52	39 - 38.75	2.066	50	0.511	0.000
L53	38.75 - 37.166	2.039	50	0.508	0.000
L54	37.166 - 36.916	1.874	50	0.487	0.000
L55	36.916 - 34	1.849	50	0.484	0.000
L56	34 - 33.75	1.565	50	0.444	0.000
L57	33.75 - 29.75	1.542	50	0.441	0.000
L58	29.75 - 29.5	1.196	50	0.387	0.000
L59	29.5 - 24.5	1.175	50	0.383	0.000
L60	24.5 - 23	0.809	50	0.316	0.000
L61	23 - 22.75	0.713	50	0.297	0.000
L62	22.75 - 21.583	0.697	50	0.294	0.000
L63	21.583 - 21.333	0.627	50	0.280	0.000
L64	21.333 - 16.333	0.613	50	0.277	0.000
L65	16.333 - 12.917	0.356	50	0.213	0.000
L66	12.917 - 12.667	0.220	50	0.169	0.000
L67	12.667 - 12.5	0.211	50	0.166	0.000
L68	12.5 - 12.25	0.205	50	0.164	0.000
L69	12.25 - 12	0.197	50	0.161	0.000
L70	12 - 11.75	0.188	50	0.158	0.000
L71	11.75 - 8.5	0.180	50	0.154	0.000
L72	8.5 - 8.25	0.093	50	0.103	0.000
L73	8.25 - 7	0.088	50	0.101	0.000
L74	7 - 6.75	0.063	50	0.087	0.000
L75	6.75 - 1.75	0.059	50	0.084	0.000
L76	1.75 - 0	0.004	50	0.021	0.000

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
144.000	(2) EPBQ-654L8H8-L2 w/ Mount Pipe	50	31.977	2.276	0.003	9673
133.000	VHLP2-23	50	26.791	2.197	0.003	2858
130.000	(2) APXVSP18-C-A20 w/ Mount Pipe	50	25.438	2.119	0.003	2117
120.000	MX08FRO665-21 w/ Mount Pipe	50	21.315	1.853	0.002	3262
110.000	SBNHH-1D65B w/ Mount Pipe	50	17.632	1.657	0.001	2855

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Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
100.000	APXVAARR24 43-U-NA20 w/ Mount Pipe	50	14.357	1.466	0.001	3031
50.000	KS24019-L112A	50	3.408	0.638	0.000	5125

Maximum Tower Deflections - Design Wind

Section No.	Elevation	Horz. Deflection	Gov. Load Comb.	Tilt	Twist
	ft	in		°	°
L1	144.25 - 139.25	132.477	24	9.427	0.005
L2	139.25 - 134.75	122.694	24	9.378	0.005
L3	134.75 - 134.25	113.994	24	9.204	0.005
L4	134.25 - 129.25	113.039	24	9.182	0.005
L5	129.25 - 124.25	103.738	24	8.684	0.006
L6	124.25 - 123.416	95.035	24	8.010	0.004
L7	123.416 - 123.166	93.654	24	7.884	0.004
L8	123.166 - 118.166	93.244	24	7.869	0.004
L9	118.166 - 113.166	85.214	24	7.540	0.003
L10	113.166 - 109.5	77.557	24	7.147	0.002
L11	109.5 - 109.25	72.214	24	6.829	0.002
L12	109.25 - 104.75	71.858	24	6.811	0.002
L13	104.75 - 104.5	65.631	24	6.450	0.002
L14	104.5 - 102.416	65.295	24	6.435	0.002
L15	102.416 - 102.166	62.525	24	6.301	0.001
L16	102.166 - 98.75	62.197	24	6.279	0.001
L17	98.75 - 98.5	57.827	12	5.976	0.001
L18	98.5 - 97.5	57.515	12	5.960	0.001
L19	97.5 - 97.25	56.277	12	5.899	0.001
L20	97.25 - 92	55.970	12	5.881	0.001
L21	95.552 - 90.552	53.906	12	5.761	0.001
L22	90.552 - 89.25	47.991	12	5.530	0.001
L23	89.25 - 89	46.500	12	5.436	0.001
L24	89 - 88.25	46.216	12	5.421	0.001
L25	88.25 - 88	45.370	12	5.376	0.001
L26	88 - 87.833	45.090	12	5.357	0.001
L27	87.833 - 87.583	44.903	12	5.344	0.001
L28	87.583 - 82.583	44.625	12	5.324	0.001
L29	82.583 - 77.583	39.291	12	4.888	0.001
L30	77.583 - 77	34.418	12	4.437	0.001
L31	77 - 76.75	33.880	12	4.385	0.001
L32	76.75 - 76.333	33.651	12	4.368	0.001
L33	76.333 - 76.083	33.272	12	4.339	0.001
L34	76.083 - 74.25	33.045	12	4.322	0.001
L35	74.25 - 74	31.413	12	4.194	0.001
L36	74 - 73.75	31.194	12	4.178	0.001
L37	73.75 - 73.5	30.976	12	4.162	0.001
L38	73.5 - 68.5	30.759	12	4.146	0.001
L39	68.5 - 63.5	26.593	12	3.822	0.001
L40	63.5 - 60.5	22.766	12	3.496	0.000
L41	60.5 - 60.25	20.634	12	3.299	0.000
L42	60.25 - 59.5	20.462	12	3.283	0.000
L43	59.5 - 59.25	19.950	12	3.234	0.000
L44	59.25 - 54.25	19.782	12	3.219	0.000
L45	54.25 - 45.802	16.577	12	2.907	0.000
L46	50 - 44.802	14.109	12	2.644	0.000
L47	44.802 - 43.583	11.322	12	2.452	0.000

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L48	43.583 - 43.333	10.706	12	2.377	0.000
L49	43.333 - 43.166	10.582	12	2.361	0.000
L50	43.166 - 42.916	10.500	12	2.351	0.000
L51	42.916 - 39	10.377	12	2.337	0.000
L52	39 - 38.75	8.552	12	2.116	0.000
L53	38.75 - 37.166	8.442	12	2.103	0.000
L54	37.166 - 36.916	7.758	12	2.018	0.000
L55	36.916 - 34	7.653	12	2.004	0.000
L56	34 - 33.75	6.480	12	1.840	0.000
L57	33.75 - 29.75	6.384	12	1.826	0.000
L58	29.75 - 29.5	4.949	12	1.601	0.000
L59	29.5 - 24.5	4.865	12	1.587	0.000
L60	24.5 - 23	3.349	12	1.310	0.000
L61	23 - 22.75	2.951	12	1.228	0.000
L62	22.75 - 21.583	2.887	12	1.216	0.000
L63	21.583 - 21.333	2.596	12	1.161	0.000
L64	21.333 - 16.333	2.536	12	1.147	0.000
L65	16.333 - 12.917	1.475	12	0.880	0.000
L66	12.917 - 12.667	0.910	12	0.700	0.000
L67	12.667 - 12.5	0.874	12	0.688	0.000
L68	12.5 - 12.25	0.850	12	0.680	0.000
L69	12.25 - 12	0.814	12	0.666	0.000
L70	12 - 11.75	0.780	12	0.652	0.000
L71	11.75 - 8.5	0.746	12	0.636	0.000
L72	8.5 - 8.25	0.384	12	0.427	0.000
L73	8.25 - 7	0.362	12	0.416	0.000
L74	7 - 6.75	0.261	12	0.359	0.000
L75	6.75 - 1.75	0.243	12	0.346	0.000
L76	1.75 - 0	0.016	12	0.088	0.000

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
144.000	(2) EPBQ-654L8H8-L2 w/ Mount Pipe	24	131.986	9.426	0.013	2451
133.000	VHLP2-23	24	110.668	9.096	0.012	725
130.000	(2) APXVSP18-C-A20 w/ Mount Pipe	24	105.100	8.773	0.011	542
120.000	MX08FRO665-21 w/ Mount Pipe	24	88.120	7.674	0.006	824
110.000	SBNHH-1D65B w/ Mount Pipe	24	72.928	6.868	0.004	713
100.000	APXVAARR24_43-U-NA20 w/ Mount Pipe	12	59.401	6.075	0.003	751
50.000	KS24019-L112A	12	14.109	2.644	0.001	1242

Compression Checks

Pole Design Data

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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	144.25 - 139.25 (1)	TP12.75x12.75x0.375	5.000	0.000	0.0	14.579	-4.424	603.569	0.007
L2	139.25 - 134.75 (2)	TP12.75x12.75x0.375	4.500	0.000	0.0	14.579	-4.706	603.569	0.008
L3	134.75 - 134.25 (3)	TP13.48x13.48x0.375	0.500	0.000	0.0	15.439	-4.741	639.173	0.007
L4	134.25 - 129.25 (4)	TP14.466x13.48x0.188	5.000	0.000	0.0	8.621	-8.526	504.301	0.017
L5	129.25 - 124.25 (5)	TP15.452x14.466x0.188	5.000	0.000	0.0	9.216	-8.760	539.118	0.016
L6	124.25 - 123.416 (6)	TP15.616x15.452x0.188	0.834	0.000	0.0	9.315	-8.821	544.926	0.016
L7	123.416 - 123.166 (7)	TP15.665x15.616x0.538	0.250	0.000	0.0	26.183	-8.858	1531.670	0.006
L8	123.166 - 118.166 (8)	TP16.651x15.665x0.513	5.000	0.000	0.0	26.633	-12.267	1558.020	0.008
L9	118.166 - 113.166 (9)	TP17.637x16.651x0.488	5.000	0.000	0.0	26.920	-12.854	1574.840	0.008
L10	113.166 - 109.5 (10)	TP18.36x17.637x0.475	3.666	0.000	0.0	27.355	-16.453	1600.250	0.010
L11	109.5 - 109.25 (11)	TP18.409x18.36x0.588	0.250	0.000	0.0	33.714	-16.509	1972.260	0.008
L12	109.25 - 104.75 (12)	TP19.296x18.409x0.563	4.500	0.000	0.0	33.931	-17.234	1984.990	0.009
L13	104.75 - 104.5 (13)	TP19.346x19.296x0.775	0.250	0.000	0.0	46.343	-17.300	2711.050	0.006
L14	104.5 - 102.416 (14)	TP19.756x19.346x0.763	2.084	0.000	0.0	46.635	-17.729	2728.130	0.006
L15	102.416 - 102.166 (15)	TP19.806x19.756x0.563	0.250	0.000	0.0	34.854	-17.788	2038.970	0.009
L16	102.166 - 98.75 (16)	TP20.479x19.806x0.55	3.416	0.000	0.0	35.295	-21.794	2064.730	0.011
L17	98.75 - 98.5 (17)	TP20.528x20.479x0.838	0.250	0.000	0.0	53.102	-21.877	3106.440	0.007
L18	98.5 - 97.5 (18)	TP20.726x20.528x0.838	1.000	0.000	0.0	53.633	-22.131	3137.550	0.007
L19	97.5 - 97.25 (19)	TP20.775x20.726x0.75	0.250	0.000	0.0	48.360	-22.203	2829.070	0.008
L20	97.25 - 92 (20)	TP21.81x20.775x0.738	5.250	0.000	0.0	48.379	-22.616	2830.160	0.008
L21	92 - 90.552 (21)	TP21.73x20.735x0.8	5.000	0.000	0.0	53.916	-24.667	3154.100	0.008
L22	90.552 - 89.25 (22)	TP21.989x21.73x0.775	1.302	0.000	0.0	52.941	-25.030	3097.030	0.008
L23	89.25 - 89 (23)	TP22.039x21.989x1	0.250	0.000	0.0	67.746	-25.125	3963.150	0.006
L24	89 - 88.25 (24)	TP22.189x22.039x0.975	0.750	0.000	0.0	66.600	-25.355	3896.090	0.007
L25	88.25 - 88 (25)	TP22.238x22.189x0.763	0.250	0.000	0.0	52.729	-25.429	3084.620	0.008
L26	88 - 87.833 (26)	TP22.272x22.238x0.763	0.167	0.000	0.0	52.810	-25.475	3089.390	0.008
L27	87.833 - 87.583 (27)	TP22.321x22.272x0.675	0.250	0.000	0.0	47.048	-25.536	2752.330	0.009
L28	87.583 - 82.583 (28)	TP23.317x22.321x0.65	5.000	0.000	0.0	47.442	-26.786	2775.340	0.010
L29	82.583 - 77.583 (29)	TP24.312x23.317x0.625	5.000	0.000	0.0	47.671	-28.079	2788.740	0.010
L30	77.583 - 77 (30)	TP24.428x24.312x0.625	0.583	0.000	0.0	47.904	-28.240	2802.410	0.010
L31	77 - 76.75 (31)	TP24.478x24.428x0.825	0.250	0.000	0.0	62.835	-28.324	3675.830	0.008
L32	76.75 - 76.333 (32)	TP24.561x24.478x0.825	0.417	0.000	0.0	63.055	-28.448	3688.730	0.008
L33	76.333 - 76.083 (33)	TP24.611x24.561x0.825	0.250	0.000	0.0	63.188	-28.524	3696.470	0.008

<p>tnxTower</p> <p>B+T Group 1717 S. Boulder, Suite 300 Tulsa, OK 74119 Phone: (918) 587-4630 FAX: (918) 295-0265</p>	<p>Job</p> <p>79982.005.01 - WATERBURY,CT (BU# 876317)</p>	<p>Page</p> <p>82 of 92</p>
	<p>Project</p>	<p>Date</p> <p>15:48:22 01/28/22</p>
	<p>Client</p> <p>Crown Castle</p>	<p>Designed by</p> <p>Jayaraj B</p>

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio P _u / φP _n
L34	76.083 - 74.25 (34)	TP24.976x24.611x0.8	1.833	0.000	0.0	62.277	-29.035	3643.220	0.008
L35	74.25 - 74 (35)	TP25.026x24.976x0.888	0.250	0.000	0.0	68.981	-29.136	4035.390	0.007
L36	74 - 73.75 (36)	TP25.076x25.026x0.888	0.250	0.000	0.0	69.123	-29.212	4043.710	0.007
L37	73.75 - 73.5 (37)	TP25.125x25.076x0.913	0.250	0.000	0.0	71.143	-29.291	4161.880	0.007
L38	73.5 - 68.5 (38)	TP26.121x25.125x0.875	5.000	0.000	0.0	71.130	-30.860	4161.110	0.007
L39	68.5 - 63.5 (39)	TP27.116x26.121x0.85	5.000	0.000	0.0	71.891	-32.464	4205.620	0.008
L40	63.5 - 60.5 (40)	TP27.714x27.116x0.825	3.000	0.000	0.0	71.430	-33.441	4178.630	0.008
L41	60.5 - 60.25 (41)	TP27.763x27.714x0.825	0.250	0.000	0.0	71.562	-33.535	4186.370	0.008
L42	60.25 - 59.5 (42)	TP27.913x27.763x0.825	0.750	0.000	0.0	71.959	-33.774	4209.570	0.008
L43	59.5 - 59.25 (43)	TP27.962x27.913x0.888	0.250	0.000	0.0	77.373	-33.868	4526.350	0.007
L44	59.25 - 54.25 (44)	TP28.958x27.962x0.85	5.000	0.000	0.0	76.932	-35.580	4500.500	0.008
L45	54.25 - 45.802 (45)	TP30.64x28.958x0.838	8.448	0.000	0.0	78.116	-37.063	4569.780	0.008
L46	45.802 - 44.802 (46)	TP30.333x29.304x0.838	5.198	0.000	0.0	79.542	-40.202	4653.200	0.009
L47	44.802 - 43.583 (47)	TP30.574x30.333x0.838	1.219	0.000	0.0	80.192	-40.641	4691.260	0.009
L48	43.583 - 43.333 (48)	TP30.624x30.574x0.85	0.250	0.000	0.0	81.491	-40.751	4767.200	0.009
L49	43.333 - 43.166 (49)	TP30.657x30.624x0.85	0.167	0.000	0.0	81.581	-40.816	4772.490	0.009
L50	43.166 - 42.916 (50)	TP30.706x30.657x0.938	0.250	0.000	0.0	89.864	-40.915	5257.060	0.008
L51	42.916 - 39 (51)	TP31.481x30.706x0.913	3.916	0.000	0.0	89.819	-42.461	5254.390	0.008
L52	39 - 38.75 (52)	TP31.531x31.481x0.95	0.250	0.000	0.0	93.547	-42.580	5472.470	0.008
L53	38.75 - 37.166 (53)	TP31.844x31.531x0.938	1.584	0.000	0.0	93.300	-43.224	5458.030	0.008
L54	37.166 - 36.916 (54)	TP31.894x31.844x0.888	0.250	0.000	0.0	88.608	-43.344	5183.570	0.008
L55	36.916 - 34 (55)	TP32.471x31.894x0.888	2.916	0.000	0.0	90.257	-44.521	5280.050	0.008
L56	34 - 33.75 (56)	TP32.52x32.471x0.875	0.250	0.000	0.0	89.161	-44.637	5215.900	0.009
L57	33.75 - 29.75 (57)	TP33.312x32.52x0.863	4.000	0.000	0.0	89.021	-45.443	5207.730	0.009
L58	29.75 - 29.5 (58)	TP33.361x33.312x0.863	0.250	0.000	0.0	90.120	-46.229	5272.040	0.009
L59	29.5 - 24.5 (59)	TP34.351x33.361x0.85	5.000	0.000	0.0	88.984	-46.341	5205.560	0.009
L60	24.5 - 23 (60)	TP34.648x34.351x0.838	1.500	0.000	0.0	90.378	-48.366	5287.090	0.009
L61	23 - 22.75 (61)	TP34.697x34.648x0.963	0.250	0.000	0.0	104.400	-48.961	6107.370	0.008
L62	22.75 - 21.583 (62)	TP34.928x34.697x0.963	1.167	0.000	0.0	104.553	-49.082	6116.340	0.008
L63	21.583 - 21.333 (63)	TP34.978x34.928x0.85	0.250	0.000	0.0	93.272	-49.589	5456.440	0.009
L64	21.333 - 16.333 (64)	TP35.967x34.978x0.838	5.000	0.000	0.0	92.068	-49.707	5385.980	0.009
L65	16.333 - 12.917 (65)	TP36.644x35.967x0.825	3.416	0.000	0.0	93.356	-51.851	5461.320	0.009
L66	12.917 - 12.667 (66)	TP36.693x36.644x0.913	0.250	0.000	0.0	104.987	-53.318	6141.720	0.009
L67	12.667 - 12.5 (67)	TP36.726x36.693x0.913	0.167	0.000	0.0	105.132	-53.434	6150.220	0.009
L68	12.5 - 12.25 (68)	TP36.776x36.726x0.763	0.250	0.000	0.0	88.299	-53.514	5165.520	0.010

tnxTower

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Client
 Crown Castle
 Designed by
 Jayaraj B

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L69	12.25 - 12 (69)	TP36.825x36.776x0.763	0.250	0.000	0.0	88.421	-53.620	5172.630	0.010
L70	12 - 11.75 (70)	TP36.874x36.825x0.663	0.250	0.000	0.0	77.144	-53.727	4512.900	0.012
L71	11.75 - 8.5 (71)	TP37.518x36.874x0.65	3.250	0.000	0.0	75.818	-53.842	4435.340	0.012
L72	8.5 - 8.25 (72)	TP37.567x37.518x0.925	0.250	0.000	0.0	108.991	-55.143	6376.000	0.009
L73	8.25 - 7 (73)	TP37.815x37.567x0.913	1.250	0.000	0.0	107.701	-55.276	6300.490	0.009
L74	7 - 6.75 (74)	TP37.864x37.815x0.813	0.250	0.000	0.0	96.807	-55.870	5663.190	0.010
L75	6.75 - 1.75 (75)	TP38.854x37.864x0.788	5.000	0.000	0.0	94.017	-55.990	5499.990	0.010
L76	1.75 - 0 (76)	TP39.2x38.854x0.788	1.750	0.000	0.0	96.526	-58.199	5646.780	0.010

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{ux} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{ux}}$	M_{uy} kip-ft	ϕM_{uy} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{uy}}$
L1	144.25 - 139.25 (1)	TP12.75x12.75x0.375	24.226	198.187	0.122	0.000	198.187	0.000
L2	139.25 - 134.75 (2)	TP12.75x12.75x0.375	51.587	198.187	0.260	0.000	198.187	0.000
L3	134.75 - 134.25 (3)	TP13.48x13.48x0.375	54.670	222.251	0.246	0.000	222.251	0.000
L4	134.25 - 129.25 (4)	TP14.466x13.48x0.188	90.956	183.885	0.495	0.000	183.885	0.000
L5	129.25 - 124.25 (5)	TP15.452x14.466x0.188	145.961	210.328	0.694	0.000	210.328	0.000
L6	124.25 - 123.416 (6)	TP15.616x15.452x0.188	155.255	214.735	0.723	0.000	214.735	0.000
L7	123.416 - 123.166 (7)	TP15.665x15.616x0.538	158.048	578.929	0.273	0.000	578.929	0.000
L8	123.166 - 118.166 (8)	TP16.651x15.665x0.513	220.157	630.532	0.349	0.000	630.532	0.000
L9	118.166 - 113.166 (9)	TP17.637x16.651x0.488	292.983	679.450	0.431	0.000	679.450	0.000
L10	113.166 - 109.5 (10)	TP18.36x17.637x0.475	349.877	721.324	0.485	0.000	721.324	0.000
L11	109.5 - 109.25 (11)	TP18.409x18.36x0.588	354.764	880.375	0.403	0.000	880.375	0.000
L12	109.25 - 104.75 (12)	TP19.296x18.409x0.563	443.614	934.067	0.475	0.000	934.067	0.000
L13	104.75 - 104.5 (13)	TP19.346x19.296x0.775	448.600	1250.400	0.359	0.000	1250.400	0.000
L14	104.5 - 102.416 (14)	TP19.756x19.346x0.763	490.384	1288.933	0.380	0.000	1288.933	0.000
L15	102.416 - 102.166 (15)	TP19.806x19.756x0.563	495.423	986.325	0.502	0.000	986.325	0.000
L16	102.166 - 98.75 (16)	TP20.479x19.806x0.55	569.672	1036.033	0.550	0.000	1036.033	0.000
L17	98.75 - 98.5 (17)	TP20.528x20.479x0.838	575.399	1518.050	0.379	0.000	1518.050	0.000
L18	98.5 - 97.5 (18)	TP20.726x20.528x0.838	598.369	1549.233	0.386	0.000	1549.233	0.000
L19	97.5 - 97.25 (19)	TP20.775x20.726x0.75	604.127	1412.833	0.428	0.000	1412.833	0.000
L20	97.25 - 92 (20)	TP21.81x20.775x0.738	643.385	1439.625	0.447	0.000	1439.625	0.000
L21	92 - 90.552 (21)	TP21.73x20.735x0.8	760.924	1645.142	0.463	0.000	1645.142	0.000
L22	90.552 - 89.25 (22)	TP21.989x21.73x0.775	791.962	1639.983	0.483	0.000	1639.983	0.000

Section No.	Elevation ft	Size	M_{ux}	ϕM_{rx}	Ratio	M_{uy}	ϕM_{ry}	Ratio
			kip-ft	kip-ft	$\frac{M_{ux}}{\phi M_{rx}}$	kip-ft	kip-ft	$\frac{M_{uy}}{\phi M_{ry}}$
L23	89.25 - 89 (23)	TP22.039x21.989x1	797.940	2059.442	0.387	0.000	2059.442	0.000
L24	89 - 88.25 (24)	TP22.189x22.039x0.975	815.912	2044.433	0.399	0.000	2044.433	0.000
L25	88.25 - 88 (25)	TP22.238x22.189x0.763	821.914	1655.175	0.497	0.000	1655.175	0.000
L26	88 - 87.833 (26)	TP22.272x22.238x0.763	825.928	1660.392	0.497	0.000	1660.392	0.000
L27	87.833 - 87.583 (27)	TP22.321x22.272x0.675	831.939	1494.833	0.557	0.000	1494.833	0.000
L28	87.583 - 82.583 (28)	TP23.317x22.321x0.65	953.242	1582.242	0.602	0.000	1582.242	0.000
L29	82.583 - 77.583 (29)	TP24.312x23.317x0.625	1076.517	1665.175	0.646	0.000	1665.175	0.000
L30	77.583 - 77 (30)	TP24.428x24.312x0.625	1091.017	1681.742	0.649	0.000	1681.742	0.000
L31	77 - 76.75 (31)	TP24.478x24.428x0.825	1097.242	2173.708	0.505	0.000	2173.708	0.000
L32	76.75 - 76.333 (32)	TP24.561x24.478x0.825	1107.642	2189.250	0.506	0.000	2189.250	0.000
L33	76.333 - 76.083 (33)	TP24.611x24.561x0.825	1113.883	2198.600	0.507	0.000	2198.600	0.000
L34	76.083 - 74.25 (34)	TP24.976x24.611x0.8	1159.817	2205.850	0.526	0.000	2205.850	0.000
L35	74.25 - 74 (35)	TP25.026x24.976x0.888	1166.108	2430.833	0.480	0.000	2430.833	0.000
L36	74 - 73.75 (36)	TP25.076x25.026x0.888	1172.400	2441.050	0.480	0.000	2441.050	0.000
L37	73.75 - 73.5 (37)	TP25.125x25.076x0.913	1178.700	2512.542	0.469	0.000	2512.542	0.000
L38	73.5 - 68.5 (38)	TP26.121x25.125x0.875	1305.892	2626.917	0.497	0.000	2626.917	0.000
L39	68.5 - 63.5 (39)	TP27.116x26.121x0.85	1435.350	2768.483	0.518	0.000	2768.483	0.000
L40	63.5 - 60.5 (40)	TP27.714x27.116x0.825	1514.092	2820.475	0.537	0.000	2820.475	0.000
L41	60.5 - 60.25 (41)	TP27.763x27.714x0.825	1520.692	2831.083	0.537	0.000	2831.083	0.000
L42	60.25 - 59.5 (42)	TP27.913x27.763x0.825	1540.517	2863.033	0.538	0.000	2863.033	0.000
L43	59.5 - 59.25 (43)	TP27.962x27.913x0.888	1547.142	3070.117	0.504	0.000	3070.117	0.000
L44	59.25 - 54.25 (44)	TP28.958x27.962x0.85	1680.742	3176.850	0.529	0.000	3176.850	0.000
L45	54.25 - 45.802 (45)	TP30.64x28.958x0.838	1796.042	3328.592	0.540	0.000	3328.592	0.000
L46	45.802 - 44.802 (46)	TP30.333x29.304x0.838	1939.917	3452.967	0.562	0.000	3452.967	0.000
L47	44.802 - 43.583 (47)	TP30.574x30.333x0.838	1974.050	3510.467	0.562	0.000	3510.467	0.000
L48	43.583 - 43.333 (48)	TP30.624x30.574x0.85	1981.067	3570.392	0.555	0.000	3570.392	0.000
L49	43.333 - 43.166 (49)	TP30.657x30.624x0.85	1985.758	3578.433	0.555	0.000	3578.433	0.000
L50	43.166 - 42.916 (50)	TP30.706x30.657x0.938	1992.775	3925.383	0.508	0.000	3925.383	0.000
L51	42.916 - 39 (51)	TP31.481x30.706x0.913	2103.442	4035.258	0.521	0.000	4035.258	0.000
L52	39 - 38.75 (52)	TP31.531x31.481x0.95	2110.542	4199.433	0.503	0.000	4199.433	0.000
L53	38.75 - 37.166 (53)	TP31.844x31.531x0.938	2155.683	4236.008	0.509	0.000	4236.008	0.000
L54	37.166 - 36.916 (54)	TP31.894x31.844x0.888	2162.825	4042.658	0.535	0.000	4042.658	0.000
L55	36.916 - 34 (55)	TP32.471x31.894x0.888	2246.392	4196.683	0.535	0.000	4196.683	0.000
L56	34 - 33.75 (56)	TP32.52x32.471x0.875	2253.575	4155.650	0.542	0.000	4155.650	0.000
L57	33.75 - 29.75 (57)	TP33.312x32.52x0.863	2311.167	4205.717	0.550	0.000	4205.717	0.000
L58	29.75 - 29.5	TP33.361x33.312x0.863	2368.942	4311.608	0.549	0.000	4311.608	0.000

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	<p>Project</p>	<p>Date</p> <p>15:48:22 01/28/22</p>
	<p>Client</p> <p>Crown Castle</p>	<p>Designed by</p> <p>Jayaraj B</p>

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{rx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{rx}}$	M_{uy} kip-ft	ϕM_{ry} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ry}}$
	(58)							
L59	29.5 - 24.5 (59)	TP34.351x33.361x0.85	2376.183	4267.175	0.557	0.000	4267.175	0.000
L60	24.5 - 23 (60)	TP34.648x34.351x0.838	2521.442	4472.633	0.564	0.000	4472.633	0.000
L61	23 - 22.75 (61)	TP34.697x34.648x0.963	2565.225	5174.958	0.496	0.000	5174.958	0.000
L62	22.75 - 21.583 (62)	TP34.928x34.697x0.963	2572.525	5190.383	0.496	0.000	5190.383	0.000
L63	21.583 - 21.333 (63)	TP34.978x34.928x0.85	2606.675	4693.900	0.555	0.000	4693.900	0.000
L64	21.333 - 16.333 (64)	TP35.967x34.978x0.838	2614.000	4643.575	0.563	0.000	4643.575	0.000
L65	16.333 - 12.917 (65)	TP36.644x35.967x0.825	2760.933	4851.733	0.569	0.000	4851.733	0.000
L66	12.917 - 12.667 (66)	TP36.693x36.644x0.913	2861.875	5536.417	0.517	0.000	5536.417	0.000
L67	12.667 - 12.5 (67)	TP36.726x36.693x0.913	2869.275	5551.950	0.517	0.000	5551.950	0.000
L68	12.5 - 12.25 (68)	TP36.776x36.726x0.763	2874.225	4706.633	0.611	0.000	4706.633	0.000
L69	12.25 - 12 (69)	TP36.825x36.776x0.763	2881.633	4719.725	0.611	0.000	4719.725	0.000
L70	12 - 11.75 (70)	TP36.874x36.825x0.663	2889.050	4146.442	0.697	0.000	4146.442	0.000
L71	11.75 - 8.5 (71)	TP37.518x36.874x0.65	2896.458	4083.675	0.709	0.000	4083.675	0.000
L72	8.5 - 8.25 (72)	TP37.567x37.518x0.925	2993.233	5887.708	0.508	0.000	5887.708	0.000
L73	8.25 - 7 (73)	TP37.815x37.567x0.913	3000.717	5830.017	0.515	0.000	5830.017	0.000
L74	7 - 6.75 (74)	TP37.864x37.815x0.813	3038.192	5305.175	0.573	0.000	5305.175	0.000
L75	6.75 - 1.75 (75)	TP38.854x37.864x0.788	3045.708	5166.292	0.590	0.000	5166.292	0.000
L76	1.75 - 0 (76)	TP39.2x38.854x0.788	3197.242	5448.700	0.587	0.000	5448.700	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	144.25 - 139.25 (1)	TP12.75x12.75x0.375	6.002	181.071	0.033	0.000	197.003	0.000
L2	139.25 - 134.75 (2)	TP12.75x12.75x0.375	6.160	181.071	0.034	0.000	197.003	0.000
L3	134.75 - 134.25 (3)	TP13.48x13.48x0.375	6.176	191.752	0.032	0.000	220.931	0.000
L4	134.25 - 129.25 (4)	TP14.466x13.48x0.188	10.793	151.290	0.071	0.161	190.015	0.001
L5	129.25 - 124.25 (5)	TP15.452x14.466x0.188	11.139	161.736	0.069	0.230	217.158	0.001
L6	124.25 - 123.416 (6)	TP15.616x15.452x0.188	11.171	163.478	0.068	0.230	221.863	0.001
L7	123.416 - 123.166 (7)	TP15.665x15.616x0.538	11.179	459.502	0.024	0.230	611.454	0.000
L8	123.166 - 118.166 (8)	TP16.651x15.665x0.513	14.379	467.405	0.031	0.319	663.528	0.000
L9	118.166 - 113.166 (9)	TP17.637x16.651x0.488	14.771	472.451	0.031	0.333	712.699	0.000
L10	113.166 - 109.5 (10)	TP18.36x17.637x0.475	19.554	480.074	0.041	0.335	755.248	0.000
L11	109.5 - 109.25 (11)	TP18.409x18.36x0.588	19.563	591.677	0.033	0.004	927.533	0.000
L12	109.25 - 104.75 (12)	TP19.296x18.409x0.563	19.944	595.497	0.033	0.003	981.300	0.000

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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 $\frac{T_u}{\phi T_n}$
L13	104.75 - 104.5 (13)	TP19.346x19.296x0.775	19.957	813.314	0.025	0.003	1328.558	0.000
L14	104.5 - 102.416 (14)	TP19.756x19.346x0.763	20.158	818.440	0.025	0.007	1367.417	0.000
L15	102.416 - 102.166 (15)	TP19.806x19.756x0.563	20.173	611.691	0.033	0.008	1035.400	0.000
L16	102.166 - 98.75 (16)	TP20.479x19.806x0.55	22.917	619.420	0.037	0.014	1085.858	0.000
L17	98.75 - 98.5 (17)	TP20.528x20.479x0.838	22.927	931.933	0.025	0.014	1614.175	0.000
L18	98.5 - 97.5 (18)	TP20.726x20.528x0.838	23.033	941.264	0.024	0.016	1646.667	0.000
L19	97.5 - 97.25 (19)	TP20.775x20.726x0.75	23.049	848.721	0.027	0.016	1494.983	0.000
L20	97.25 - 92 (20)	TP21.81x20.775x0.738	23.222	849.049	0.027	0.016	1521.492	0.000
L21	92 - 90.552 (21)	TP21.73x20.735x0.8	23.803	946.229	0.025	0.016	1742.083	0.000
L22	90.552 - 89.25 (22)	TP21.989x21.73x0.775	23.920	929.108	0.026	0.017	1733.792	0.000
L23	89.25 - 89 (23)	TP22.039x21.989x1	23.930	1188.950	0.020	0.017	2200.350	0.000
L24	89 - 88.25 (24)	TP22.189x22.039x0.975	24.012	1168.830	0.021	0.019	2181.042	0.000
L25	88.25 - 88 (25)	TP22.238x22.189x0.763	24.029	925.385	0.026	0.019	1748.125	0.000
L26	88 - 87.833 (26)	TP22.272x22.238x0.763	24.045	926.817	0.026	0.019	1753.542	0.000
L27	87.833 - 87.583 (27)	TP22.321x22.272x0.675	24.066	825.698	0.029	0.019	1572.192	0.000
L28	87.583 - 82.583 (28)	TP23.317x22.321x0.65	24.484	832.602	0.029	0.024	1660.075	0.000
L29	82.583 - 77.583 (29)	TP24.312x23.317x0.625	24.874	836.622	0.030	0.026	1743.192	0.000
L30	77.583 - 77 (30)	TP24.428x24.312x0.625	24.909	840.722	0.030	0.026	1760.317	0.000
L31	77 - 76.75 (31)	TP24.478x24.428x0.825	24.924	1102.750	0.023	0.026	2294.383	0.000
L32	76.75 - 76.333 (32)	TP24.561x24.478x0.825	24.964	1106.620	0.023	0.026	2310.525	0.000
L33	76.333 - 76.083 (33)	TP24.611x24.561x0.825	24.984	1108.940	0.023	0.027	2320.225	0.000
L34	76.083 - 74.25 (34)	TP24.976x24.611x0.8	25.174	1092.970	0.023	0.027	2324.292	0.000
L35	74.25 - 74 (35)	TP25.026x24.976x0.888	25.170	1210.620	0.021	0.022	2570.467	0.000
L36	74 - 73.75 (36)	TP25.076x25.026x0.888	25.193	1213.110	0.021	0.021	2581.075	0.000
L37	73.75 - 73.5 (37)	TP25.125x25.076x0.913	25.216	1248.560	0.020	0.020	2659.225	0.000
L38	73.5 - 68.5 (38)	TP26.121x25.125x0.875	25.687	1248.330	0.021	0.003	2772.167	0.000
L39	68.5 - 63.5 (39)	TP27.116x26.121x0.85	26.135	1261.680	0.021	0.026	2915.075	0.000
L40	63.5 - 60.5 (40)	TP27.714x27.116x0.825	26.403	1253.590	0.021	0.039	2964.992	0.000
L41	60.5 - 60.25 (41)	TP27.763x27.714x0.825	26.412	1255.910	0.021	0.040	2975.975	0.000
L42	60.25 - 59.5 (42)	TP27.913x27.763x0.825	26.488	1262.870	0.021	0.043	3009.058	0.000
L43	59.5 - 59.25 (43)	TP27.962x27.913x0.888	26.502	1357.910	0.020	0.044	3233.983	0.000
L44	59.25 - 54.25 (44)	TP28.958x27.962x0.85	26.968	1350.150	0.020	0.068	3338.192	0.000
L45	54.25 - 45.802 (45)	TP30.64x28.958x0.838	27.336	1370.930	0.020	0.089	3493.133	0.000
L46	45.802 - 44.802 (46)	TP30.333x29.304x0.838	27.977	1395.960	0.020	0.039	3621.825	0.000
L47	44.802 - 43.583 (47)	TP30.574x30.333x0.838	28.076	1407.380	0.020	0.039	3681.317	0.000
L48	43.583 -	TP30.624x30.574x0.85	28.074	1430.160	0.020	0.038	3745.558	0.000

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			Jayaraj B

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 $\frac{T_u}{\phi T_n}$
L49	43.333 (48)	TP30.657x30.624x0.85	28.086	1431.750	0.020	0.038	3753.883	0.000
L50	43.333 - 43.166 (49)	TP30.706x30.657x0.938	28.107	1577.120	0.018	0.038	4129.758	0.000
L51	43.166 - 42.916 (50)	TP31.481x30.706x0.913	28.440	1576.320	0.018	0.038	4238.592	0.000
L52	42.916 - 39 (51)	TP31.531x31.481x0.95	28.438	1641.740	0.017	0.038	4416.233	0.000
L53	39 - 38.75 (52)	TP31.844x31.531x0.938	28.590	1637.410	0.017	0.039	4451.542	0.000
L54	38.75 - 37.166 (53)	TP31.894x31.844x0.888	28.583	1555.070	0.018	0.039	4241.300	0.000
L55	37.166 - 36.916 (54)	TP32.471x31.894x0.888	28.765	1584.020	0.018	0.039	4400.650	0.000
L56	36.916 - 34 (55)	TP32.52x32.471x0.875	28.752	1564.770	0.018	0.039	4355.717	0.000
L57	34 - 33.75 (56)	TP33.312x32.52x0.863	28.910	1571.970	0.018	0.039	4405.008	0.000
L58	33.75 - 29.75 (57)	TP33.361x33.312x0.863	28.951	1584.020	0.018	0.039	4514.475	0.000
L59	29.75 - 29.5 (58)	TP34.351x33.361x0.85	29.010	1571.170	0.018	0.039	4466.058	0.000
L60	29.5 - 24.5 (59)	TP34.648x34.351x0.838	29.253	1600.180	0.018	0.039	4675.825	0.000
L61	24.5 - 23 (60)	TP34.697x34.648x0.963	29.235	1834.900	0.016	0.039	5428.967	0.000
L62	23 - 22.75 (61)	TP34.928x34.697x0.963	29.309	1847.470	0.016	0.039	5444.933	0.000
L63	22.75 - 21.583 (62)	TP34.978x34.928x0.85	29.301	1639.310	0.018	0.039	4906.925	0.000
L64	21.583 - 21.333 (63)	TP35.967x34.978x0.838	29.355	1625.160	0.018	0.039	4852.367	0.000
L65	21.333 - 16.333 (64)	TP36.644x35.967x0.825	29.550	1648.900	0.018	0.039	5064.658	0.000
L66	16.333 - 12.917 (65)	TP36.693x36.644x0.913	29.631	1845.070	0.016	0.039	5791.033	0.000
L67	12.917 - 12.667 (66)	TP36.726x36.693x0.913	29.637	1846.770	0.016	0.039	5807.083	0.000
L68	12.667 - 12.5 (67)	TP36.776x36.726x0.763	29.649	1551.790	0.019	0.039	4902.275	0.000
L69	12.5 - 12.25 (68)	TP36.825x36.776x0.763	29.658	1553.920	0.019	0.039	4915.775	0.000
L70	12.25 - 12 (69)	TP36.874x36.825x0.663	29.666	1355.720	0.022	0.039	4306.608	0.000
L71	12 - 11.75 (70)	TP37.518x36.874x0.65	29.769	1338.480	0.022	0.039	4239.850	0.000
L72	11.75 - 8.5 (71)	TP37.567x37.518x0.925	29.923	1915.390	0.016	0.007	6156.925	0.000
L73	8.5 - 8.25 (72)	TP37.815x37.567x0.913	30.073	1902.900	0.016	0.009	6094.317	0.000
L74	8.25 - 7 (73)	TP37.864x37.815x0.813	30.075	1701.230	0.018	0.012	5529.792	0.000
L75	7 - 6.75 (74)	TP38.854x37.864x0.788	30.189	1658.800	0.018	0.017	5381.242	0.000
L76	6.75 - 1.75 (75)	TP39.2x38.854x0.788	30.755	1709.450	0.018	0.046	5672.325	0.000
L76	1.75 - 0 (76)							

Pole Interaction Design Data

Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		ϕP_n	ϕM_{nx}	ϕM_{ny}	ϕV_n	ϕT_n			
L1	144.25 - 139.25 (1)	0.007	0.122	0.000	0.033	0.000	0.131	1.050	4.8.2 ✓
L2	139.25 - 134.75 (2)	0.008	0.260	0.000	0.034	0.000	0.269	1.050	4.8.2 ✓

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Section No.	Elevation ft	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Ratio V_u ϕV_n	Ratio T_u ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L3	134.75 - 134.25 (3)	0.007	0.246	0.000	0.032	0.000	0.254	1.050	4.8.2 ✓
L4	134.25 - 129.25 (4)	0.017	0.495	0.000	0.071	0.001	0.517	1.050	4.8.2 ✓
L5	129.25 - 124.25 (5)	0.016	0.694	0.000	0.069	0.001	0.715	1.050	4.8.2 ✓
L6	124.25 - 123.416 (6)	0.016	0.723	0.000	0.068	0.001	0.744	1.050	4.8.2 ✓
L7	123.416 - 123.166 (7)	0.006	0.273	0.000	0.024	0.000	0.279	1.050	4.8.2 ✓
L8	123.166 - 118.166 (8)	0.008	0.349	0.000	0.031	0.000	0.358	1.050	4.8.2 ✓
L9	118.166 - 113.166 (9)	0.008	0.431	0.000	0.031	0.000	0.440	1.050	4.8.2 ✓
L10	113.166 - 109.5 (10)	0.010	0.485	0.000	0.041	0.000	0.497	1.050	4.8.2 ✓
L11	109.5 - 109.25 (11)	0.008	0.403	0.000	0.033	0.000	0.412	1.050	4.8.2 ✓
L12	109.25 - 104.75 (12)	0.009	0.475	0.000	0.033	0.000	0.485	1.050	4.8.2 ✓
L13	104.75 - 104.5 (13)	0.006	0.359	0.000	0.025	0.000	0.366	1.050	4.8.2 ✓
L14	104.5 - 102.416 (14)	0.006	0.380	0.000	0.025	0.000	0.388	1.050	4.8.2 ✓
L15	102.416 - 102.166 (15)	0.009	0.502	0.000	0.033	0.000	0.512	1.050	4.8.2 ✓
L16	102.166 - 98.75 (16)	0.011	0.550	0.000	0.037	0.000	0.562	1.050	4.8.2 ✓
L17	98.75 - 98.5 (17)	0.007	0.379	0.000	0.025	0.000	0.387	1.050	4.8.2 ✓
L18	98.5 - 97.5 (18)	0.007	0.386	0.000	0.024	0.000	0.394	1.050	4.8.2 ✓
L19	97.5 - 97.25 (19)	0.008	0.428	0.000	0.027	0.000	0.436	1.050	4.8.2 ✓
L20	97.25 - 92 (20)	0.008	0.447	0.000	0.027	0.000	0.456	1.050	4.8.2 ✓
L21	92 - 90.552 (21)	0.008	0.463	0.000	0.025	0.000	0.471	1.050	4.8.2 ✓
L22	90.552 - 89.25 (22)	0.008	0.483	0.000	0.026	0.000	0.492	1.050	4.8.2 ✓
L23	89.25 - 89 (23)	0.006	0.387	0.000	0.020	0.000	0.394	1.050	4.8.2 ✓
L24	89 - 88.25 (24)	0.007	0.399	0.000	0.021	0.000	0.406	1.050	4.8.2 ✓
L25	88.25 - 88 (25)	0.008	0.497	0.000	0.026	0.000	0.505	1.050	4.8.2 ✓
L26	88 - 87.833 (26)	0.008	0.497	0.000	0.026	0.000	0.506	1.050	4.8.2 ✓
L27	87.833 - 87.583 (27)	0.009	0.557	0.000	0.029	0.000	0.567	1.050	4.8.2 ✓
L28	87.583 - 82.583 (28)	0.010	0.602	0.000	0.029	0.000	0.613	1.050	4.8.2 ✓

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Section No.	Elevation ft	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Ratio V_u ϕV_n	Ratio T_u ϕT_n	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L29	82.583 - 77.583 (29)	0.010	0.646	0.000	0.030	0.000	0.657	1.050	4.8.2 ✓
L30	77.583 - 77 (30)	0.010	0.649	0.000	0.030	0.000	0.660	1.050	4.8.2 ✓
L31	77 - 76.75 (31)	0.008	0.505	0.000	0.023	0.000	0.513	1.050	4.8.2 ✓
L32	76.75 - 76.333 (32)	0.008	0.506	0.000	0.023	0.000	0.514	1.050	4.8.2 ✓
L33	76.333 - 76.083 (33)	0.008	0.507	0.000	0.023	0.000	0.515	1.050	4.8.2 ✓
L34	76.083 - 74.25 (34)	0.008	0.526	0.000	0.023	0.000	0.534	1.050	4.8.2 ✓
L35	74.25 - 74 (35)	0.007	0.480	0.000	0.021	0.000	0.487	1.050	4.8.2 ✓
L36	74 - 73.75 (36)	0.007	0.480	0.000	0.021	0.000	0.488	1.050	4.8.2 ✓
L37	73.75 - 73.5 (37)	0.007	0.469	0.000	0.020	0.000	0.477	1.050	4.8.2 ✓
L38	73.5 - 68.5 (38)	0.007	0.497	0.000	0.021	0.000	0.505	1.050	4.8.2 ✓
L39	68.5 - 63.5 (39)	0.008	0.518	0.000	0.021	0.000	0.527	1.050	4.8.2 ✓
L40	63.5 - 60.5 (40)	0.008	0.537	0.000	0.021	0.000	0.545	1.050	4.8.2 ✓
L41	60.5 - 60.25 (41)	0.008	0.537	0.000	0.021	0.000	0.546	1.050	4.8.2 ✓
L42	60.25 - 59.5 (42)	0.008	0.538	0.000	0.021	0.000	0.547	1.050	4.8.2 ✓
L43	59.5 - 59.25 (43)	0.007	0.504	0.000	0.020	0.000	0.512	1.050	4.8.2 ✓
L44	59.25 - 54.25 (44)	0.008	0.529	0.000	0.020	0.000	0.537	1.050	4.8.2 ✓
L45	54.25 - 45.802 (45)	0.008	0.540	0.000	0.020	0.000	0.548	1.050	4.8.2 ✓
L46	45.802 - 44.802 (46)	0.009	0.562	0.000	0.020	0.000	0.571	1.050	4.8.2 ✓
L47	44.802 - 43.583 (47)	0.009	0.562	0.000	0.020	0.000	0.571	1.050	4.8.2 ✓
L48	43.583 - 43.333 (48)	0.009	0.555	0.000	0.020	0.000	0.564	1.050	4.8.2 ✓
L49	43.333 - 43.166 (49)	0.009	0.555	0.000	0.020	0.000	0.564	1.050	4.8.2 ✓
L50	43.166 - 42.916 (50)	0.008	0.508	0.000	0.018	0.000	0.516	1.050	4.8.2 ✓
L51	42.916 - 39 (51)	0.008	0.521	0.000	0.018	0.000	0.530	1.050	4.8.2 ✓
L52	39 - 38.75 (52)	0.008	0.503	0.000	0.017	0.000	0.511	1.050	4.8.2 ✓
L53	38.75 - 37.166 (53)	0.008	0.509	0.000	0.017	0.000	0.517	1.050	4.8.2 ✓
L54	37.166 - 36.916 (54)	0.008	0.535	0.000	0.018	0.000	0.544	1.050	4.8.2 ✓

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Section No.	Elevation ft	Ratio P_u	Ratio M_{ux}	Ratio M_{uy}	Ratio V_u	Ratio T_u	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		ϕP_n	ϕM_{nx}	ϕM_{ny}	ϕV_n	ϕT_n			
L55	36.916 - 34 (55)	0.008	0.535	0.000	0.018	0.000	0.544	1.050	4.8.2 ✓
L56	34 - 33.75 (56)	0.009	0.542	0.000	0.018	0.000	0.551	1.050	4.8.2 ✓
L57	33.75 - 29.75 (57)	0.009	0.550	0.000	0.018	0.000	0.559	1.050	4.8.2 ✓
L58	29.75 - 29.5 (58)	0.009	0.549	0.000	0.018	0.000	0.559	1.050	4.8.2 ✓
L59	29.5 - 24.5 (59)	0.009	0.557	0.000	0.018	0.000	0.566	1.050	4.8.2 ✓
L60	24.5 - 23 (60)	0.009	0.564	0.000	0.018	0.000	0.573	1.050	4.8.2 ✓
L61	23 - 22.75 (61)	0.008	0.496	0.000	0.016	0.000	0.504	1.050	4.8.2 ✓
L62	22.75 - 21.583 (62)	0.008	0.496	0.000	0.016	0.000	0.504	1.050	4.8.2 ✓
L63	21.583 - 21.333 (63)	0.009	0.555	0.000	0.018	0.000	0.565	1.050	4.8.2 ✓
L64	21.333 - 16.333 (64)	0.009	0.563	0.000	0.018	0.000	0.572	1.050	4.8.2 ✓
L65	16.333 - 12.917 (65)	0.009	0.569	0.000	0.018	0.000	0.579	1.050	4.8.2 ✓
L66	12.917 - 12.667 (66)	0.009	0.517	0.000	0.016	0.000	0.526	1.050	4.8.2 ✓
L67	12.667 - 12.5 (67)	0.009	0.517	0.000	0.016	0.000	0.526	1.050	4.8.2 ✓
L68	12.5 - 12.25 (68)	0.010	0.611	0.000	0.019	0.000	0.621	1.050	4.8.2 ✓
L69	12.25 - 12 (69)	0.010	0.611	0.000	0.019	0.000	0.621	1.050	4.8.2 ✓
L70	12 - 11.75 (70)	0.012	0.697	0.000	0.022	0.000	0.709	1.050	4.8.2 ✓
L71	11.75 - 8.5 (71)	0.012	0.709	0.000	0.022	0.000	0.722	1.050	4.8.2 ✓
L72	8.5 - 8.25 (72)	0.009	0.508	0.000	0.016	0.000	0.517	1.050	4.8.2 ✓
L73	8.25 - 7 (73)	0.009	0.515	0.000	0.016	0.000	0.524	1.050	4.8.2 ✓
L74	7 - 6.75 (74)	0.010	0.573	0.000	0.018	0.000	0.583	1.050	4.8.2 ✓
L75	6.75 - 1.75 (75)	0.010	0.590	0.000	0.018	0.000	0.600	1.050	4.8.2 ✓
L76	1.75 - 0 (76)	0.010	0.587	0.000	0.018	0.000	0.597	1.050	4.8.2 ✓

Section Capacity Table

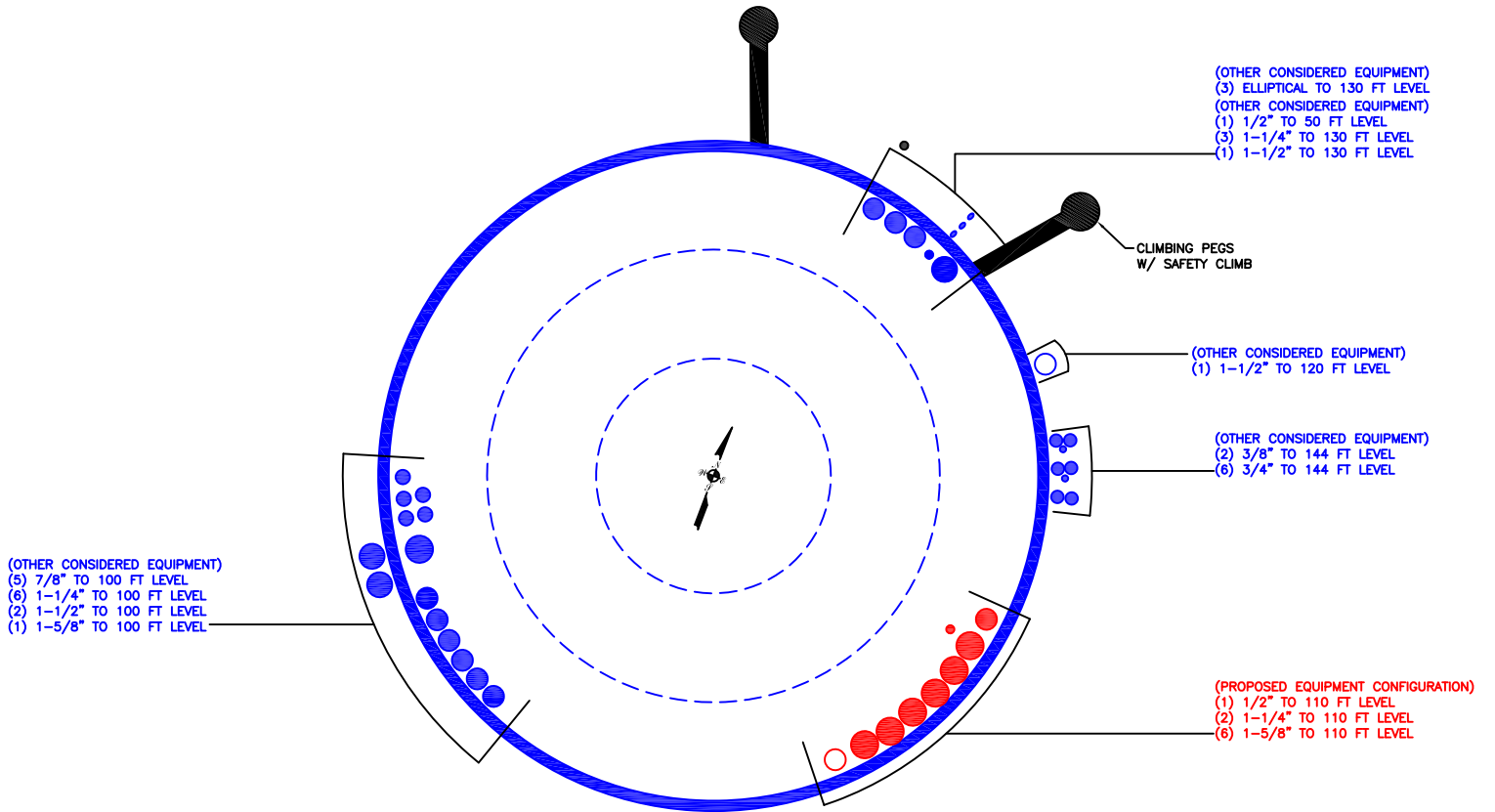
Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	144.25 - 139.25	Pole	TP12.75x12.75x0.375	1	-4.424	633.747	**	**
L2	139.25 - 134.75	Pole	TP12.75x12.75x0.375	2	-4.706	633.747	**	**
L3	134.75 - 134.25	Pole	TP13.48x13.48x0.375	3	-4.741	671.132	**	**
L4	134.25 - 129.25	Pole	TP14.466x13.48x0.188	4	-8.526	529.516	**	**
L5	129.25 - 124.25	Pole	TP15.452x14.466x0.188	5	-8.760	566.074	**	**
L6	124.25 - 123.416	Pole	TP15.616x15.452x0.188	6	-8.821	572.172	**	**
L7	123.416 - 123.166	Pole	TP15.665x15.616x0.538	7	-8.858	1608.253	**	**
L8	123.166 - 118.166	Pole	TP16.651x15.665x0.513	8	-12.267	1635.921	**	**
L9	118.166 - 113.166	Pole	TP17.637x16.651x0.488	9	-12.854	1653.582	**	**
L10	113.166 - 109.5	Pole	TP18.36x17.637x0.475	10	-16.453	1680.262	**	**
L11	109.5 - 109.25	Pole	TP18.409x18.36x0.588	11	-16.509	2070.873	**	**
L12	109.25 - 104.75	Pole	TP19.296x18.409x0.563	12	-17.234	2084.239	**	**
L13	104.75 - 104.5	Pole	TP19.346x19.296x0.775	13	-17.300	2846.602	**	**
L14	104.5 - 102.416	Pole	TP19.756x19.346x0.763	14	-17.729	2864.536	**	**
L15	102.416 - 102.166	Pole	TP19.806x19.756x0.563	15	-17.788	2140.918	**	**
L16	102.166 - 98.75	Pole	TP20.479x19.806x0.55	16	-21.794	2167.966	**	**
L17	98.75 - 98.5	Pole	TP20.528x20.479x0.838	17	-21.877	3261.762	**	**
L18	98.5 - 97.5	Pole	TP20.726x20.528x0.838	18	-22.131	3294.427	**	**
L19	97.5 - 97.25	Pole	TP20.775x20.726x0.75	19	-22.203	2970.523	**	**
L20	97.25 - 92	Pole	TP21.81x20.775x0.738	20	-22.616	2971.668	**	**
L21	92 - 90.552	Pole	TP21.73x20.735x0.8	21	-24.667	3311.805	**	**
L22	90.552 - 89.25	Pole	TP21.989x21.73x0.775	22	-25.030	3251.881	**	**
L23	89.25 - 89	Pole	TP22.039x21.989x1	23	-25.125	4161.307	**	**
L24	89 - 88.25	Pole	TP22.189x22.039x0.975	24	-25.355	4090.894	**	**
L25	88.25 - 88	Pole	TP22.238x22.189x0.763	25	-25.429	3238.851	**	**
L26	88 - 87.833	Pole	TP22.272x22.238x0.763	26	-25.475	3243.859	**	**
L27	87.833 - 87.583	Pole	TP22.321x22.272x0.675	27	-25.536	2889.946	**	**
L28	87.583 - 82.583	Pole	TP23.317x22.321x0.65	28	-26.786	2914.107	**	**
L29	82.583 - 77.583	Pole	TP24.312x23.317x0.625	29	-28.079	2928.177	**	**
L30	77.583 - 77	Pole	TP24.428x24.312x0.625	30	-28.240	2942.530	**	**
L31	77 - 76.75	Pole	TP24.478x24.428x0.825	31	-28.324	3859.621	**	**
L32	76.75 - 76.333	Pole	TP24.561x24.478x0.825	32	-28.448	3873.166	**	**
L33	76.333 - 76.083	Pole	TP24.611x24.561x0.825	33	-28.524	3881.293	**	**
L34	76.083 - 74.25	Pole	TP24.976x24.611x0.8	34	-29.035	3825.381	**	**
L35	74.25 - 74	Pole	TP25.026x24.976x0.888	35	-29.136	4237.159	**	**
L36	74 - 73.75	Pole	TP25.076x25.026x0.888	36	-29.212	4245.895	**	**
L37	73.75 - 73.5	Pole	TP25.125x25.076x0.913	37	-29.291	4369.974	**	**
L38	73.5 - 68.5	Pole	TP26.121x25.125x0.875	38	-30.860	4369.165	**	**
L39	68.5 - 63.5	Pole	TP27.116x26.121x0.85	39	-32.464	4415.901	**	**
L40	63.5 - 60.5	Pole	TP27.714x27.116x0.825	40	-33.441	4387.561	**	**
L41	60.5 - 60.25	Pole	TP27.763x27.714x0.825	41	-33.535	4395.688	**	**
L42	60.25 - 59.5	Pole	TP27.913x27.763x0.825	42	-33.774	4420.048	**	**
L43	59.5 - 59.25	Pole	TP27.962x27.913x0.888	43	-33.868	4752.667	**	**
L44	59.25 - 54.25	Pole	TP28.958x27.962x0.85	44	-35.580	4725.525	**	**
L45	54.25 - 45.802	Pole	TP30.64x28.958x0.838	45	-37.063	4798.269	**	**
L46	45.802 - 44.802	Pole	TP30.333x29.304x0.838	46	-40.202	4885.860	**	**
L47	44.802 - 43.583	Pole	TP30.574x30.333x0.838	47	-40.641	4925.823	**	**
L48	43.583 - 43.333	Pole	TP30.624x30.574x0.85	48	-40.751	5005.560	**	**
L49	43.333 - 43.166	Pole	TP30.657x30.624x0.85	49	-40.816	5011.114	**	**
L50	43.166 - 42.916	Pole	TP30.706x30.657x0.938	50	-40.915	5519.913	**	**
L51	42.916 - 39	Pole	TP31.481x30.706x0.913	51	-42.461	5517.109	**	**
L52	39 - 38.75	Pole	TP31.531x31.481x0.95	52	-42.580	5746.093	**	**
L53	38.75 - 37.166	Pole	TP31.844x31.531x0.938	53	-43.224	5730.931	**	**
L54	37.166 - 36.916	Pole	TP31.894x31.844x0.888	54	-43.344	5442.748	**	**
L55	36.916 - 34	Pole	TP32.471x31.894x0.888	55	-44.521	5544.052	**	**
L56	34 - 33.75	Pole	TP32.52x32.471x0.875	56	-44.637	5476.695	**	**
L57	33.75 - 29.75	Pole	TP33.312x32.52x0.863	57	-45.443	5468.116	**	**

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	Client	Crown Castle	Designed by	Jayaraj B

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L58	29.75 - 29.5	Pole	TP33.361x33.312x0.863	58	-46.229	5535.642	**	**
L59	29.5 - 24.5	Pole	TP34.351x33.361x0.85	59	-46.341	5465.838	**	**
L60	24.5 - 23	Pole	TP34.648x34.351x0.838	60	-48.366	5551.444	**	**
L61	23 - 22.75	Pole	TP34.697x34.648x0.963	61	-48.961	6412.738	**	**
L62	22.75 - 21.583	Pole	TP34.928x34.697x0.963	62	-49.082	6422.157	**	**
L63	21.583 - 21.333	Pole	TP34.978x34.928x0.85	63	-49.589	5729.262	**	**
L64	21.333 - 16.333	Pole	TP35.967x34.978x0.838	64	-49.707	5655.279	**	**
L65	16.333 - 12.917	Pole	TP36.644x35.967x0.825	65	-51.851	5734.386	**	**
L66	12.917 - 12.667	Pole	TP36.693x36.644x0.913	66	-53.318	6448.806	**	**
L67	12.667 - 12.5	Pole	TP36.726x36.693x0.913	67	-53.434	6457.731	**	**
L68	12.5 - 12.25	Pole	TP36.776x36.726x0.763	68	-53.514	5423.796	**	**
L69	12.25 - 12	Pole	TP36.825x36.776x0.763	69	-53.620	5431.261	**	**
L70	12 - 11.75	Pole	TP36.874x36.825x0.663	70	-53.727	4738.545	**	**
L71	11.75 - 8.5	Pole	TP37.518x36.874x0.65	71	-53.842	4657.107	**	**
L72	8.5 - 8.25	Pole	TP37.567x37.518x0.925	72	-55.143	6694.800	**	**
L73	8.25 - 7	Pole	TP37.815x37.567x0.913	73	-55.276	6615.514	**	**
L74	7 - 6.75	Pole	TP37.864x37.815x0.813	74	-55.870	5946.349	**	**
L75	6.75 - 1.75	Pole	TP38.854x37.864x0.788	75	-55.990	5774.989	**	**
L76	1.75 - 0	Pole	TP39.2x38.854x0.788	76	-58.199	5929.119	**	**
							Summary	
							Pole (L6)	**
							RATING =	**

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

APPENDIX B
BASE LEVEL DRAWING



BUSINESS UNIT: 876317

APPENDIX C
ADDITIONAL CALCULATIONS

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	144.25	9.5	0	0	12.75	12.75	0.375		A500-46
2	134.75	0.5	0	0	13.48	13.48	0.375		A500-46
3	134.25	42.25	3.552	12	13.48	21.81	0.1875	Auto	A572-65
4	95.552	49.75	4.198	12	20.73	30.64	0.25	Auto	A572-65
5	50	50	0	12	29.30	39.2	0.3125	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	29.75	plate	PL 6.875x1.25 BW	2				E1								E1
2	0	12.917	plate	PL 6.875x1.25 (14)	2							E1		E1			
3	12.917	29.75	plate	PL 6.875x1.25	1								E1				
4	29.75	59.5	plate	PL 6.625x1.25	3				E1				E1				E1
5	59.5	89.25	plate	PL 5.5x1.25	3				E1				E1				E1
6	89.25	98.75	plate	PL 3.625x1.25	3				E1				E1				E1
7	12.5	39	plate	PL 4x1	1	E2											
8	12.5	34	plate	PL 4x1	2						E2					E2	
9	34	60.5	plate	PL 4x1	3			E2				E2					E2
10	60.5	77	plate	PL 4x1	3		E2				E2					E2	
11	88.25	104.75	plate	PL 4x1	3		E2				E2					E2	
12	0	8.5	plate	TS 1x7	3			3							3		
13	7	23	plate	CCI-SFP-060100	2					E3							E3
14	12	23	plate	CCI-SFP-060100	1			E3									
15	21.583	37.166	plate	CCI-SFP-045100	1									E3			
16	23	37.166	plate	CCI-SFP-045100	1					E3							
17	23	43.583	plate	CCI-SFP-045100	1			E3									
18	37.166	43.166	plate	CCI-SFP-060100	2					E3							E3
19	43.166	73.75	plate	CCI-SFP-045100	1									E3			
20	46.75	73.75	plate	CCI-SFP-045100	1			E3									
21	43.166	74.25	plate	CCI-SFP-040075	1					E3							
22	73.75	102.416	plate	CCI-SFP-040075	2		E3							E3			
23	76.333	89.25	plate	CCI-SFP-040075	1				E3								
24	87.833	102.416	plate	CCI-AFP-050125	1							E3					
25	102.416	123.416	plate	CCI-AFP-045100	2		E3							E3			
26	102.416	123.416	plate	CCI-AFP-045100	1					E3							
27	97.5	109.5	plate	CCI-AFP-040075	1				E3								
28	102.416	109.5	plate	CCI-AFP-040075	1												E3
29																	

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 (in ²)	Bolt Hole Size (in)	Reinforcement Material
1	6.875	1.25	8.59375	0.625	Welded	n/a	PC 8.8 - M20 (100)	36.000	15.000	6.953	1.2500	A572-65
2	6.875	1.25	8.59375	0.625	Welded	n/a	PC 8.8 - M20 (100)	42.000	15.000	6.953	1.2500	A572-65
3	6.875	1.25	8.59375	0.625	PC 8.8 - M20 (100)	42	PC 8.8 - M20 (100)	36.000	15.000	6.953	1.2500	A572-65
4	6.625	1.25	8.28125	0.625	None	n/a	PC 8.8 - M20 (100)	30.000	18.000	6.641	1.2500	A572-65
5	5.5	1.25	6.875	0.625	None	n/a	PC 8.8 - M20 (100)	18.000	18.000	5.234	1.2500	A572-65
6	3.625	1.25	4.53125	0.625	None	n/a	PC 8.8 - M20 (100)	15.000	24.000	2.891	1.2500	A572-65
7	4	1	4	0.5	PC 8.8 - M20 (100)	21	PC 8.8 - M20 (100)	21.000	20.000	2.750	1.1875	A572-65
8	4	1	4	0.5	PC 8.8 - M20 (100)	21	PC 8.8 - M20 (100)	21.000	20.000	2.750	1.1875	A572-65
9	4	1	4	0.5	PC 8.8 - M20 (100)	21	PC 8.8 - M20 (100)	21.000	20.000	2.750	1.1875	A572-65
10	4	1	4	0.5	PC 8.8 - M20 (100)	21	PC 8.8 - M20 (100)	21.000	20.000	2.750	1.1875	A572-65
11	4	1	4	0.5	PC 8.8 - M20 (100)	21	PC 8.8 - M20 (100)	21.000	20.000	2.750	1.1875	A572-65
12	1	7	7	3.5	Welded	n/a	Welded	0.000	0.750	7.000	0.0000	A572-65
13	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
14	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
15	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
16	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
17	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
18	6	1	6	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	16.000	4.750	1.1875	A572-65
19	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
20	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	20.000	3.250	1.1875	A572-65
21	4	0.75	3	0.375	PC 8.8 - M20 (100)	12	PC 8.8 - M20 (100)	12.000	16.000	2.063	1.1875	A572-65
22	4	0.75	3	0.375	PC 8.8 - M20 (100)	12	PC 8.8 - M20 (100)	12.000	16.000	2.063	1.1875	A572-65
23	4	0.75	3	0.375	PC 8.8 - M20 (100)	12	PC 8.8 - M20 (100)	12.000	16.000	2.063	1.1875	A572-65
24	5	1.25	6.25	0.625	PC 8.8 - M20 (100)	30	PC 8.8 - M20 (100)	30.000	23.000	4.688	1.1875	A572-65
25	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
26	4.5	1	4.5	0.5	PC 8.8 - M20 (100)	24	PC 8.8 - M20 (100)	24.000	20.000	3.250	1.1875	A572-65
27	4	0.75	3	0.375	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	16.000	2.063	1.1875	A572-65
28	4	0.75	3	0.375	PC 8.8 - M20 (100)	18	PC 8.8 - M20 (100)	18.000	16.000	2.063	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)
PL 6.875x1.25 BW	Top	12	N	3	3	-	None	-	-	-	-	-	-	-
	Bottom	-	-	-	-	70	None	-	-	-	-	-	-	-
PL 6.875x1.25 (14)	Top	14	N	3	3	-	None	-	-	-	-	-	-	-
	Bottom	-	-	-	-	70	None	-	-	-	-	-	-	-
PL 6.875x1.25	Top	12	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	14	N	3	3	0	-	-	-	-	-	-	-	-
PL 6.625x1.25	Top	10	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	70	None	-	-	-	-	-	-	-
PL 5.5x1.25	Top	6	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	70	None	-	-	-	-	-	-	-
PL 3.625x1.25	Top	5	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	70	None	-	-	-	-	-	-	-
PL 4x1	Top	7	N	3	3	-	-	-	-	-	-	-	-	-
	Bottom	7	N	3	3	0	-	-	-	-	-	-	-	-
TS 1x7	Top	0	-	0	0	80	None	-	-	-	-	125.25	0.313	-
	Bottom	-	-	-	-	80	CJP Groove	12.5	0.5	45	0.3125	-	-	-

TNX Geometry Input

Increment (ft): [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	144.25 - 139.25	5		0	12.750	12.750	0.375	A500-46	1.000
2	139.25 - 134.75	4.5	0	0	12.750	12.750	0.375	A500-46	1.000
3	134.75 - 134.25	0.5	0	0	13.480	13.480	0.375	A500-46	1.000
4	134.25 - 129.25	5		12	13.480	14.466	0.1875	A572-65	1.000
5	129.25 - 124.25	5		12	14.466	15.452	0.1875	A572-65	1.000
6	124.25 - 123.416	0.834		12	15.452	15.616	0.1875	A572-65	1.000
7	123.416 - 123.166	0.25		12	15.616	15.665	0.5375	A572-65	0.873
8	123.166 - 118.166	5		12	15.665	16.651	0.5125	A572-65	0.881
9	118.166 - 113.166	5		12	16.651	17.637	0.4875	A572-65	0.894
10	113.166 - 109.5	3.666		12	17.637	18.360	0.475	A572-65	0.895
11	109.5 - 109.25	0.25		12	18.360	18.409	0.5875	A572-65	0.906
12	109.25 - 104.75	4.5		12	18.409	19.296	0.5625	A572-65	0.916
13	104.75 - 104.5	0.25		12	19.296	19.346	0.775	A572-65	0.930
14	104.5 - 102.416	2.084		12	19.346	19.756	0.7625	A572-65	0.930
15	102.416 - 102.166	0.25		12	19.756	19.806	0.5625	A572-65	1.123
16	102.166 - 98.75	3.416		12	19.806	20.479	0.55	A572-65	1.120
17	98.75 - 98.5	0.25		12	20.479	20.528	0.8375	A572-65	1.002
18	98.5 - 97.5	1		12	20.528	20.726	0.8375	A572-65	0.994
19	97.5 - 97.25	0.25		12	20.726	20.775	0.75	A572-65	1.041
20	97.25 - 95.552	5.25	3.552	12	20.775	21.810	0.7375	A572-65	1.044
21	95.552 - 90.552	5		12	20.735	21.730	0.8	A572-65	1.024
22	90.552 - 89.25	1.302		12	21.730	21.989	0.775	A572-65	1.046
23	89.25 - 89	0.25		12	21.989	22.039	1	A572-65	0.967
24	89 - 88.25	0.75		12	22.039	22.189	0.975	A572-65	0.985
25	88.25 - 88	0.25		12	22.189	22.238	0.7625	A572-65	1.017
26	88 - 87.833	0.167		12	22.238	22.272	0.7625	A572-65	1.016
27	87.833 - 87.583	0.25		12	22.272	22.321	0.675	A572-65	1.008
28	87.583 - 82.583	5		12	22.321	23.317	0.65	A572-65	1.017
29	82.583 - 77.583	5		12	23.317	24.312	0.625	A572-65	1.029
30	77.583 - 77	0.583		12	24.312	24.428	0.625	A572-65	1.026
31	77 - 76.75	0.25		12	24.428	24.478	0.825	A572-65	0.974
32	76.75 - 76.333	0.417		12	24.478	24.561	0.825	A572-65	0.971
33	76.333 - 76.083	0.25		12	24.561	24.611	0.825	A572-65	0.923
34	76.083 - 74.25	1.833		12	24.611	24.976	0.8	A572-65	0.941
35	74.25 - 74	0.25		12	24.976	25.026	0.8875	A572-65	0.893
36	74 - 73.75	0.25		12	25.026	25.076	0.8875	A572-65	0.892
37	73.75 - 73.5	0.25		12	25.076	25.125	0.9125	A572-65	0.910
38	73.5 - 68.5	5		12	25.125	26.121	0.875	A572-65	0.921
39	68.5 - 63.5	5		12	26.121	27.116	0.85	A572-65	0.922
40	63.5 - 60.5	3		12	27.116	27.714	0.825	A572-65	0.935
41	60.5 - 60.25	0.25		12	27.714	27.763	0.825	A572-65	0.934
42	60.25 - 59.5	0.75		12	27.763	27.913	0.825	A572-65	0.931
43	59.5 - 59.25	0.25		12	27.913	27.962	0.8875	A572-65	0.920
44	59.25 - 54.25	5		12	27.962	28.958	0.85	A572-65	0.936
45	54.25 - 50	8.448	4.198	12	28.958	30.640	0.8375	A572-65	0.931
46	50 - 44.802	5.198		12	29.304	30.333	0.8375	A572-65	0.938
47	44.802 - 43.583	1.219		12	30.333	30.574	0.8375	A572-65	0.933
48	43.583 - 43.333	0.25		12	30.574	30.624	0.85	A572-65	0.975
49	43.333 - 43.166	0.167		12	30.624	30.657	0.85	A572-65	0.974
50	43.166 - 42.916	0.25		12	30.657	30.706	0.9375	A572-65	0.935
51	42.916 - 39	3.916		12	30.706	31.481	0.9125	A572-65	0.944
52	39 - 38.75	0.25		12	31.481	31.531	0.95	A572-65	0.950
53	38.75 - 37.166	1.584		12	31.531	31.844	0.9375	A572-65	0.956
54	37.166 - 36.916	0.25		12	31.844	31.894	0.8875	A572-65	0.973
55	36.916 - 34	2.916		12	31.894	32.471	0.8875	A572-65	0.961
56	34 - 33.75	0.25		12	32.471	32.520	0.875	A572-65	0.929
57	33.75 - 29.75	4		12	32.520	33.312	0.8625	A572-65	0.928
58	29.75 - 29.5	0.25		12	33.312	33.361	0.8625	A572-65	0.937
59	29.5 - 24.5	5		12	33.361	34.351	0.85	A572-65	0.934
60	24.5 - 23	1.5		12	34.351	34.648	0.8375	A572-65	0.942
61	23 - 22.75	0.25		12	34.648	34.697	0.9625	A572-65	0.908
62	22.75 - 21.583	1.167		12	34.697	34.928	0.9625	A572-65	0.904
63	21.583 - 21.333	0.25		12	34.928	34.978	0.85	A572-65	0.971
64	21.333 - 16.333	5		12	34.978	35.967	0.8375	A572-65	0.968
65	16.333 - 12.917	3.416		12	35.967	36.644	0.825	A572-65	0.971
66	12.917 - 12.667	0.25		12	36.644	36.693	0.9125	A572-65	0.961
67	12.667 - 12.5	0.167		12	36.693	36.726	0.9125	A572-65	0.961
68	12.5 - 12.25	0.25		12	36.726	36.776	0.7625	A572-65	1.008
69	12.25 - 12	0.25		12	36.776	36.825	0.7625	A572-65	1.007
70	12 - 11.75	0.25		12	36.825	36.874	0.6625	A572-65	1.077
71	11.75 - 8.5	3.25		12	36.874	37.518	0.65	A572-65	1.087
72	8.5 - 8.25	0.25		12	37.518	37.567	0.925	A572-65	0.962
73	8.25 - 7	1.25		12	37.567	37.815	0.9125	A572-65	0.970
74	7 - 6.75	0.25		12	37.815	37.864	0.8125	A572-65	0.962
75	6.75 - 1.75	5		12	37.864	38.854	0.7875	A572-65	0.976
76	1.75 - 0	1.75		12	38.854	39.200	0.7875	A572-65	0.971

TNX Section Forces

Increment (ft):		TNX Output			
5					
	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)	
1	144.25 - 139.25	4.42	24.23	6.00	
2	139.25 - 134.75	4.71	51.59	6.16	
3	134.75 - 134.25	4.74	54.67	6.18	
4	134.25 - 129.25	8.53	90.96	10.79	
5	129.25 - 124.25	8.76	145.96	11.14	
6	124.25 - 123.416	8.82	155.26	11.17	
7	123.416 - 123.166	8.86	158.05	11.18	
8	123.166 - 118.166	12.27	220.16	14.38	
9	118.166 - 113.166	12.85	292.98	14.77	
10	113.166 - 109.5	16.45	349.88	19.55	
11	109.5 - 109.25	16.51	354.76	19.56	
12	109.25 - 104.75	17.23	443.61	19.94	
13	104.75 - 104.5	17.30	448.60	19.96	
14	104.5 - 102.416	17.73	490.38	20.16	
15	102.416 - 102.166	17.79	495.42	20.17	
16	102.166 - 98.75	21.79	569.67	22.92	
17	98.75 - 98.5	21.88	575.40	22.93	
18	98.5 - 97.5	22.13	598.37	23.03	
19	97.5 - 97.25	22.20	604.13	23.05	
20	97.25 - 95.552	22.62	643.38	23.22	
21	95.552 - 90.552	24.67	760.92	23.80	
22	90.552 - 89.25	25.03	791.96	23.92	
23	89.25 - 89	25.13	797.94	23.93	
24	89 - 88.25	25.35	815.91	24.01	
25	88.25 - 88	25.43	821.91	24.03	
26	88 - 87.833	25.48	825.93	24.04	
27	87.833 - 87.583	25.54	831.94	24.07	
28	87.583 - 82.583	26.79	953.24	24.48	
29	82.583 - 77.583	28.08	1076.52	24.87	
30	77.583 - 77	28.24	1091.02	24.91	
31	77 - 76.75	28.32	1097.24	24.92	
32	76.75 - 76.333	28.45	1107.64	24.96	
33	76.333 - 76.083	28.52	1113.88	24.98	
34	76.083 - 74.25	29.04	1159.82	25.17	
35	74.25 - 74	29.14	1166.11	25.17	
36	74 - 73.75	29.21	1172.40	25.19	
37	73.75 - 73.5	29.29	1178.70	25.22	
38	73.5 - 68.5	30.86	1305.89	25.69	
39	68.5 - 63.5	32.46	1435.35	26.13	
40	63.5 - 60.5	33.44	1514.09	26.40	
41	60.5 - 60.25	33.53	1520.69	26.41	
42	60.25 - 59.5	33.77	1540.52	26.49	
43	59.5 - 59.25	33.87	1547.14	26.50	
44	59.25 - 54.25	35.58	1680.74	26.97	
45	54.25 - 50	37.06	1796.04	27.34	
46	50 - 44.802	40.20	1939.91	27.98	
47	44.802 - 43.583	40.64	1974.05	28.08	
48	43.583 - 43.333	40.75	1981.07	28.07	
49	43.333 - 43.166	40.82	1985.75	28.09	
50	43.166 - 42.916	40.92	1992.78	28.11	
51	42.916 - 39	42.46	2103.44	28.44	
52	39 - 38.75	42.58	2110.54	28.44	
53	38.75 - 37.166	43.22	2155.68	28.59	
54	37.166 - 36.916	43.34	2162.83	28.58	
55	36.916 - 34	44.52	2246.39	28.77	
56	34 - 33.75	44.64	2253.58	28.75	
57	33.75 - 29.75	46.21	2368.94	28.96	
58	29.75 - 29.5	46.32	2376.18	28.95	
59	29.5 - 24.5	48.33	2521.44	29.18	
60	24.5 - 23	48.94	2565.22	29.25	
61	23 - 22.75	49.07	2572.53	29.23	
62	22.75 - 21.583	49.57	2606.67	29.31	
63	21.583 - 21.333	49.69	2614.00	29.30	
64	21.333 - 16.333	51.82	2760.94	29.50	
65	16.333 - 12.917	53.30	2861.87	29.64	
66	12.917 - 12.667	53.43	2869.28	29.63	
67	12.667 - 12.5	53.51	2874.22	29.64	
68	12.5 - 12.25	53.61	2881.63	29.65	
69	12.25 - 12	53.72	2889.05	29.66	
70	12 - 11.75	53.82	2896.46	29.67	
71	11.75 - 8.5	55.12	2993.24	29.93	
72	8.5 - 8.25	55.26	3000.71	29.92	
73	8.25 - 7	55.85	3038.19	30.07	
74	7 - 6.75	55.97	3045.71	30.08	
75	6.75 - 1.75	58.16	3197.24	30.57	
76	1.75 - 0	58.93	3250.84	30.75	

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
144.25 - 139.25	Pole	TP12.75x12.75x0.375	Pole	12.4%	Pass
139.25 - 134.75	Pole	TP12.75x12.75x0.375	Pole	25.6%	Pass
134.75 - 134.25	Pole	TP13.48x13.48x0.375	Pole	24.2%	Pass
134.25 - 129.25	Pole	TP14.466x13.48x0.1875	Pole	49.1%	Pass
129.25 - 124.25	Pole	TP15.452x14.466x0.1875	Pole	67.9%	Pass
124.25 - 123.42	Pole	TP15.616x15.452x0.1875	Pole	70.6%	Pass
123.42 - 123.17	Pole + Reinf.	TP15.665x15.616x0.5375	Reinf. 25 Tension Rupture	46.1%	Pass
123.17 - 118.17	Pole + Reinf.	TP16.651x15.665x0.5125	Reinf. 25 Tension Rupture	59.2%	Pass
118.17 - 113.17	Pole + Reinf.	TP17.637x16.651x0.4875	Reinf. 25 Tension Rupture	72.5%	Pass
113.17 - 109.5	Pole + Reinf.	TP18.36x17.637x0.475	Reinf. 25 Tension Rupture	82.0%	Pass
109.5 - 109.25	Pole + Reinf.	TP18.409x18.36x0.5875	Reinf. 25 Tension Rupture	69.2%	Pass
109.25 - 104.75	Pole + Reinf.	TP19.296x18.409x0.5625	Reinf. 25 Tension Rupture	81.0%	Pass
104.75 - 104.5	Pole + Reinf.	TP19.346x19.296x0.775	Reinf. 11 Tension Rupture	65.4%	Pass
104.5 - 102.42	Pole + Reinf.	TP19.756x19.346x0.7625	Reinf. 11 Tension Rupture	69.6%	Pass
102.42 - 102.17	Pole + Reinf.	TP19.806x19.756x0.5625	Reinf. 11 Tension Rupture	86.8%	Pass
102.17 - 98.75	Pole + Reinf.	TP20.479x19.806x0.55	Reinf. 11 Tension Rupture	95.6%	Pass
98.75 - 98.5	Pole + Reinf.	TP20.528x20.479x0.8375	Reinf. 6 Bolt-Shaft Bearing	83.6%	Pass
98.5 - 97.5	Pole + Reinf.	TP20.726x20.528x0.8375	Reinf. 6 Tension Rupture	72.7%	Pass
97.5 - 97.25	Pole + Reinf.	TP20.775x20.726x0.75	Reinf. 6 Tension Rupture	84.8%	Pass
97.25 - 95.55	Pole + Reinf.	TP21.81x20.775x0.7375	Reinf. 6 Tension Rupture	88.5%	Pass
95.55 - 90.55	Pole + Reinf.	TP21.73x20.735x0.8	Reinf. 6 Tension Rupture	92.1%	Pass
90.55 - 89.25	Pole + Reinf.	TP21.989x21.73x0.775	Reinf. 6 Tension Rupture	94.3%	Pass
89.25 - 89	Pole + Reinf.	TP22.039x21.989x1	Reinf. 5 Bolt-Shaft Bearing	81.5%	Pass
89 - 88.25	Pole + Reinf.	TP22.189x22.039x0.975	Reinf. 11 Tension Rupture	68.1%	Pass
88.25 - 88	Pole + Reinf.	TP22.238x22.189x0.7625	Reinf. 5 Tension Rupture	78.0%	Pass
88 - 87.83	Pole + Reinf.	TP22.272x22.238x0.7625	Reinf. 5 Tension Rupture	78.2%	Pass
87.83 - 87.58	Pole + Reinf.	TP22.321x22.272x0.675	Reinf. 5 Tension Rupture	82.9%	Pass
87.58 - 82.58	Pole + Reinf.	TP23.317x22.321x0.65	Reinf. 5 Tension Rupture	89.5%	Pass
82.58 - 77.58	Pole + Reinf.	TP24.312x23.317x0.625	Reinf. 5 Tension Rupture	95.3%	Pass
77.58 - 77	Pole + Reinf.	TP24.428x24.312x0.625	Reinf. 5 Tension Rupture	96.0%	Pass
77 - 76.75	Pole + Reinf.	TP24.478x24.428x0.825	Reinf. 10 Tension Rupture	90.0%	Pass
76.75 - 76.33	Pole + Reinf.	TP24.561x24.478x0.825	Reinf. 10 Tension Rupture	90.5%	Pass
76.33 - 76.08	Pole + Reinf.	TP24.611x24.561x0.825	Reinf. 10 Tension Rupture	91.6%	Pass
76.08 - 74.25	Pole + Reinf.	TP24.976x24.611x0.8	Reinf. 10 Tension Rupture	93.5%	Pass
74.25 - 74	Pole + Reinf.	TP25.026x24.976x0.8875	Reinf. 10 Tension Rupture	82.5%	Pass
74 - 73.75	Pole + Reinf.	TP25.076x25.026x0.8875	Reinf. 10 Tension Rupture	82.8%	Pass
73.75 - 73.5	Pole + Reinf.	TP25.125x25.076x0.9125	Reinf. 21 Tension Rupture	82.1%	Pass
73.5 - 68.5	Pole + Reinf.	TP26.121x25.125x0.875	Reinf. 21 Tension Rupture	86.5%	Pass
68.5 - 63.5	Pole + Reinf.	TP27.116x26.121x0.85	Reinf. 21 Tension Rupture	90.6%	Pass
63.5 - 60.5	Pole + Reinf.	TP27.714x27.116x0.825	Reinf. 21 Tension Rupture	92.9%	Pass
60.5 - 60.25	Pole + Reinf.	TP27.763x27.714x0.825	Reinf. 21 Tension Rupture	93.1%	Pass
60.25 - 59.5	Pole + Reinf.	TP27.913x27.763x0.825	Reinf. 21 Tension Rupture	93.7%	Pass
59.5 - 59.25	Pole + Reinf.	TP27.962x27.913x0.8875	Reinf. 21 Tension Rupture	87.6%	Pass
59.25 - 54.25	Pole + Reinf.	TP28.958x27.962x0.85	Reinf. 21 Tension Rupture	91.1%	Pass
54.25 - 50	Pole + Reinf.	TP30.64x28.958x0.8375	Reinf. 21 Tension Rupture	93.8%	Pass
50 - 44.8	Pole + Reinf.	TP30.333x29.304x0.8375	Reinf. 9 Tension Rupture	95.5%	Pass
44.8 - 43.58	Pole + Reinf.	TP30.574x30.333x0.8375	Reinf. 9 Tension Rupture	96.2%	Pass
43.58 - 43.33	Pole + Reinf.	TP30.624x30.574x0.85	Reinf. 9 Tension Rupture	95.3%	Pass
43.33 - 43.17	Pole + Reinf.	TP30.657x30.624x0.85	Reinf. 9 Tension Rupture	95.3%	Pass
43.17 - 42.92	Pole + Reinf.	TP30.706x30.657x0.9375	Reinf. 9 Tension Rupture	90.3%	Pass
42.92 - 39	Pole + Reinf.	TP31.481x30.706x0.9125	Reinf. 9 Tension Rupture	92.1%	Pass
39 - 38.75	Pole + Reinf.	TP31.531x31.481x0.95	Reinf. 9 Tension Rupture	87.1%	Pass
38.75 - 37.17	Pole + Reinf.	TP31.844x31.531x0.9375	Reinf. 9 Tension Rupture	87.7%	Pass
37.17 - 36.92	Pole + Reinf.	TP31.894x31.844x0.8875	Reinf. 9 Tension Rupture	91.2%	Pass
36.92 - 34	Pole + Reinf.	TP32.471x31.894x0.8875	Reinf. 9 Tension Rupture	92.5%	Pass
34 - 33.75	Pole + Reinf.	TP32.52x32.471x0.875	Reinf. 8 Tension Rupture	92.5%	Pass
33.75 - 29.75	Pole + Reinf.	TP33.312x32.52x0.8625	Reinf. 8 Tension Rupture	94.1%	Pass
29.75 - 29.5	Pole + Reinf.	TP33.361x33.312x0.8625	Reinf. 8 Tension Rupture	93.0%	Pass
29.5 - 24.5	Pole + Reinf.	TP34.351x33.361x0.85	Reinf. 8 Tension Rupture	94.8%	Pass
24.5 - 23	Pole + Reinf.	TP34.648x34.351x0.8375	Reinf. 8 Tension Rupture	95.4%	Pass
23 - 22.75	Pole + Reinf.	TP34.697x34.648x0.9625	Reinf. 8 Tension Rupture	88.4%	Pass
22.75 - 21.58	Pole + Reinf.	TP34.928x34.697x0.9625	Reinf. 8 Tension Rupture	88.8%	Pass
21.58 - 21.33	Pole + Reinf.	TP34.978x34.928x0.85	Reinf. 8 Tension Rupture	93.7%	Pass
21.33 - 16.33	Pole + Reinf.	TP35.967x34.978x0.8375	Reinf. 8 Tension Rupture	95.3%	Pass
16.33 - 12.92	Pole + Reinf.	TP36.644x35.967x0.825	Reinf. 8 Tension Rupture	96.2%	Pass
12.92 - 12.67	Pole + Reinf.	TP36.693x36.644x0.9125	Reinf. 7 Tension Rupture	87.2%	Pass
12.67 - 12.5	Pole + Reinf.	TP36.726x36.693x0.9125	Reinf. 7 Tension Rupture	87.3%	Pass
12.5 - 12.25	Pole + Reinf.	TP36.776x36.726x0.7625	Reinf. 14 Tension Rupture	90.5%	Pass
12.25 - 12	Pole + Reinf.	TP36.825x36.776x0.7625	Reinf. 14 Tension Rupture	90.6%	Pass
12 - 11.75	Pole + Reinf.	TP36.874x36.825x0.6625	Reinf. 2 Tension Rupture	92.6%	Pass
11.75 - 8.5	Pole + Reinf.	TP37.518x36.874x0.65	Reinf. 2 Tension Rupture	93.3%	Pass
8.5 - 8.25	Pole + Reinf.	TP37.567x37.518x0.925	Reinf. 1 Tension Rupture	76.5%	Pass
8.25 - 7	Pole + Reinf.	TP37.815x37.567x0.9125	Reinf. 1 Tension Rupture	76.8%	Pass
7 - 6.75	Pole + Reinf.	TP37.864x37.815x0.8125	Reinf. 1 Tension Rupture	89.0%	Pass
6.75 - 1.75	Pole + Reinf.	TP38.854x37.864x0.7875	Reinf. 1 Tension Rupture	90.1%	Pass
1.75 - 0	Pole + Reinf.	TP39.2x38.854x0.7875	Reinf. 1 Tension Rupture	90.5%	Pass
				Summary	
			Pole	82.9%	Pass
			Reinforcement	96.2%	Pass
			Overall	96.2%	Pass

Monopole Flange Plate Connection

Elevation = 134.25 ft.



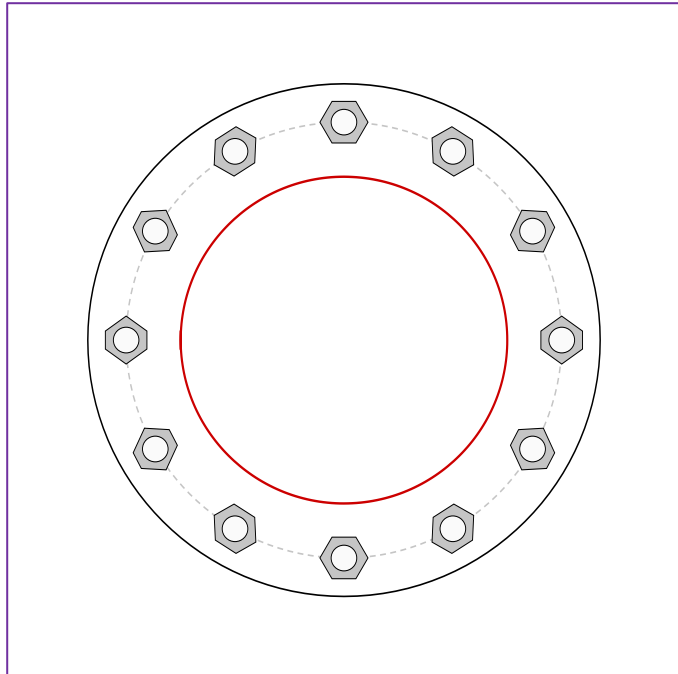
BU #	876317
Site Name	WATERBURY,CT
Order #	601536,Rev# 0

TIA-222 Revision	H
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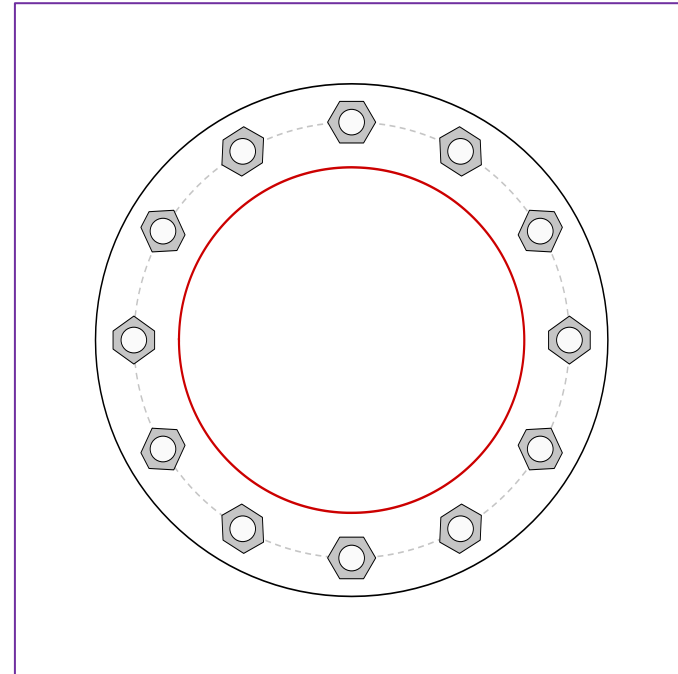
Applied Loads	
Moment (kip-ft)	54.67
Axial Force (kips)	4.74
Shear Force (kips)	6.18

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(12) 1" ϕ bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 17" BC

Top Plate Data

20" OD x 1" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Top Stiffener Data

N/A

Top Pole Data

12.75" x 0.375" round pole (A500-46; Fy=46 ksi, Fu=62 ksi)

Bottom Plate Data

20" OD x 1" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

13.48" x 0.1875" 12-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	12.45
Allowable (kips)	54.53
Stress Rating:	21.7% Pass

Top Plate Capacity

Max Stress (ksi):	18.09	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	38.3%	Pass
Tension Side Stress Rating:	23.4%	Pass

Bottom Plate Capacity

Max Stress (ksi):	14.54	(Flexural)
Allowable Stress (ksi):	45.00	
Stress Rating:	30.8%	Pass
Tension Side Stress Rating:	17.0%	Pass

Monopole Base Plate Connection

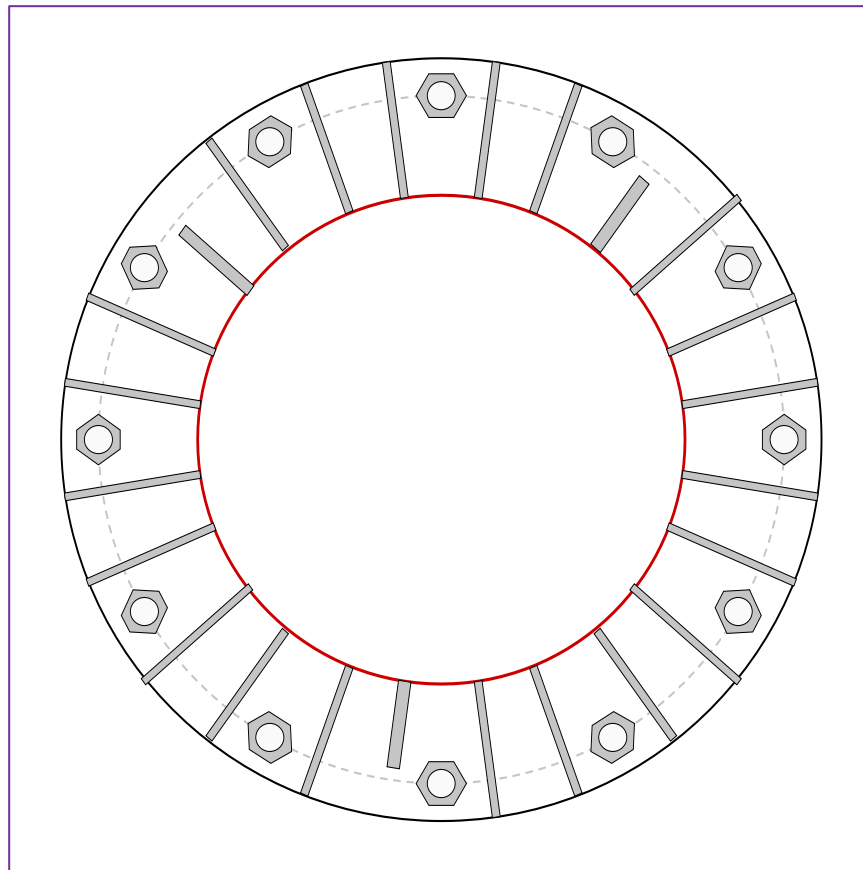


Site Info	
BU #	876317
Site Name	WATERBURY,CT
Order #	601536,Rev# 0

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	0.25

Applied Loads	
Moment (kip-ft)	3250.84
Axial Force (kips)	58.93
Shear Force (kips)	30.75

*TIA-222-H Section 15.5 Applied



Connection Properties	Analysis Results
-----------------------	------------------

Anchor Rod Data
 (12) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 55.16" BC

Base Plate Data
 61.16" OD x 2.5" Plate (S-128; $F_y=60$ ksi, $F_u=80$ ksi)

Stiffener Data
 Group 1: (21) 21.5"H x 11"W x 0.625"T, Notch: 0.75"
 plate: $F_y= 50$ ksi ; weld: $F_y= 80$ ksi
 horiz. weld: 0.3125" groove, 45° dbl bevel, 0.5" fillet
 vert. weld: 0.3125" fillet

Group 2: (3) 126"H x 7"W x 1"T, Notch: 0.75"
 plate: $F_y= 65$ ksi ; weld: $F_y= 80$ ksi
 horiz. weld: 0.5" groove, 45° dbl bevel, 0.3125" fillet
 vert. weld: 0.3125" fillet

Pole Data
 39.2" x 0.3125" 12-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary			<i>(units of kips, kip-in)</i>
$Pu_t = 230.67$	$\phi Pn_t = 243.75$	Stress Rating	
$Vu = 2.56$	$\phi Vn = 149.1$		90.1%
$Mu = n/a$	$\phi Mn = n/a$		Pass

Base Plate Summary		
Max Stress (ksi):	31.65	(Flexural)
Allowable Stress (ksi):	54	
Stress Rating:	55.8%	Pass

Stiffener Summary		
Horizontal Weld:	41.8%	Pass
Vertical Weld:	42.1%	Pass
Plate Flexure+Shear:	23.0%	Pass
Plate Tension+Shear:	43.6%	Pass
Plate Compression:	62.6%	Pass

Pole Summary		
Punching Shear:	17.0%	Pass

Pier and Pad Foundation



BU #: 876317
 Site Name: WATERBURY, CT
 App. Number: 553382, Rev# 2

TIA-222 Revision: H
 Tower Type: Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp} :	59	kips
Base Shear, V_u_{comp} :	31	kips
Moment, M_u :	3251	ft-kips
Tower Height, H :	143	ft
BP Dist. Above Fdn, bp_{dist} :	2.75	in
Bolt Circle / Bearing Plate Width, BC :	55.16	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	277.58	31.00	10.6%	Pass
<i>Bearing Pressure (ksf)</i>	22.50	6.37	28.3%	Pass
<i>Overturning (kip*ft)</i>	3937.12	3467.35	88.1%	Pass
<i>Pad Flexure (kip*ft)</i>	9014.86	1987.40	21.0%	Pass
<i>Pad Shear - 1-way (kips)</i>	1732.56	183.03	10.1%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.190	0.000	0.0%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	18499.97	0.00	0.0%	Pass

*Rating per TIA-222-H Section 15.5

Structural Rating*:	21.0%
Soil Rating*:	88.1%

Pad Properties		
Depth, D :	6.75	ft
Pad Width, W_1 :	20	ft
Pad Thickness, T :	6.75	ft
Pad Rebar Size (Top dir. 2), Sp_{top2} :	9	
Pad Rebar Quantity (Top dir. 2), mp_{top2} :	28	
Pad Rebar Size (Bottom dir. 2), Sp_2 :	10	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	21	
Pad Clear Cover, cc_{pad} :	3	in

Material Properties		
Rebar Grade, F_y :	60	ksi
Concrete Compressive Strength, F'_c :	4	ksi
Dry Concrete Density, δ_c :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	125	pcf
Ultimate Gross Bearing, Q_{ult} :	30.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	36	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :	0.5	
Neglected Depth, N :	3.33	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	11.5	ft

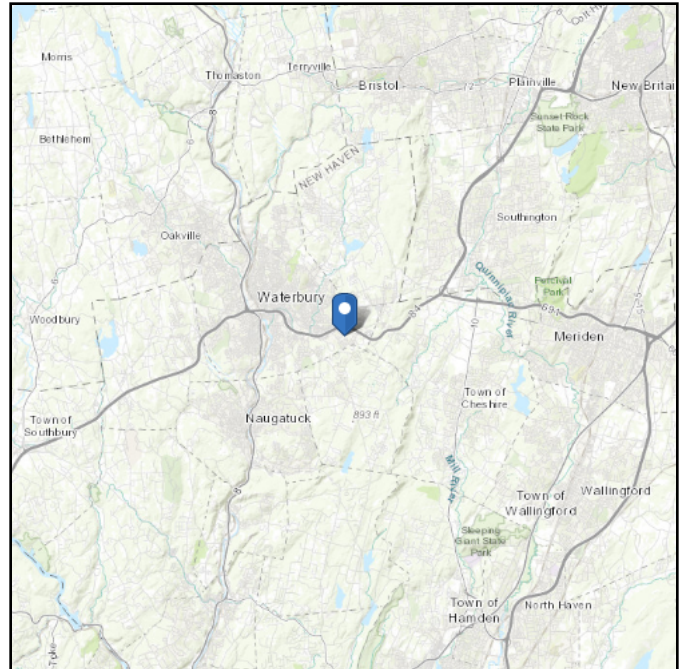
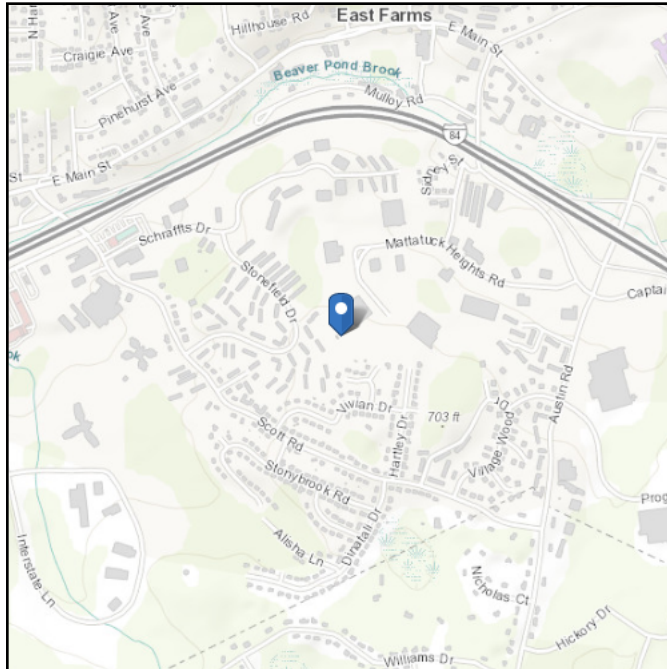
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ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 660.21 ft (NAVD 88)
Latitude: 41.537861
Longitude: -72.985028



Wind

Results:

Wind Speed	118 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	90 Vmph
100-year MRI	97 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: Thu Jan 27 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).

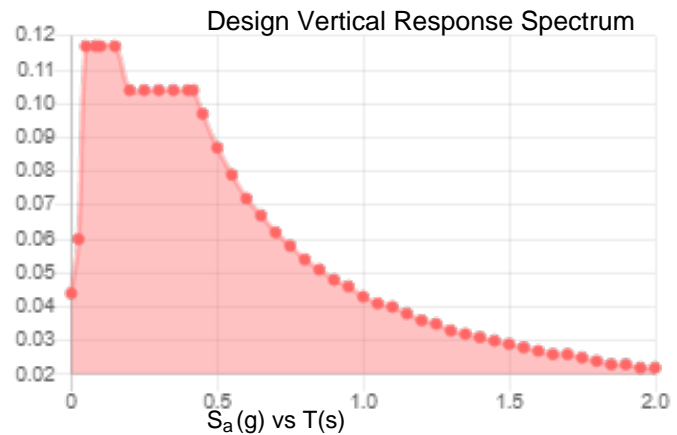
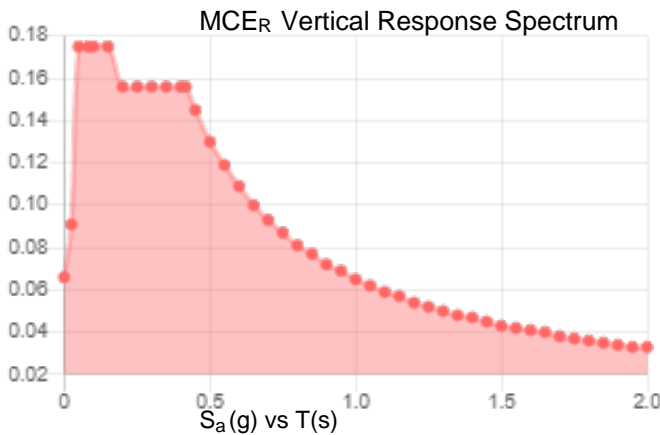
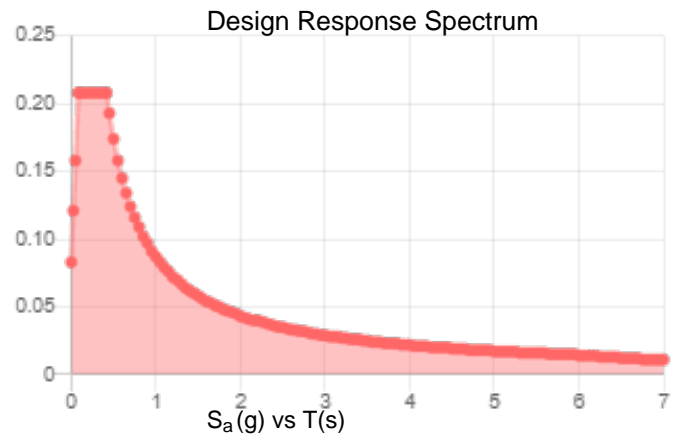
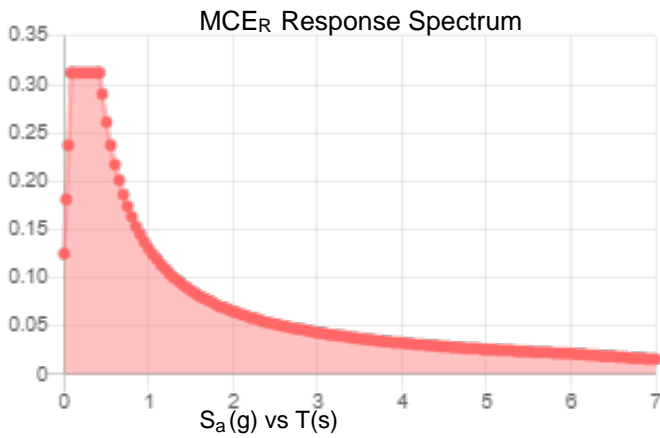
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.195	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.108
F_v :	2.4	PGA _M :	0.171
S_{MS} :	0.312	F_{PGA} :	1.585
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.208	C_v :	0.7

Seismic Design Category B



Data Accessed: Thu Jan 27 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: Thu Jan 27 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.

The ASCE 7 Hazard Tool is provided for your convenience, for informational purposes only, and is provided “as is” and without warranties of any kind. The location data included herein has been obtained from information developed, produced, and maintained by third party providers; or has been extrapolated from maps incorporated in the ASCE 7 standard. While ASCE has made every effort to use data obtained from reliable sources or methodologies, ASCE does not make any representations or warranties as to the accuracy, completeness, reliability, currency, or quality of any data provided herein. Any third-party links provided by this Tool should not be construed as an endorsement, affiliation, relationship, or sponsorship of such third-party content by or from ASCE.

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Network Building + Consulting, LLC
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Blue Bell, MD 21075
(267)460-0122
NBC_SmartTool@nbcllc.com

Post-Modification Antenna Mount Analysis Report and PMI Requirements

Mount Fix

SMART Tool Project #: 10128550

January 24, 2022

Site Information

Site ID: 467706-VZW / WATERBURY S CT
Site Name: WATERBURY S CT
Carrier Name: Verizon Wireless
Address: 150 MATTATUCK HGTS
Waterbury, Connecticut 06705,
New Haven County
Latitude: 41.537958°
Longitude: -72.984106°

Structure Information

Tower Type: 130-Ft Monopole
Mount Type: 12.83-Ft

FUZE ID # 16244089

Analysis Results

Platform: 49.6% **Pass w/ Modifications***

***Antennas and equipment to be installed in compliance with PMI Requirements of this mount analysis.**

***Contractor PMI Requirements:

**Included at the end of this MA report
Available & Submitted via portal at <https://pmi.vzwsmart.com>
For additional questions and support, please reach out to:
vzwpmisupport@nbcllc.com**

Report Prepared By: Connor Rice, EIT



DocuSigned by:

Krupakaran Kolandavelu

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1/24/2022

Executive Summary:

The objective of this report is to summarize the analysis results of the antenna support mount including the proposed modifications at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

This analysis is inclusive of the mount structure only and does not address the structural capacity of the supporting structure. This mounting frame was not analyzed as an anchor attachment point for fall protection. All climbing activities are required to have a fall protection plan completed by a competent person.

Sources of Information:

Document Type	Remarks
Radio Frequency Data Sheet	Verizon RFDS, Site ID: 325071, dated December 7, 2021
Mount Mapping Report	Hudson Design Group LLC, Site Name: Waterbury S Ct, dated March 24, 2021
Previous Mount Analysis	NB+C, Project #: 100820, dated January 20, 2021
Mount Modification Drawings	NB+C, Project #: 100820, dated January 24, 2021

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT} : 118 mph Ice Wind Speed (3-sec. Gust): 50 mph Design Ice Thickness: 1.50 in Risk Category: II Exposure Category: B Topographic Category: 1 Topographic Feature Considered: N/A Topographic Method: N/A Ground Elevation Factor, K_e : 0.977
Seismic Parameters:	S_s : .195g S_1 : .054g
Maintenance Parameters:	Wind Speed (3-sec. Gust): 30 mph Maintenance Live Load, L_v : 250 lbs. Maintenance Live Load, L_m : 500 lbs.
Analysis Software:	RISA-3D (V17)

Final Loading Configuration:

The following equipment has been considered for the analysis of the mount:

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
108.0	110.0	3	Samsung	MT6407-77A	Added
		3	Samsung	B2/B66A RRH-BR049 (RFV01U-D1A)	Retained
		3	Samsung	B5/B13 RRH-BR04C (RFV01U-D2A)	
		6	Andrew	SBNHH-1D65B	
		3	Antel	BXA-80063/4	
		1	Raycap	RHSDC-6627-PF-48	

The recent mount mapping did not report existing OVP units. However, it is acceptable to install up to any three (3) of the OVP model numbers listed below as required at any location other than the mount face without affecting the structural capacity of the mount. If OVP units are installed on the mount face, a mount re-analysis may be required.

Model Number	Ports	AKA
RHSDC-1064-PF-48	2	OVP-2
RC3DC-3315-PF-48	6	OVP-6
RC3DC-3300-PF-48	6	OVP-6
RC3DC-4750-PF-48	6	OVP-6
RHSDC-6627-PF-48	12	OVP-12
RHSDC-6600-PF-48	12	OVP-12

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Network Building + Consulting, LLC and used in this analysis is current and correct. The existing equipment loading has been applied at locations determined from the supplied documentation. Any deviation from the loading locations specified in this report shall be communicated to Network Building + Consulting, LLC to verify deviation will not adversely impact the analysis.
2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping and reported in the Mount Mapping Report are assumed to be corrected and documented as part of the PMI process and are not considered in the mount analysis.

The mount analysis and the mount mapping are not a condition assessment of the mount. Proper maintenance and condition assessments are still required post analysis.

3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped in accordance with the NSTD-446 Standard, the mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.
4. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.

5. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.
6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Network Building + Consulting, LLC is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.
7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
 - o Channel, Solid Round, Angle, Plate ASTM A36 (Gr. 36)
 - o HSS (Rectangular) ASTM 500 (Gr. B-46)
 - o Pipe ASTM A53 (Gr. B-35)
 - o Threaded Rod F1554 (Gr. 36)
 - o Bolts ASTM A325
8. Any mount modifications listed under Sources of Information are assumed to have been installed per the design specifications.

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Network Building + Consulting, LLC.

Analysis Results:

Component	Utilization %	Pass/Fail
HSS Tube	19.5 %	Pass
Face Horizontal Angle	19.6 %	Pass
Support Rail Angle	18.1 %	Pass
Mount Pipe	30.6 %	Pass
Angle Connection	45.4 %	Pass
Platform Angle	45.0 %	Pass
Horizontal connection	49.6 %	Pass
Kicker	12.0 %	Pass
MOD	35.8 %	Pass

Structure Rating – (Controlling Utilization of all Components)	49.6%
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Mount Steel (EPA)a per ANSI/TIA-222-H Section 2.6.11.2:

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	42.2	42.2	57.9	57.9
0.5	50.4	50.4	72.9	72.9
1	57.7	57.7	86.9	86.9

Notes:

- (EPA)a values listed above may be used in the absence of more precise information
- (EPA)a values in the table above include 3 sector(s).
- Ka factors included in (EPA)a calculations

Requirements:

The existing mount(s) will be **SUFFICIENT** for the final loading configuration (attachment 2) **after the modifications detailed in attachment 3 are successfully completed.**

ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

Attachments:

1. **Contractor Required PMI Report Deliverables**
2. Antenna Placement Diagrams
3. Mount Modification Drawings
4. Mount Photos
5. Mount Mapping Report (for reference only)
6. Analysis Calculations

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – Mount Modification

Electronic pdf version of this can be downloaded at <https://pmi.vzwsmart.com>

For additional questions and support, please reach out to vzwpmisupport@nbcllc.com

PSLC #: 467706

SMART Project #: 10128550

Fuze Project ID: 16244089

Purpose – to upload the proper documentation to the SMART Tool in order to allow the SMART Tool engineering vendor to complete the required Mount Desktop review of the Post Modification Inspection Report.

- Contractor is responsible for making certain the photos provided as noted below provide confirmation that the modification was completed in accordance with the modification drawings.
- Contractor shall relay any data that can impact the performance of the mount or the mount modification, this includes safety issues.

Base Requirements:

- If installation of the modification will cause damage to the structure, the climbing facility, or safety climb if present or any installed system, SMART Tool vendor to be notified prior to install. Any special photos outside of the standard requirements will be indicated on the drawings.
- Provide “as built drawings” showing contractor’s name, preparer’s signature, and date. Any deviations from the drawings (proposed modification) shall be shown. NOTE: If loading is different than what is conveyed in the post-modification passing mount analysis (MA) contact the SMART Tool vendor immediately.
- Each photo shall be time and date stamped.
- Photos should be high resolution.
- Contractor shall ensure that the safety climb wire rope is not adversely impacted by the install of the modification components. This may involve the install of wire rope guides, or other items to protect the wire rope. If there is conflict, contact the SMART Tool engineer for recommendations.
- The PMI can be accessed at the following portal: <https://pmi.vzwsmart.com>

Photo Requirements:

- Photos taken at ground level
 - Photo of Gate Signs showing the tower owner, site name, and number.
 - Overall tower structure after installation of the modifications.
 - Photos of the mount after installation of the modifications; if the mounts are at different rad elevations, pictures must be provided for all elevations that the modifications were installed
- Photos taken at Mount Elevation
 - Photos showing the safety climb wire rope above and below the mount prior to modification.
 - Photos showing the climbing facility and safety climb if present.

- Photos showing each individual sector after installation of modifications. Each entire sector must be in one photo to show the interconnection of members.
 - These photos shall also certify that the placement and geometry of the equipment on the mount is as depicted in the antenna placement diagram in this form.
- Photos that show the model number of each antenna and piece of equipment installed per sector.
- Photos of each installed modification per the modification drawings; pictures shall also include connection hardware (U-bolts, bolts, nuts, all-threaded rods, etc.)
- Photos showing the distances (relative distance between collars) of the installed modifications from the appropriate reference locations shown in the modification drawings.
- Photos showing the installed modifications onto the tower (i.e. ring/collar mounts, tie-backs, V-bracing kits, etc.); if the existing mount elevation needs to be changed according to the modification drawings, an elevation measurement shall be provided before the elevation change.

Material Certification:

- Materials utilized must be as per specification on the drawings or the equivalent as validated by the SMART Tool vendor.
 - If the materials are as specified on the drawings
 - The contractor shall provide the packing list, or the materials certifications for the materials utilized to perform the mount modification
 - Commscope, Metrosite, Perfect Vision, Sabre, and Site Pro have all agreed to support Verizon vendors with the necessary material certifications
 - If seeking permission to use an equivalent
 - It is required that the SMART Tool engineering vendor approval of such is included in the contractor submission package. There may be an additional charge for approval if the equivalent submission doesn't meet specifications as prescribed in the drawings.

All hardware has been properly installed, and the existing hardware was inspected.

The material utilized was as specified on the SMART Tool engineering vendor Mount Modification Drawings and included in the material certification folder is a packing list or invoice for these materials.

OR

The material utilized was approved by a SMART Tool engineering vendor as an "equivalent" and this approval is included as part of the contractor submission.

Antenna & Equipment Placement and Geometry Confirmation:

The contractor certifies that the photos support and the equipment on the mount is as depicted on the sketch and table included in this form and with the mount analysis provided.

OR

The contractor notes that the equipment on the mount is not in accordance with the sketch and has noted the differences below and provided photo documentation of any alterations.

Comments:

Was the mount modification completed in conjunction with the equipment change / installation?

Yes No

Special Instructions / Validation as required from the MA or Mod Drawings:

Issue:

Response:

Special Instruction Confirmation:

The contractor has read and acknowledges the above special instructions.

Comments:

Contractor certifies that the climbing facility / safety climb was not damaged prior to starting work:

Yes No

Contractor certifies no new damage created during the current installation:

Yes No

Contractor to certify the condition of the safety climb and verify no damage when leaving the site:

Safety Climb in Good Condition Safety Climb Damaged

Comments:

--

Certifying Individual:

Company:	
Employee Name:	
Contact Phone:	
Email:	
Date:	

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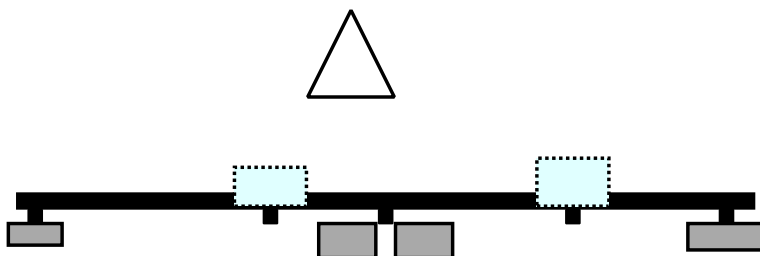
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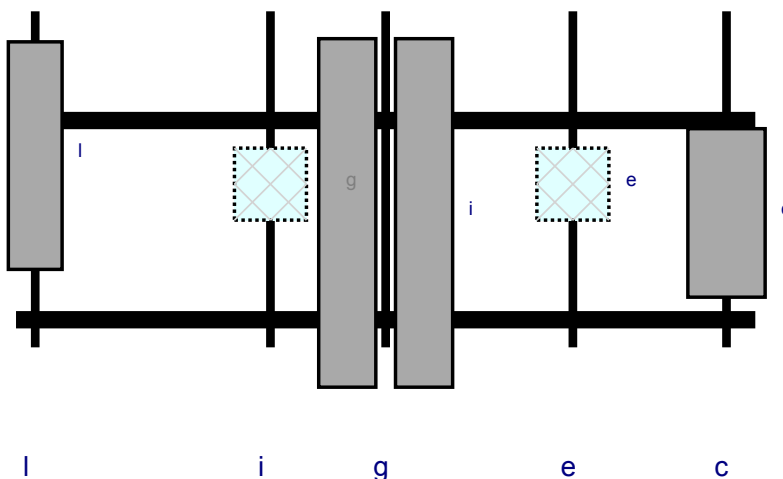


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Plan View



Front View - 0 0



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i f n l	oefn	ccfu	oo	g	i e f Sglei leSec
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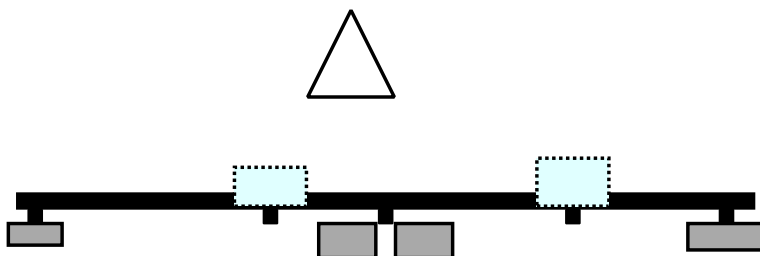
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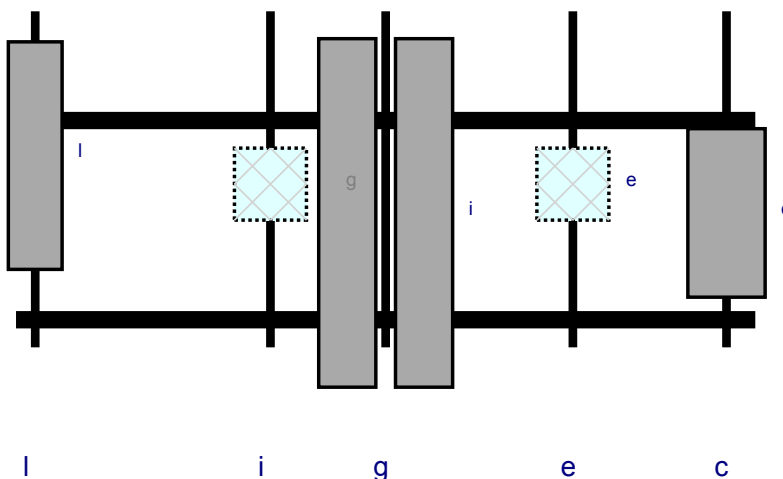


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Plan View



Front View - 0 0



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i	fe nl	oefn	ccfu	oo	g	i e	p Sglei leSec
i	fe nl	oefn	ccfu	oo	g	i e	fp Sglei leSec
g	ll cg0 E Si Ø Sc E e :	cl	cl	lg	i	gn	S Sglei leSec
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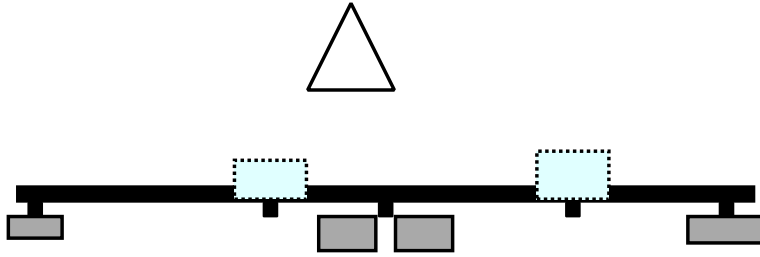
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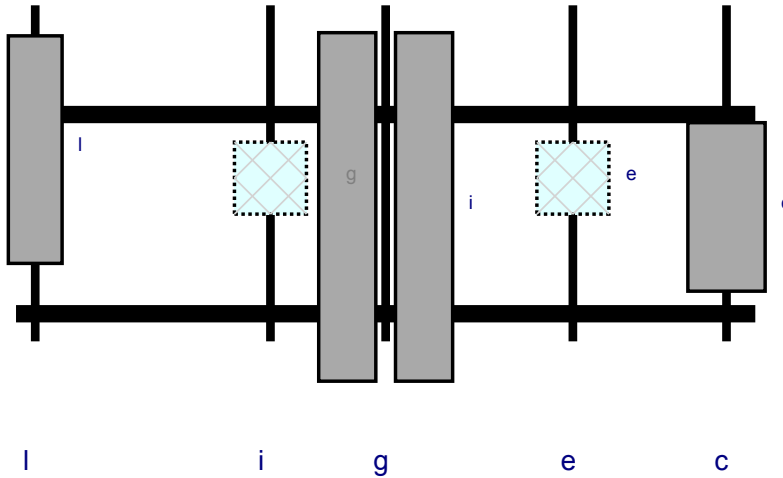


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Plan View



Front View - 0 0



4

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e	el nn 0 E Si uØ Sc E c :	cl	cl	ccn	e	gn	S	Sglei leSec
i	fē nl	oefn	ccfu	oo	g	i e	p	Sglei leSec
i	fē nl	oefn	ccfu	oo	g	i e	fp	Sglei leSec
g	ll cg0 E Si Ø Sc E e :	cl	cl	lg	i	gn	S	Sglei leSec
l	fpSSngli	i of	ccfē	i	l	gSfSn	S	Sglei leSec

MOUNT MODIFICATION DRAWINGS

PROPOSED CARRIER: VERIZON

TOWER OWNER: CROWN CASTLE

TOWER OWNER SITE #: 876317

CARRIER SITE NAME: WATERBURY S CT

CARRIER SITE #: 467706

COORDINATES (LATITUDE: 41.537958°, LONGITUDE: 72.985106°)

FUZE ID #: 16244089

ENGINEER



APPLICANT



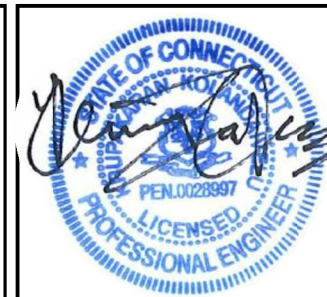
SITE INFORMATION

SITE NAME: WATERBURY S CT
 PSLC: 467706
 NB+C JOB NO: 100820
 SITE ADDRESS:
 150 MATTATUCK HGTS
 WATERBURY, CT 06705
 NEW HAVEN COUNTY

DESIGN RECORD

REVISIONS			
REV	DATE	DESCRIPTION	BY
1	01/24/22	MODIFICATION DRAWINGS	DS
0	06/11/21	MODIFICATION DRAWINGS	PHJ

PROFESSIONAL STAMP



ENGINEER

KRUPAKARAN KOLANDAIVELU, P.E.
 STATE OF CONNECTICUT
 PROFESSIONAL ENGINEER
 LICENSE #PEN.0028997

SHEET TITLE

TITLE SHEET

SHEET NUMBER

ST-1

CONTRACTOR PMI REQUIREMENTS	
PMI ACCESSED AT:	HTTPS://PMI.VZWSMART.COM
SMART TOOL VENDOR PROJECT NUMBER:	10071588
VZW LOCATION CODE (PSLC):	467706
POST MOD ANALYSIS REPORT PROJECT NUMBER:	100820
REPORT DATED	01/24/2022
*** PMI AND REQUIREMENTS EMBEDDED IN MOUNT ANALYSIS REPORT	
VZW APPROVED SMART KIT VENDORS	
REFER TO BILL OF MATERIALS PAGE FOR VZW SMART KIT APPROVED VENDORS	

DRAWING INDEX	
ST-1	TITLE SHEET
SBOM	BILL OF MATERIALS
SGN-1	GENERAL NOTES
SCF-1	CLIMBING FACILITY DETAILS
SS-1	ANTENNA MOUNT MODIFICATION DETAILS
SS-2	ANTENNA MOUNT PHOTOS
-	SPECIFICATION SHEETS

GENERAL NOTES

GENERAL NOTES:

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL PERMITS NECESSARY TO COMPLETE THE PROJECT AND ABIDE BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO NB+C ENGINEERING SERVICES, LLC. FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
- INCORRECTLY FABRICATED, DAMAGED, OTHERWISE MISFITTING, OR NON-CONFORMING MATERIALS AND CONDITIONS SHALL BE REPORTED TO NB+C ENGINEERING SERVICES, LLC. PRIOR TO ANY REMEDIAL OR CORRECTIVE ACTION. ALL ACTIONS SHALL REQUIRE NB+C ENGINEERING SERVICES, LLC. APPROVAL.
- IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AFTER THE COMPLETION OF THE PROJECT.
- CONTRACTOR SHALL PROMPTLY REMOVE ANY & ALL DEBRIS FROM SITE AND RESTORE AS BEST AS POSSIBLE TO PRECONSTRUCTION CONDITION.
- 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 ASSP A10.48 (LATEST EDITION), OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ASSP A10.48 AND ANSI/TIA-322 (LATEST EDITIONS) INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.
- THE USE OF GAS TORCH OR WELDER ARE NOT ALLOWED ON ANY TOWER STRUCTURE WITHOUT THE CONSENT OF THE TOWER OWNER.

CONTRACTOR QUALIFICATION NOTES:

- ALL REPAIRS SHALL BE PERFORMED BY A TOWER CONTRACTOR WITH A MINIMUM 5 YEARS EXPERIENCE IN TOWER ERECTION AND RETROFIT AND WITH WORKING KNOWLEDGE OF THE ANSI/TIA-222-H "STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS AND SMALL WIND TURBINE SUPPORT STRUCTURES".
- CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS. SHOULD THE CONTRACTOR REQUIRE DIRECT CONSULTATION, NB+C ENGINEERING SERVICES, LLC. IS WILLING TO OFFER SERVICES BASED UPON AN AGREED FEE FOR THE WORK REQUIRED.
- ALL SUBMITTAL INFORMATION MUST BE SENT TO PMI INSPECTOR. ANY VARIATION OF THESE SPECIFICATIONS OR DRAWINGS WITHOUT CONSENT FROM NB+C ENGINEERING SERVICES, LLC. WILL VOID ANY RESPONSIBILITY OR LIABILITY FOR DAMAGE (MATERIAL OR PHYSICAL) TOWARDS NB+C ENGINEERING SERVICES, LLC.
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE ASSP A10.48 AND ANSI/TIA-322 STANDARDS.

JOB SITE SAFETY & NOTES:

- NEITHER THE PROFESSIONAL ACTIVITIES OF NB+C ENGINEERING SERVICES, LLC. NOR THE PRESENCE OF NB+C ENGINEERING SERVICES, LLC. OR EMPLOYEES AND SUB-CONSULTANTS AT THE CONSTRUCTION SITE, SHALL RELIEVE THE GENERAL CONTRACTOR AND OR SUBCONTRACTORS AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE GENERAL CONTRACTOR AND OR SUBCONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SAFETY, AND WARRANTS THAT THIS INTENT IS EVIDENT BY ACCEPTING THIS WORK.

COLD GALVANIZATION/SURFACE PREPARATION NOTES:

- CONTRACTOR TO USE ZINGA COLD GALVANIZATION COMPOUNDS.
- PREPARE RUSTED/CORRODED SURFACE FOR TREATMENT ACCORDING TO MANUFACTURERS RECOMMENDATIONS.
- CONTRACTOR TO APPLY (2) COATS OF COLD GALVANIZATION COMPOUND PER MANUFACTURER'S RECOMMENDATION. DRYING AND CURING TIMES MUST BE UTILIZED PER MANUFACTURER'S RECOMMENDATION.
- APPLY ALL COATINGS BY BRUSH IN CALM WIND CONDITIONS. THE USE OF AEROSOL IS NOT PERMITTED.
- IF THE TOWER IS PAINTED, BRUSH PAINT ALL TREATED AREAS TO MATCH TOWER AFTER COLD GALVANIZATION COMPOUND IS ALLOWED TO CURE.

STEEL :

- ALL PROPOSED MEMBERS TO USE THE PREFERRED MATERIAL SPECIFICATION AS DEFINED BY THE AISC CODE AND ASTM SPECIFICATIONS.
- ALL CONNECTIONS OF STRUCTURAL STEEL MEMBERS SHALL BE MADE USING SPECIFIED WELDS WITH WELDING ELECTRODES E-70XX OR SPECIFIED HIGH STRENGTH BOLTS TO BE ASTM A325N, THREAD INCLUDED WITH SHEAR PLANE (UNLESS OTHERWISE NOTED).
- ALL BOLTED CONNECTIONS TO BE INSTALLED TO A SNUG-TIGHTENED CONDITION IN ACCORDANCE WITH AISC 15 PART 16.2, "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS, SECTION 8.1, UNLESS OTHERWISE SPECIFIED. WHEN "X" TYPE BOLTS ARE USED, CONTRACTOR MAY BE REQUIRED TO STACK ADDITIONAL WASHERS TO OBTAIN PROPER SNUG TIGHT INSTALLATION. ALL NUTS SHALL BE HEAVY HEX UNLESS OTHERWISE NOTED.
- ALL STEEL, AFTER FABRICATION, SHALL BE HOT DIPPED GALVANIZED PER ASTM A-123. ALL DAMAGED SURFACES, WELDED AREAS AND AUTHORIZED NON-GALVANIZED MEMBERS OR PARTS (EXISTING OR NEW) SHALL BE PAINTED WITH MULTIPLE COATS OF ZRC COLD GALVANIZING COMPOUND ACHIEVING A MINIMUM OF 4 MILS DRY FILM PER ASTM A 780.
- ALL SHOP AND FIELD WELDING SHALL BE DONE BY WELDERS QUALIFIED AS DESCRIBED IN THE "AMERICAN WELDING SOCIETY'S STANDARD QUALIFICATION PROCEDURE" TO PERFORM THE TYPE OF WORK REQUIRED. CONTRACTOR IS REQUIRED TO PROVIDE NB+C ENGINEERING SERVICES, LLC. WITH A PASSING CERTIFIED WELDING INSPECTION FOR ALL WELDS.
- STRUCTURAL STEEL MAY NOT BE TORCH CUT FOR FABRICATION. ALL STEEL FABRICATION MUST FOLLOW AISC STANDARDS.
- ALL STEEL SHALL MEET OR EXCEED THE MINIMUM STRENGTH AS SPECIFIED IN THE DRAWINGS. IF YIELD STRENGTH WAS NOT NOTED IN THE DRAWINGS, CONTRACTORS SHALL CONTACT NB+C FOR DIRECTION.

MISC. NOTES:

- ALL MODIFICATIONS ARE ASSUMED TO BE MADE ON AN EMPTY TOWER. CONTRACTOR IS RESPONSIBLE TO MAKE PROVISIONS TO SUPPORT OR WORK AROUND EXISTING ANTENNAS AND TRANSMISSION LINES. MODIFICATIONS MUST BE CONTINUOUS THROUGH ALL AREAS SHOWN.
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

FABRICATION NOTES:

- ALL DIMENSIONS ARE PRELIMINARY UNTIL FIELD VERIFIED BY CONTRACTOR. ANY CHANGES MUST BE APPROVED BY ENGINEER OF RECORD IN WRITING PRIOR TO FABRICATION AND INSTALLATION.
- NEW STEEL MEMBERS MUST HAVE SINGLE DRILLED HOLES. SLOTTED AND DOUBLE DRILLED HOLES ARE NOT ACCEPTABLE MEANS OF FABRICATION UNLESS OTHERWISE NOTED.

SUBSTITUTES AND/OR EQUALS:

- IF CONTRACTOR WISHES TO FURNISH OR USE A SUBSTITUTE ITEM OF MATERIAL OR EQUIPMENT, CONTRACTOR SHALL FIRST MAKE WRITTEN APPLICATION TO ENGINEER OF RECORD FOR ACCEPTANCE THEREOF, CERTIFYING THAT THE PROPOSED SUBSTITUTE WILL PERFORM ADEQUATELY THE FUNCTIONS AND ACHIEVE THE RESULTS CALLED FOR BY THE GENERAL DESIGN, BE SIMILAR IN SUBSTANCE TO THAT SPECIFIED AND SUITED TO THE SAME USE AS THAT SPECIFIED. ALL VARIATIONS OF THE PROPOSED SUBSTITUTE FROM THAT SPECIFIED WILL BE IDENTIFIED IN THE APPLICATION AND AVAILABLE MAINTENANCE, REPAIR AND REPLACEMENT SERVICE WILL BE INDICATED. THE APPLICATION WILL ALSO CONTAIN AN ITEMIZED ESTIMATE OF ALL COSTS OR CREDITS THAT WILL RESULT DIRECTLY OR INDIRECTLY FROM ACCEPTANCE OF SUCH SUBSTITUTE INCLUDING COSTS OF REDESIGN AND CLAIMS OF OTHER CONTRACTORS AFFECTED BY THE RESULTING CHANGE. ALL OF WHICH WILL BE CONSIDERED BY ENGINEER OF RECORD IN EVALUATION OF THE PROPOSED SUBSTITUTE. ENGINEER OF RECORD MAY REQUIRE CONTRACTOR TO FURNISH ADDITIONAL DATA ABOUT THE PROPOSED SUBSTITUTE.

FIELD HOT WORK PLAN NOTES:

- ALL CONTRACTORS RESPONSIBILITY TO COMPLETE A HOT WORK PLAN IF AWARDED PER CUSTOMER SPECIFICATIONS GUIDELINES FOR WELDING, CUTTING & SPARK PRODUCING WORK.
- HAVE A FIRE PLAN APPROVED BY THE CUSTOMER AND THEIR SAFETY MANAGEMENT DEPARTMENT.
- CONTRACTOR MUST OBTAIN THE CONTACT INFO OF THE LOCAL FIRE DEPARTMENT AND THE 911 ADDRESS OF THE TOWER SITE BEFORE CONSTRUCTION.
- CONTRACTOR SHALL MAKE SURE THAT CELL PHONE COVERAGE IS AVAILABLE IN THE TOWER SITE. IF CELL COVERAGE IS NOT AVAILABLE, AN IMMEDIATE AVAILABLE MEANS OF DIRECT COMMUNICATION WITH THE FIRE DEPARTMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION START.
- ALL CONSTRUCTION SHALL BE PERFORMED UNDER WIND SPEED LESS THAN 10 MPH ON THE GROUND LEVEL. IF WIND SPEED INCREASES, CONTRACTOR MUST DETERMINE IF CONSTRUCTION SHALL BE DISCONTINUED.
- FIRE SUPPRESSION EQUIPMENT MUST BE MADE AVAILABLE ON SITE AND READY TO USE.
- CONTRACTOR SHALL ASSIGN A FIRE WATCHER TO PERFORM FIRE-FIGHTING DUTIES.
- ALL WELDERS SHALL BE AWS OR STATE CERTIFIED. THEY MUST ALSO BE EXPERIENCED IN WELDING ON GALVANIZED MATERIALS.
- IF IT IS POSSIBLE, ALL EXISTING COAX NEAR WELDING AREA SHALL BE TEMPORARILY MOVED AWAY FROM THE WELDING AREA BEFORE WELDING.
- PLEASE REPORT ANY FIELD ISSUE TO NB+C @ 267-460-0122

BOLT HOLE DIMENSIONS

BOLT DIAMETER	STANDARD HOLE DIAMETER	OVERSIZED HOLE DIAMETER	SHORT SLOTTED (WIDTH X LENGTH)	DETAIL	LONG SLOTTED (WIDTH X LENGTH)	DETAIL
1/2"	9/16"	5/8"	9/16" x 11/16"	o	9/16" x 1-1/4"	o
5/8"	11/16"	13/16"	11/16" x 7/8"	o	11/16" x 1-9/16"	o
3/4"	13/16"	15/16"	13/16" x 1"	o	13/16" x 1-7/8"	o
7/8"	15/16"	1-1/16"	15/16" x 1-1/8"	o	15/16" x 2-3/16"	o
1"	1-1/16"	1-1/4"	1-1/16" x 1-5/16"	o	1-1/16" x 2-1/2"	o

MINIMUM EDGE DISTANCES

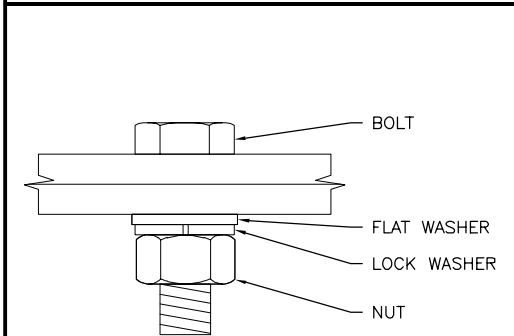
BOLT DIAMETER	MINIMUM EDGE DISTANCE
1/2"	7/8"
5/8"	1-1/8"
3/4"	1-1/4"
7/8"	1-1/2" [a]
1"	1-3/4" [a]
1-1/8"	2"
1-1/4"	2-1/4"
OVER 1-1/4"	1-3/4" x d

NUT ROTATION FROM SNUG-TIGHT CONDITION^{a,b}

BOLT LENGTH ^c	DISPOSITION OF OUTER FACE OF BOLTED PARTS		
	BOTH FACES NORMAL TO BOLT AXIS	ONE FACE NORMAL TO BOLT AXIS, OTHER SLOPED NOT MORE THAN 1:20 ^d	BOTH FACES SLOPED NOT MORE THAN 1:20 FROM NORMAL TO BOLT AXIS ^d
NOT MORE THAN 4d _b	1/3 TURN	1/2 TURN	2/3 TURN
MORE THAN 4d _b BUT NOT MORE THAN 8d _b	1/2 TURN	2/3 TURN	5/6 TURN
MORE THAN 8d _b BUT NOT MORE THAN 12d _b	2/3 TURN	5/6 TURN	1 TURN

- NOTES:**
- NUT ROTATION IS RELATIVE TO BOLT REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR REQUIRED NUT ROTATIONS OF 1/2 TURN AND LESS, THE TOLERANCE IS PLUS OR MINUS 30 DEGREES; FOR REQUIRED NUT ROTATIONS OF 2/3 TURN AND MORE, THE TOLERANCE IS PLUS OR MINUS 45 DEGREES.
 - APPLICABLE ONLY TO JOINTS IN WHICH ALL MATERIAL WITHIN THE GRIP IS STEEL
 - WHEN THE BOLT LENGTH EXCEEDS 12d_b, THE REQUIRED NUT ROTATION SHALL BE DETERMINED BY ACTUAL TESTING IN A SUITABLE TENSION CALIBRATION THAT SIMULATE THE CONDITIONS OF SOLIDLY FITTING STEEL
 - BEVELED WASHER NOT USED.

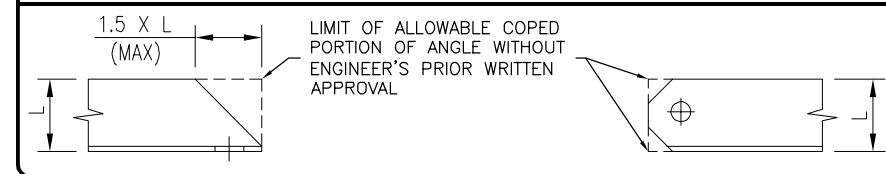
TYPICAL BOLT ASSEMBLY



WORKABLE GAGES

ANGLE SIZE	GAGE
1 3/4"	1'
2"	1 1/8"
2 1/2"	1 3/8"
3"	1 3/4"
3 1/2"	2"
4"	2 1/2"

WORKABLE COPING



NOTES:

- ALL DIMENSIONS REPRESENTED IN THIS SHEET ARE AISC MINIMUM REQUIREMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF DISTANCES ARE LESS THAN THOSE PROVIDED
- THE DIMENSIONS PROVIDED ARE MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS OF PROPOSES MEMBERS WITH THESE DRAWINGS MAY VARY FROM AISC MIN. REQUIREMENTS
- SHORT SLOT HOLES SHALL ONLY BE USED WHEN DEPICTED IN THE DRAWINGS.
- MATCH EXISTING HOLES GAGES WHEN APPLICABLE, UNLESS MINIMUM EDGE DISTANCE ARE COMPROMISED

ENGINEER

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

ENGINEER

SHEET TITLE

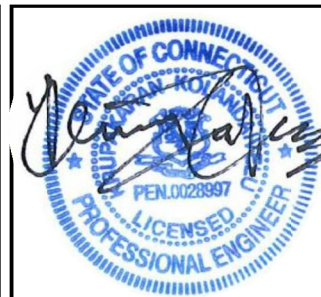
SHEET NUMBER



SITE NAME: WATERBURY S CT
PSLC: 467706
NB+C JOB NO: 100820
SITE ADDRESS:
150 MATTATUCK HGTS
WATERBURY, CT 06705
NEW HAVEN COUNTY

REVISIONS

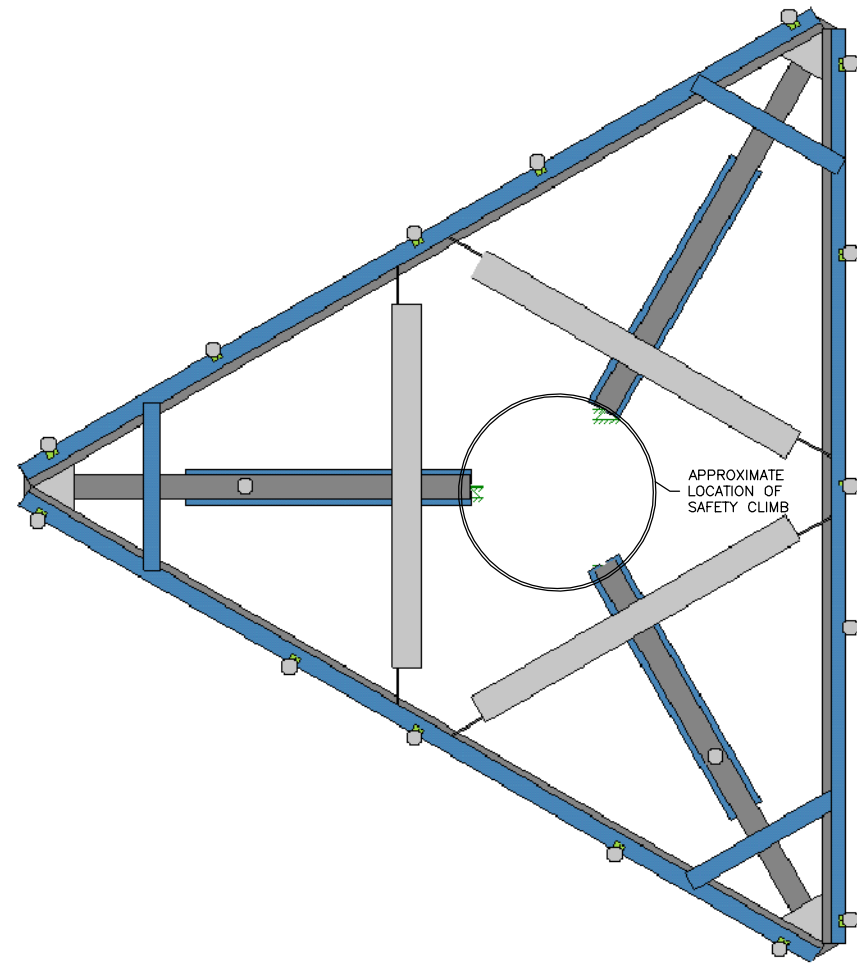
REV	DATE	DESCRIPTION	BY
1	01/24/22	MODIFICATION DRAWINGS	DS
0	06/11/21	MODIFICATION DRAWINGS	PHJ



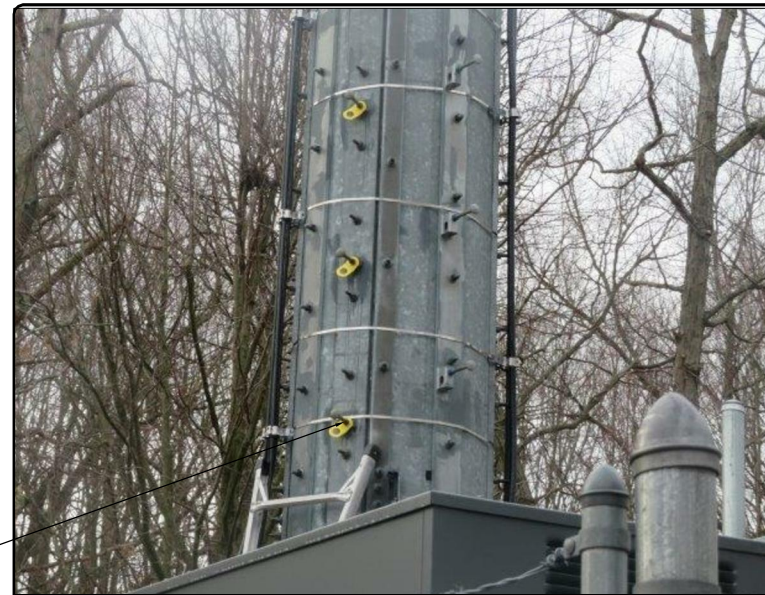
KRUPAKARAN KOLANDAIVELU, P.E.
 STATE OF CONNECTICUT
 PROFESSIONAL ENGINEER
 LICENSE #PEN.0028997

GENERAL NOTES

SGN-1

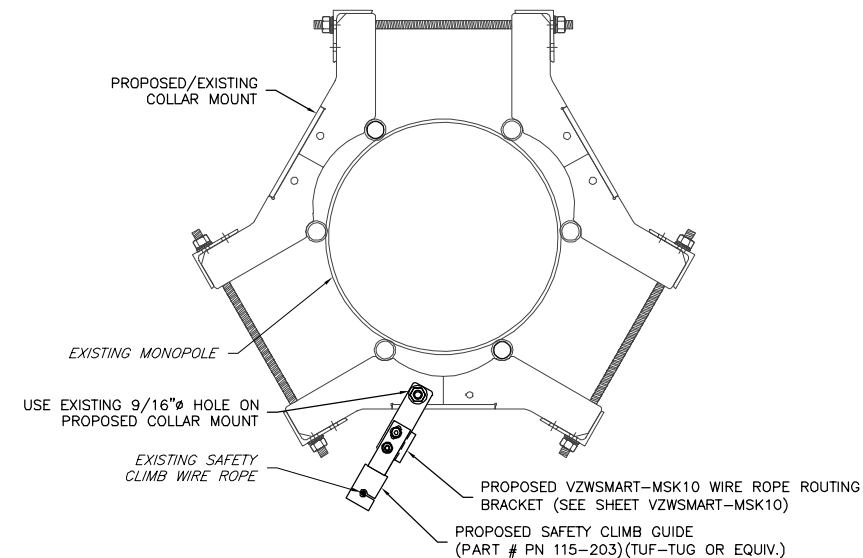


1 SAFETY CLIMB LOCATION - TOP VIEW
SCALE: NTS
SCF-1



EXISTING LOCATION OF SAFETY CLIMB

PHOTO OF SAFETY CLIMB



2 SAFETY CLIMB DETAIL
SCALE: NTS
SCF-1

NOTE:
INSTALL SHALL NOT CAUSE HARM TO THE
STRUCTURE, CLIMBING FACILITY, SAFETY CLIMB OR
ANY SYSTEM INSTALLED ON THE STRUCTURE

ENGINEER

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
1777 SENTRY PARKWAY WEST
VENA 17, SUITE 200
BLUE BELT, PA 19022
(267) 460-0122

APPLICANT

verizon

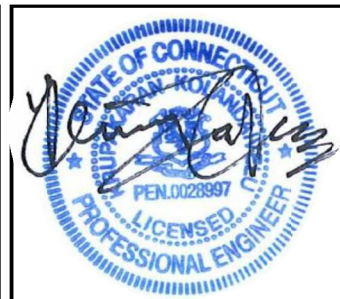
SITE INFORMATION

SITE NAME: WATERBURY SCT
PSLC: 467706
NB+C JOB NO: 100820
SITE ADDRESS:
150 MATTATUCK HGTS
WATERBURY, CT 06705
NEW HAVEN COUNTY

DESIGN RECORD

REVISIONS			
REV	DATE	DESCRIPTION	BY
1	01/24/22	MODIFICATION DRAWINGS	DS
0	06/11/21	MODIFICATION DRAWINGS	PHJ

PROFESSIONAL STAMP



ENGINEER

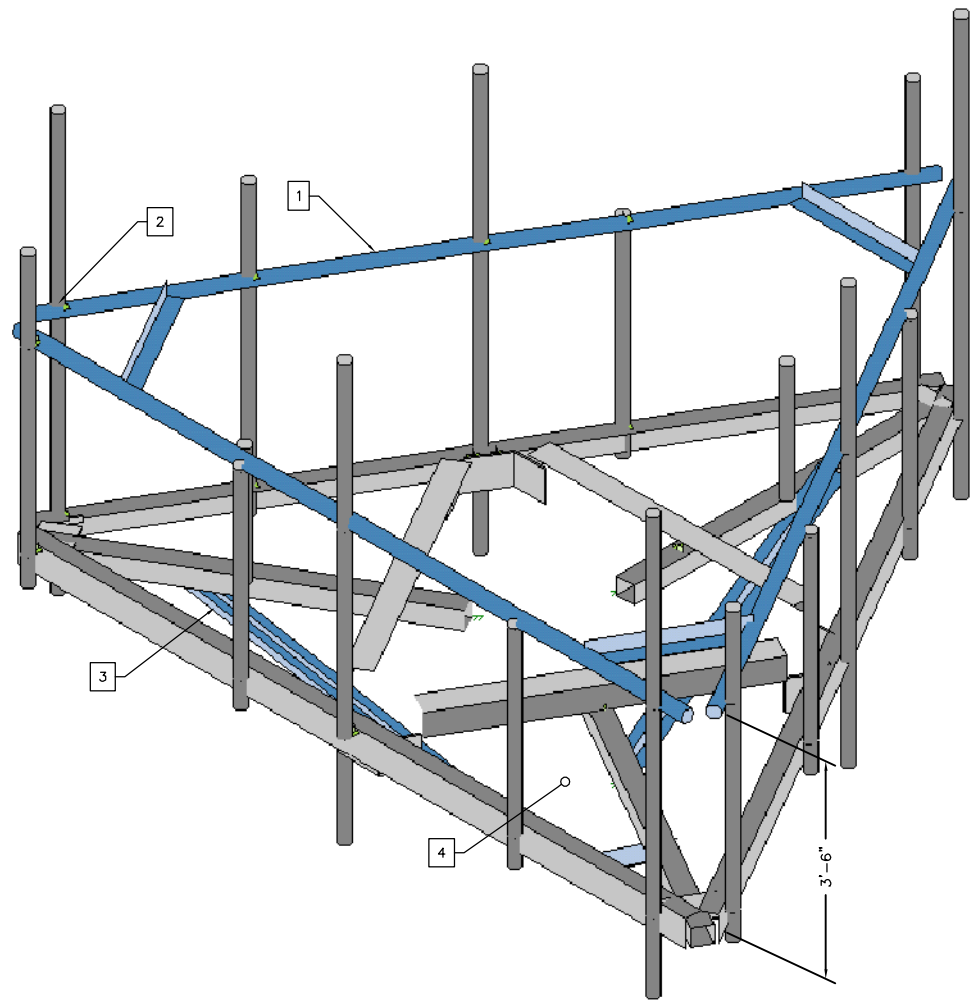
KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

SHEET TITLE

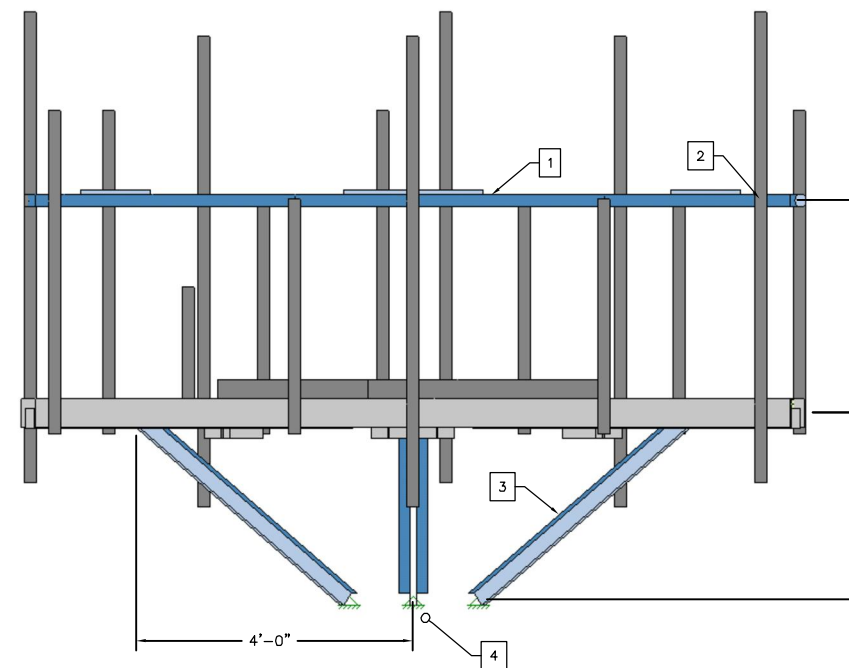
**CLIMBING FACILITY
DETAILS**

SHEET NUMBER

SCF-1



1 MODIFICATION - ISOMETRIC VIEW
 SS-1 SCALE: NTS MOUNT ELEVATION: 108.0'



2 MODIFICATION - FRONT VIEW
 SS-1 SCALE: NTS MOUNT ELEVATION: 108.0'

SL NO.	MOUNT MODIFICATION SCHEDULE	REFERENCE SHEET NO.
1	REPLACE EXISTING SUPPORT RAIL W/ NEW VZSMART SUPPORT RAIL KIT	VZSMART-PLK1
2	INSTALL NEW VZSMART CROSSOVER PLATE TO EXISTING MOUNTING PIPES IN POS. 5	VZSMART-MSK1
3	INSTALL NEW VZSMART KICKER KIT	VZSMART-PLK5
4	INSTALL NEW VZSMART MONOPOLE COLLAR	VZSMART-PLK7

NOTES

- APPURTENANCES MAY INTERFERE WITH PROPOSED MODIFICATIONS
- ALL MODIFICATIONS TO BE INSTALLED CONTINUOUSLY THROUGH EXISTING EQUIPMENT. ALL EXISTING EQUIPMENT NOT TO BE DAMAGED OR TAKEN OFF AIR DURING INSTALLATION. CONTRACTOR TO COORDINATE WITH CARRIER PRIOR TO MODIFICATION INSTALLATION TO DETERMINE IF EXISTING ANTENNAS NEED TO BE TURNED DOWN.
- ANTENNA & COAX GRAPHICS NOT SHOWN FOR CLARITY. SEE MOUNT ANALYSIS REPORT FOR EXISTING ANTENNA LOADING & COAX CONFIGURATION.
- CONTRACTOR TO FIELD VERIFY ALL LENGTHS AND QUANTITIES PRIOR TO MATERIAL ORDERS, FABRICATION, AND INSTALLATION.
- IF EXISTING TOWER IS PAINTED CONTRACTOR TO VERIFY WITH TOWER OWNER IF NEW MODIFICATION MEMBERS ARE TO BE PAINTED TO MATCH EXISTING TOWER FINISHES.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THERE ARE NO INTERFERENCES WITH SAFETY CLIMB BRACKETS, TRANSMISSION LINES, ETC. PRIOR TO MOBILIZATION AND INSTALLATION OF THESE MODIFICATIONS. PLEASE NOTIFY NB+C ES IMMEDIATELY IF ANY INSTALLATION ISSUES OCCUR RELATED TO THIS DRAWING.
- MEMBERS SHADED IN BLUE COLOR ARE NEW REINFORCEMENTS AND MEMBERS IN A AQUA COLOR (IF SHOW) ARE RELOCATED MEMBERS.
- FIELD CUTTING AND FIELD DRILLING MAY BE NECESSARY TO ACHIEVE THE REQUIRED DIMENSIONS
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN-UP, REMOVAL, AND DISPOSAL OF EXCESS MATERIALS USED AND REMOVED FROM THE STRUCTURE AT THE COMPLETION OF THE PROJECT.

ENGINEER



APPLICANT



SITE INFORMATION

SITE NAME: WATERBURY SCT
 PSLC: 467706
 NB+C JOB NO: 100820
 SITE ADDRESS:
 150 MATTATUCK HGTS
 WATERBURY, CT 06705
 NEW HAVEN COUNTY

DESIGN RECORD

REVISIONS			
REV	DATE	DESCRIPTION	BY
1	01/24/22	MODIFICATION DRAWINGS	DS
0	06/11/21	MODIFICATION DRAWINGS	PHJ

PROFESSIONAL STAMP



ENGINEER

KRUPAKARAN KOLANDAIVELU, P.E.
 STATE OF CONNECTICUT
 PROFESSIONAL ENGINEER
 LICENSE #PEN.0028997

SHEET TITLE

ANTENNA MOUNT
 MODIFICATION
 DETAILS

SHEET NUMBER

SS-1



PHOTO 1

EXISTING VERIZON ANTENNA
MOUNT AT 108.0' ELEV



PHOTO 2



PHOTO 3



PHOTO 4

ENGINEER

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
1777 SENTRY PARKWAY WEST
VENA 17, SUITE 200
BLUE BELL, PA 19022
(267) 460-0122

APPLICANT



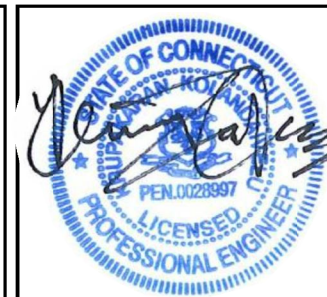
SITE INFORMATION

SITE NAME: WATERBURY SCT
PSLC: 467706
NB+C JOB NO: 100820
SITE ADDRESS:
150 MATTATUCK HGTS
WATERBURY, CT 06705
NEW HAVEN COUNTY

DESIGN RECORD

REVISIONS			
REV	DATE	DESCRIPTION	BY
1	01/24/22	MODIFICATION DRAWINGS	DS
0	06/11/21	MODIFICATION DRAWINGS	PHU

PROFESSIONAL STAMP



ENGINEER

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

SHEET TITLE

**ANTENNA
MOUNT
PHOTOS**

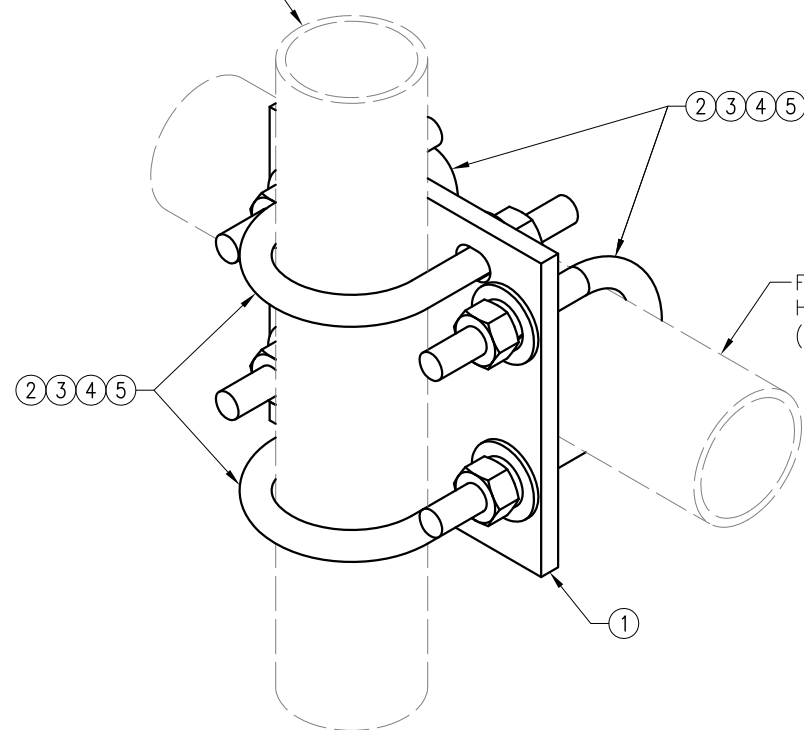
SHEET NUMBER

SS-2

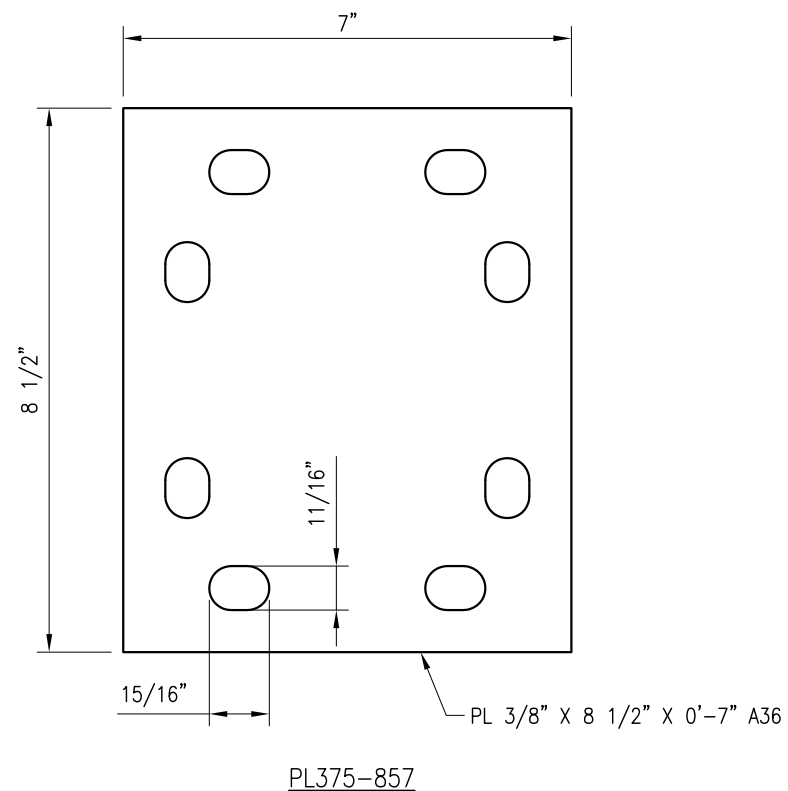
VzW
SMART Tool[®]
Vendor



FITS 2.375" O.D. AND 2.875" O.D.
 VERTICAL PIPE.
 (NOT INCLUDED IN THIS KIT)



FITS 2.375" O.D. AND 2.875" O.D.
 HORIZONTAL PIPE.
 (NOT INCLUDED IN THIS KIT)



NOTES:
 1. HOT-DIPPED GALVANIZED PER ASTM A123.

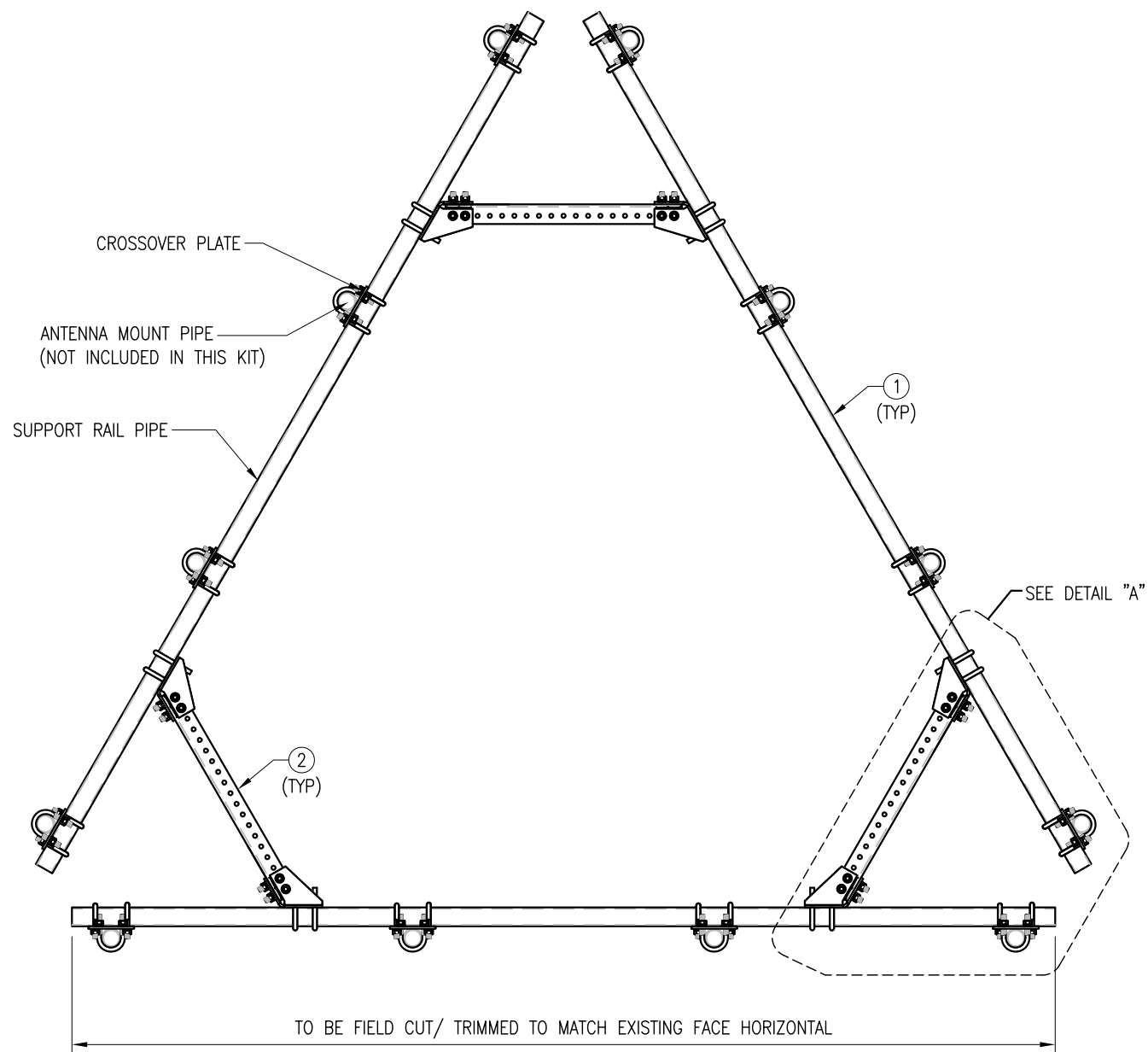
VZWSMART-MSK1 (CROSSOVER PLATE)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	PL375-857	PL 3/8" X 8 1/2" X 0'-7" A36	MSK1-F1	6
2	4	MS02-625-300-500	RU-BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)	RBC-1	5
3	8	FW-625	5/8" HDG USS FLAT WASHER	---	1
4	8	LW-625	5/8" HDG LOCK WASHER	---	0
5	8	NUT-625	5/8" HDG HEX NUT	---	1
GALVANIZED WT					14

DRAWN BY: H.R. CHECKED BY: HMA

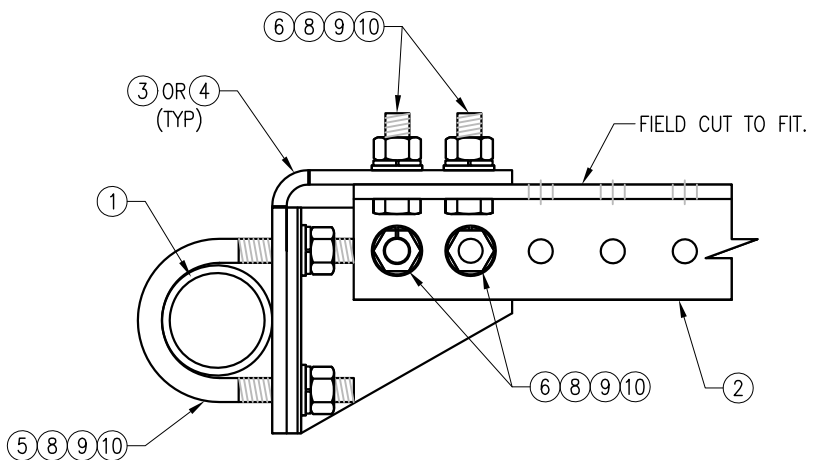
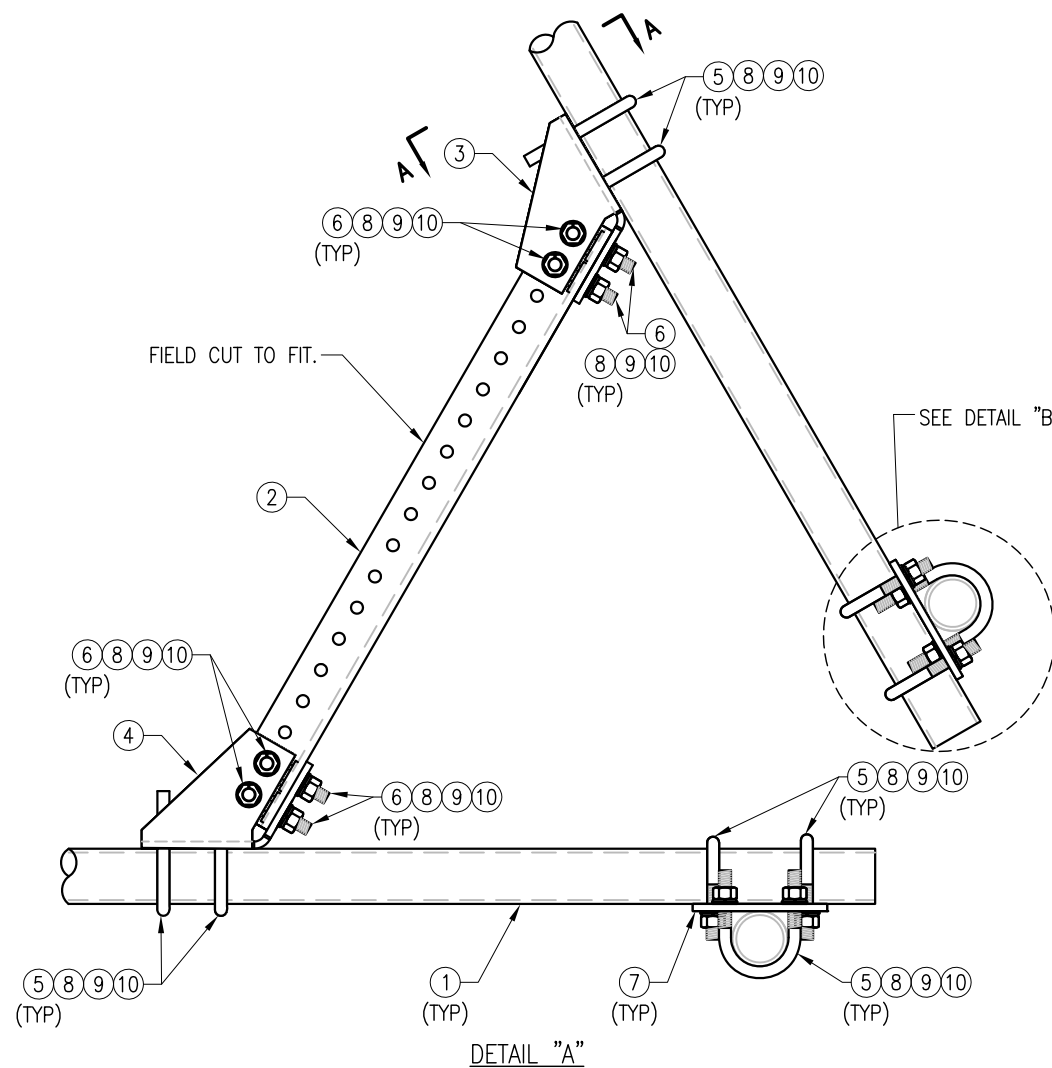
REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	H.R.	05/08/20

SHEET TITLE:
**VZWSMART-MSK1
 CROSSOVER PLATE**

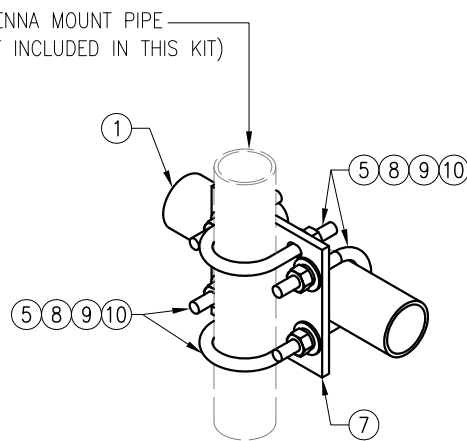
SHEET NUMBER: **VZWSMART-MSK1** REV #: **0**



PLAN VIEW



SECTION "A-A"



DETAIL "B"

NOTES:

1. HOT-DIPPED GALVANIZED PER ASTM A123.

VZW SMART-PLK1 (SUPPORT RAIL KIT)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	PST2875-12.5	2.5" PST (2.875" O.D. X 0.203" THK.) X 12'-6" A53 GR-B	PLK1-F1	292
2	3	L33375-3	L 3" X 3" X 3/8" X 3'-0" A36	PLK1-F1	66
3	3	CBP-L	CORNER BENT PLATE BRACKET	PLK1-F2	28
4	3	CBP-R	CORNER BENT PLATE BRACKET	PLK1-F2	28
5	60	MS02-625-300-500	RU-BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)	RBC-1	82
6	24	---	BOLT 5/8" X 2" A325	---	9
7	12	PL375-857	PL 3/8" X 8 1/2" X 7" A36	PLK1-F3	77
8	144	FW-625	5/8" HDG USS FLAT WASHER	---	12
9	144	LW-625	5/8" HDG LOCK WASHER	---	3
10	144	NUT-625	5/8" HDG HEX NUT	---	17
GALVANIZED WT					504

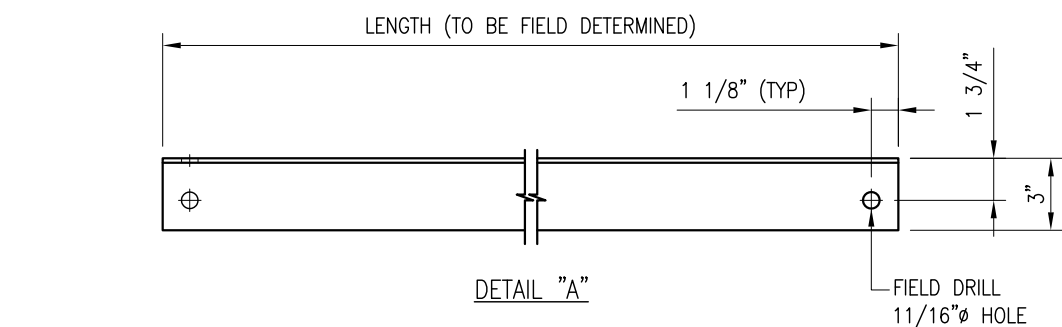
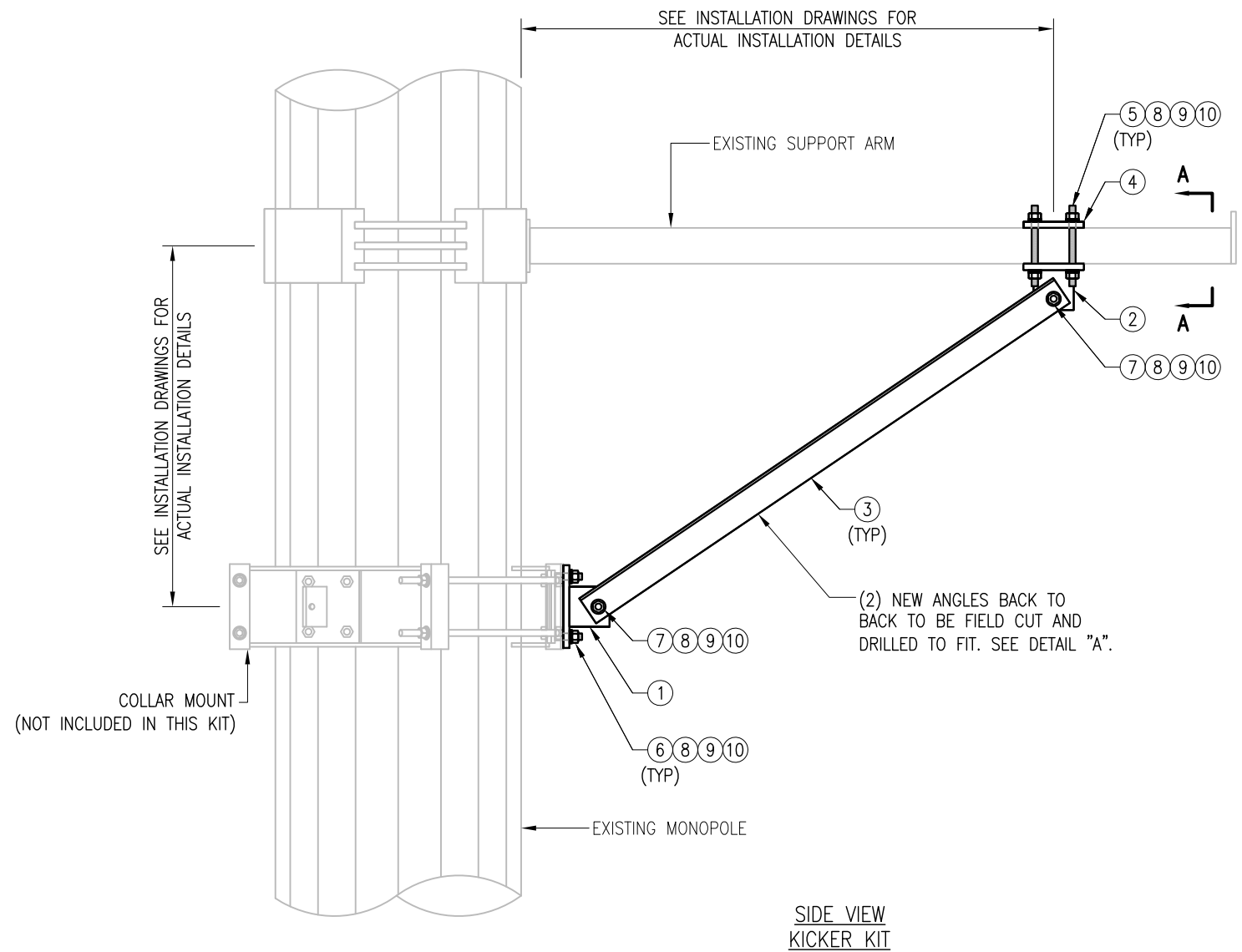
DRAWN BY: H.R. CHECKED BY: HMA

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	H.R.	04/20/21

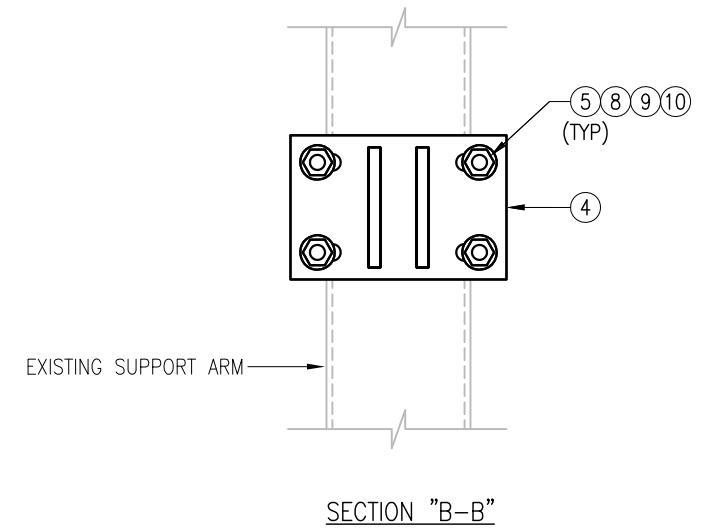
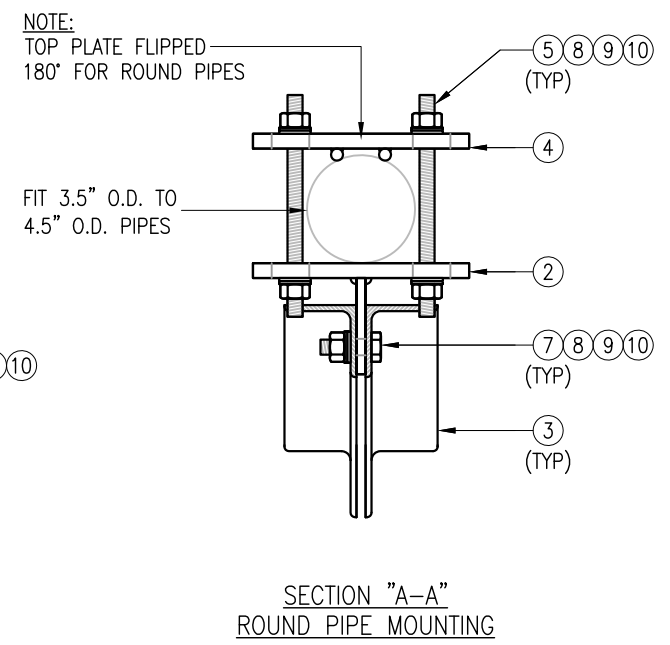
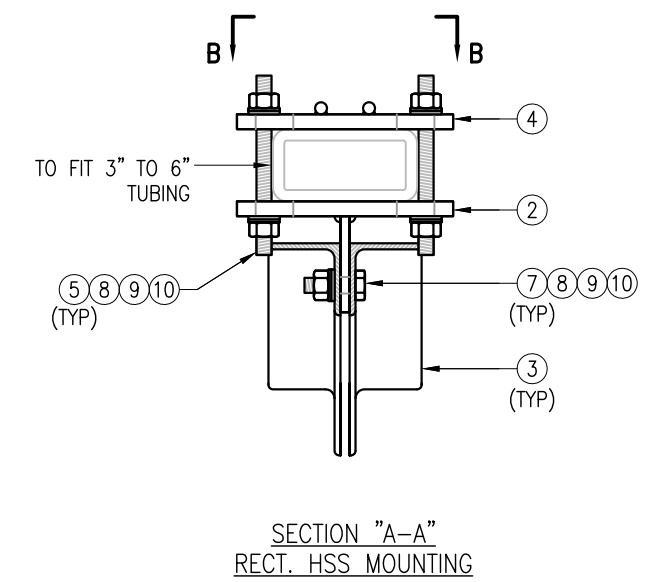
SHEET TITLE:
VZWSMART-PLK1
SUPPORT RAIL KIT

SHEET NUMBER: VZWSMART-PLK1
REV #: 0

NOTE:
THE LOCATION OF KICKER AND EXISTING ANTENNA MOUNT SHOWN ON THE DRAWING IS FOR REPRESENTATION PURPOSE ONLY. SEE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION OF DETAILS.



NOTES:
1. ALL HOLES ARE 11/16" DIA. U.N.O
2. HOT-DIPPED GALVANIZED PER ASTM A123.
3. FIT UP TO 6" SQ. TUBING OR 4 1/2" O.D. PIPE



VZWSMART-PLK5 (KICKER KIT)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	BRKW-XXX	BRACKET WELDMENT A36	PLK5-F3	43.8
2	3	BRKW-XXXX	BRACKET WELDMENT A36	PLK5-F2	35.7
3	6	L331875-8	L 3" X 3" X 3/16" X 8'-0" A36	PLK5-F4	182.9
4	3	PL-KI	PL 5/8" X 6" X 9" A36	PLK5-F1	29.0
5	12	---	THREADED ROD 5/8" DIA. X 1'-0" F1554-36 HDG	---	---
6	6	---	BOLT 5/8" X 2 1/4" A325	---	---
7	12	---	BOLT 5/8" X 2" A325	---	---
8	42	FW-625	5/8" HDG USS FLAT WASHER	---	3
9	42	LW-625	5/8" HDG LOCK WASHER	---	1
10	42	NUT-625	5/8" HDG HEX NUT	---	5
GALVANIZED WT					291

VzW
SMART Tool[®]
Vendor



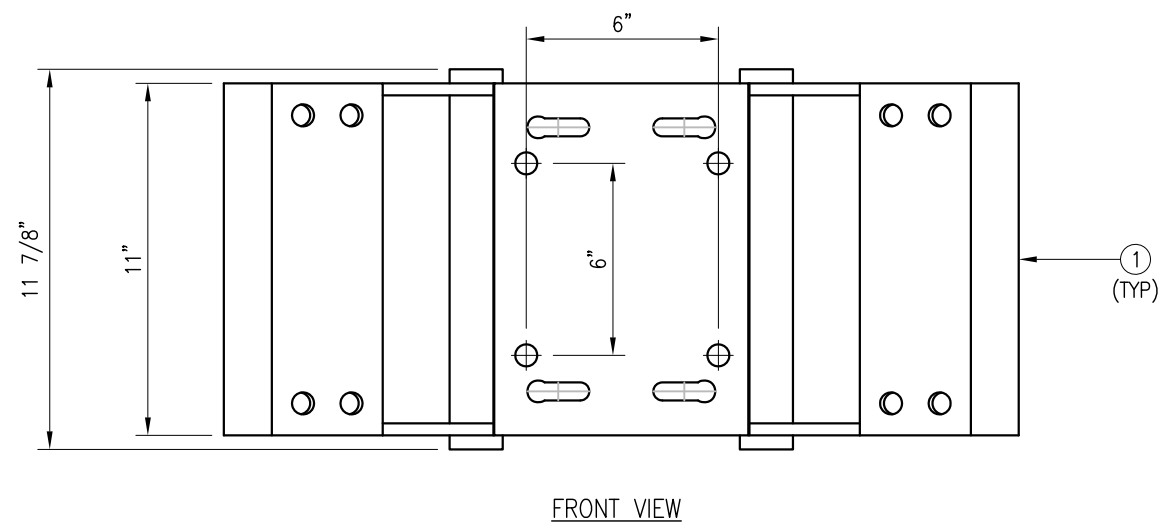
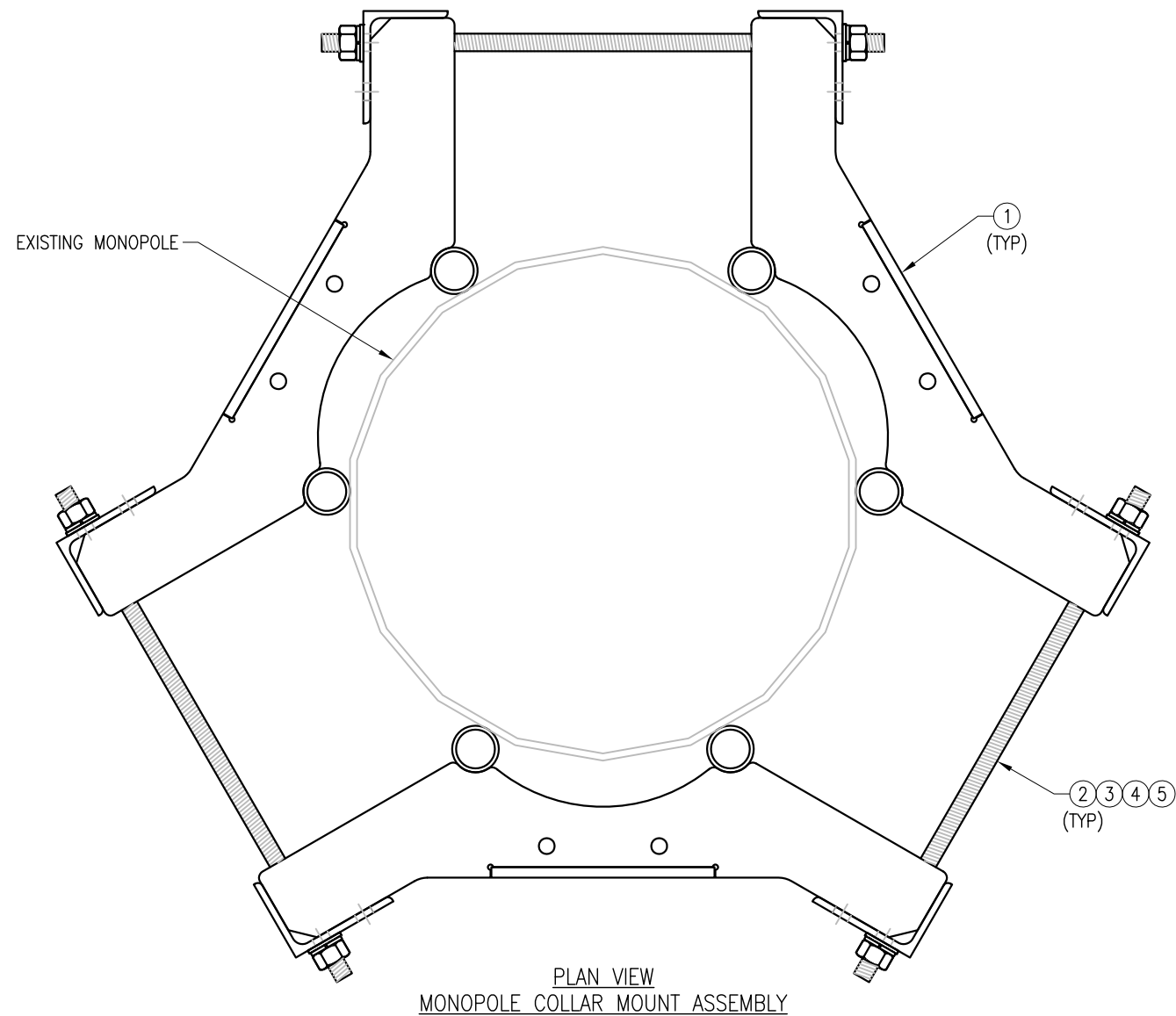
DRAWN BY: BT CHECKED BY: HMA/KW

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	BT	05/08/20

SHEET TITLE:
**VZWSMART-PLK5
KICKER KIT**

SHEET NUMBER: **VZWSMART-PLK5** REV #: **0**

VzW
SMART Tool[®]
 Vendor



- NOTES:**
 1. FIT 12" TO 45" DIA MONOPOLE.
 2. HOT-DIPPED GALVANIZED PER ASTM A123.

VZSMART-PLK7 (MONOPOLE COLLAR MOUNT ASSEMBLY)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	CM-1245	COLLAR MOUNT ASSEMBLY	PLK7-F1	147
2	6	---	THREADED ROD 5/8" X 4'-0" A193-B7	---	
3	12	FW-625	5/8" HDG USS FLAT WASHER	---	1
4	12	LW-625	5/8" HDG LOCK WASHER	---	0
5	12	NUT-625	5/8" HDG HEX NUT	---	1
GALVANIZED WT					150


DRAWN BY: BT CHECKED BY: HMA/KW

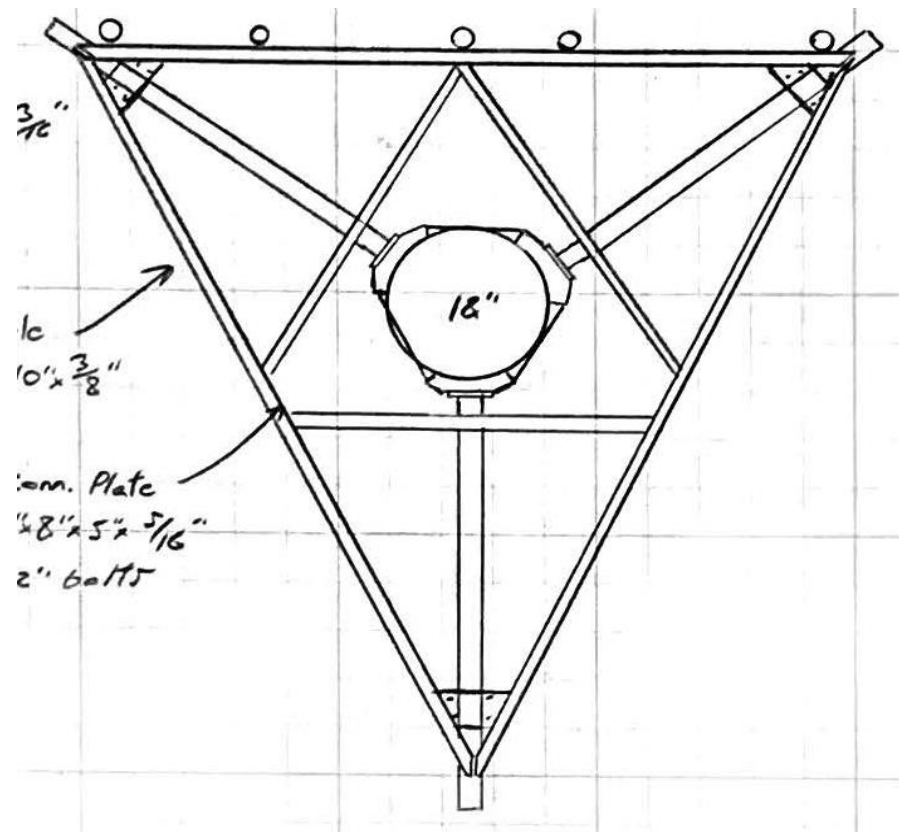
REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	BT	05/11/20

SHEET TITLE:
 VZSMART-PLK7
 MONOPOLE COLLAR
 MOUNT ASSEMBLY

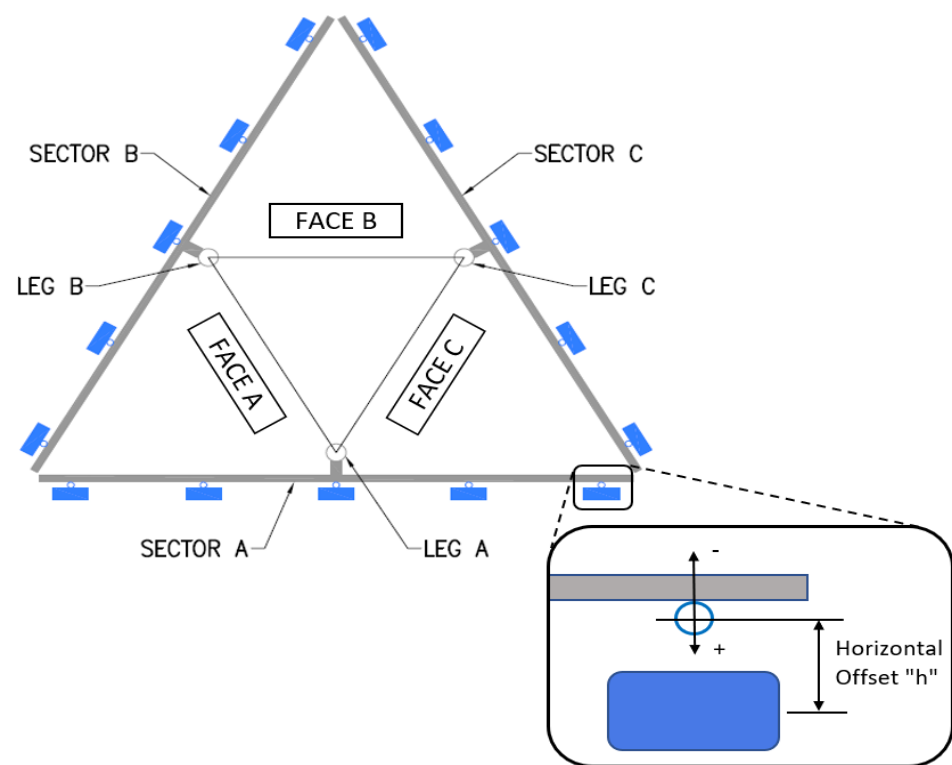
SHEET NUMBER: VZSMART-PLK7 REV #: 0



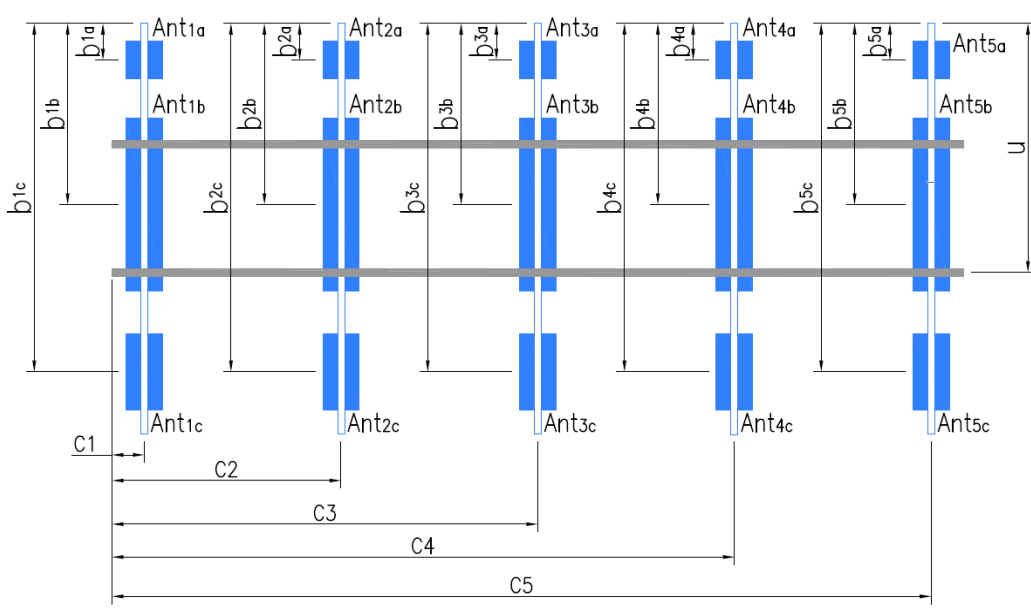
	Antenna Mount Mapping Form (PATENT PENDING)			FCC #
	Tower Owner:	CROWN CASTLE	Mapping Date:	3/24/2021
	Site Name:	WATERBURY S CT	Tower Type:	Monopole
	Site Number or ID:	467706	Tower Height (Ft.):	
Mapping Contractor:	HUDSON DESIGN GROUP, LLC.	Mount Elevation (Ft.):	111.75	
This antenna mapping form is the property of TES and under PATENT PENDING. The formation contained herein is considered confidential in nature and is to be used only for the specific customer it was intended for. Reproduction, transmission, publication, modification or disclosure by any method is prohibited except by express written permission of TES. All means and methods are the responsibility of the contractor and the work shall be compliant with ANSI/ASSE A 10.48, OSHA, FCC, FAA and other safety requirements that may apply. TES is not warranting the usability of the safety climb as it must be assessed prior to each use in compliance with OSHA requirements.				



Mount Pipe Configuration and Geometries [Unit = Inches]								
Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."	Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."	
A1	2" STD. PIPE X 96" LONG	80.00	6.00	C1	2" STD. PIPE X 96" LONG	80.00	6.00	
A2	2" STD. PIPE X 48" LONG	42.00	38.00	C2	2" STD. PIPE X 48" LONG	42.00	38.00	
A3	2" STD. PIPE X 96" LONG	75.00	77.00	C3	2" STD. PIPE X 96" LONG	75.00	77.00	
A4	2" STD. PIPE X 48" LONG	42.00	101.00	C4	2" STD. PIPE X 48" LONG	42.00	101.00	
A5	2" STD. PIPE X 66" LONG	60.00	150.00	C5	2" STD. PIPE X 66" LONG	60.00	150.00	
A6				C6				
B1	2" STD. PIPE X 96" LONG	80.00	6.00	D1				
B2	2" STD. PIPE X 66" LONG	60.00	38.00	D2				
B3	2" STD. PIPE X 96" LONG	75.00	77.00	D3				
B4	2" STD. PIPE X 48" LONG	42.00	101.00	D4				
B5	2" STD. PIPE X 66" LONG	60.00	150.00	D5				
B6				D6				
Distance between bottom rail and mount CL elevation (dim d). Unit is inches. See 'Mount Elev Ref' tab for details. :							6.00	
Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.) :							3.46	
Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.) :								
Please enter additional information or comments below.								
MONOPOLE WALL THICKNESS: 0.250"								
Tower Face Width at Mount Elev. (ft.):							Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.):	18



Ants. Items	Enter antenna model. If not labeled, enter "Unknown".						Mounting Locations [Units are inches and degrees]			Photos of antennas
	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Antenna Center-line (Ft.)	Vertical Distances "b _{1a} , b _{2a} , b _{3a} , b _{1b} ..." (Inches)	Horiz. Offset "h" (Use "-" if Ant. is behind)	Antenna Azimuth (Degrees)	
Sector A										
Ant _{1a}										
Ant _{1b}										
Ant _{1c}	FD9R6004/2C-3C	6.50	0.75	5.00		112.833	61.00	-3.00		48,70
Ant _{2a}										
Ant _{2b}	RFV01U-D1A	16.00	12.00	16.00		113.75	12.00	-9.00		51,70
Ant _{2c}										
Ant _{3a}										
Ant _{3b}	(2) SBNHH-1D65B	12.00	7.00	73.00		113.583	47.00	10.00	40.00	54,70
Ant _{3c}										
Ant _{4a}										
Ant _{4b}	RFV01U-D2A	16.00	10.00	16.00		113.75	12.00	-8.00		56,71
Ant _{4c}										
Ant _{5a}										
Ant _{5b}	BXA80063/4CF	11.00	5.00	47.50		113.75	30.00	9.00	40.00	60,71
Ant _{5c}	FD9R6004/2C-3C	6.50	0.75	5.00		113	39.00	-3.00		48,61,71
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										



Antenna Layout (Looking Out From Tower)

Mount Azimuth (Degree) for Each Sector				Tower Leg Azimuth (Degree) for Each Sector		Sector B														
Sector A:	50.00	Deg	Leg A:		Deg	Ant _{1a}														
Sector B:	170.00	Deg	Leg B:		Deg	Ant _{1b}														
Sector C:	290.00	Deg	Leg C:		Deg	Ant _{1c}	FD9R6004/2C-3C	6.50	0.75	5.00	112.833	61.00	-3.00							48,61,72
Sector D:		Deg	Leg D:		Deg	Ant _{2a}														
Climbing Facility Information						Ant _{2b}	RFV01U-D1A	16.00	12.00	16.00	113.75	30.00	-9.00							51,72
Location:	5.00	Deg	N/A			Ant _{2c}														
Climbing Facility	Corrosion Type:		Good condition.			Ant _{3a}														
	Access:		Climbing path was unobstructed.			Ant _{3b}	(2) SBNHH-1D65B	12.00	7.00	73.00	113.583	47.00	10.00	160.00						54,73
	Condition:		Good condition.			Ant _{3c}														
						Ant _{4a}														
						Ant _{4b}	RFV01U-D2A	16.00	10.00	16.00	113.75	12.00	-8.00							56,73
						Ant _{4c}														
						Ant _{5a}	GPS				116.25								73	
						Ant _{5b}	BXA80063/4CF	11.00	5.00	47.50	113.75	30.00	9.00	160.00					60,73	
						Ant _{5c}	FD9R6004/2C-3C	6.50	0.75	5.00	113	39.00	-3.00						48,73	
						Ant on Standoff	RHSDC-6627-PF-48	15.00	10.00	28.00									62,63,73,74	
						Ant on Standoff														
						Ant on Tower														
						Ant on Tower														
						Sector C														
						Ant _{1a}														
						Ant _{1b}														
						Ant _{1c}	FD9R6004/2C-3C	6.50	0.75	5.00	112.833	61.00	-3.00							48,74
						Ant _{2a}														
						Ant _{2b}	RFV01U-D1A	16.00	12.00	16.00	113.75	12.00	-9.00							51,74
						Ant _{2c}														
						Ant _{3a}														
						Ant _{3b}	(2) SBNHH-1D65B	12.00	7.00	73.00	113.583	47.00	10.00	290.00					54,74	
						Ant _{3c}														
						Ant _{4a}														
						Ant _{4b}	RFV01U-D2A	16.00	10.00	16.00	113.75	12.00	-8.00						56,74	
						Ant _{4c}														
						Ant _{5a}														
						Ant _{5b}	BXA80063/4CF	11.00	5.00	47.50	113.75	30.00	9.00	290.00					60,75	
						Ant _{5c}	FD9R6004/2C-3C	6.50	0.75	5.00	113	39.00	-3.00						48,75	
						Ant on Standoff														
						Ant on Standoff														
						Ant on Tower														
						Ant on Tower														
						Sector D														
						Ant _{1a}														
						Ant _{1b}														
						Ant _{1c}														
						Ant _{2a}														
						Ant _{2b}														
						Ant _{2c}														
						Ant _{3a}														
						Ant _{3b}														
						Ant _{3c}														
						Ant _{4a}														
						Ant _{4b}														
						Ant _{4c}														
						Ant _{5a}														
						Ant _{5b}														
						Ant _{5c}														
						Ant on Standoff														
						Ant on Standoff														
						Ant on Tower														
						Ant on Tower														

Observed Safety and Structural Issues During the Mount Mapping		
Issue #	Description of Issue	Photo #

1		
2	(12) 1-5/8"Ø COAX, (2) 1-1/4"Ø HYBRID, (1) 1/2"Ø COAX	84-88
3		
4		
5		
6		
7		
8		

Mapping Notes

1. Please report any visible structural or safety issues observed on the antenna mounts (Damaged members, loose connections, tilting mounts, safety climb issues, etc.)
2. If the thickness of the existing pipes or tubing can't be obtained from a general tool (such as Caliper), please use an ultrasonic measurement tool (thickness gauge) to measure the thickness.
3. Please create all required detail sketches of the mounts and insert them into the "Sketches" tab.
4. Please measure and enter the bolt sizes and types under the Members Box in the spreadsheet of the mount type.
5. Take and label the photos of the tower, mounts, connections, antennas and all measurements. Minimum 50 photos are required.
6. Please measure and report the size and length of all existing antenna mounting pipes.
7. Please measure and report the antenna information for all sectors.
8. Don't delete or rearrange any sheet or contents of any sheet from this mapping form.

Standard Conditions

1. Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping are to be reported in this mapping. However, this mount mapping is not a condition assessment of the mount.



Antenna Mount Mapping Form (PATENT PENDING)

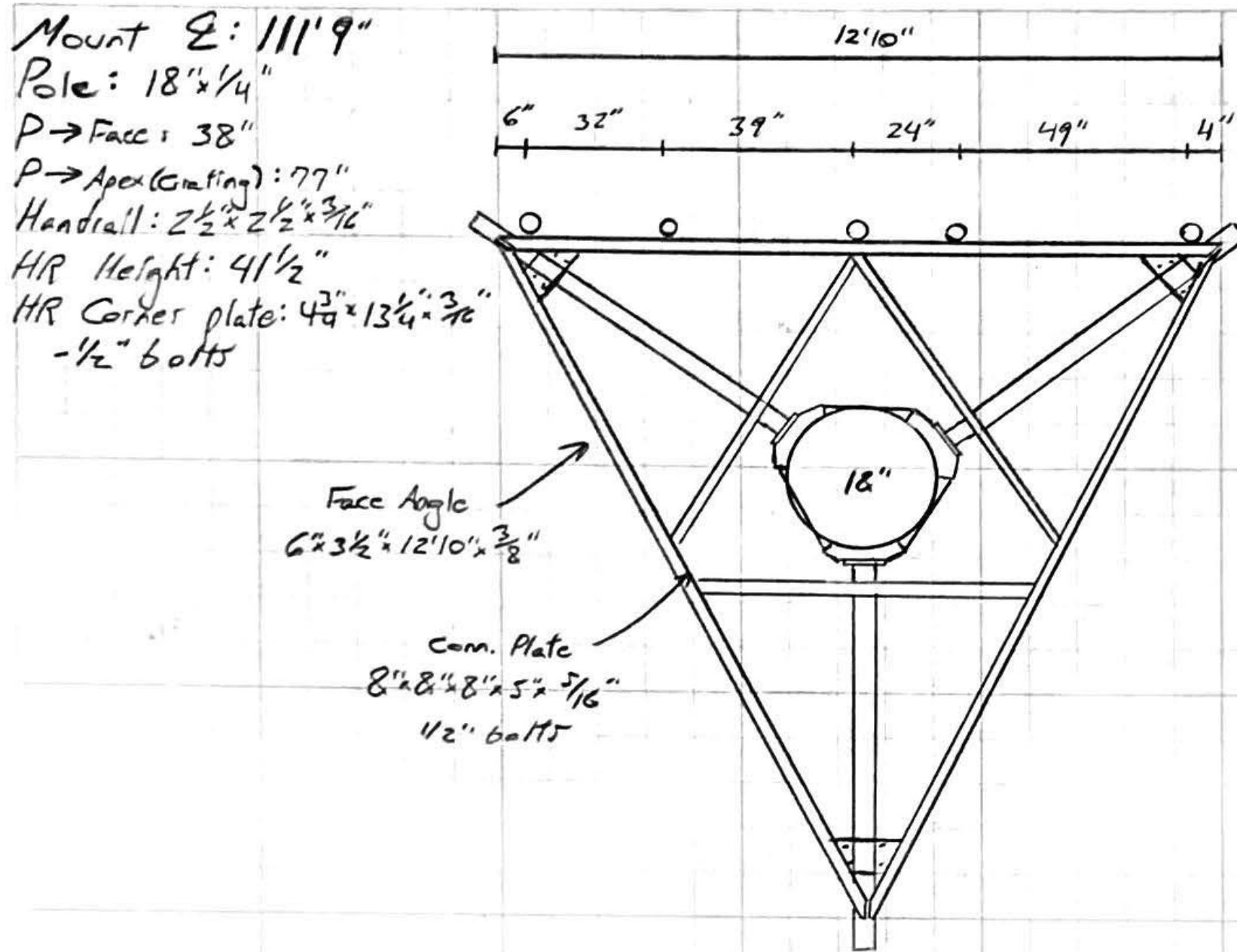
FCC #

Tower Owner:	CROWN CASTLE	Mapping Date:	3/24/2021
Site Name:	WATERBURY S CT	Tower Type:	Monopole
Site Number or ID:	467706	Tower Height (Ft.):	
Mapping Contractor:	HUDSON DESIGN GROUP, LLC.	Mount Elevation (Ft.):	111.75

This antenna mapping form is the property of TES and under **PATENT PENDING**. The formation contained herein is considered confidential in nature and is to be used only for the specific customer it was intended for. Reproduction, transmission, publication, modification or disclosure by any method is prohibited except by express written permission of TES. All means and methods are the responsibility of the contractor and the work shall be compliant with ANSI/ASSE A 10.48, OSHA, FCC, FAA and other safety requirements that may apply. TES is not warranting the usability of the safety climb as it must be assessed prior to each use in compliance with OSHA requirements.

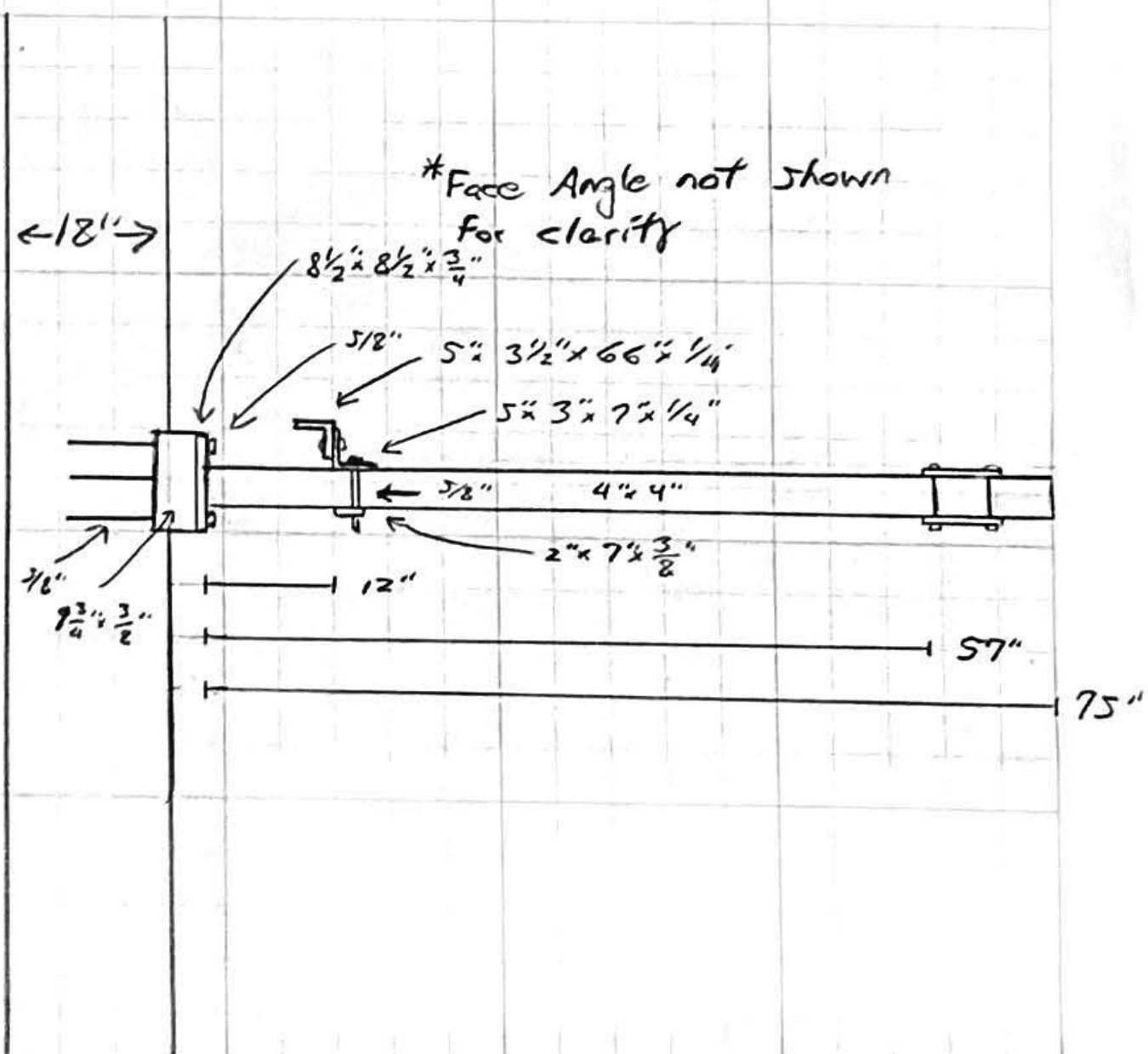
Please Insert Sketches of the Antenna Mount

DATE: 3-24-21
 Project Name: Waterbury S CT
 Project No.: _____
 Design By: Josh Chk'd By: _____ Page _____ of _____



Inventory

- P1 (1) RF5 Diplexer
- P2 RFV01U-D1A
- P3 (2) JBNHH-1065B
- P4 RFV01U-D2A
- P5 BXA8006314CF
(1) RF5 Diplexer



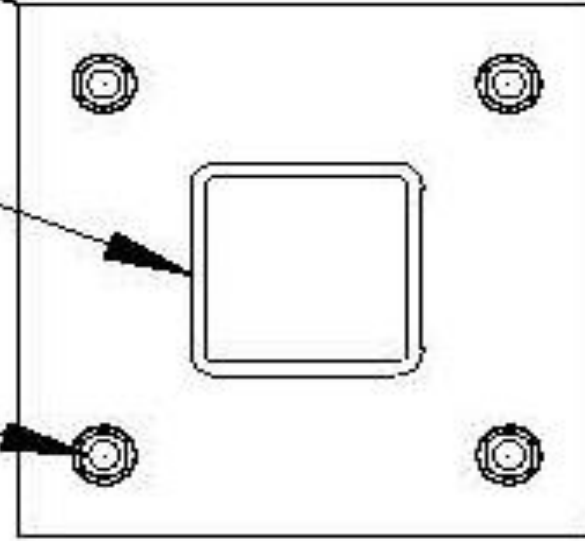
(2) OVPs mounted to grating

Please Insert Sketches of the Antenna Mount, cont'd

8" X 8" X 3/4" THK.
PLATE

4" X 4" X 1/4" THK.
HSS

(4) 5/8"Ø BOLTS

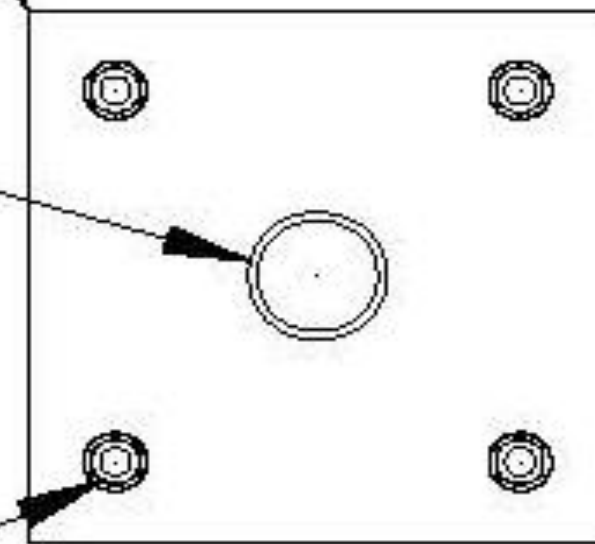


**STANDOFF TO RING
MOUNT CONNECTION**

(2) 8" X 8" PLATES

2"Ø STD. PIPE

(2) 1/2"Ø BOLTS



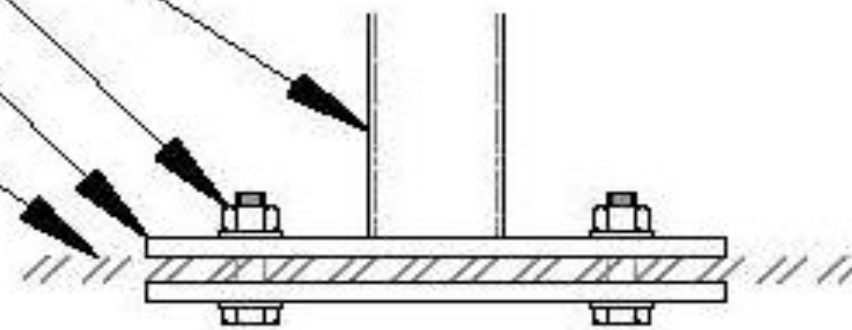
S.O. MOUNT DETAIL

2"Ø STD. PIPE

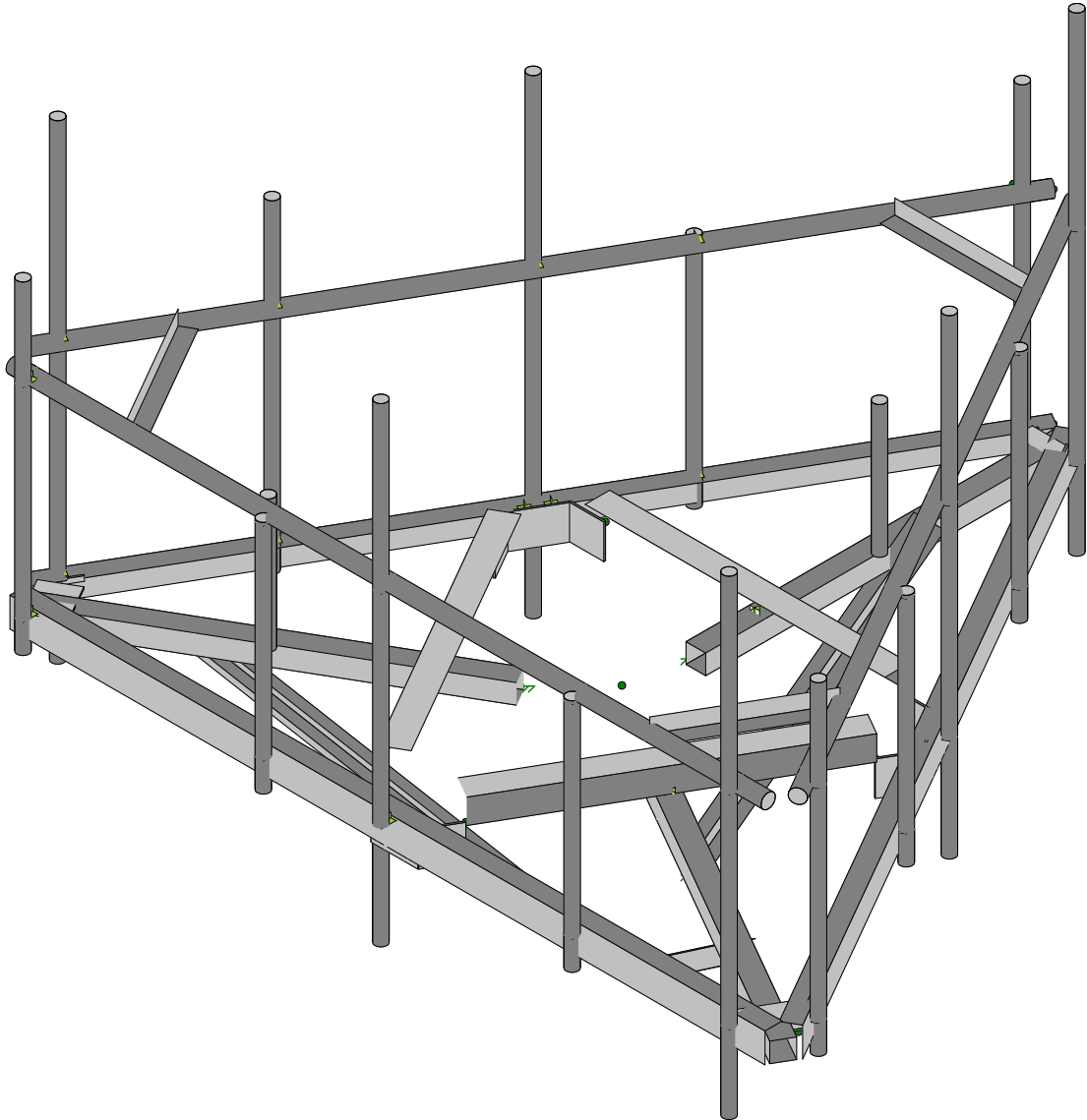
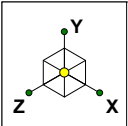
(4) BOLTS (TYP.)

(2) BASE PLATES

EXISTING GRATING



TYP. OVP MOUNT SIDE DETAIL



Envelope Only Solution

NB+C ES		SK - 1
Connor Rice, EIT	467706-Waterbury S Ct	Jan 24, 2022 at 9:50 AM
100820	Model Rendering	467706-VZW_MT_LO_H.r3d



Company : NB+C ES
 Designer : Connor Rice, EIT
 Job Number : 100820
 Model Name : 467706-Waterbury S Ct

Jan 24, 2022
 9:51 AM
 Checked By: _____

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
1	Antenna D	None					84		
2	Antenna Di	None					84		
3	Antenna Wo (0 Deg)	None					84		
4	Antenna Wo (30 Deg)	None					84		
5	Antenna Wo (60 Deg)	None					84		
6	Antenna Wo (90 Deg)	None					84		
7	Antenna Wo (120 Deg)	None					84		
8	Antenna Wo (150 Deg)	None					84		
9	Antenna Wo (180 Deg)	None					84		
10	Antenna Wo (210 Deg)	None					84		
11	Antenna Wo (240 Deg)	None					84		
12	Antenna Wo (270 Deg)	None					84		
13	Antenna Wo (300 Deg)	None					84		
14	Antenna Wo (330 Deg)	None					84		
15	Antenna Wi (0 Deg)	None					84		
16	Antenna Wi (30 Deg)	None					84		
17	Antenna Wi (60 Deg)	None					84		
18	Antenna Wi (90 Deg)	None					84		
19	Antenna Wi (120 Deg)	None					84		
20	Antenna Wi (150 Deg)	None					84		
21	Antenna Wi (180 Deg)	None					84		
22	Antenna Wi (210 Deg)	None					84		
23	Antenna Wi (240 Deg)	None					84		
24	Antenna Wi (270 Deg)	None					84		
25	Antenna Wi (300 Deg)	None					84		
26	Antenna Wi (330 Deg)	None					84		
27	Antenna Wm (0 Deg)	None					84		
28	Antenna Wm (30 Deg)	None					84		
29	Antenna Wm (60 Deg)	None					84		
30	Antenna Wm (90 Deg)	None					84		
31	Antenna Wm (120 De...	None					84		
32	Antenna Wm (150 De...	None					84		
33	Antenna Wm (180 De...	None					84		
34	Antenna Wm (210 De...	None					84		
35	Antenna Wm (240 De...	None					84		
36	Antenna Wm (270 De...	None					84		
37	Antenna Wm (300 De...	None					84		
38	Antenna Wm (330 De...	None					84		
39	Structure D	None		-1					3
40	Structure Di	None						53	3
41	Structure Wo (0 Deg)	None						106	
42	Structure Wo (30 Deg)	None						106	
43	Structure Wo (60 Deg)	None						106	
44	Structure Wo (90 Deg)	None						106	
45	Structure Wo (120 D...	None						106	
46	Structure Wo (150 D...	None						106	
47	Structure Wo (180 D...	None						106	
48	Structure Wo (210 D...	None						106	
49	Structure Wo (240 D...	None						106	
50	Structure Wo (270 D...	None						106	
51	Structure Wo (300 D...	None						106	
52	Structure Wo (330 D...	None						106	
53	Structure Wi (0 Deg)	None						106	
54	Structure Wi (30 Deg)	None						106	
55	Structure Wi (60 Deg)	None						106	
56	Structure Wi (90 Deg)	None						106	



Company : NB+C ES
 Designer : Connor Rice, EIT
 Job Number : 100820
 Model Name : 467706-Waterbury S Ct

Jan 24, 2022
 9:51 AM
 Checked By: _____

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
57	Structure Wi (120 De...	None						106	
58	Structure Wi (150 De...	None						106	
59	Structure Wi (180 De...	None						106	
60	Structure Wi (210 De...	None						106	
61	Structure Wi (240 De...	None						106	
62	Structure Wi (270 De...	None						106	
63	Structure Wi (300 De...	None						106	
64	Structure Wi (330 De...	None						106	
65	Structure Wm (0 Deg)	None						106	
66	Structure Wm (30 De...	None						106	
67	Structure Wm (60 De...	None						106	
68	Structure Wm (90 De...	None						106	
69	Structure Wm (120 D...	None						106	
70	Structure Wm (150 D...	None						106	
71	Structure Wm (180 D...	None						106	
72	Structure Wm (210 D...	None						106	
73	Structure Wm (240 D...	None						106	
74	Structure Wm (270 D...	None						106	
75	Structure Wm (300 D...	None						106	
76	Structure Wm (330 D...	None						106	
77	Lm1	None					1		
78	Lm2	None					1		
79	Lv1	None					1		
80	Lv2	None					1		
81	Antenna Ev	None					84		
82	Antenna Eh (0 Deg)	None					56		
83	Antenna Eh (90 Deg)	None					56		
84	Structure Ev	ELY							3
85	Structure Eh (0 Deg)	ELZ			-03				3
86	Structure Eh (90 Deg)	ELX	.03						3
87	BLC 39 Transient Are...	None						83	
88	BLC 40 Transient Are...	None						83	

Load Combinations

	Description	So...	P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
1	1.2D+1.0Wo (0 Deg)	Yes	Y		1	1.2	39	1.2	3	1	41	1						
2	1.2D+1.0Wo (30 Deg)	Yes	Y		1	1.2	39	1.2	4	1	42	1						
3	1.2D+1.0Wo (60 Deg)	Yes	Y		1	1.2	39	1.2	5	1	43	1						
4	1.2D+1.0Wo (90 Deg)	Yes	Y		1	1.2	39	1.2	6	1	44	1						
5	1.2D+1.0Wo (120 D...	Yes	Y		1	1.2	39	1.2	7	1	45	1						
6	1.2D+1.0Wo (150 D...	Yes	Y		1	1.2	39	1.2	8	1	46	1						
7	1.2D+1.0Wo (180 D...	Yes	Y		1	1.2	39	1.2	9	1	47	1						
8	1.2D+1.0Wo (210 D...	Yes	Y		1	1.2	39	1.2	10	1	48	1						
9	1.2D+1.0Wo (240 D...	Yes	Y		1	1.2	39	1.2	11	1	49	1						
10	1.2D+1.0Wo (270 D...	Yes	Y		1	1.2	39	1.2	12	1	50	1						
11	1.2D+1.0Wo (300 D...	Yes	Y		1	1.2	39	1.2	13	1	51	1						
12	1.2D+1.0Wo (330 D...	Yes	Y		1	1.2	39	1.2	14	1	52	1						
13	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1		
14	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1		
15	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1		
16	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1	56	1		
17	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1	57	1		
18	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1		
19	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1	59	1		
20	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1	60	1		



Company : NB+C ES
 Designer : Connor Rice, EIT
 Job Number : 100820
 Model Name : 467706-Waterbury S Ct

Jan 24, 2022
 9:51 AM
 Checked By: _____

Load Combinations (Continued)

	Description	So...	P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
21	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1	61	1
22	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1	62	1
23	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1
24	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1
25	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1		
26	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1		
27	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1		
28	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1		
29	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1		
30	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1		
31	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1		
32	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1		
33	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1		
34	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1		
35	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1		
36	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1		
37	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1		
38	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1		
39	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1		
40	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1		
41	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1		
42	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1		
43	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1		
44	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1		
45	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1		
46	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1		
47	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1		
48	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1		
49	1.2D + 1.5Lv1		Y		1	1.2	39	1.2	79	1.5						
50	1.2D + 1.5Lv2		Y		1	1.2	39	1.2	80	1.5						
51	1.4D		Y		1	1.4	39	1.4								
52	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	1	83	ELZ 1 ELX
53	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	.5 ELZ .866 ELX .5
54	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	.866 ELZ .5 ELX .866
55	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82		83	1 ELZ ELX 1
56	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	.866 ELZ -.5 ELX .866
57	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	-.866	83	.5 ELZ -.866 ELX .5
58	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	-1	83	ELZ -1 ELX
59	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	-.866	83	-.5 ELZ -.866 ELX -.5
60	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	-.866 ELZ -.5 ELX -.866
61	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82		83	-1 ELZ ELX -1
62	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	-.866 ELZ .5 ELX -.866
63	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	-.5 ELZ .866 ELX -.5
64	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	1	83	ELZ 1 ELX
65	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	.866	83	.5 ELZ .866 ELX .5
66	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	.5	83	.866 ELZ .5 ELX .866
67	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82		83	1 ELZ ELX 1
68	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	-.5	83	.866 ELZ -.5 ELX .866
69	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	-.866	83	.5 ELZ -.866 ELX .5
70	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	-1	83	ELZ -1 ELX
71	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	-.866	83	-.5 ELZ -.866 ELX -.5
72	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	-.5	83	-.866 ELZ -.5 ELX -.866
73	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82		83	-1 ELZ ELX -1
74	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	.5	83	-.866 ELZ .5 ELX -.866
75	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	.866	83	-.5 ELZ .866 ELX -.5



Company : NB+C ES
 Designer : Connor Rice, EIT
 Job Number : 100820
 Model Name : 467706-Waterbury S Ct

Jan 24, 2022
 9:51 AM
 Checked By: _____

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	2.820603	-25	7.049479	0	
2	N2	-2.5918	-25	10.174332	0	
3	N3	5.01273	-25	7.049479	0	
4	N4	10.425133	-25	10.174332	0	
5	N5	3.916667	-25	5.151042	0	
6	N6	3.916667	-25	-1.098663	0	
7	N8	-2.5	0	10.333333	0	
8	N9	10.333333	0	10.333333	0	
9	N10	-2.5	3.458333	10.333333	0	
10	N11	10.333333	3.458333	10.333333	0	
11	N12	-2.166667	3.458333	10.333333	0	
12	N13	-2.166667	3.458333	10.5	0	
13	N14	-2.166667	0	10.333333	0	
14	N15	-2.166667	0	10.5	0	
15	N16	1.916667	3.458333	10.333333	0	
16	N17	1.916667	3.458333	10.5	0	
17	N18	1.916667	0	10.333333	0	
18	N19	1.916667	0	10.5	0	
19	N20	3.916667	3.458333	10.333333	0	
20	N21	3.916667	3.458333	10.5	0	
21	N22	3.916667	0	10.333333	0	
22	N23	3.916667	0	10.5	0	
23	N24	7.166667	3.458333	10.333333	0	
24	N25	7.166667	3.458333	10.5	0	
25	N26	7.166667	0	10.333333	0	
26	N27	7.166667	0	10.5	0	
27	N28	9.833333	3.458333	10.5	0	
28	N29	9.833333	0	10.5	0	
29	N30	-2.166667	-5	10.5	0	
30	N31	-2.166667	5	10.5	0	
31	N32	1.916667	-5	10.5	0	
32	N33	1.916667	3.5	10.5	0	
33	N34	3.916667	-1.75	10.5	0	
34	N35	3.916667	6.25	10.5	0	
35	N36	7.166667	-5	10.5	0	
36	N37	7.166667	3.5	10.5	0	
37	N38	9.833333	-1.333333	10.5	0	
38	N39	9.833333	6.666667	10.5	0	
39	N40	10.516933	0	10.01533	0	
40	N41	4.100266	0	-1.098663	0	
41	N42	10.516933	3.458333	10.01533	0	
42	N43	4.100266	3.458333	-1.098663	0	
43	N44	10.350266	3.458333	9.726655	0	
44	N45	10.494604	3.458333	9.643321	0	
45	N46	10.350266	0	9.726655	0	
46	N47	10.494604	0	9.643321	0	
47	N48	8.308599	3.458333	6.190384	0	
48	N49	8.452937	3.458333	6.107051	0	
49	N50	8.308599	0	6.190384	0	
50	N51	8.452937	0	6.107051	0	
51	N52	7.308599	3.458333	4.458333	0	
52	N53	7.452937	3.458333	4.375	0	
53	N54	7.308599	0	4.458333	0	
54	N55	7.452937	0	4.375	0	
55	N56	5.683599	3.458333	1.643751	0	
56	N57	5.827937	3.458333	1.560417	0	



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Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
57	N58	5.683599	0	1.643751	0	
58	N59	5.827937	0	1.560417	0	
59	N60	4.494604	3.458333	-0.748984	0	
60	N62	4.494604	0	-0.748984	0	
61	N63	10.494604	-.5	9.643321	0	
62	N64	10.494604	5	9.643321	0	
63	N65	8.452937	-.5	6.107051	0	
64	N66	8.452937	3.5	6.107051	0	
65	N67	7.452937	-1.75	4.375	0	
66	N68	7.452937	6.25	4.375	0	
67	N69	5.827937	-.5	1.560417	0	
68	N70	5.827937	3.5	1.560417	0	
69	N71	4.494604	-1.333333	-0.748984	0	
70	N72	4.494604	6.666667	-0.748984	0	
71	N73	3.733067	0	-1.098663	0	
72	N74	-2.683599	0	10.01533	0	
73	N75	3.733067	3.458333	-1.098663	0	
74	N76	-2.683599	3.458333	10.01533	0	
75	N77	3.566401	3.458333	-0.809988	0	
76	N78	3.422063	3.458333	-0.893321	0	
77	N79	3.566401	0	-0.809988	0	
78	N80	3.422063	0	-0.893321	0	
79	N81	1.524734	3.458333	2.726283	0	
80	N82	1.380396	3.458333	2.642949	0	
81	N83	1.524734	0	2.726283	0	
82	N84	1.380396	0	2.642949	0	
83	N85	0.524734	3.458333	4.458333	0	
84	N86	0.380396	3.458333	4.375	0	
85	N87	0.524734	0	4.458333	0	
86	N88	0.380396	0	4.375	0	
87	N89	-1.100266	3.458333	7.272916	0	
88	N90	-1.244604	3.458333	7.189583	0	
89	N91	-1.100266	0	7.272916	0	
90	N92	-1.244604	0	7.189583	0	
91	N93	-2.577937	3.458333	9.498984	0	
92	N94	-2.577937	0	9.498984	0	
93	N95	3.422063	-.5	-0.893321	0	
94	N96	3.422063	5	-0.893321	0	
95	N97	1.380396	-.5	2.642949	0	
96	N98	1.380396	3.5	2.642949	0	
97	N99	0.380396	-1.75	4.375	0	
98	N100	0.380396	6.25	4.375	0	
99	N101	-2.577937	-1.333333	9.498984	0	
100	N102	-2.577937	6.666667	9.498984	0	
101	N103	-2	0	10.333333	0	
102	N104	-2.433599	0	9.582317	0	
103	N105	10.266933	0	9.582317	0	
104	N106	9.833333	0	10.333333	0	
105	N107	7.486014	0	4.765625	0	
106	N108	4.271497	0	10.333333	0	
107	N109	0.702149	0	4.151042	0	
108	N110	7.131185	0	4.151042	0	
109	N111	3.561837	0	10.333333	0	
110	N112	0.347319	0	4.765625	0	
111	N113	4.350266	3.458333	-0.66565	0	
112	N114	3.483067	3.458333	-0.66565	0	
113	N115	-2	3.458333	10.333333	0	



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Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
114	N116	-2.433599	3.458333	9.582317	0	
115	N117	10.266933	3.458333	9.582317	0	
116	N118	9.833333	3.458333	10.333333	0	
117	N119	-1.244604	-.5	7.189583	0	
118	N120	-1.244604	5	7.189583	0	
119	N136	3.916667	0	6.416667	0	
120	N134	0.114402	-.25	8.611905	0	
121	N135	0.114402	2	8.611905	0	
122	N136A	-2.2168	0	9.957825	0	
123	N137	1.954578	0	7.549479	0	
124	N138	10.050133	0	9.957825	0	
125	N139	5.878755	0	7.549479	0	
126	N140	3.916667	-0.083333	-0.66565	0	
127	N141	3.916667	0	4.151042	0	
128	N142	3.916667	-.25	2.026189	0	
129	N143	3.916668	2	2.026189	0	
130	N144	-2.2168	-.25	9.957825	0	
131	N145	1.954578	-.25	7.549479	0	
132	N146	10.050133	-.25	9.957825	0	
133	N147	5.878755	-.25	7.549479	0	
134	N148	3.916667	-.25	-0.66565	0	
135	N149	3.916667	-.25	4.151042	0	
136	N150	-2.433599	3.541667	9.582317	0	
137	N151	-.2	3.541667	10.333333	0	
138	N152	4.350266	3.625	-0.66565	0	
139	N153	3.483067	3.625	-0.66565	0	
140	N154	10.266933	3.625	9.582317	0	
141	N155	9.833333	3.625	10.333333	0	
142	N156	0.680652	0	5.342975	0	
143	N157	3.228503	0	9.755983	0	
144	N161	4.60483	0	9.755983	0	
145	N162	7.152681	0	5.342975	0	
146	N166	6.464518	0	4.151042	0	
147	N167	1.368815	0	4.151042	0	
148	N150A	0.388986	0	4.837794	0	
149	N151A	0.785482	0	4.151042	0	
150	N152A	0.587234	0	4.494418	0	
151	N154A	4.313163	0	10.261165	0	
152	N155A	3.52017	0	10.261165	0	
153	N158	7.047851	0	4.151042	0	
154	N159	7.444348	0	4.837794	0	
155	N160	7.246099	0	4.494418	0	
156	N159A	-2.058599	0	10.231836	0	
157	N160A	-2.391933	0	9.654486	0	
158	N161A	4.350266	0	-0.66565	0	
159	N162A	4.308599	-0.083333	-0.66565	0	
160	N163	3.525266	-0.083333	-0.66565	0	
161	N164	4.308599	0	-0.66565	0	
162	N165	3.525266	0	-0.66565	0	
163	N166A	3.483067	0	-0.66565	0	
164	N166B	-2.2168	-0.083333	9.957825	0	
165	N169	-2.412766	-0.083333	9.618401	0	
166	N170	-2.021099	-0.083333	10.296788	0	
167	N171	-2.412766	0	9.618401	0	
168	N172	-2.021099	0	10.296788	0	
169	N175	10.050133	-0.083333	9.957825	0	
170	N178	9.854167	-0.083333	10.297249	0	



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Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
171	N179	10.245833	-0.083333	9.618862	0	
172	N180	9.854167	0	10.297249	0	
173	N181	10.245833	0	9.618862	0	
174	N175A	4.083333	0	10.333333	0	
175	N176	4.083333	0	10.261165	0	
176	N177	3.75	0	10.333333	0	
177	N178A	3.75	0	10.261165	0	
178	N178B	7.225266	0	4.313996	0	
179	N179A	7.162766	0	4.35008	0	
180	N180A	7.391933	0	4.602671	0	
181	N181A	7.329433	0	4.638755	0	
182	N182	0.441401	0	4.602671	0	
183	N183	0.503901	0	4.638755	0	
184	N184	0.608067	0	4.313996	0	
185	N185	0.670567	0	4.35008	0	
186	N186	3.916667	-3.25	5.151042	0	
187	N187	3.916667	-.25	1.151042	0	
188	N188	-.5	3.458333	10.333333	0	
189	N189	8.333333	3.458333	10.333333	0	
190	N191	9.516933	3.458333	8.283279	0	
191	N192	5.100266	3.458333	0.633388	0	
192	N194	2.733067	3.458333	0.633388	0	
193	N195	-1.683599	3.458333	8.283279	0	
194	N195A	2.820603	-3.25	7.049479	0	
195	N196	-0.643498	-.25	9.049479	0	
196	N198	5.01273	-3.25	7.049479	0	
197	N199	8.476832	-.25	9.049479	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mount Pi...	PIPE 2.0	Column	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	Support ...	PIPE 2.5	Beam	Single Angle	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
3	HSS Tube	HSS4X4...	Beam	Square Tube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
4	Face Ho...	L6X3.5X6	Beam	Single Angle	A36 Gr.36	Typical	3.44	3.33	12.9	.168
5	Platform ...	L5X3.5X4	Beam	Single Angle	A36 Gr.36	Typical	2.07	2.2	5.36	.046
6	Plate Co...	PL5x3/16	Beam	RECT	A36 Gr.36	Typical	.938	.003	1.953	.011
7	Angle C...	PL3/8x7	Beam	RECT	A36 Gr.36	Typical	2.625	.031	10.719	.119
8	Horizont...	PL3/8x7	Beam	RECT	A36 Gr.36	Typical	2.625	.031	10.719	.119
9	Kicker	LL3x3x3...	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical	2.18	4.09	1.9	.027
10	MOD	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.031

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
8	A913 Gr.65	29000	11154	.3	.65	.49	65	1.1	80	1.1



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Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2			HSS Tube	Beam	SquareTube	A500 Gr.B...	Typical
2	M2	N3	N4			HSS Tube	Beam	SquareTube	A500 Gr.B...	Typical
3	M3	N5	N6			HSS Tube	Beam	SquareTube	A500 Gr.B...	Typical
4	M5	N8	N9		180	Face Horizont...	Beam	Single Angle	A36 Gr.36	Typical
5	M6	N10	N11		180	Support Rail A...	Beam	Single Angle	A53 Gr.B	Typical
6	M7	N12	N13			RIGID	None	None	RIGID	Typical
7	M8	N14	N15			RIGID	None	None	RIGID	Typical
8	M9	N16	N17			RIGID	None	None	RIGID	Typical
9	M10	N18	N19			RIGID	None	None	RIGID	Typical
10	M11	N20	N21			RIGID	None	None	RIGID	Typical
11	M12	N22	N23			RIGID	None	None	RIGID	Typical
12	M13	N24	N25			RIGID	None	None	RIGID	Typical
13	M14	N26	N27			RIGID	None	None	RIGID	Typical
14	M15	N118	N28			RIGID	None	None	RIGID	Typical
15	M16	N106	N29			RIGID	None	None	RIGID	Typical
16	MP5A	N31	N30		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
17	MP4A	N33	N32		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
18	MP3A	N35	N34		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
19	MP2A	N37	N36		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
20	MP1A	N39	N38		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
21	M22	N40	N41		180	Face Horizont...	Beam	Single Angle	A36 Gr.36	Typical
22	M23	N42	N43		180	Support Rail A...	Beam	Single Angle	A53 Gr.B	Typical
23	M24	N44	N45			RIGID	None	None	RIGID	Typical
24	M25	N46	N47			RIGID	None	None	RIGID	Typical
25	M26	N48	N49			RIGID	None	None	RIGID	Typical
26	M27	N50	N51			RIGID	None	None	RIGID	Typical
27	M28	N52	N53			RIGID	None	None	RIGID	Typical
28	M29	N54	N55			RIGID	None	None	RIGID	Typical
29	M30	N56	N57			RIGID	None	None	RIGID	Typical
30	M31	N58	N59			RIGID	None	None	RIGID	Typical
31	M32	N113	N60			RIGID	None	None	RIGID	Typical
32	M33	N161A	N62			RIGID	None	None	RIGID	Typical
33	MP5C	N64	N63		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
34	MP4C	N66	N65		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
35	MP3C	N68	N67		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
36	MP2C	N70	N69		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
37	MP1C	N72	N71		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
38	M39	N73	N74		180	Face Horizont...	Beam	Single Angle	A36 Gr.36	Typical
39	M40	N76	N75		90	Support Rail A...	Beam	Single Angle	A53 Gr.B	Typical
40	M41	N77	N78			RIGID	None	None	RIGID	Typical
41	M42	N79	N80			RIGID	None	None	RIGID	Typical
42	M43	N81	N82			RIGID	None	None	RIGID	Typical
43	M44	N83	N84			RIGID	None	None	RIGID	Typical
44	M45	N85	N86			RIGID	None	None	RIGID	Typical
45	M46	N87	N88			RIGID	None	None	RIGID	Typical
46	M47	N89	N90			RIGID	None	None	RIGID	Typical
47	M48	N91	N92			RIGID	None	None	RIGID	Typical
48	M49	N116	N93			RIGID	None	None	RIGID	Typical
49	M50	N104	N94			RIGID	None	None	RIGID	Typical
50	MP5B	N96	N95		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
51	MP4B	N98	N97		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
52	MP3B	N100	N99		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
53	MP1B	N102	N101		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
54	M59	N150A	N151A		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
55	MP2B	N120	N119		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
56	M70	N135	N134			Mount Pipe	Column	Pipe	A53 Gr.B	Typical



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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
57	M71	N143	N142			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
58	M73	N137	N145			RIGID	None	None	RIGID	Typical
59	M74	N139	N147			RIGID	None	None	RIGID	Typical
60	M76	N141	N149			RIGID	None	None	RIGID	Typical
61	M77	N140	N148			RIGID	None	None	RIGID	Typical
62	M84	N155A	N157		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
63	M85	N157	N156		90	Platform Angle	Beam	Single Angle	A36 Gr.36	Typical
64	M84A	N154A	N161		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
65	M85A	N159	N162		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
66	M86	N162	N161		90	Platform Angle	Beam	Single Angle	A36 Gr.36	Typical
67	M87	N158	N166		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
68	M89	N167	N166		90	Platform Angle	Beam	Single Angle	A36 Gr.36	Typical
69	M84B	N150A	N156		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
70	M85B	N151A	N167		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
71	M86A	N154A	N155A		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
72	M88	N158	N159		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
73	M92	N162A	N163		270	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
74	M94	N163	N165		60	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
75	M95	N162A	N164		300	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
76	M96	N161A	N164		270	RIGID	None	None	RIGID	Typical
77	M97	N165	N166A		270	RIGID	None	None	RIGID	Typical
78	M90	N166B	N144			RIGID	None	None	RIGID	Typical
79	M91	N169	N170		270	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
80	M92A	N170	N172		180	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
81	M93	N169	N171		60	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
82	M94A	N104	N171		270	RIGID	None	None	RIGID	Typical
83	M95A	N172	N103		270	RIGID	None	None	RIGID	Typical
84	M96A	N175	N146			RIGID	None	None	RIGID	Typical
85	M97A	N178	N179		270	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
86	M98	N179	N181		300	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
87	M99	N178	N180		180	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
88	M100	N106	N180		270	RIGID	None	None	RIGID	Typical
89	M101	N181	N105		270	RIGID	None	None	RIGID	Typical
90	M102	N175A	N176			RIGID	None	None	RIGID	Typical
91	M103	N177	N178A			RIGID	None	None	RIGID	Typical
92	M101A	N178B	N179A			RIGID	None	None	RIGID	Typical
93	M102A	N180A	N181A			RIGID	None	None	RIGID	Typical
94	M103A	N182	N183			RIGID	None	None	RIGID	Typical
95	M104	N184	N185			RIGID	None	None	RIGID	Typical
96	M105	N186	N187			Kicker	Beam	Double Angle (...)	A36 Gr.36	Typical
97	M106	N188	N195			MOD	Beam	Single Angle	A36 Gr.36	Typical
98	M107	N194	N192			MOD	Beam	Single Angle	A36 Gr.36	Typical
99	M108	N189	N191			MOD	Beam	Single Angle	A36 Gr.36	Typical
100	M100A	N195A	N196			Kicker	Beam	Double Angle (...)	A36 Gr.36	Typical
101	M101B	N198	N199			Kicker	Beam	Double Angle (...)	A36 Gr.36	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes	Default			None
2	M2						Yes				None
3	M3						Yes				None
4	M5						Yes				None
5	M6						Yes				None
6	M7						Yes	** NA **			None
7	M8						Yes	** NA **			None



Company : NB+C ES
 Designer : Connor Rice, EIT
 Job Number : 100820
 Model Name : 467706-Waterbury S Ct

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Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
8	M9						Yes	** NA **			None
9	M10						Yes	** NA **			None
10	M11						Yes	** NA **			None
11	M12						Yes	** NA **			None
12	M13						Yes	** NA **			None
13	M14						Yes	** NA **			None
14	M15						Yes	** NA **			None
15	M16						Yes	** NA **			None
16	MP5A						Yes	** NA **			None
17	MP4A						Yes	** NA **			None
18	MP3A						Yes	** NA **			None
19	MP2A						Yes	** NA **			None
20	MP1A						Yes	** NA **			None
21	M22						Yes	Default			None
22	M23						Yes	Default			None
23	M24						Yes	** NA **			None
24	M25						Yes	** NA **			None
25	M26						Yes	** NA **			None
26	M27						Yes	** NA **			None
27	M28						Yes	** NA **			None
28	M29						Yes	** NA **			None
29	M30						Yes	** NA **			None
30	M31						Yes	** NA **			None
31	M32						Yes	** NA **			None
32	M33						Yes	** NA **			None
33	MP5C						Yes	** NA **			None
34	MP4C						Yes	** NA **			None
35	MP3C						Yes	** NA **			None
36	MP2C						Yes	** NA **			None
37	MP1C						Yes	** NA **			None
38	M39						Yes				None
39	M40						Yes	Default			None
40	M41						Yes	** NA **			None
41	M42						Yes	** NA **			None
42	M43						Yes	** NA **			None
43	M44						Yes	** NA **			None
44	M45						Yes	** NA **			None
45	M46						Yes	** NA **			None
46	M47						Yes	** NA **			None
47	M48						Yes	** NA **			None
48	M49						Yes	** NA **			None
49	M50						Yes	** NA **			None
50	MP5B						Yes	** NA **			None
51	MP4B						Yes	** NA **			None
52	MP3B						Yes	** NA **			None
53	MP1B						Yes	** NA **			None
54	M59						Yes	Default	+y		None
55	MP2B						Yes	** NA **			None
56	M70						Yes	** NA **			None
57	M71						Yes	** NA **			None
58	M73	OOOOOX					Yes	** NA **			None
59	M74	OOOOOX					Yes	** NA **			None
60	M76	OOOOXO					Yes	** NA **			None
61	M77						Yes	** NA **			None
62	M84						Yes	Default	+y		None
63	M85	BenPIN	BenPIN				Yes	Default	-z		None
64	M84A						Yes	Default	+y		None



Company : NB+C ES
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Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
65	M85A						Yes	Default	+y		None
66	M86	BenPIN	BenPIN				Yes	Default	-z		None
67	M87						Yes	Default	+y		None
68	M89	BenPIN	BenPIN				Yes	Default	-z		None
69	M84B						Yes		+y		None
70	M85B						Yes		+y		None
71	M86A						Yes	Default	+y		None
72	M88						Yes	Default	+y		None
73	M92						Yes				None
74	M94						Yes				None
75	M95						Yes				None
76	M96						Yes	** NA **			None
77	M97						Yes	** NA **			None
78	M90						Yes	** NA **			None
79	M91						Yes				None
80	M92A						Yes				None
81	M93						Yes				None
82	M94A						Yes	** NA **			None
83	M95A						Yes	** NA **			None
84	M96A						Yes	** NA **			None
85	M97A						Yes	Default			None
86	M98						Yes				None
87	M99						Yes				None
88	M100						Yes	** NA **			None
89	M101						Yes	** NA **			None
90	M102						Yes	** NA **			None
91	M103						Yes	** NA **			None
92	M101A						Yes	** NA **			None
93	M102A						Yes	** NA **			None
94	M103A						Yes	** NA **			None
95	M104						Yes	** NA **			None
96	M105		BenPIN				Yes				None
97	M106						Yes				None
98	M107						Yes				None
99	M108						Yes				None
100	M100A		BenPIN				Yes				None
101	M101B		BenPIN				Yes				None

Member Area Loads (BLC 39 : Structure D)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N8	N74	N112	N111	Y	Two Way	-.005
2	N108	N107	N40	N9	Y	Two Way	-.005
3	N109	N73	N41	N110	Y	Two Way	-.005

Member Area Loads (BLC 40 : Structure Di)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N8	N74	N112	N111	Y	Two Way	-.013
2	N108	N107	N40	N9	Y	Two Way	-.013
3	N109	N73	N41	N110	Y	Two Way	-.013

Member Area Loads (BLC 84 : Structure Ev)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N8	N74	N112	N111	Y	Two Way	0
2	N108	N107	N40	N9	Y	Two Way	0



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Member Area Loads (BLC 84 : Structure Ev) (Continued)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
3	N109	N73	N41	N110	Y	Two Way	0

Member Area Loads (BLC 85 : Structure Eh (0 Deg))

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N8	N74	N112	N111	Z	Two Way	-.000156
2	N108	N107	N40	N9	Z	Two Way	-.000156
3	N109	N73	N41	N110	Z	Two Way	-.000156

Member Area Loads (BLC 86 : Structure Eh (90 Deg))

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N8	N74	N112	N111	X	Two Way	.000156
2	N108	N107	N40	N9	X	Two Way	.000156
3	N109	N73	N41	N110	X	Two Way	.000156

Envelope Joint Reactions

Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
1	N1	max	3157.19	9	594.13	3	1768.359	3	.54	11	1.44	12	.657	8
2		min	-2951.54	3	-547.87	9	-1922.222	9	-.455	5	-1.471	6	-.475	2
3	N5	max	1136.107	10	567.409	7	3597.763	1	.485	7	1.252	4	.407	4
4		min	-1137.861	4	-532.844	1	-3328.773	7	-.737	1	-1.262	10	-.375	10
5	N3	max	2978.639	11	529.285	11	1600.876	11	.35	3	1.225	8	.379	11
6		min	-3090.752	5	-506.084	5	-1717.098	5	-.318	9	-1.206	2	-.634	5
7	N186	max	33.732	10	3370.706	13	175.032	7	0	48	0	48	0	48
8		min	-33.759	4	-125.002	7	-4405.424	13	0	1	0	1	0	1
9	N195A	max	168.37	3	3478.589	21	2274.793	21	0	48	0	48	0	48
10		min	-3939.797	21	-139.537	3	-97.19	3	0	1	0	1	0	1
11	N198	max	3744.294	17	3309.293	17	2161.592	17	0	48	0	48	0	48
12		min	-161.805	11	-133.867	11	-93.445	11	0	1	0	1	0	1
13	Totals:	max	4086.799	10	9269.659	16	4109.07	1						
14		min	-4086.793	4	3429.516	10	-4109.068	7						

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

Member	Shape	Code Check	Lo...	LC	She...	Lo...	phi*P...	phi*P...	phi*...	phi*...	Eqn		
1	M1	HSS4X...	.193	4.0...	21	.073	0	z 6	1184...	1395...	16.181	16.181	H1-1b
2	M2	HSS4X...	.191	4.0...	17	.060	0	z 8	1184...	1395...	16.181	16.181	H1-1b
3	M3	HSS4X...	.195	4.0...	13	.060	0	z 4	1184...	1395...	16.181	16.181	H1-1b
4	M5	L6X3.5...	.191	4.4...	22	.195	6.4...	y...	1907...	1114...	4.002	11.674	H2-1
5	M6	PIPE 2.5	.178	6.4...	7	.121	2.0...	7	1381...	50715	3.596	3.596	H1-1b
6	MP5A	PIPE 2.0	.266	4.9...	10	.067	4.9...	8	2235...	32130	1.872	1.872	H1-1b
7	MP4A	PIPE 2.0	.299	3.5	10	.098	3.5	8	2652...	32130	1.872	1.872	H1-1b
8	MP3A	PIPE 2.0	.285	6.25	10	.104	6.25	...	1491...	32130	1.872	1.872	H1-1b
9	MP2A	PIPE 2.0	.255	3.5	4	.091	3.5	6	2652...	32130	1.872	1.872	H1-1b
10	MP1A	PIPE 2.0	.258	6.6...	5	.066	3.25	8	1491...	32130	1.872	1.872	H1-1b
11	M22	L6X3.5...	.194	4.4...	18	.196	6.4...	y...	1907...	1114...	4.002	11.715	H2-1
12	M23	PIPE 2.5	.178	6.4...	3	.124	10...	3	1381...	50715	3.596	3.596	H1-1b
13	MP5C	PIPE 2.0	.267	4.9...	6	.062	4.0...	7	2235...	32130	1.872	1.872	H1-1b
14	MP4C	PIPE 2.0	.295	3.5	6	.090	3.5	4	2652...	32130	1.872	1.872	H1-1b
15	MP3C	PIPE 2.0	.281	6.25	6	.103	6.25	6	1491...	32130	1.872	1.872	H1-1b
16	MP2C	PIPE 2.0	.258	3.5	12	.099	3.5	2	2652...	32130	1.872	1.872	H1-1b
17	MP1C	PIPE 2.0	.267	6.6...	1	.071	3.25	3	1491...	32130	1.872	1.872	H1-1b
18	M39	L6X3.5...	.195	4.4...	14	.191	6.2...	y...	1907...	1114...	4.002	11.716	H2-1
19	M40	PIPE 2.5	.181	6.4...	11	.124	2.0...	...	1381...	50715	3.596	3.596	H1-1b
20	MP5B	PIPE 2.0	.270	4.9...	2	.065	4.9...	...	2235...	32130	1.872	1.872	H1-1b



Company : NB+C ES
 Designer : Connor Rice, EIT
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Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Lo...	LC	She... Lo...	phi*P...	phi*P...	phi*...	phi*...	Eqn				
21	MP4B	PIPE_2.0	.306	3.5	2	.098	3.5	...	2652...	32130	1.872	1.872	...	H1-1b
22	MP3B	PIPE_2.0	.295	6.25	2	.102	6.25	2	1491...	32130	1.872	1.872	...	H1-1b
23	MP1B	PIPE_2.0	.270	6.6...	9	.073	3.25	...	1491...	32130	1.872	1.872	...	H1-1b
24	M59	PL3/8x7	.158	.223	12	.443	.793	y	5680...	85050	.664	12.404	...	H1-1b
25	MP2B	PIPE_2.0	.282	4.9...	8	.096	4.9...	...	2235...	32130	1.872	1.872	...	H1-1b
26	M70	PIPE_2.0	.089	2.25	12	.014	2.25	...	3023...	32130	1.872	1.872	...	H1-1b
27	M71	PIPE_2.0	.007	2.25	1	.001	2.25	1	3023...	32130	1.872	1.872	1	H1-1b
28	M84	PL3/8x7	.101	0	24	.113	.583	y	6836...	85050	.664	12.404	...	H1-1b
29	M85	L5X3.5...	.450	2.5...	24	.044	2.5...	z	5194...	67068	2.629	7.37	...	H2-1
30	M84A	PL3/8x7	.101	0	14	.114	.583	y	6836...	85050	.664	12.404	...	H1-1b
31	M85A	PL3/8x7	.099	0	20	.109	.583	y	6836...	85050	.664	12.404	...	H1-1b
32	M86	L5X3.5...	.442	2.5...	14	.044	2.5...	z	5194...	67068	2.629	7.371	...	H2-1
33	M87	PL3/8x7	.060	0	22	.045	.583	y	6836...	85050	.664	12.404	...	H1-1b
34	M89	L5X3.5...	.441	2.5...	16	.058	2.5...	z	5194...	67068	2.629	7.371	...	H2-1
35	M84B	PL3/8x7	.099	0	22	.112	.583	y	6836...	85050	.664	12.404	...	H1-1b
36	M85B	PL3/8x7	.060	0	16	.040	.583	y	6836...	85050	.664	12.404	...	H1-1b
37	M86A	PL3/8x7	.155	.223	7	.454	.793	y	5680...	85050	.664	12.404	...	H1-1b
38	M88	PL3/8x7	.145	.223	4	.448	.793	y	5680...	85050	.664	12.404	...	H1-1b
39	M92	PL3/8x7	.490	.392	14	.203	0	y	5736...	85050	.664	12.404	...	H1-1b
40	M94	PL3/8x7	.196	.083	15	.262	0	y	8467...	85050	.664	12.404	...	H1-1b
41	M95	PL3/8x7	.226	.083	24	.286	0	y	8467...	85050	.664	12.404	...	H1-1b
42	M91	PL3/8x7	.496	.392	22	.202	.4	y	5736...	85050	.664	12.404	...	H1-1b
43	M92A	PL3/8x7	.193	.083	23	.266	0	y	8467...	85050	.664	12.404	...	H1-1b
44	M93	PL3/8x7	.229	.083	20	.288	0	y	8467...	85050	.664	12.404	...	H1-1b
45	M97A	PL3/8x7	.484	.392	18	.202	.4	y	7770...	85050	.664	11.939	1	H1-1b
46	M98	PL3/8x7	.197	.083	19	.267	0	y	8467...	85050	.664	12.404	...	H1-1b
47	M99	PL3/8x7	.227	.083	15	.290	0	y	8467...	85050	.664	12.404	...	H1-1b
48	M105	LL3x3x...	.116	0	13	.002	0	y	4766...	70632	5.543	3.751	1	H1-...
49	M106	L3X3X4	.236	0	11	.041	.025	z	4120...	46656	1.688	3.756	...	H2-1
50	M107	L3X3X4	.220	0	2	.039	0	z	4120...	46656	1.688	3.756	...	H2-1
51	M108	L3X3X4	.358	2.3...	7	.044	0	z	4120...	46656	1.688	3.756	...	H2-1
52	M100A	LL3x3x...	.120	0	21	.002	0	y	4766...	70632	5.543	3.751	1	H1-...
53	M101B	LL3x3x...	.114	0	17	.002	.5	y	4766...	70632	5.543	3.751	1	H1-...

Connection Check Summary

Site Name	Waterbury CT
Site ID	467706
NB+C Project No.	100820

Connection Properties				Joint Reactions			
Plate Properties				Shear	F _y	570	lbs
Thickness	t	0.75	in		Tension	F _z	1140
Plate length	L	8.5	in	Bending	F _x	3600	lbs
Plate Grade	F _y	36	ksi	Bending	M _z	0.737	k-ft
Connected Part Dimensions	Width	4	in	Torsion	M _y	1.262	k-ft
	Height	4	in	Connection Capacities (% Usage)			
Horizontal Bolt Separation	d _x	6	in				
Vertical Bolt Separation	d _y	6	in				
Bolt Properties				Plate Capacity	Shear	3.5%	Pass
Bolt Grade		A325			Bending	4.5%	Pass
Bolt Diameter	d _b	0.625	in	Bolt Capacity	Shear	4.9%	Pass
Number of Bolts	N _b	4	Bolts		Tension	14.0%	Pass
Weld Properties				Weld Capacity	% Usage	15.6%	Pass
Weld Shape		Square					
Standoff Arm Height	d	4	in				
Standoff Arm Width	b	4	in				
Fillet Weld Size	a	1/4	in				

Site Name: WATERBURY S CT
Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density
	(MHz)		(watts)	(watts)	(feet)	(mW/cm ²)
VZW 700	751	4	690	2761	110	0.0082
VZW Cellular	874	4	825	3302	110	0.0098
VZW PCS	1975	4	1593	6370	110	0.0189
VZW AWS	2120	4	1563	6251	110	0.0186
VZW CBAND	3730.08	4	6531	26125	110	0.0776

Total Percentage of Maximum Permissible Exposure

*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/II

**Calculation includes a -10 dB Off Beam Antenna Pattern Adjustment pursuant to Attachments B and C of the Siting Council'

MHz = Megahertz

mW/cm² = milliwatts per square centimeter

ERP = Effective Radiated Power

Absolute worst case maximum values used.

Maximum Permissible Exposure*	Fraction of MPE
(mW/cm ²)	(%)
0.5007	1.64%
0.5827	1.68%
1.0000	1.89%
1.0000	1.86%
1.0000	7.76%
	14.84%

EEE C95.1-1992
s November 10, 2015 Memorandum for Exempt Modification filings



VERIZON SITE NUMBER: 467706
VERIZON SITE NAME: WATERBURY S CT
SITE TYPE: MONOPOLE
TOWER HEIGHT: 144'-0"

BUSINESS UNIT #: 876317
SITE ADDRESS: 150 MATTATUCK HEIGHTS
 WATERBURY, CT 06705
COUNTY: NEW HAVEN
JURISDICTION: CONNECTICUT
SITING COUNCIL

VERIZON 5G L-SUB6 - CARRIER ADD

verizon
 180 WASHINGTON VALLEY ROAD
 BEDMINSTER, NJ 07921

CROWN CASTLE
 3 CORPORATE PARK DRIVE, SUITE 101
 CLIFTON PARK, NY 12065

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

VERIZON SITE NUMBER:
 467706
BU #: 876317
WATERBURY
 150 MATTATUCK HEIGHTS
 WATERBURY, CT 06705
 EXISTING 144'-0" MONOPOLE

SITE INFORMATION

CROWN CASTLE USA INC. WATERBURY
SITE NAME:
SITE ADDRESS: 150 MATTATUCK HEIGHTS
 WATERBURY, CT 06705
COUNTY: NEW HAVEN
MAP/PARCEL #: 0424-0141-0001
AREA OF CONSTRUCTION: EXISTING
LATITUDE: 41.537861°
LONGITUDE: -72.985028°
LAT/LONG TYPE: NAD83
GROUND ELEVATION: 660'
CURRENT ZONING: IP - INDUSTRIAL PARK 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: WATERBURY TWIN LLC & 150 MH LLC
 12 ISELIN TERRACE
 LARCHMONT, NY 10538
TOWER OWNER: CROWN CASTLE
 2000 CORPORATE DRIVE
 CANONSBURG, PA 15317
CARRIER/APPLICANT: VERIZON WIRELESS
 180 WASHINGTON VALLEY ROAD
 BEDMINSTER, NJ 07921
ELECTRIC PROVIDER: CONNECTICUT LIGHT & POWER CO
 (800) 286-2000
TELCO PROVIDER: LIGHTOWER
 (855) 91-FIBER

DRAWING INDEX

SHEET #	SHEET DESCRIPTION
T-1	TITLE SHEET
T-2	GENERAL NOTES
C-1	SITE PLAN
C-2	TOWER ELEVATION & ANTENNA PLANS
C-3	EQUIPMENT SCHEDULES
C-4	EQUIPMENT DETAILS
C-5	EQUIPMENT DETAILS
C-6	PLUMBING DIAGRAM
G-1	GROUNDING DETAILS
G-2	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.

APPROVALS

SIGNATURE	DATE
_____	_____
_____	_____
_____	_____
_____	_____

CONTRACTOR PMI REQUIREMENTS

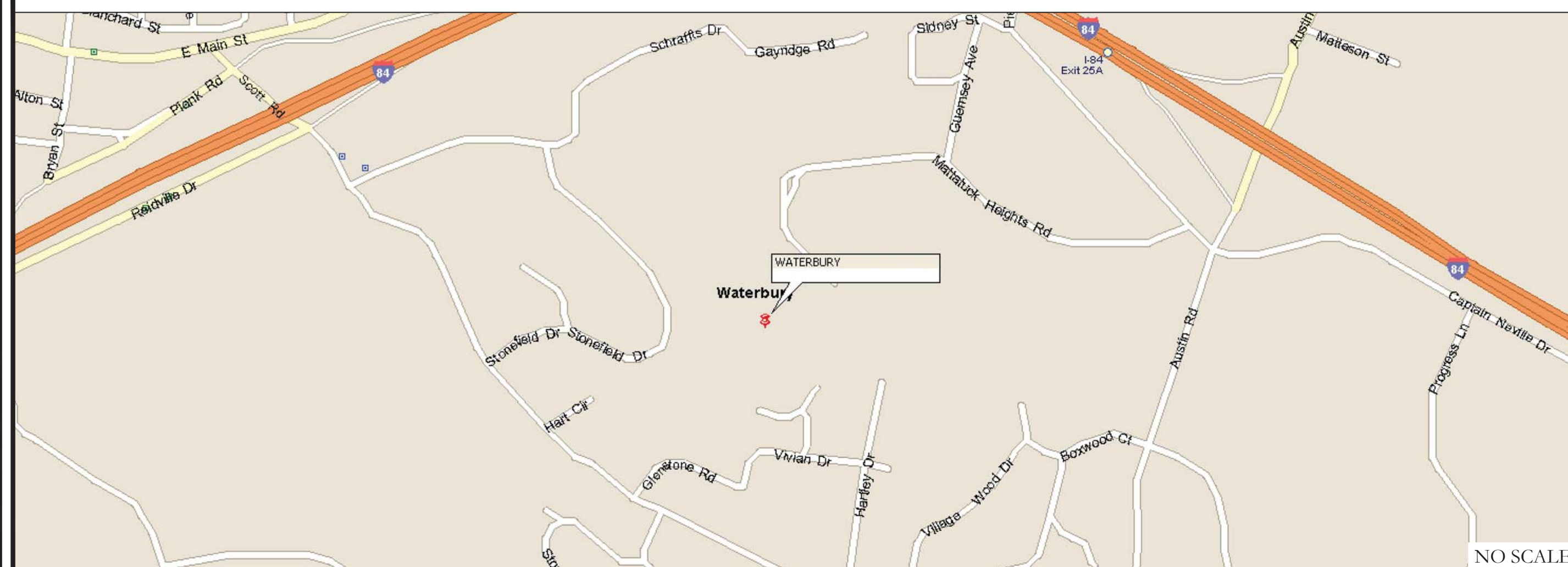
PMI ACCESSED AT	https://pmi.vxwsmart.com
SMART TOOL VENDOR	
PROJECT NUMBER	10127907
VzW LOCATION CODE (PSLC)	467706
*** PMI AND REQUIREMENTS ALSO EMBEDDED IN MOUNT ANALYSIS REPORT	

MOUNT MODIFICATION REQUIRED	Y
	Y

VzW APPROVED SMART KIT VENDORS

REFER TO MOUNT MODIFICATION DRAWINGS PAGE FOR VzW SMART KIT APPROVED VENDORS

LOCATION MAP



DEPART SCHOEPHOESTER RD, WINDSOR LOCKS, CT 06096 ON CT-75 [TURNPIKE RD] (SOUTH), BEAR RIGHT (SOUTH-WEST) ONTO CT-75 [POQUONOCK AVE], TAKE RAMP (RIGHT) ONTO CT-20 [BRADLEY FIELD CONNECTOR] CT-20 E / I-91 / HARTFORD / SPRINGFIELD, TAKE RAMP (RIGHT) ONTO I-91 [RICHARD P HORAN MEMORIAL HWY] I-91 S / HARTFORD AT EXIT 32A-32B, TURN RIGHT ONTO RAMP I-84 W / TRUMBULL ST / WATERBURY, TAKE RAMP (LEFT) ONTO I-84 [US-6] I-84 W / WATERBURY AT EXIT 25A, TURN RIGHT ONTO RAMP AUSTIN RD, TURN LEFT (SOUTH) ONTO AUSTIN RD, TURN RIGHT (WEST) ONTO CAPTAIN NEVILLE DR, THEN IMMEDIATELY TURN LEFT (WEST) ONTO MATTATUCK HEIGHTS RD, ARRIVE 150 MATTATUCK HEIGHTS RD, WATERBURY, CT 06705 [150 MATTATUCK HEIGHTS RD, WATERBURY, CT 06705]

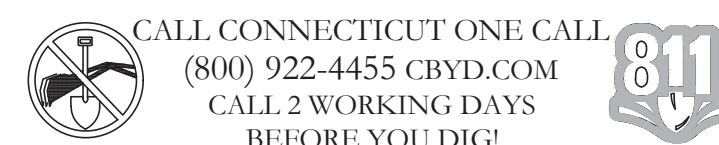
APPLICABLE CODES/REFERENCE DOCUMENTS

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 W/ AMENDMENTS
MECHANICAL	2015 IMC W/ AMENDMENTS
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	B+T GROUP
DATED:	1/31/22
MOUNT ANALYSIS:	NETWORK BUILDING + CONSULTING, LLC
DATED:	1/24/22
RFDS REVISION:	2
DATED:	12/7/21
ORDER ID:	601536
REVISION:	0



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 (1) COAX CABLE (1-5/8")
- INSTALL (3) ANTENNAS W/ INTEGRATED RADIOS
- INSTALL (1) HYBRID CABLE (1-1/4")
- INSTALL MOUNT MODIFICATIONS PER MOUNT MODIFICATION ANALYSIS BY NETWORK BUILDING + CONSULTING, LLC DATED 1/24/22

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

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:
 3 CORPORATE PARK DRIVE, SUITE 101
 CLIFTON PARK, NY 12065
 WILLIAM GATES - PROJECT MANAGER
 WILLIAM.GATES@CROWNCastle.COM
 JASON DAMICO - CONSTRUCTION MANAGER
 JASON.DAMICO@CROWNCastle.COM
VERIZON CONTACT: TIMOTHY PARKS
 TIMOTHY.PARKS@VERIZONWIRELESS.COM



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-1
REVISION: 0

CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

- 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.
- "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.
- 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.
- 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).
- 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." 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.
- 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.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- 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.
- ALL SITE WORK SHALL BE AS INDICATED ON THE STAMPED CONSTRUCTION DRAWINGS AND PROJECT SPECIFICATIONS, LATEST APPROVED REVISION.
- 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.
- 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.
- 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.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE CARRIER'S EQUIPMENT AND TOWER AREAS.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
- 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.
- 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.
- 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.
- 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.
- 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.

GREENFIELD GROUNDING NOTES:

- 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.
- THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL 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.
- 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.
- METAL CONDUIT AND TRAY SHALL BE GROUNDING AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- 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.
- 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.
- 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.
- ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING SHALL BE #2 SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
- ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
- ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR AND EXTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS.
- COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
- ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
- APPROVED ANTI-OXIDANT COATINGS (i.e. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
- MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- BOND ALL METALLIC OBJECTS WITHIN 6 ft. OF MAIN GROUND RING WITH (1) #2 BARE SOLID TINNED COPPER GROUND CONDUCTOR.
- 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.
- 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).
- 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).

GENERAL NOTES:

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
CONTRACTOR: GENERAL CONTRACTOR RESPONSIBLE FOR CONSTRUCTION
CARRIER: VERIZON
TOWER OWNER: CROWN CASTLE USA INC.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- 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.
- 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.
- 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.
- 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION. TRASH AND DEBRIS SHOULD BE REMOVED FROM SITE ON A DAILY BASIS.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

- 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.
- UNLESS NOTED OTHERWISE, SOIL BEARING PRESSURE USED FOR DESIGN OF SLABS AND FOUNDATIONS IS ASSUMED TO BE 1000 psf.
- 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.
- 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.
- 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
- 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"
- 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.

ELECTRICAL INSTALLATION NOTES:

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED AND TRIP HAZARDS ARE ELIMINATED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
 - ALL EQUIPMENT SHALL BEAR THE UNDERWRITERS LABORATORIES LABEL OF APPROVAL, AND SHALL CONFORM TO REQUIREMENT OF THE NATIONAL ELECTRICAL CODE.
 - 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. VERIFY 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.
- 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.
- 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).
- PANEL BOARDS (ID NUMBERS) SHALL BE CLEARLY LABELED WITH PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- 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.
- 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.
- POWER AND CONTROL WIRING IN FLEXIBLE CORD SHALL BE MULTI-CONDUCTOR, TYPE SOOW CORD (#14 OR LARGER) UNLESS OTHERWISE SPECIFIED.
- 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.
- 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).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC AND NEC.
- ELECTRICAL METALLIC TUBING (EMT), INTERMEDIATE METAL CONDUIT (IMC), OR RIGID METAL CONDUIT (RMC) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT) OR METAL-CLAD CABLE (MC) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- SCHEDULE 40 PVC UNDERGROUND ON STRAIGHTS AND SCHEDULE 80 PVC FOR ALL ELBOWS/90s AND ALL APPROVED ABOVE GRADE PVC CONDUIT.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SET NEW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES AND WIRE WAYS SHALL BE LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC AND THE NEC.
- WIREWAYS SHALL BE METAL WITH AN ENAMEL FINISH AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARDS (WIREFOLD SPECMATE WIREWAY).
- SLOTTED WIRING DUCT SHALL BE PVC AND INCLUDE COVER (PANDUIT TYPE E OR EQUAL).
- 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- INSTALL LAMICOID LABEL ON THE METER CENTER TO SHOW "VERIZON".
- 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
120/208V, 3Ø	GROUND	GREEN
	A PHASE	BLACK
	B PHASE	RED
	C PHASE	BLUE
	NEUTRAL	WHITE
277/480V, 3Ø	GROUND	GREEN
	A PHASE	BROWN
	B PHASE	ORANGE OR PURPLE
	C PHASE	YELLOW
	NEUTRAL	GREY
DC VOLTAGE	GROUND	GREEN
	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
- RETS 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



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www.btgrp.com

VERIZON SITE NUMBER:
467706


BU #: 876317
WATERBURY

150 MATTATUCK HEIGHTS
WATERBURY, CT 06705

EXISTING 144'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	2/17/22	GAC	CONSTRUCTION	LR



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REVISION:
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VERIZON SITE NUMBER:
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BU #: **876317**
WATERBURY

150 MATTATUCK HEIGHTS
WATERBURY, CT 06705

EXISTING 144'-0" MONOPOLE

ISSUED FOR:

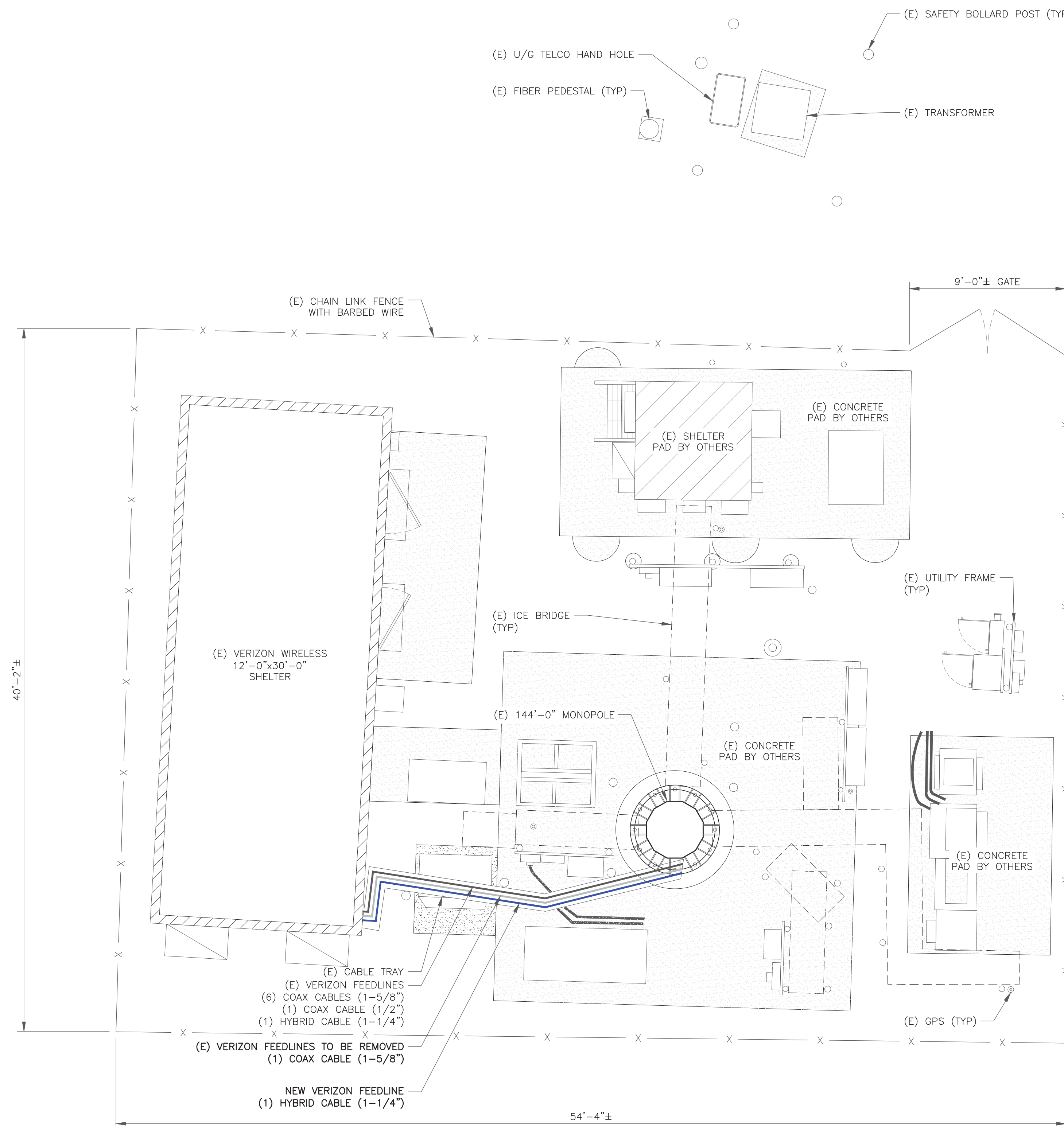
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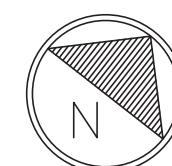
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1 SITE PLAN
SCALE: 1/4"=1'-0" (FULL SIZE)
1/8"=1'-0" (11x17)



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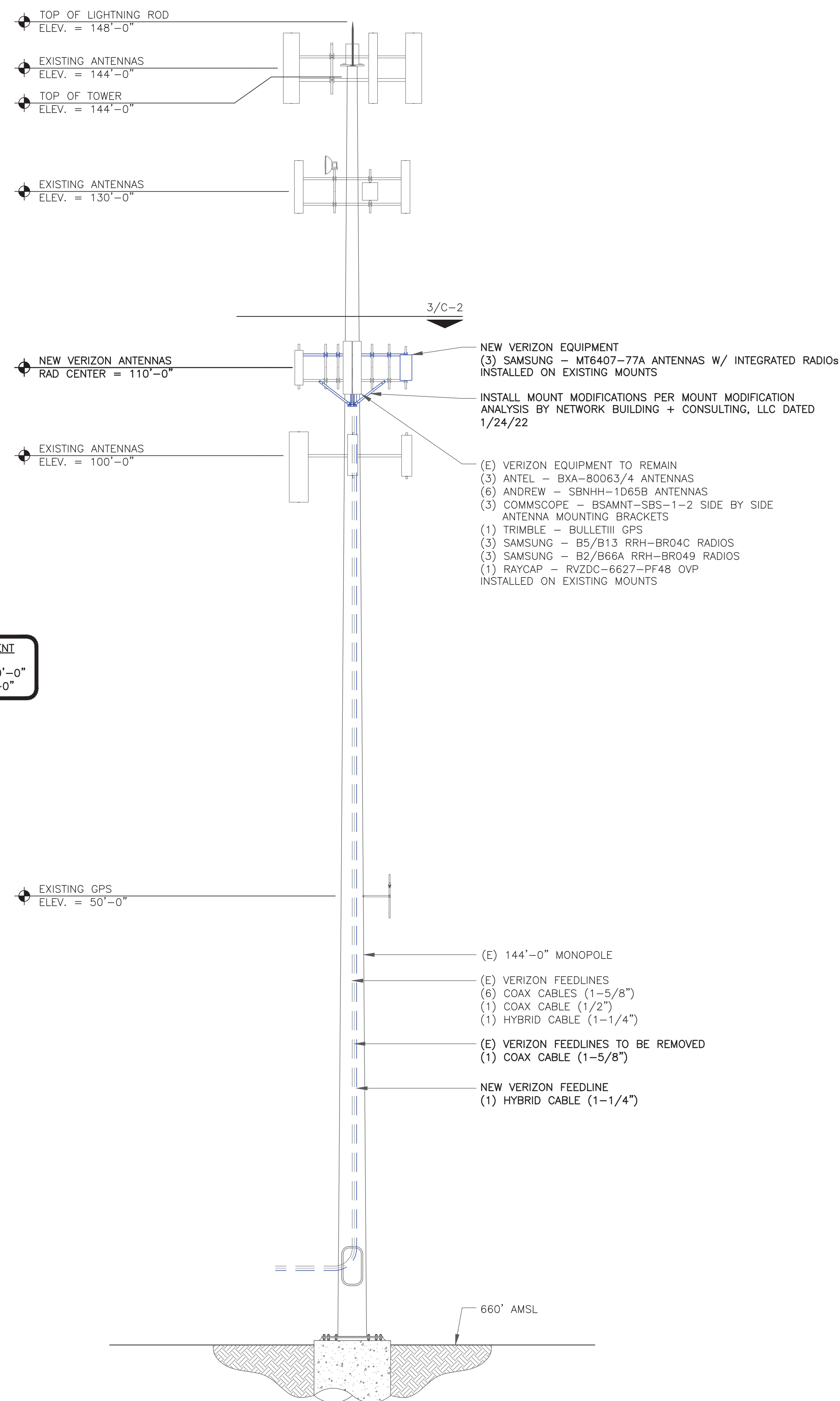
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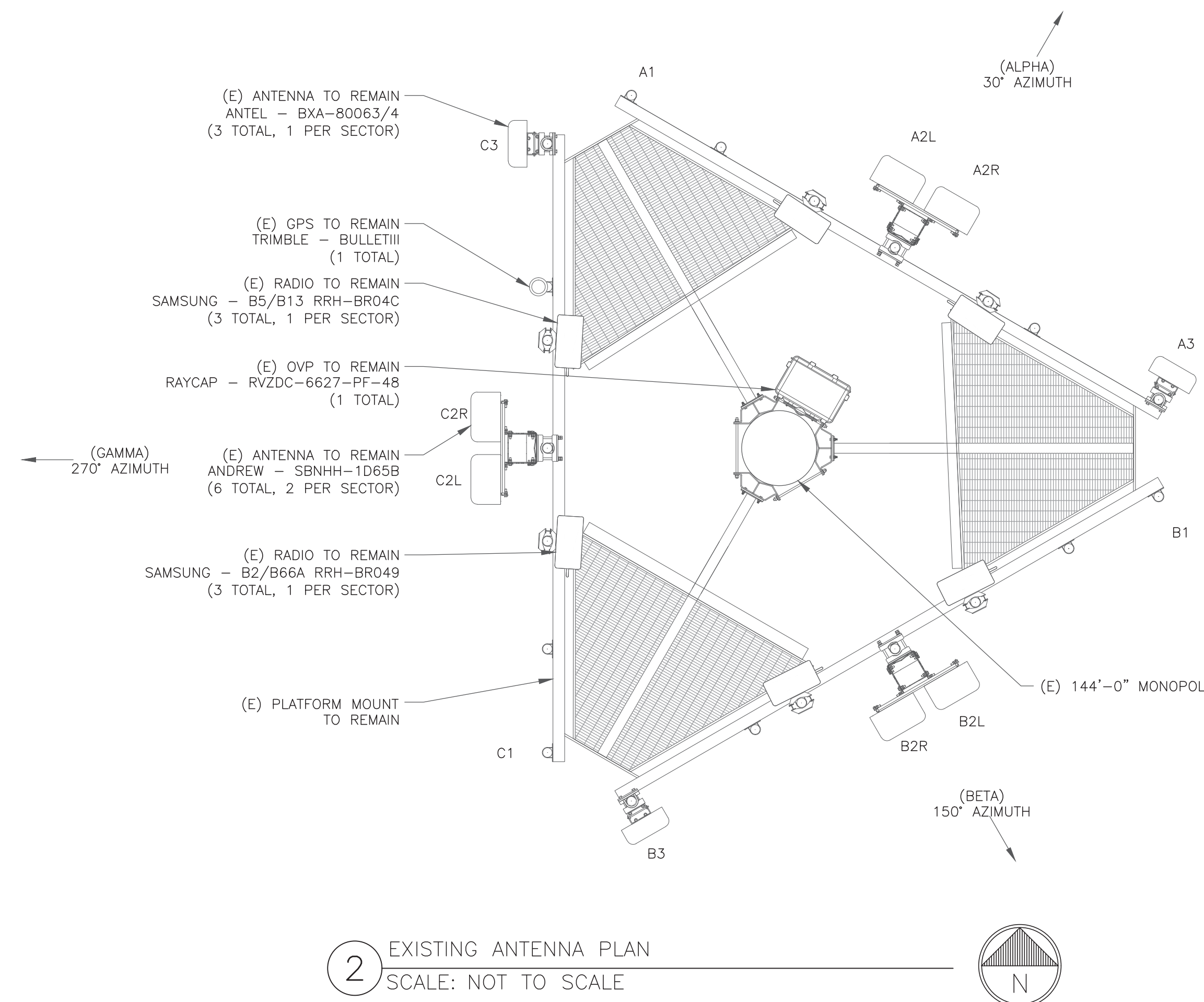
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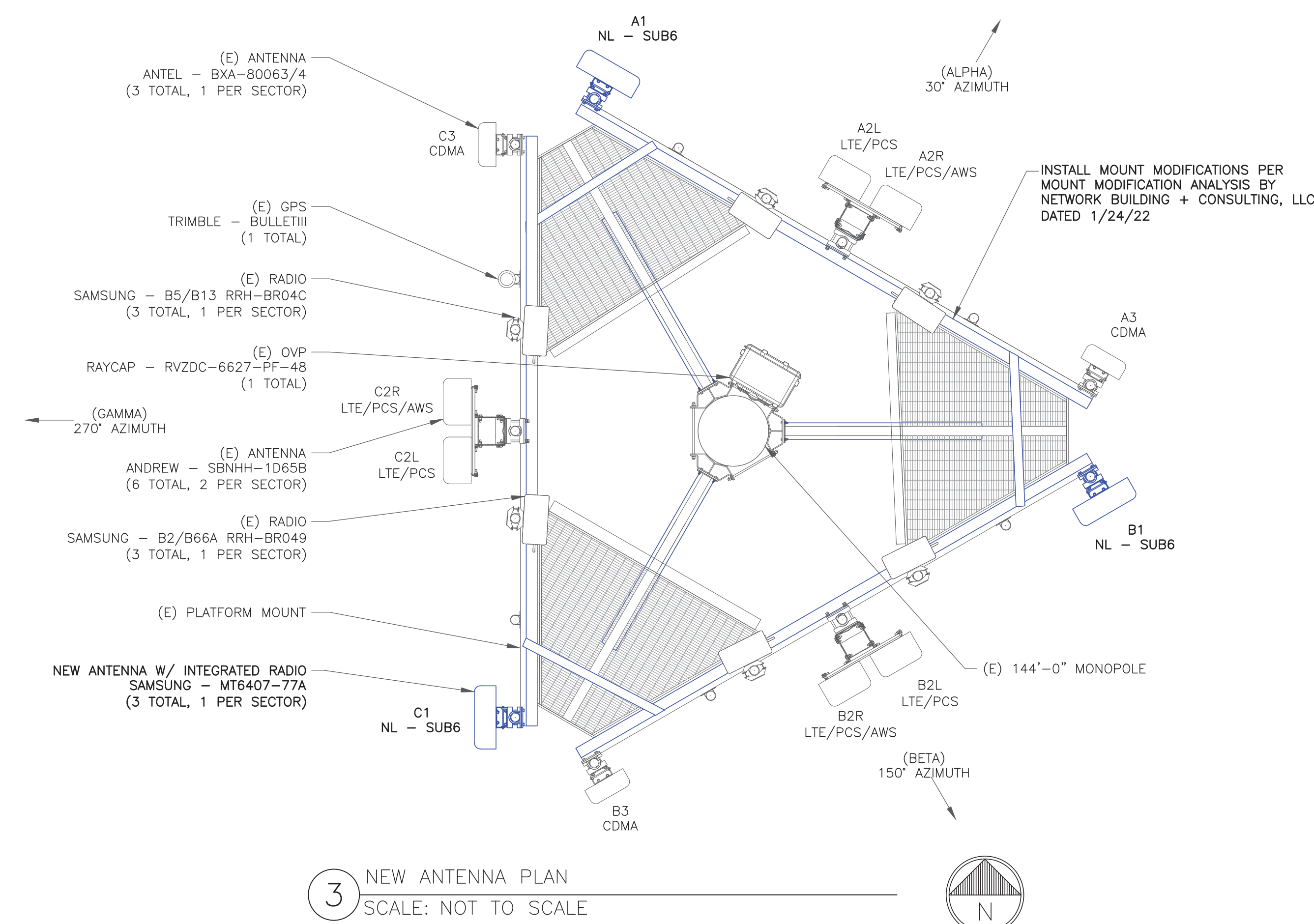
SHEET NUMBER: **C-2** REVISION: **0**



1 TOWER ELEVATION
SCALE: NOT TO SCALE



2 EXISTING ANTENNA PLAN
SCALE: NOT TO SCALE



3 NEW ANTENNA PLAN
SCALE: NOT TO SCALE

VERIZON EQUIPMENT
ANTENNA CL: 110'-0"
MOUNT CL: 110'-0"

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VERIZON SITE NUMBER:
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BU #: **876317**
WATERBURY

150 MATTATUCK HEIGHTS
WATERBURY, CT 06705

EXISTING 144'-0" MONOPOLE

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SHEET NUMBER: **C-3** REVISION: **0**

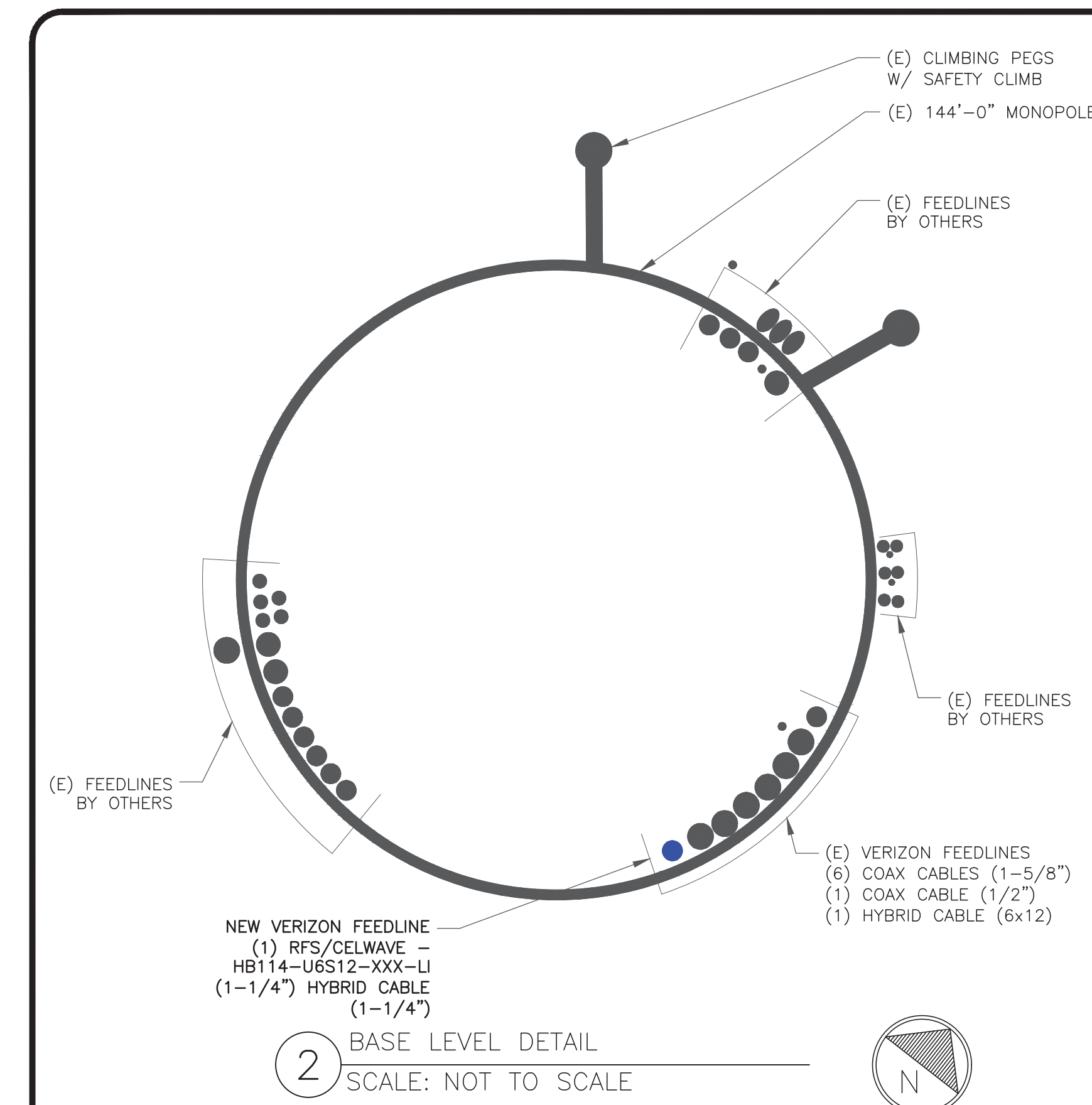
ANTENNA/RRH SCHEDULE

SECTOR	STATUS	ANTENNA MANUFACTURER	ANTENNA MODEL	ANTENNA CENTERLINE	AZIMUTH	MECHANICAL DOWNTILTS	ELECTRICAL DOWNTILTS	TOWER EQUIPMENT MANUFACTURER	TOWER EQUIPMENT QTY/MODEL
A1	NEW	SAMSUNG	MT6407-77A	110'-0"	30°	0°	6'	-	-
A2L	EXISTING	ANDREW	SBNHH-1D65B	110'-0"	30°	0°	2'/2'/2'/3'/3'/3'	SAMSUNG	(1) B5/B13 RRH-BR04C2
A2R	EXISTING	ANDREW	SBNHH-1D65B	110'-0"	30°	0°	2'/2'/2'/3'/3'/3'	SAMSUNG	(1) B2/B66A RRH-BR049
A3	EXISTING	ANTEL	BXA-80063/4	110'-0"	30°	-	-	RAYCAP	(1) RVZDC-6627-PF-48
B1	NEW	SAMSUNG	MT6407-77A	110'-0"	150°	0°	6'	-	-
B2L	EXISTING	ANDREW	SBNHH-1D65B	110'-0"	150°	0°	2'/2'/2'/2'/2'/2'	SAMSUNG	(1) B5/B13 RRH-BR04C2
B2R	EXISTING	ANDREW	SBNHH-1D65B	110'-0"	150°	0°	2'/2'/2'/2'/2'/2'	SAMSUNG	(1) B2/B66A RRH-BR049
B3	EXISTING	ANTEL	BXA-80063/4	110'-0"	150°	-	-	-	-
C1	NEW	SAMSUNG	MT6407-77A	110'-0"	270°	0°	6'	-	-
C2L	EXISTING	ANDREW	SBNHH-1D65B	110'-0"	270°	0°	7'/7'/7'/3'/3'/3'	SAMSUNG	(1) B5/B13 RRH-BR04C2
C2R	EXISTING	ANDREW	SBNHH-1D65B	110'-0"	270°	0°	7'/7'/7'/3'/3'/3'	SAMSUNG	(1) B2/B66A RRH-BR049
-	-	TRIMBLE	BULLETHI	113'-0"	270°	-	-	-	-
C3	EXISTING	ANTEL	BXA-80063/4	110'-0"	270°	-	-	-	-

1 VERIZON TOWER EQUIPMENT SCHEDULE
SCALE: NOT TO SCALE

CABLE SCHEDULE

STATUS	CABLE TYPE	SIZE	LENGTH	QTY
EXISTING	COAX	1-5/8"	160'-0"±	6
EXISTING	COAX	1/2"	160'-0"±	1
EXISTING	HYBRID	6x12	160'-0"±	1
NEW	HYBRID	6x12	160'-0"±	1
TOTAL CABLE QTY:				9



2 BASE LEVEL DETAIL
SCALE: NOT TO SCALE

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VERIZON SITE NUMBER:
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BU #: **876317**
WATERBURY

150 MATTATUCK HEIGHTS
WATERBURY, CT 06705

EXISTING 144'-0" MONOPOLE

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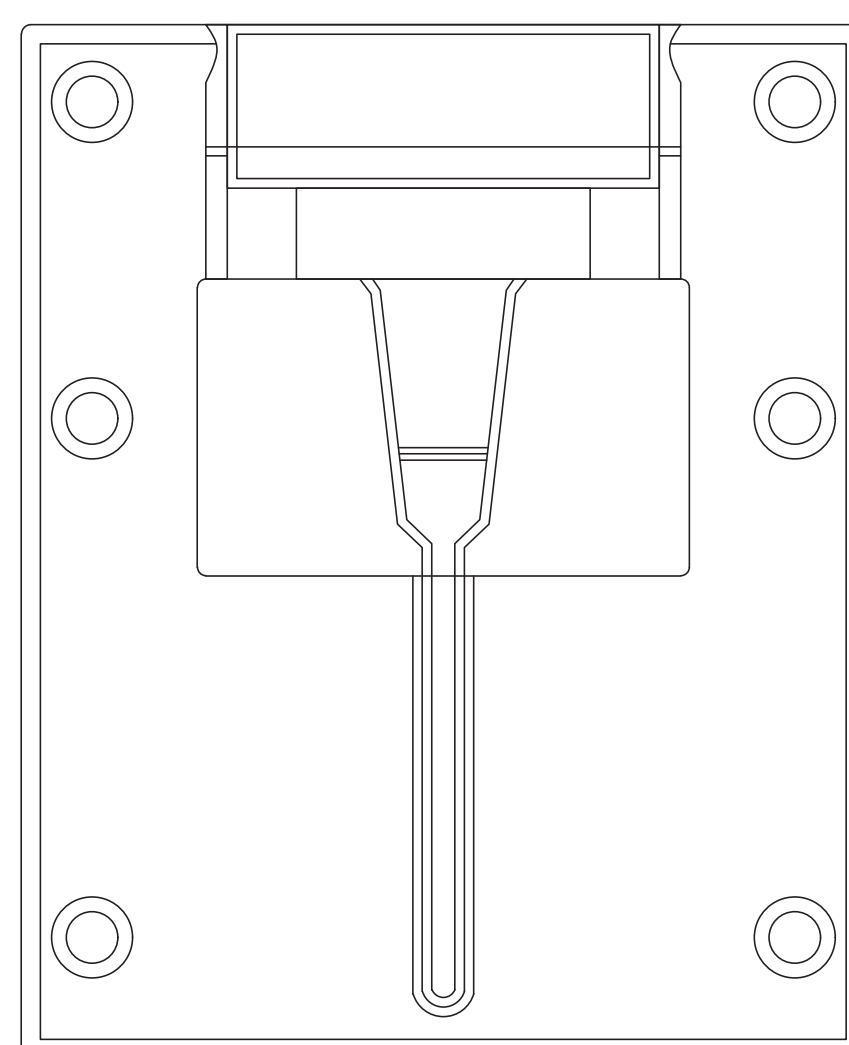
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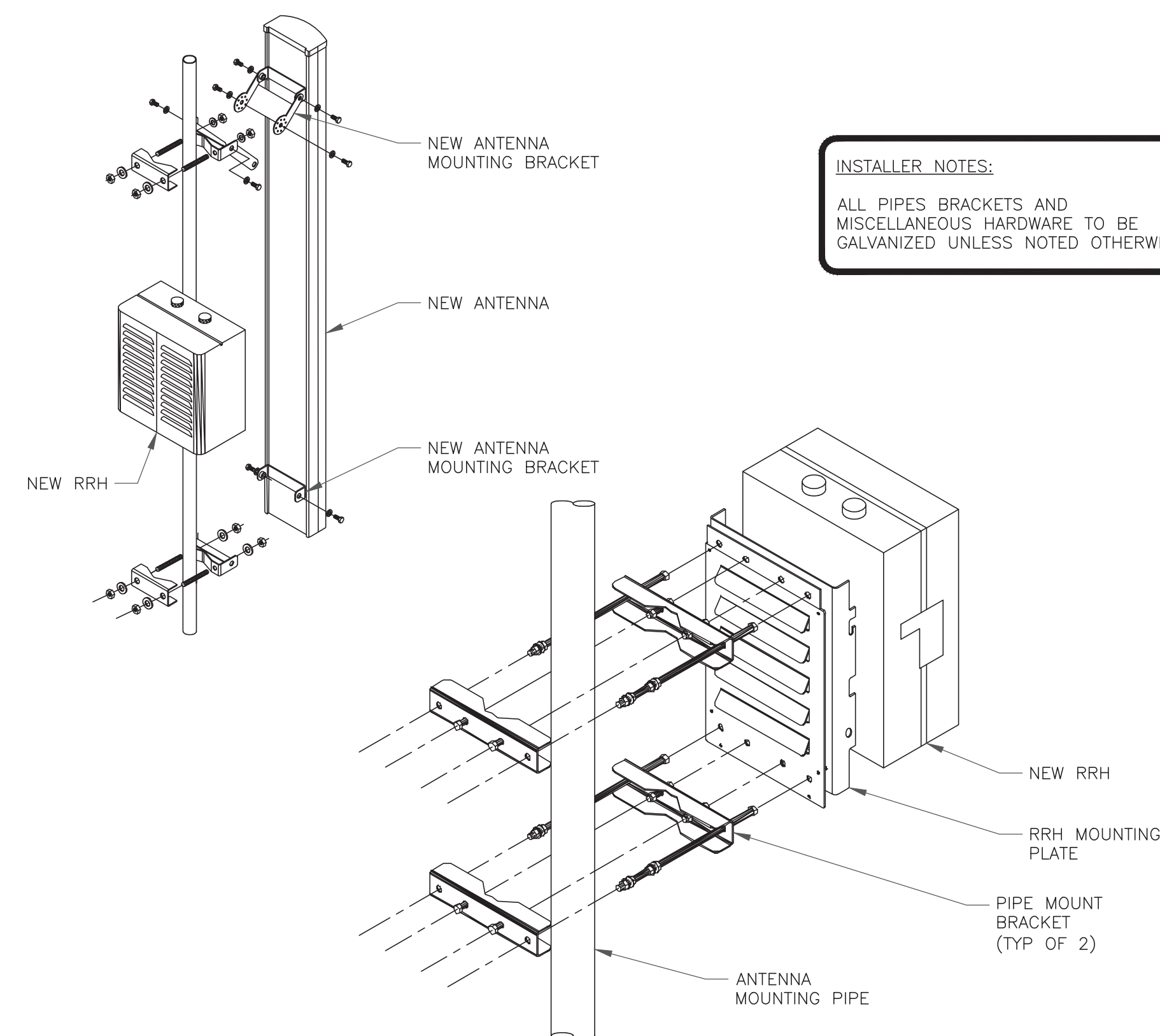
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SCALE: NOT TO SCALE

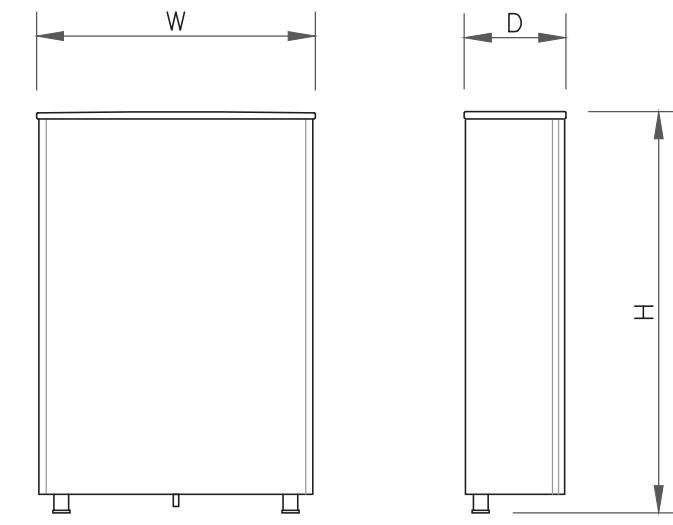
2 NOT USED
SCALE: NOT TO SCALE



3 SAMSUNG - EP97-01585A BRACKET DETAIL
SCALE: NOT TO SCALE



4 ANTENNA & RRH MOUNTING DETAIL
SCALE: NOT TO SCALE



ANTENNA SPECS	
MANUFACTURER	SAMSUNG
MODEL #	MT6407-77A
WIDTH	16.06"
DEPTH	5.51"
HEIGHT	35.06"
WEIGHT	81.57 LBS

1 ANTENNA SPECS
SCALE: NOT TO SCALE

2 NOT USED
SCALE: NOT TO SCALE

3 NOT USED
SCALE: NOT TO SCALE

4 NOT USED
SCALE: NOT TO SCALE

5 NOT USED
SCALE: NOT TO SCALE

6 NOT USED
SCALE: NOT TO SCALE

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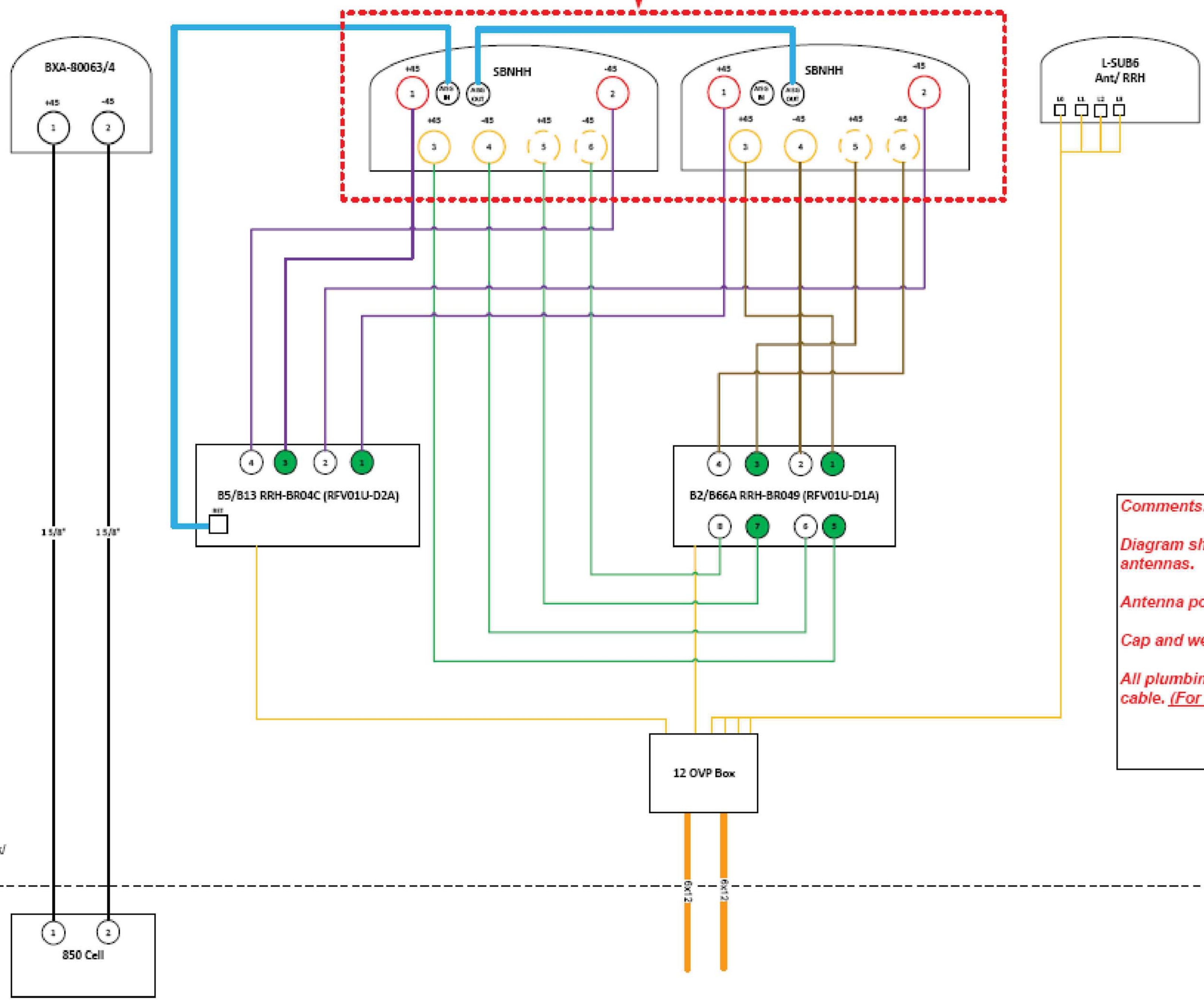
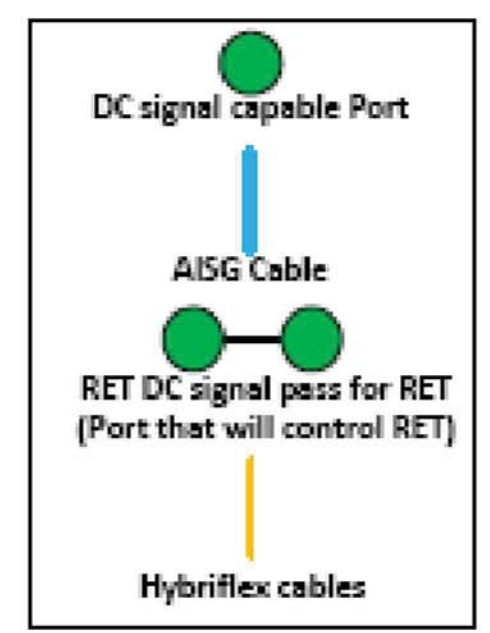
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BSAMNT-SBS-1-2

- Port 1 & 2 are for low band (698-896 MHz).
- Port 3,4,5, & 6 are for high band (1695-2360 MHz).
- Smart Bias Tee (SBT) is through port 1 & 3 for low band and port 1 for high band.
- AISG cable is only needed when drawn in the diagrams below, if it is not drawn then SBT is enough to control all RET motors.
- Not all SBT ports are needed to control RET, only green port connection to green port will control RET.



Comments:
 Diagram shows antenna port configuration as viewed from below antennas.
 Antenna positions are indicated as viewed from IN FRONT of antennas.
 Cap and weatherproof unused antenna ports.
 All plumbing diagram colors are irrelevant except for AISG & Hybriflex cable. (For the coax colors follow Coax Colors guide above)

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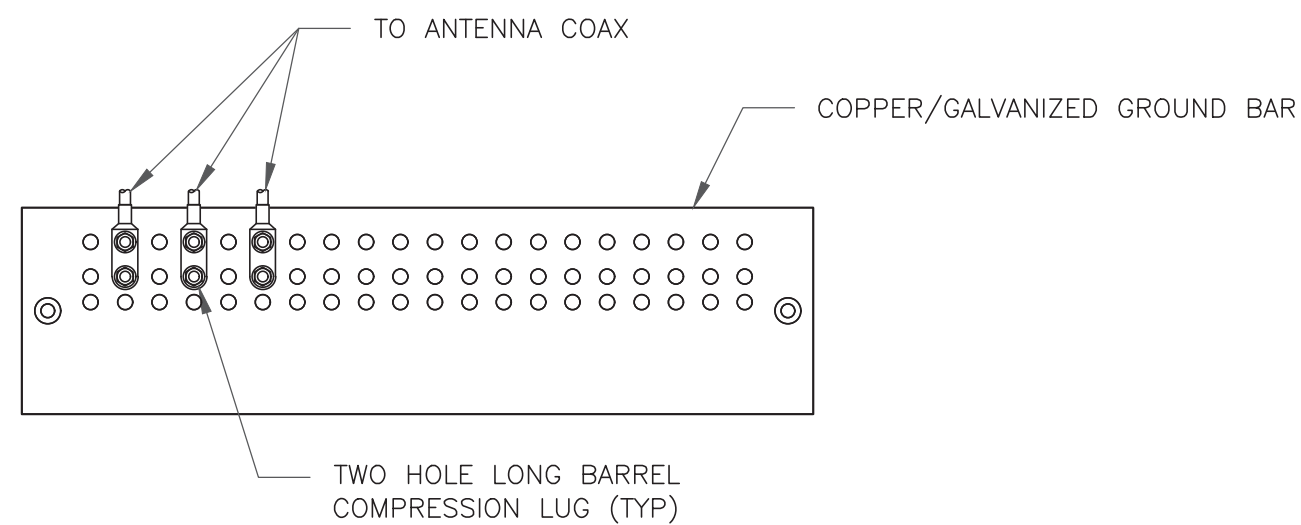
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 150 MATTATUCK HEIGHTS
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 EXISTING 144'-0" MONOPOLE

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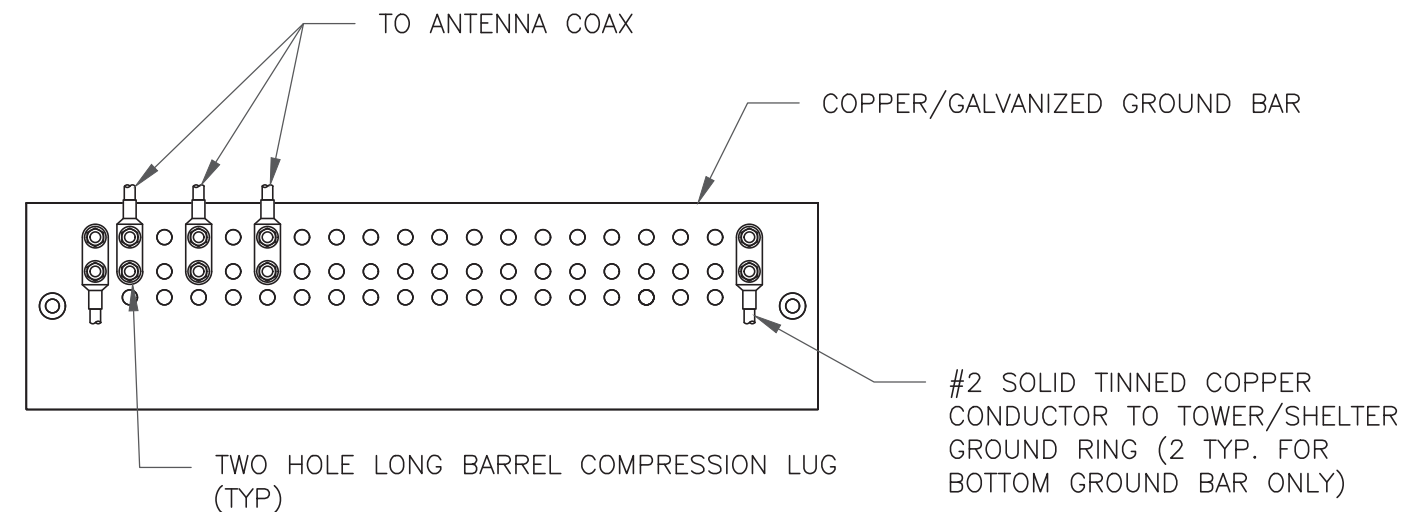
SHEET NUMBER: **C-6** REVISION: **0**



NOTES:

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

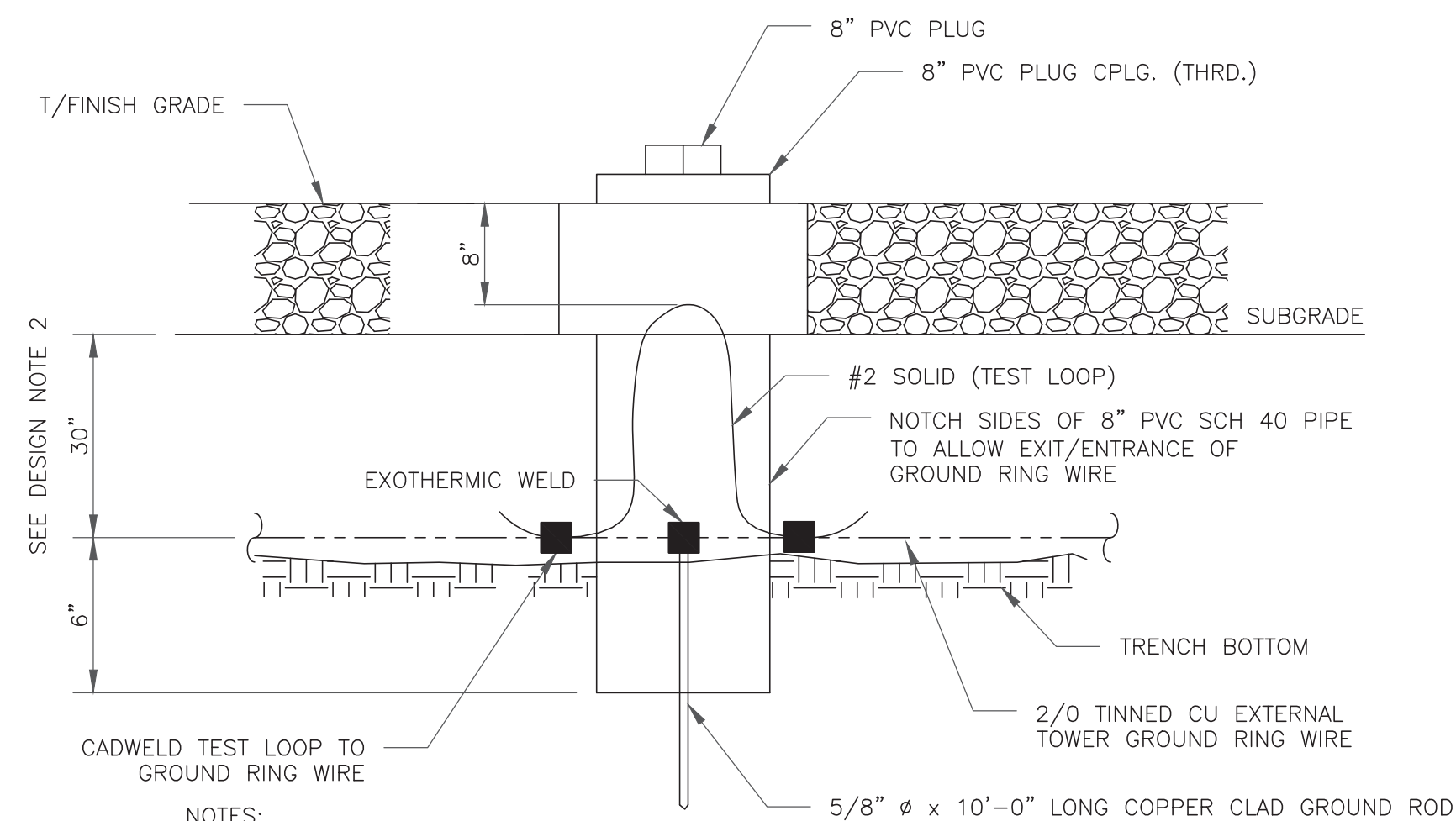
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

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

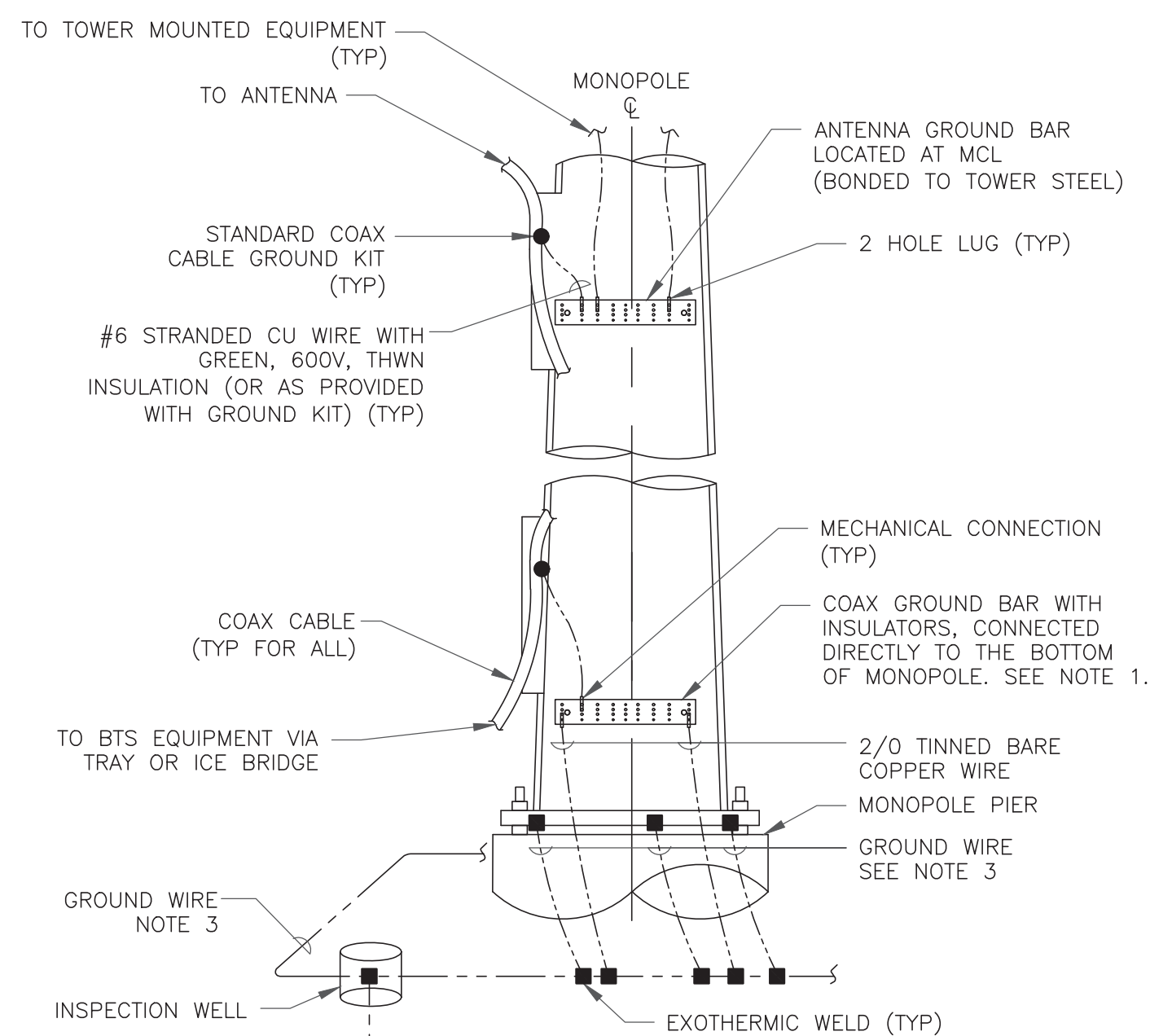
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

- GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
- 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)

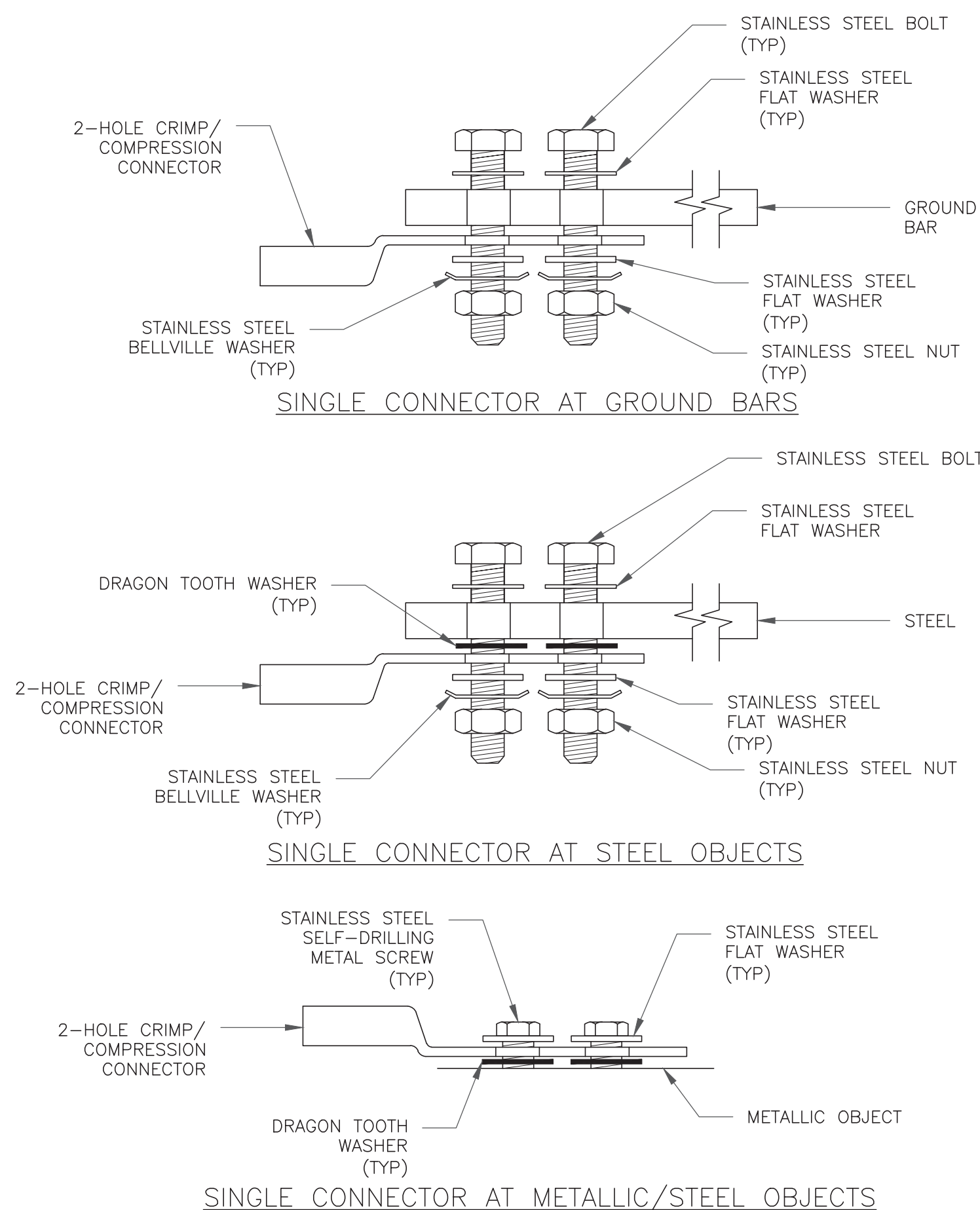
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



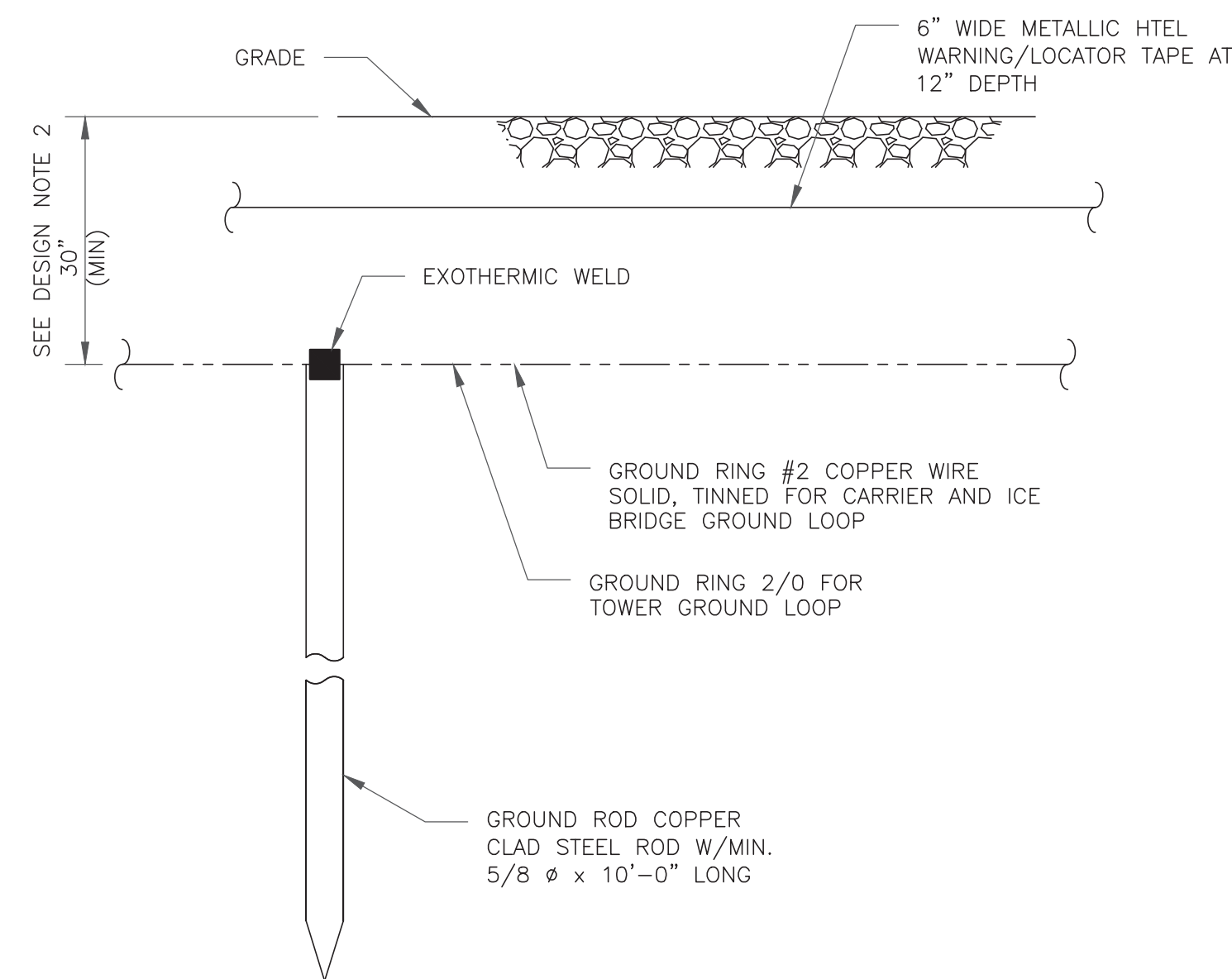
NOTES:

- 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.
- 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.
- 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:

- GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 45 DEGREES FROM THE VERTICAL
- 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

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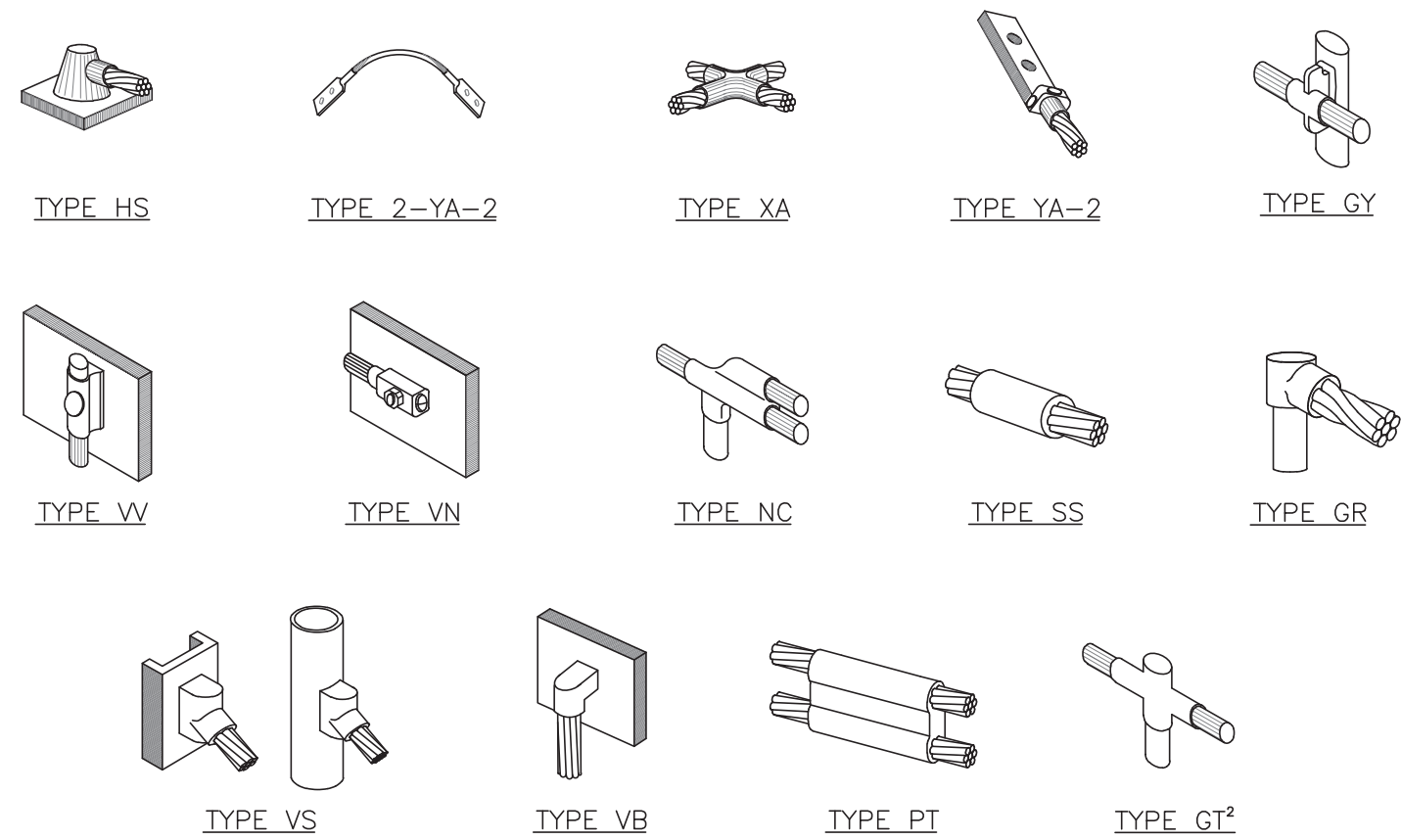
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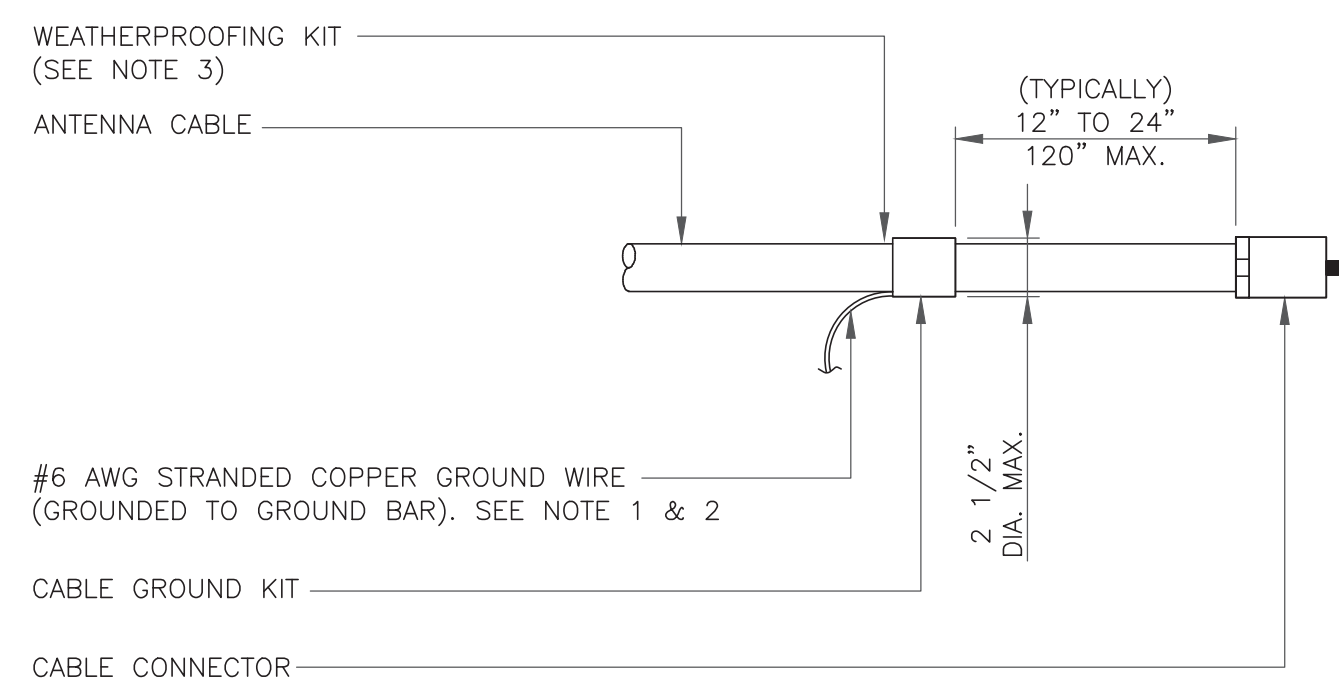
SHEET NUMBER: **G-1** REVISION: **0**



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.

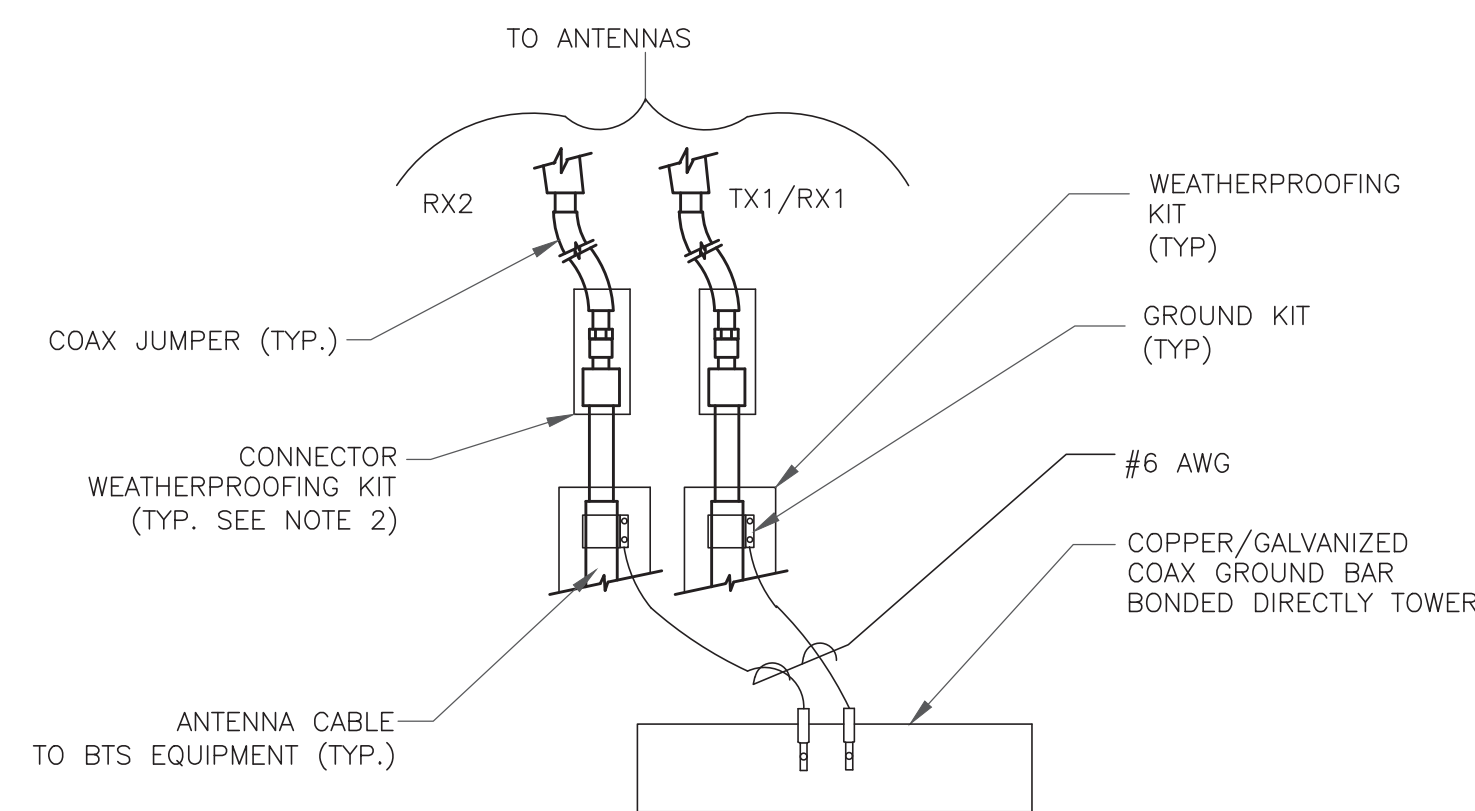
1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE



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.

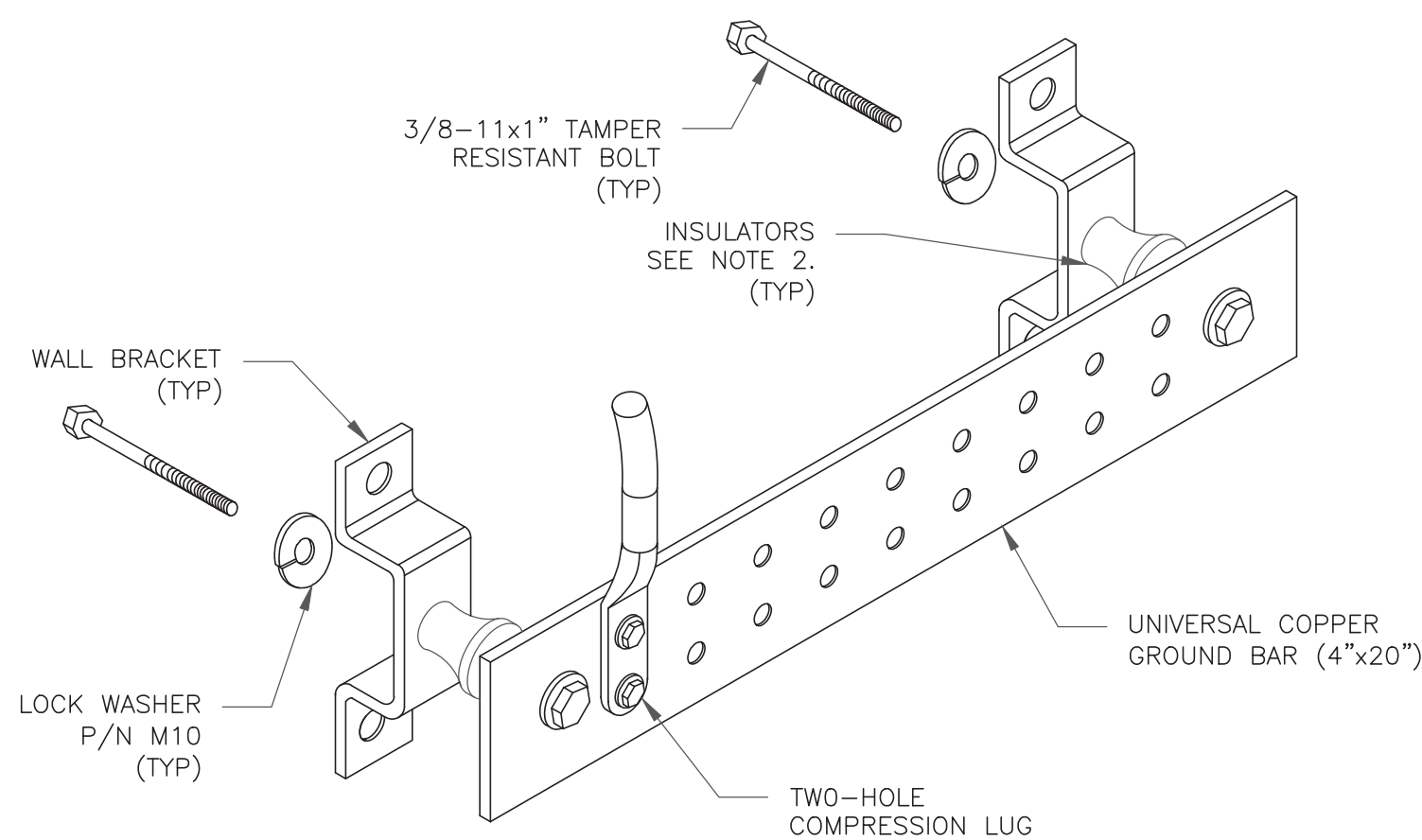
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



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.

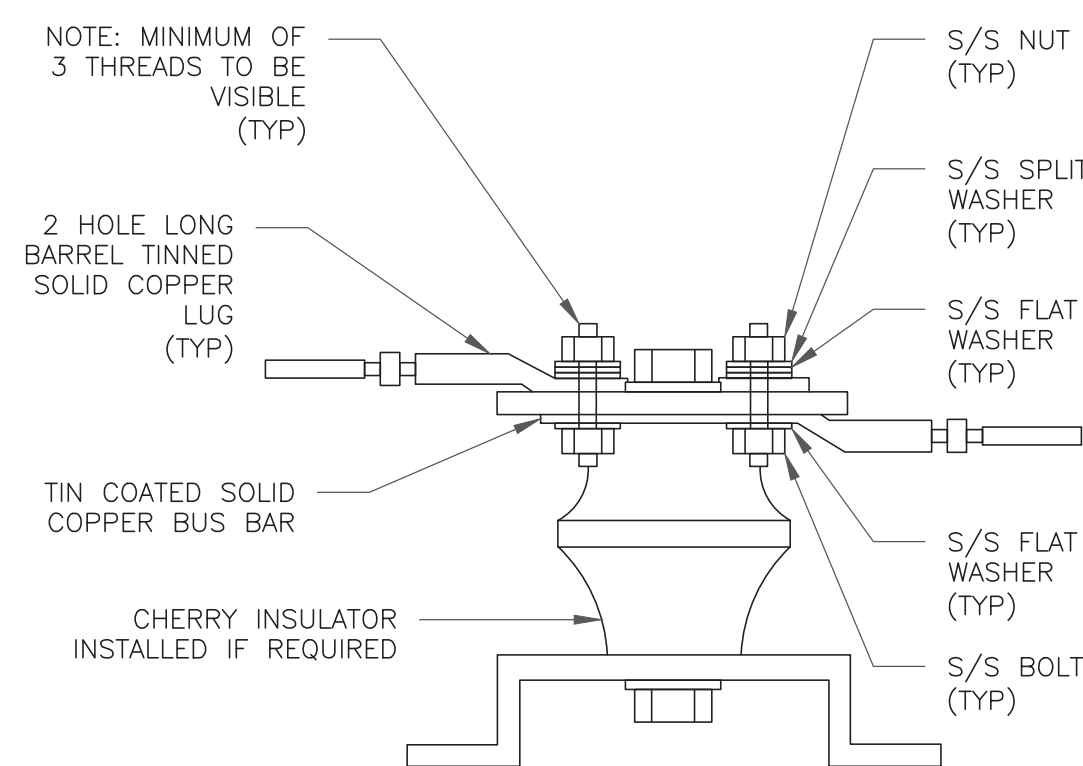
4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



NOTES:

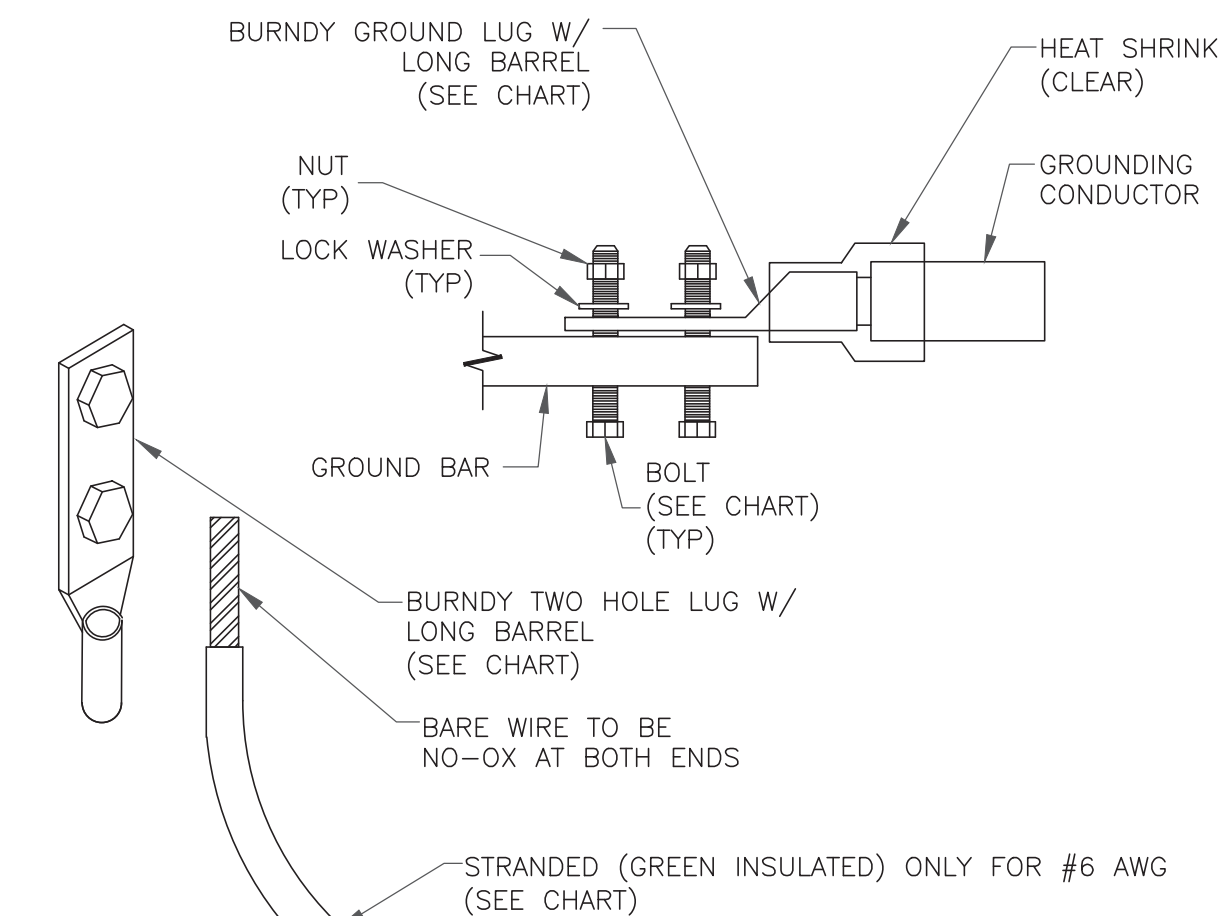
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION. CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR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

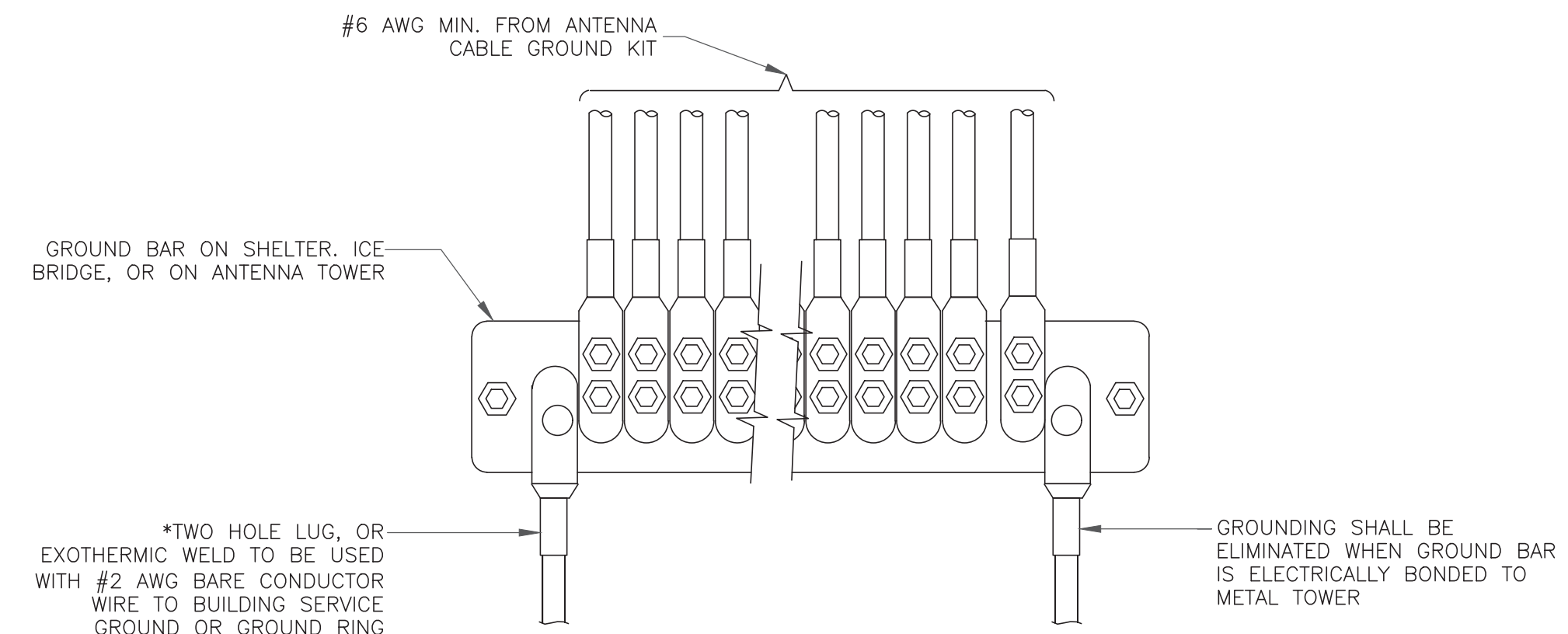
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



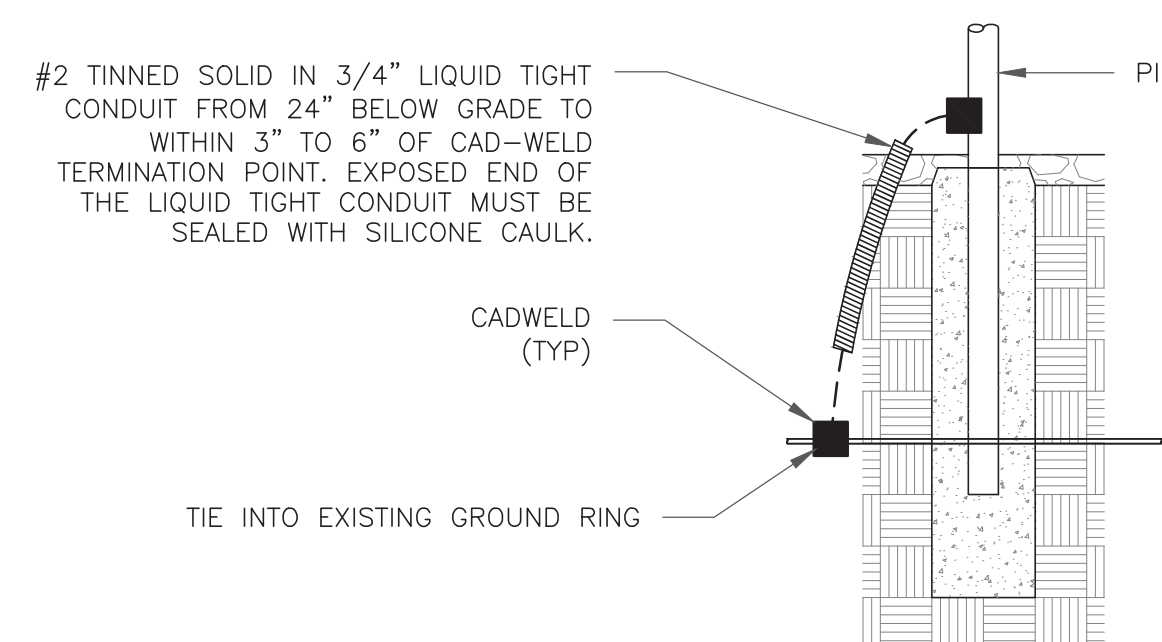
NOTES:

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



5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE

verizon
180 WASHINGTON VALLEY ROAD
BEDMINSTER, NJ 07921

CROWN CASTLE
3 CORPORATE PARK DRIVE, SUITE 101
CLIFTON PARK, NY 12065

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

VERIZON SITE NUMBER:
467706

BU #: **876317**
WATERBURY

150 MATTATUCK HEIGHTS
WATERBURY, CT 06705

EXISTING 144'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	2/17/22	GAC	CONSTRUCTION	LR

PROFESSIONAL ENGINEER
No. 23824
EXPIRES 2/17/22

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: **G-2** REVISION: **0**

MOUNT MODIFICATION DRAWINGS

PROPOSED CARRIER: VERIZON

TOWER OWNER: CROWN CASTLE

TOWER OWNER SITE #: 876317

CARRIER SITE NAME: WATERBURY S CT

CARRIER SITE #: 467706

COORDINATES (LATITUDE: 41.537958°, LONGITUDE: 72.985106°)

FUZE ID #: 16244089

ENGINEER



APPLICANT



SITE INFORMATION

SITE NAME: WATERBURY S CT
 PSLC: 467706
 NB+C JOB NO: 100820
 SITE ADDRESS:
 150 MATTATUCK HGTS
 WATERBURY, CT 06705
 NEW HAVEN COUNTY

DESIGN RECORD

REVISIONS			
REV	DATE	DESCRIPTION	BY
1	01/24/22	MODIFICATION DRAWINGS	DS
0	06/11/21	MODIFICATION DRAWINGS	PHJ

PROFESSIONAL STAMP



ENGINEER

KRUPAKARAN KOLANDAIVELU, P.E.
 STATE OF CONNECTICUT
 PROFESSIONAL ENGINEER
 LICENSE #PEN.0028997

SHEET TITLE

TITLE SHEET

SHEET NUMBER

ST-1

CONTRACTOR PMI REQUIREMENTS	
PMI ACCESSED AT:	HTTPS://PMI.VZWSMART.COM
SMART TOOL VENDOR PROJECT NUMBER:	10071588
VZW LOCATION CODE (PSLC):	467706
POST MOD ANALYSIS REPORT PROJECT NUMBER:	100820
REPORT DATED	01/24/2022
*** PMI AND REQUIREMENTS EMBEDDED IN MOUNT ANALYSIS REPORT	
VZW APPROVED SMART KIT VENDORS	
REFER TO BILL OF MATERIALS PAGE FOR VZW SMART KIT APPROVED VENDORS	

DRAWING INDEX	
ST-1	TITLE SHEET
SBOM	BILL OF MATERIALS
SGN-1	GENERAL NOTES
SCF-1	CLIMBING FACILITY DETAILS
SS-1	ANTENNA MOUNT MODIFICATION DETAILS
SS-2	ANTENNA MOUNT PHOTOS
-	SPECIFICATION SHEETS

GENERAL NOTES

GENERAL NOTES:

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL PERMITS NECESSARY TO COMPLETE THE PROJECT AND ABIDE BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO NB+C ENGINEERING SERVICES, LLC. FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
- INCORRECTLY FABRICATED, DAMAGED, OTHERWISE MISFITTING, OR NON-CONFORMING MATERIALS AND CONDITIONS SHALL BE REPORTED TO NB+C ENGINEERING SERVICES, LLC. PRIOR TO ANY REMEDIAL OR CORRECTIVE ACTION. ALL ACTIONS SHALL REQUIRE NB+C ENGINEERING SERVICES, LLC. APPROVAL.
- IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AFTER THE COMPLETION OF THE PROJECT.
- CONTRACTOR SHALL PROMPTLY REMOVE ANY & ALL DEBRIS FROM SITE AND RESTORE AS BEST AS POSSIBLE TO PRECONSTRUCTION CONDITION.
- 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 ASSP A10.48 (LATEST EDITION), OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ASSP A10.48 AND ANSI/TIA-322 (LATEST EDITIONS) INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.
- THE USE OF GAS TORCH OR WELDER ARE NOT ALLOWED ON ANY TOWER STRUCTURE WITHOUT THE CONSENT OF THE TOWER OWNER.

CONTRACTOR QUALIFICATION NOTES:

- ALL REPAIRS SHALL BE PERFORMED BY A TOWER CONTRACTOR WITH A MINIMUM 5 YEARS EXPERIENCE IN TOWER ERECTION AND RETROFIT AND WITH WORKING KNOWLEDGE OF THE ANSI/TIA-222-H "STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS AND SMALL WIND TURBINE SUPPORT STRUCTURES".
- CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS. SHOULD THE CONTRACTOR REQUIRE DIRECT CONSULTATION, NB+C ENGINEERING SERVICES, LLC. IS WILLING TO OFFER SERVICES BASED UPON AN AGREED FEE FOR THE WORK REQUIRED.
- ALL SUBMITTAL INFORMATION MUST BE SENT TO PMI INSPECTOR. ANY VARIATION OF THESE SPECIFICATIONS OR DRAWINGS WITHOUT CONSENT FROM NB+C ENGINEERING SERVICES, LLC. WILL VOID ANY RESPONSIBILITY OR LIABILITY FOR DAMAGE (MATERIAL OR PHYSICAL) TOWARDS NB+C ENGINEERING SERVICES, LLC.
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE ASSP A10.48 AND ANSI/TIA-322 STANDARDS.

JOB SITE SAFETY & NOTES:

- NEITHER THE PROFESSIONAL ACTIVITIES OF NB+C ENGINEERING SERVICES, LLC. NOR THE PRESENCE OF NB+C ENGINEERING SERVICES, LLC. OR EMPLOYEES AND SUB-CONSULTANTS AT THE CONSTRUCTION SITE, SHALL RELIEVE THE GENERAL CONTRACTOR AND OR SUBCONTRACTORS AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE GENERAL CONTRACTOR AND OR SUBCONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SAFETY, AND WARRANTS THAT THIS INTENT IS EVIDENT BY ACCEPTING THIS WORK.

COLD GALVANIZATION/SURFACE PREPARATION NOTES:

- CONTRACTOR TO USE ZINGA COLD GALVANIZATION COMPOUNDS.
- PREPARE RUSTED/CORRODED SURFACE FOR TREATMENT ACCORDING TO MANUFACTURERS RECOMMENDATIONS.
- CONTRACTOR TO APPLY (2) COATS OF COLD GALVANIZATION COMPOUND PER MANUFACTURER'S RECOMMENDATION. DRYING AND CURING TIMES MUST BE UTILIZED PER MANUFACTURER'S RECOMMENDATION.
- APPLY ALL COATINGS BY BRUSH IN CALM WIND CONDITIONS. THE USE OF AEROSOL IS NOT PERMITTED.
- IF THE TOWER IS PAINTED, BRUSH PAINT ALL TREATED AREAS TO MATCH TOWER AFTER COLD GALVANIZATION COMPOUND IS ALLOWED TO CURE.

STEEL :

- ALL PROPOSED MEMBERS TO USE THE PREFERRED MATERIAL SPECIFICATION AS DEFINED BY THE AISC CODE AND ASTM SPECIFICATIONS.
- ALL CONNECTIONS OF STRUCTURAL STEEL MEMBERS SHALL BE MADE USING SPECIFIED WELDS WITH WELDING ELECTRODES E-70XX OR SPECIFIED HIGH STRENGTH BOLTS TO BE ASTM A325N, THREAD INCLUDED WITH SHEAR PLANE (UNLESS OTHERWISE NOTED).
- ALL BOLTED CONNECTIONS TO BE INSTALLED TO A SNUG-TIGHTENED CONDITION IN ACCORDANCE WITH AISC 15 PART 16.2, "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS, SECTION 8.1, UNLESS OTHERWISE SPECIFIED. WHEN "X" TYPE BOLTS ARE USED, CONTRACTOR MAY BE REQUIRED TO STACK ADDITIONAL WASHERS TO OBTAIN PROPER SNUG TIGHT INSTALLATION. ALL NUTS SHALL BE HEAVY HEX UNLESS OTHERWISE NOTED.
- ALL STEEL, AFTER FABRICATION, SHALL BE HOT DIPPED GALVANIZED PER ASTM A-123. ALL DAMAGED SURFACES, WELDED AREAS AND AUTHORIZED NON-GALVANIZED MEMBERS OR PARTS (EXISTING OR NEW) SHALL BE PAINTED WITH MULTIPLE COATS OF ZRC COLD GALVANIZING COMPOUND ACHIEVING A MINIMUM OF 4 MILS DRY FILM PER ASTM A 780.
- ALL SHOP AND FIELD WELDING SHALL BE DONE BY WELDERS QUALIFIED AS DESCRIBED IN THE "AMERICAN WELDING SOCIETY'S STANDARD QUALIFICATION PROCEDURE" TO PERFORM THE TYPE OF WORK REQUIRED. CONTRACTOR IS REQUIRED TO PROVIDE NB+C ENGINEERING SERVICES, LLC. WITH A PASSING CERTIFIED WELDING INSPECTION FOR ALL WELDS.
- STRUCTURAL STEEL MAY NOT BE TORCH CUT FOR FABRICATION. ALL STEEL FABRICATION MUST FOLLOW AISC STANDARDS.
- ALL STEEL SHALL MEET OR EXCEED THE MINIMUM STRENGTH AS SPECIFIED IN THE DRAWINGS. IF YIELD STRENGTH WAS NOT NOTED IN THE DRAWINGS, CONTRACTORS SHALL CONTACT NB+C FOR DIRECTION.

MISC. NOTES:

- ALL MODIFICATIONS ARE ASSUMED TO BE MADE ON AN EMPTY TOWER. CONTRACTOR IS RESPONSIBLE TO MAKE PROVISIONS TO SUPPORT OR WORK AROUND EXISTING ANTENNAS AND TRANSMISSION LINES. MODIFICATIONS MUST BE CONTINUOUS THROUGH ALL AREAS SHOWN.
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

FABRICATION NOTES:

- ALL DIMENSIONS ARE PRELIMINARY UNTIL FIELD VERIFIED BY CONTRACTOR. ANY CHANGES MUST BE APPROVED BY ENGINEER OF RECORD IN WRITING PRIOR TO FABRICATION AND INSTALLATION.
- NEW STEEL MEMBERS MUST HAVE SINGLE DRILLED HOLES. SLOTTED AND DOUBLE DRILLED HOLES ARE NOT ACCEPTABLE MEANS OF FABRICATION UNLESS OTHERWISE NOTED.

SUBSTITUTES AND/OR EQUALS:

- IF CONTRACTOR WISHES TO FURNISH OR USE A SUBSTITUTE ITEM OF MATERIAL OR EQUIPMENT, CONTRACTOR SHALL FIRST MAKE WRITTEN APPLICATION TO ENGINEER OF RECORD FOR ACCEPTANCE THEREOF, CERTIFYING THAT THE PROPOSED SUBSTITUTE WILL PERFORM ADEQUATELY THE FUNCTIONS AND ACHIEVE THE RESULTS CALLED FOR BY THE GENERAL DESIGN, BE SIMILAR IN SUBSTANCE TO THAT SPECIFIED AND SUITED TO THE SAME USE AS THAT SPECIFIED. ALL VARIATIONS OF THE PROPOSED SUBSTITUTE FROM THAT SPECIFIED WILL BE IDENTIFIED IN THE APPLICATION AND AVAILABLE MAINTENANCE, REPAIR AND REPLACEMENT SERVICE WILL BE INDICATED. THE APPLICATION WILL ALSO CONTAIN AN ITEMIZED ESTIMATE OF ALL COSTS OR CREDITS THAT WILL RESULT DIRECTLY OR INDIRECTLY FROM ACCEPTANCE OF SUCH SUBSTITUTE INCLUDING COSTS OF REDESIGN AND CLAIMS OF OTHER CONTRACTORS AFFECTED BY THE RESULTING CHANGE. ALL OF WHICH WILL BE CONSIDERED BY ENGINEER OF RECORD IN EVALUATION OF THE PROPOSED SUBSTITUTE. ENGINEER OF RECORD MAY REQUIRE CONTRACTOR TO FURNISH ADDITIONAL DATA ABOUT THE PROPOSED SUBSTITUTE.

FIELD HOT WORK PLAN NOTES:

- ALL CONTRACTORS RESPONSIBILITY TO COMPLETE A HOT WORK PLAN IF AWARDED PER CUSTOMER SPECIFICATIONS GUIDELINES FOR WELDING, CUTTING & SPARK PRODUCING WORK.
- HAVE A FIRE PLAN APPROVED BY THE CUSTOMER AND THEIR SAFETY MANAGEMENT DEPARTMENT.
- CONTRACTOR MUST OBTAIN THE CONTACT INFO OF THE LOCAL FIRE DEPARTMENT AND THE 911 ADDRESS OF THE TOWER SITE BEFORE CONSTRUCTION.
- CONTRACTOR SHALL MAKE SURE THAT CELL PHONE COVERAGE IS AVAILABLE IN THE TOWER SITE. IF CELL COVERAGE IS NOT AVAILABLE, AN IMMEDIATE AVAILABLE MEANS OF DIRECT COMMUNICATION WITH THE FIRE DEPARTMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION START.
- ALL CONSTRUCTION SHALL BE PERFORMED UNDER WIND SPEED LESS THAN 10 MPH ON THE GROUND LEVEL. IF WIND SPEED INCREASES, CONTRACTOR MUST DETERMINE IF CONSTRUCTION SHALL BE DISCONTINUED.
- FIRE SUPPRESSION EQUIPMENT MUST BE MADE AVAILABLE ON SITE AND READY TO USE.
- CONTRACTOR SHALL ASSIGN A FIRE WATCHER TO PERFORM FIRE-FIGHTING DUTIES.
- ALL WELDERS SHALL BE AWS OR STATE CERTIFIED. THEY MUST ALSO BE EXPERIENCED IN WELDING ON GALVANIZED MATERIALS.
- IF IT IS POSSIBLE, ALL EXISTING COAX NEAR WELDING AREA SHALL BE TEMPORARILY MOVED AWAY FROM THE WELDING AREA BEFORE WELDING.
- PLEASE REPORT ANY FIELD ISSUE TO NB+C @ 267-460-0122

BOLT HOLE DIMENSIONS

BOLT DIAMETER	STANDARD HOLE DIAMETER	OVERSIZED HOLE DIAMETER	SHORT SLOTTED (WIDTH X LENGTH)	DETAIL	LONG SLOTTED (WIDTH X LENGTH)	DETAIL
1/2"	9/16"	5/8"	9/16" x 11/16"	o	9/16" x 1-1/4"	o
5/8"	11/16"	13/16"	11/16" x 7/8"	o	11/16" x 1-9/16"	o
3/4"	13/16"	15/16"	13/16" x 1"	o	13/16" x 1-7/8"	o
7/8"	15/16"	1-1/16"	15/16" x 1-1/8"	o	15/16" x 2-3/16"	o
1"	1-1/16"	1-1/4"	1-1/16" x 1-5/16"	o	1-1/16" x 2-1/2"	o

MINIMUM EDGE DISTANCES

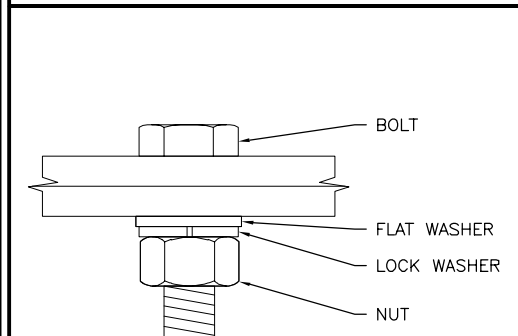
BOLT DIAMETER	MINIMUM EDGE DISTANCE
1/2"	7/8"
5/8"	1-1/8"
3/4"	1-1/4"
7/8"	1-1/2" [a]
1"	1-3/4" [a]
1-1/8"	2"
1-1/4"	2-1/4"
OVER 1-1/4"	1-3/4" x d

NUT ROTATION FROM SNUG-TIGHT CONDITION^{a,b}

BOLT LENGTH ^c	DISPOSITION OF OUTER FACE OF BOLTED PARTS		
	BOTH FACES NORMAL TO BOLT AXIS	ONE FACE NORMAL TO BOLT AXIS, OTHER SLOPED NOT MORE THAN 1:20 ^d	BOTH FACES SLOPED NOT MORE THAN 1:20 FROM NORMAL TO BOLT AXIS ^d
NOT MORE THAN 4d _b	1/3 TURN	1/2 TURN	2/3 TURN
MORE THAN 4d _b BUT NOT MORE THAN 8d _b	1/2 TURN	2/3 TURN	5/6 TURN
MORE THAN 8d _b BUT NOT MORE THAN 12d _b	2/3 TURN	5/6 TURN	1 TURN

- NOTES:**
- NUT ROTATION IS RELATIVE TO BOLT REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR REQUIRED NUT ROTATIONS OF 1/2 TURN AND LESS, THE TOLERANCE IS PLUS OR MINUS 30 DEGREES; FOR REQUIRED NUT ROTATIONS OF 2/3 TURN AND MORE, THE TOLERANCE IS PLUS OR MINUS 45 DEGREES.
 - APPLICABLE ONLY TO JOINTS IN WHICH ALL MATERIAL WITHIN THE GRIP IS STEEL
 - WHEN THE BOLT LENGTH EXCEEDS 12d_b, THE REQUIRED NUT ROTATION SHALL BE DETERMINED BY ACTUAL TESTING IN A SUITABLE TENSION CALIBRATION THAT SIMULATE THE CONDITIONS OF SOLIDLY FITTING STEEL
 - BEVELED WASHER NOT USED.

TYPICAL BOLT ASSEMBLY

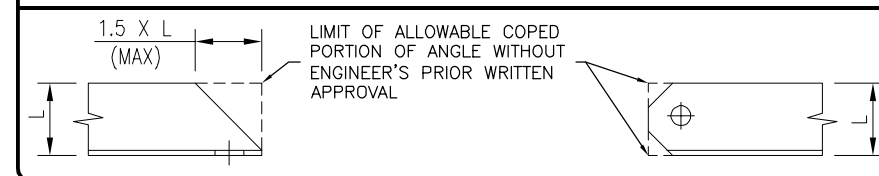


WORKABLE GAGES

ANGLE SIZE	GAGE
1 3/4"	1"
2"	1 1/8"
2 1/2"	1 3/8"
3"	1 3/4"
3 1/2"	2"
4"	2 1/2"

The diagram shows a gage used for measuring angle sizes. It consists of a vertical plate with a horizontal edge and a curved edge. A dimension line indicates the distance from the vertical edge to the start of the curve, labeled 'GAGE'.

WORKABLE COPING



NOTES:

- ALL DIMENSIONS REPRESENTED IN THIS SHEET ARE AISC MINIMUM REQUIREMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF DISTANCES ARE LESS THAN THOSE PROVIDED
- THE DIMENSIONS PROVIDED ARE MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS OF PROPOSES MEMBERS WITH THESE DRAWINGS MAY VARY FROM AISC MIN. REQUIREMENTS
- SHORT SLOT HOLES SHALL ONLY BE USED WHEN DEPICTED IN THE DRAWINGS.
- MATCH EXISTING H GAGES WHEN APPLICABLE, UNLESS MINIMUM EDGE DISTANCE ARE COMPROMISED

ENGINEER

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

ENGINEER

SHEET TITLE

SHEET NUMBER



SITE NAME: WATERBURY S CT
PSLC: 467706
NB+C JOB NO: 100820
SITE ADDRESS:
150 MATTATUCK HGTS
WATERBURY, CT 06705
NEW HAVEN COUNTY

REVISIONS

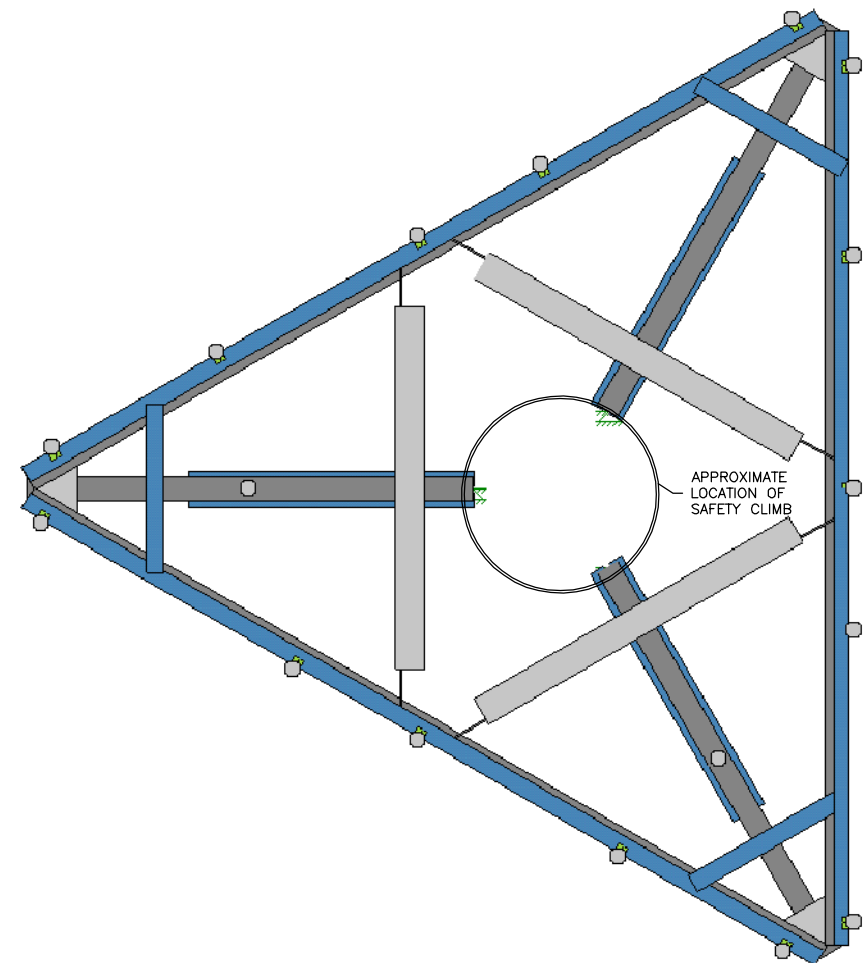
REV	DATE	DESCRIPTION	BY
1	01/24/22	MODIFICATION DRAWINGS	DS
0	06/11/21	MODIFICATION DRAWINGS	PHJ



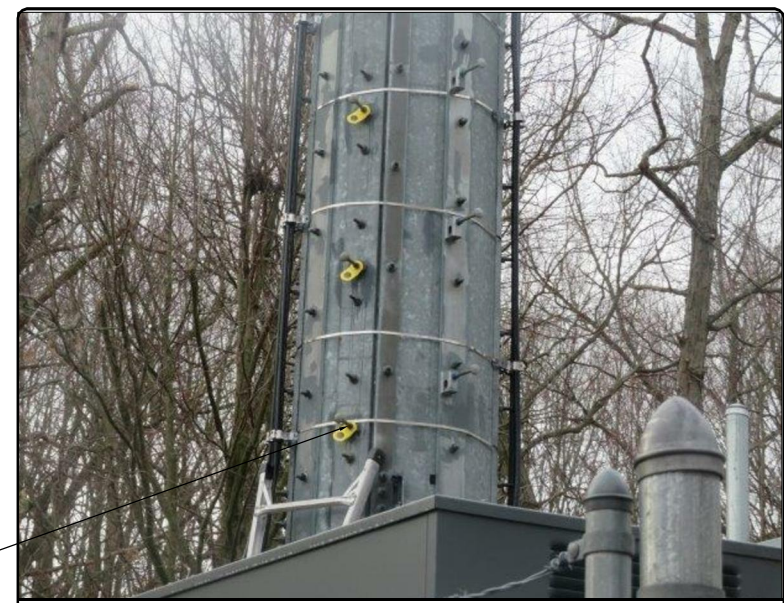
KRUPAKARAN KOLANIDAVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

GENERAL NOTES

SGN-1

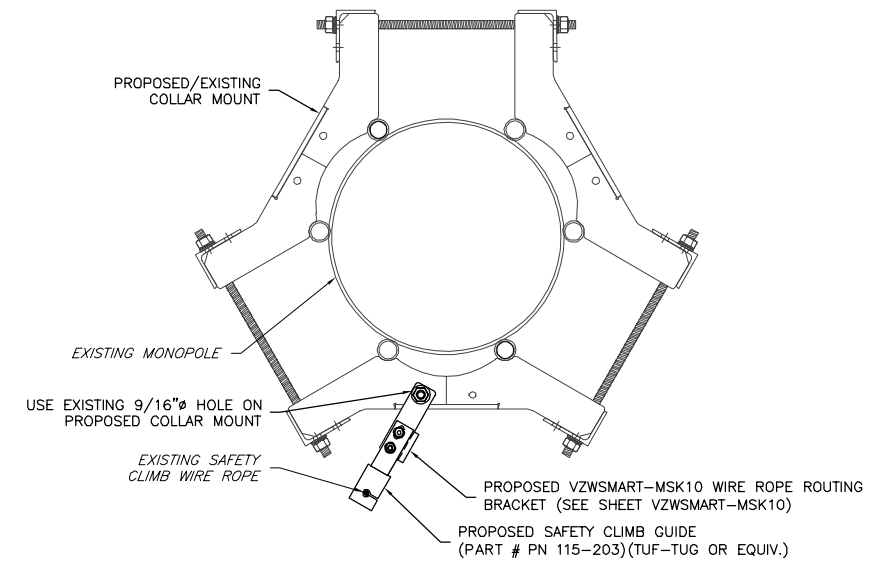


1 SAFETY CLIMB LOCATION - TOP VIEW
SCALE: NTS
SCF-1






EXISTING LOCATION OF SAFETY CLIMB

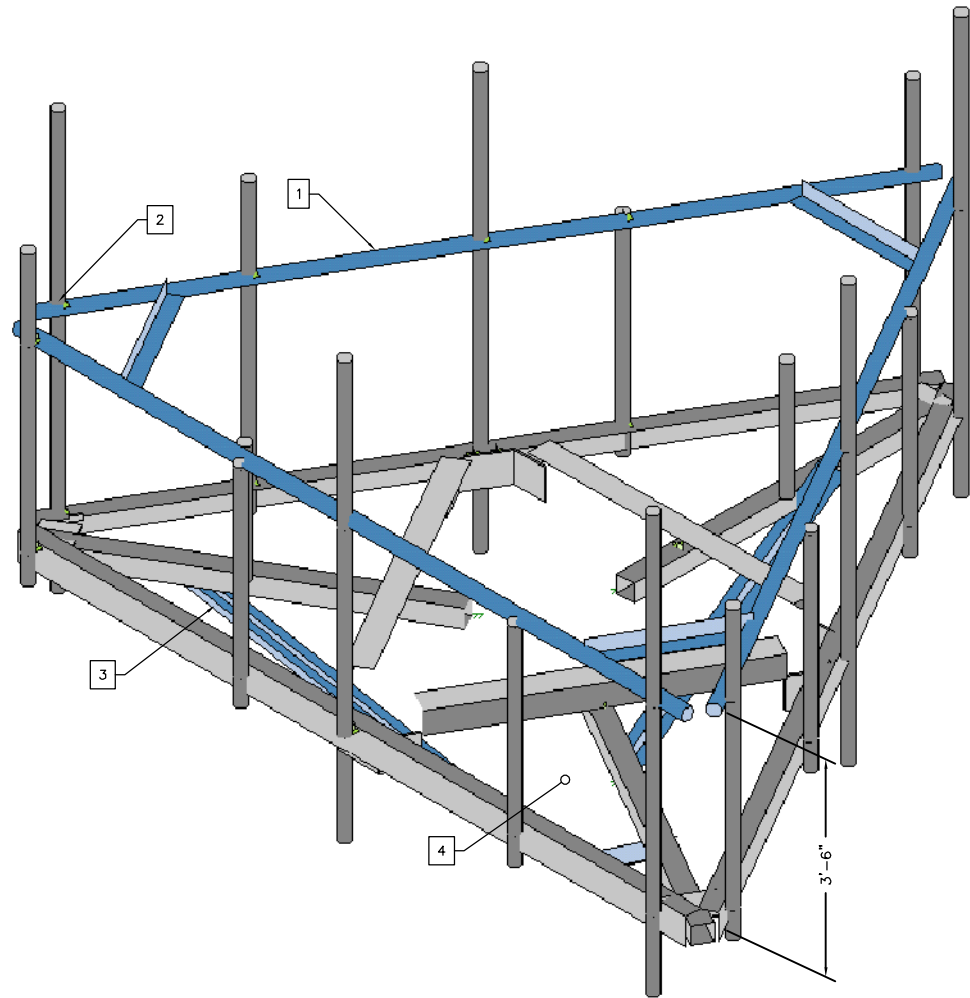
PHOTO OF SAFETY CLIMB



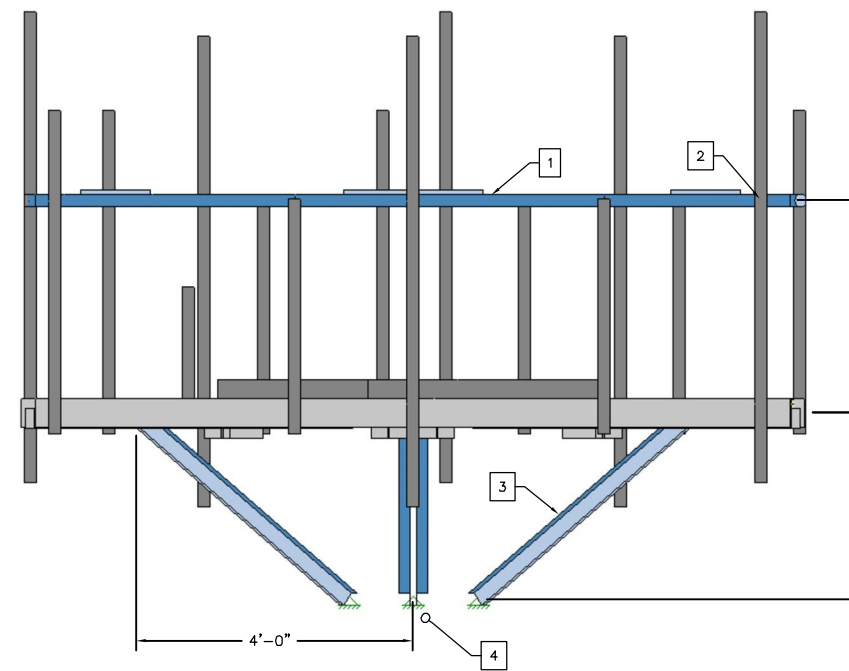
2 SAFETY CLIMB DETAIL
SCALE: NTS
SCF-1

NOTE:
INSTALL SHALL NOT CAUSE HARM TO THE
STRUCTURE, CLIMBING FACILITY, SAFETY CLIMB OR
ANY SYSTEM INSTALLED ON THE STRUCTURE

ENGINEER	 TOTALLY COMMITTED. NB+C ENGINEERING SERVICES, LLC. <small>1777 SENTRY PARKWAY WEST VENA 17, SUITE 200 BLUE BELT, PA 19022 (267) 460-0122</small>																
APPLICANT																	
SITE INFORMATION	SITE NAME: WATERBURY SCT PSLC: 467706 NB+C JOB NO: 100820 SITE ADDRESS: 150 MATTATUCK HGTS WATERBURY, CT 06705 NEW HAVEN COUNTY																
DESIGN RECORD	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">REVISIONS</th> </tr> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>01/24/22</td> <td>MODIFICATION DRAWINGS</td> <td>DS</td> </tr> <tr> <td>0</td> <td>06/11/21</td> <td>MODIFICATION DRAWINGS</td> <td>PHJ</td> </tr> </tbody> </table>	REVISIONS				REV	DATE	DESCRIPTION	BY	1	01/24/22	MODIFICATION DRAWINGS	DS	0	06/11/21	MODIFICATION DRAWINGS	PHJ
REVISIONS																	
REV	DATE	DESCRIPTION	BY														
1	01/24/22	MODIFICATION DRAWINGS	DS														
0	06/11/21	MODIFICATION DRAWINGS	PHJ														
PROFESSIONAL STAMP	 Signed by: Krupakaran Kolandaivelu 81AC599182D841D... 1/24/2022																
ENGINEER	KRUPAKARAN KOLANDAIVELU, P.E. STATE OF CONNECTICUT PROFESSIONAL ENGINEER LICENSE #PEN.0028997																
SHEET TITLE	CLIMBING FACILITY DETAILS																
SHEET NUMBER	SCF-1																



1 MODIFICATION - ISOMETRIC VIEW
 SS-1 SCALE: NTS MOUNT ELEVATION: 108.0'



2 MODIFICATION - FRONT VIEW
 SS-1 SCALE: NTS MOUNT ELEVATION: 108.0'

SL NO.	MOUNT MODIFICATION SCHEDULE	REFERENCE SHEET NO.
1	REPLACE EXISTING SUPPORT RAIL W/ NEW VZSMART SUPPORT RAIL KIT	VZSMART-PLK1
2	INSTALL NEW VZSMART CROSSOVER PLATE TO EXISTING MOUNTING PIPES IN POS. 5	VZSMART-MSK1
3	INSTALL NEW VZSMART KICKER KIT	VZSMART-PLK5
4	INSTALL NEW VZSMART MONOPOLE COLLAR	VZSMART-PLK7

NOTES

- APPURTENANCES MAY INTERFERE WITH PROPOSED MODIFICATIONS
- ALL MODIFICATIONS TO BE INSTALLED CONTINUOUSLY THROUGH EXISTING EQUIPMENT. ALL EXISTING EQUIPMENT NOT TO BE DAMAGED OR TAKEN OFF AIR DURING INSTALLATION. CONTRACTOR TO COORDINATE WITH CARRIER PRIOR TO MODIFICATION INSTALLATION TO DETERMINE IF EXISTING ANTENNAS NEED TO BE TURNED DOWN.
- ANTENNA & COAX GRAPHICS NOT SHOWN FOR CLARITY. SEE MOUNT ANALYSIS REPORT FOR EXISTING ANTENNA LOADING & COAX CONFIGURATION.
- CONTRACTOR TO FIELD VERIFY ALL LENGTHS AND QUANTITIES PRIOR TO MATERIAL ORDERS, FABRICATION, AND INSTALLATION.
- IF EXISTING TOWER IS PAINTED CONTRACTOR TO VERIFY WITH TOWER OWNER IF NEW MODIFICATION MEMBERS ARE TO BE PAINTED TO MATCH EXISTING TOWER FINISHES.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THERE ARE NO INTERFERENCES WITH SAFETY CLIMB BRACKETS, TRANSMISSION LINES, ETC. PRIOR TO MOBILIZATION AND INSTALLATION OF THESE MODIFICATIONS. PLEASE NOTIFY NB+C ES IMMEDIATELY IF ANY INSTALLATION ISSUES OCCUR RELATED TO THIS DRAWING.
- MEMBERS SHADED IN BLUE COLOR ARE NEW REINFORCEMENTS AND MEMBERS IN A AQUA COLOR (IF SHOW) ARE RELOCATED MEMBERS.
- FIELD CUTTING AND FIELD DRILLING MAY BE NECESSARY TO ACHIEVE THE REQUIRED DIMENSIONS
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN-UP, REMOVAL, AND DISPOSAL OF EXCESS MATERIALS USED AND REMOVED FROM THE STRUCTURE AT THE COMPLETION OF THE PROJECT.




ENGINEER																	
APPLICANT																	
SITE INFORMATION	SITE NAME: WATERBURY SCT PSLC: 467706 NB+C JOB NO: 100820 SITE ADDRESS: 150 MATTATUCK HGTS WATERBURY, CT 06705 NEW HAVEN COUNTY																
DESIGN RECORD	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">REVISIONS</th> </tr> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>01/24/22</td> <td>MODIFICATION DRAWINGS</td> <td>DS</td> </tr> <tr> <td>0</td> <td>06/1/21</td> <td>MODIFICATION DRAWINGS</td> <td>PHJ</td> </tr> </tbody> </table>	REVISIONS				REV	DATE	DESCRIPTION	BY	1	01/24/22	MODIFICATION DRAWINGS	DS	0	06/1/21	MODIFICATION DRAWINGS	PHJ
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REV	DATE	DESCRIPTION	BY														
1	01/24/22	MODIFICATION DRAWINGS	DS														
0	06/1/21	MODIFICATION DRAWINGS	PHJ														
PROFESSIONAL STAMP																	
ENGINEER	KRUPAKARAN KOLANDAIVELU, P.E. STATE OF CONNECTICUT PROFESSIONAL ENGINEER LICENSE #PEN.0028997																
SHEET TITLE	ANTENNA MOUNT MODIFICATION DETAILS																
SHEET NUMBER	SS-1																



PHOTO 1

EXISTING VERIZON ANTENNA
MOUNT AT 108.0' ELEV



PHOTO 2



PHOTO 3



PHOTO 4

ENGINEER

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
1777 SENTRY PARKWAY WEST
VENA 17, SUITE 200
BLUE BELT, PA 19022
(267) 460-0122

APPLICANT



SITE INFORMATION

SITE NAME: WATERBURY SCT
PSLC: 467706
NB+C JOB NO: 100820
SITE ADDRESS:
150 MATTATUCK HGTS
WATERBURY, CT 06705
NEW HAVEN COUNTY

DESIGN RECORD

REVISIONS

REV	DATE	DESCRIPTION	BY
1	01/24/22	MODIFICATION DRAWINGS	DS
0	06/11/21	MODIFICATION DRAWINGS	PHU

PROFESSIONAL STAMP

DocuSigned by:
Krupakaran Kolan Daivelu
81AC599182D841D 1/24/2022

ENGINEER

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

SHEET TITLE

**ANTENNA
MOUNT
PHOTOS**

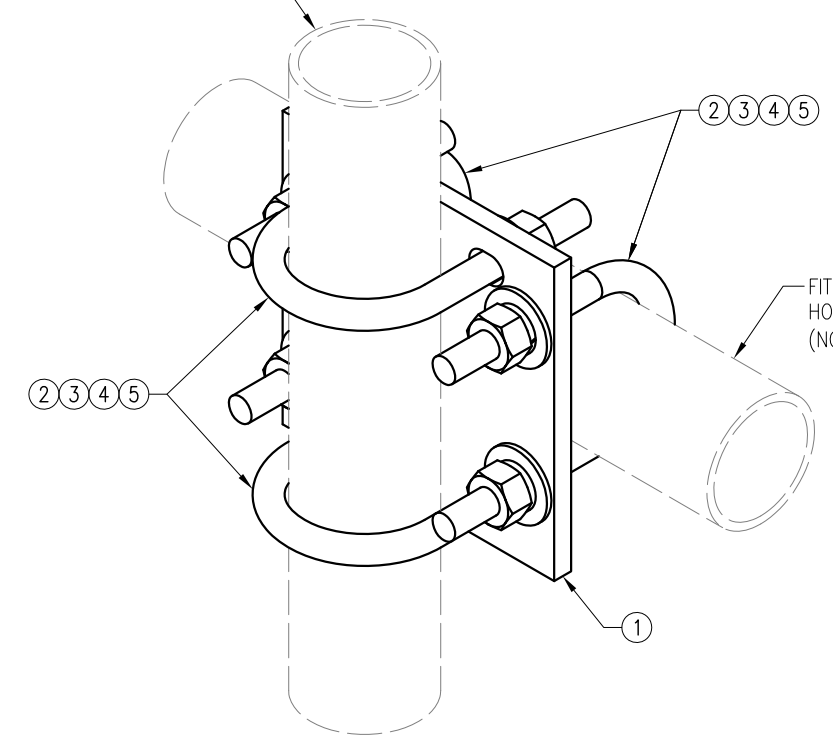
SHEET NUMBER

SS-2

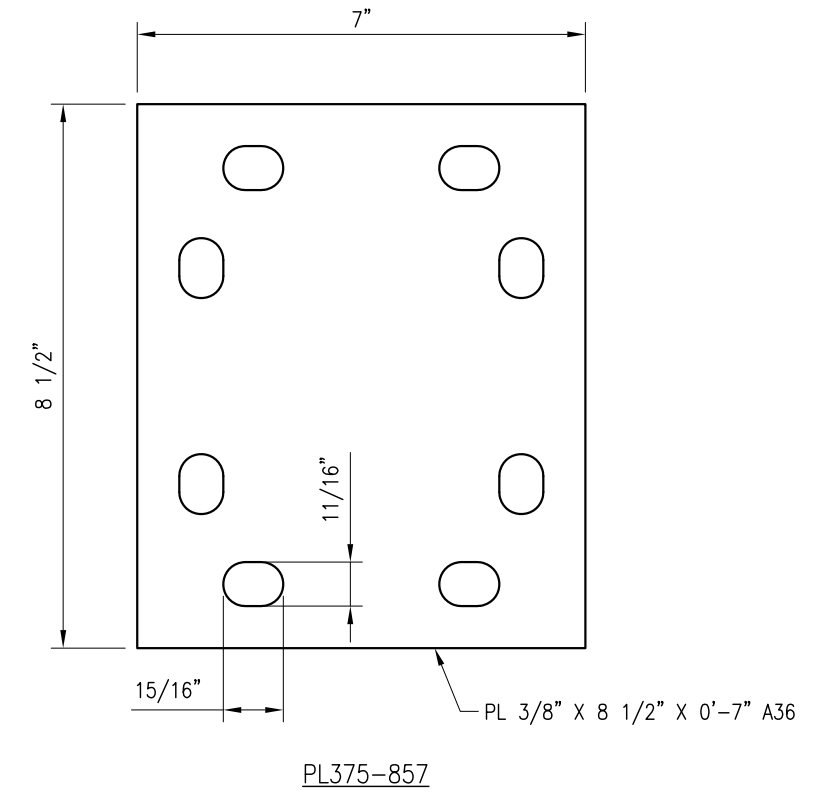
VzW
SMART Tool[®]
Vendor



FITS 2.375" O.D. AND 2.875" O.D.
 VERTICAL PIPE.
 (NOT INCLUDED IN THIS KIT)



FITS 2.375" O.D. AND 2.875" O.D.
 HORIZONTAL PIPE.
 (NOT INCLUDED IN THIS KIT)



NOTES:
 1. HOT-DIPPED GALVANIZED PER ASTM A123.

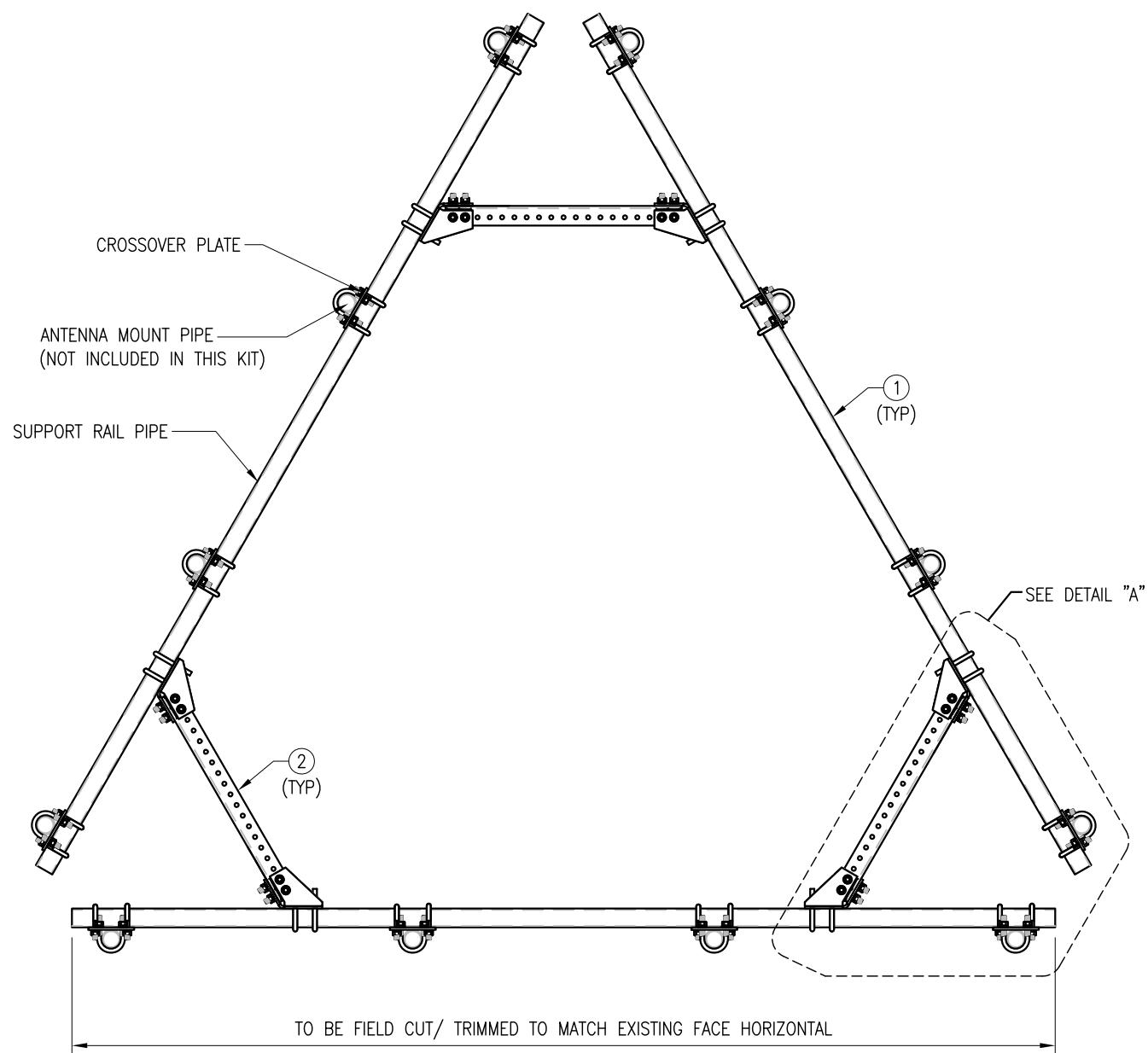
VZSMART-MSK1 (CROSSOVER PLATE)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	PL375-857	PL 3/8" X 8 1/2" X 0'-7" A36	MSK1-F1	6
2	4	MS02-625-300-500	RU-BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)	RBC-1	5
3	8	FW-625	5/8" HDG USS FLAT WASHER	---	1
4	8	LW-625	5/8" HDG LOCK WASHER	---	0
5	8	NUT-625	5/8" HDG HEX NUT	---	1
GALVANIZED WT					14

DRAWN BY: H.R CHECKED BY: HMA

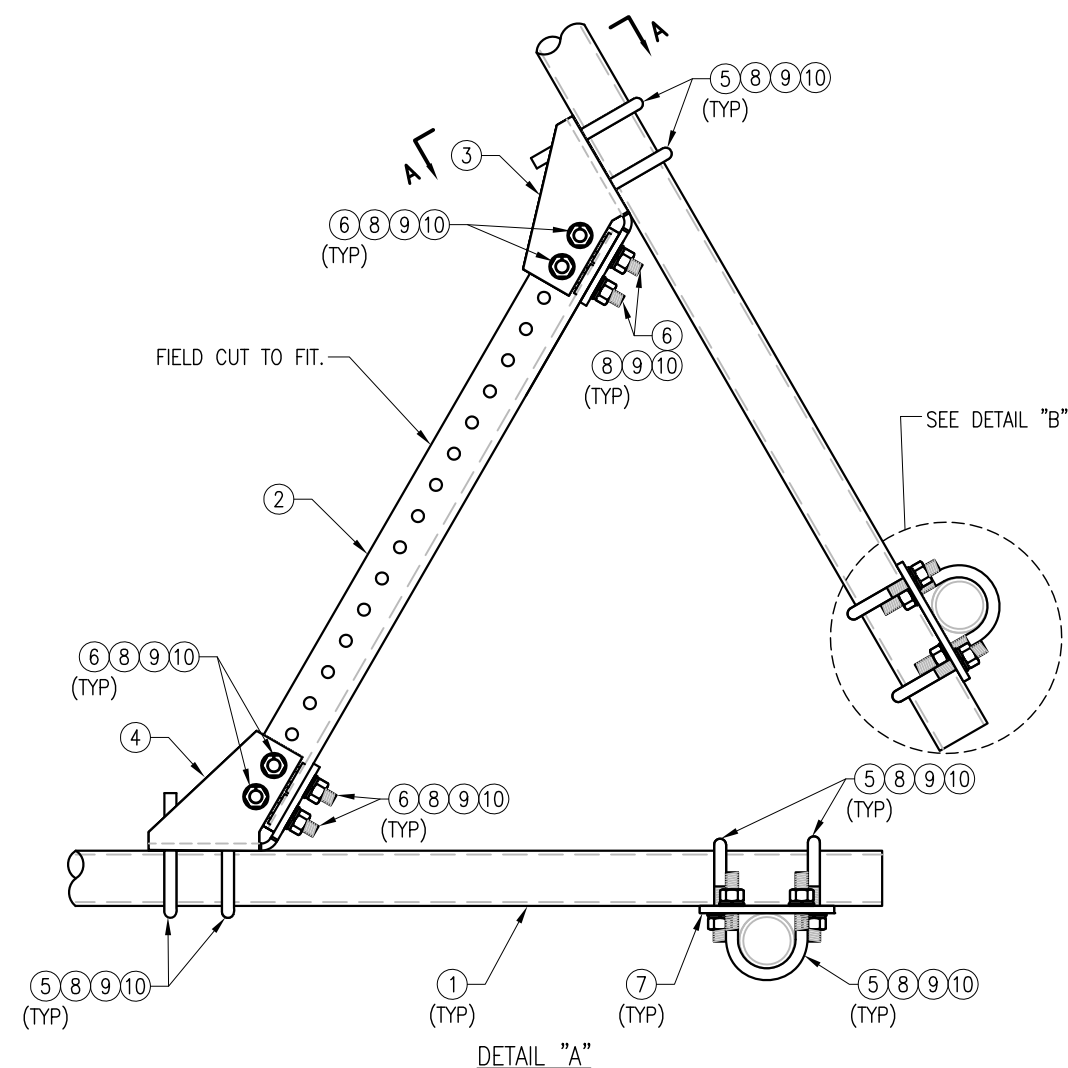
REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	H.R	05/08/20

SHEET TITLE:
**VZSMART-MSK1
 CROSSOVER PLATE**

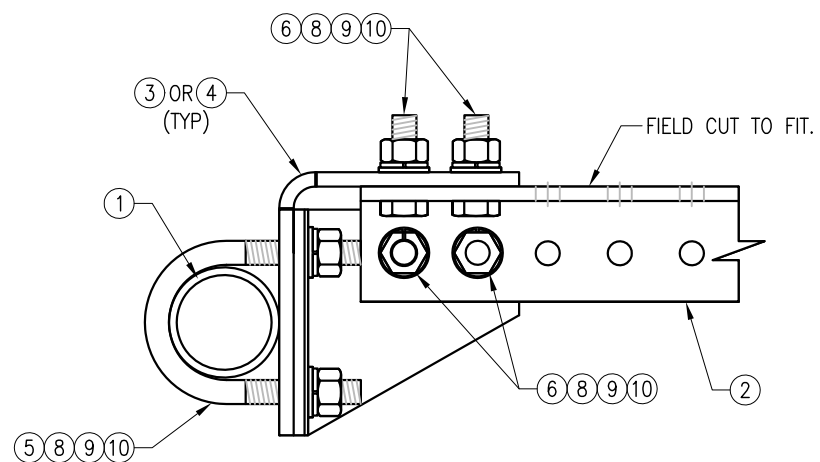
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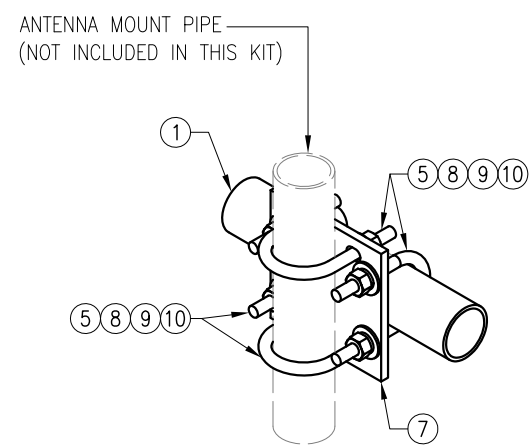
PLAN VIEW



DETAIL "A"



SECTION "A-A"



DETAIL "B"

NOTES:

1. HOT-DIPPED GALVANIZED PER ASTM A123.

VZW SMART-PLK1 (SUPPORT RAIL KIT)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	PST2875-12.5	2.5" PST (2.875" O.D. X 0.203" THK.) X 12'-6" A53 GR-B	PLK1-F1	292
2	3	L33375-3	L 3" X 3" X 3/8" X 3'-0" A36	PLK1-F1	66
3	3	CBP-L	CORNER BENT PLATE BRACKET	PLK1-F2	28
4	3	CBP-R	CORNER BENT PLATE BRACKET	PLK1-F2	28
5	60	MS02-625-300-500	RU-BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)	RBC-1	82
6	24	---	BOLT 5/8" X 2" A325	---	9
7	12	PL375-857	PL 3/8" X 8 1/2" X 7" A36	PLK1-F3	77
8	144	FW-625	5/8" HDG USS FLAT WASHER	---	12
9	144	LW-625	5/8" HDG LOCK WASHER	---	3
10	144	NUT-625	5/8" HDG HEX NUT	---	17
GALVANIZED WT					504

DRAWN BY: H.R. CHECKED BY: HMA

REV.	DESCRIPTION	BY	DATE
△	FIRST ISSUE	H.R.	04/20/21
△			
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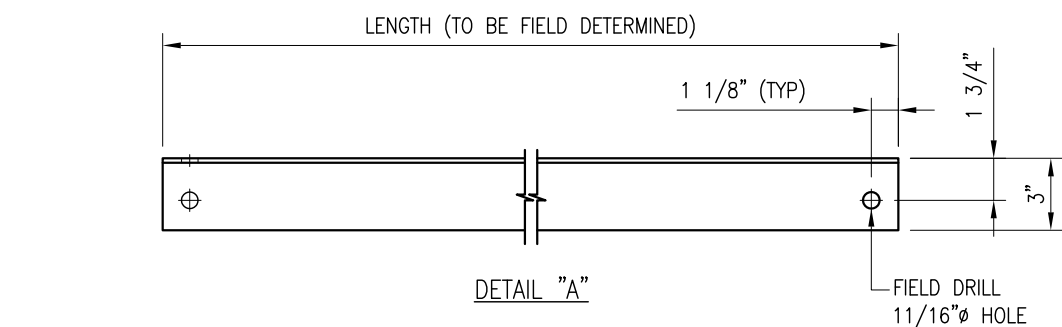
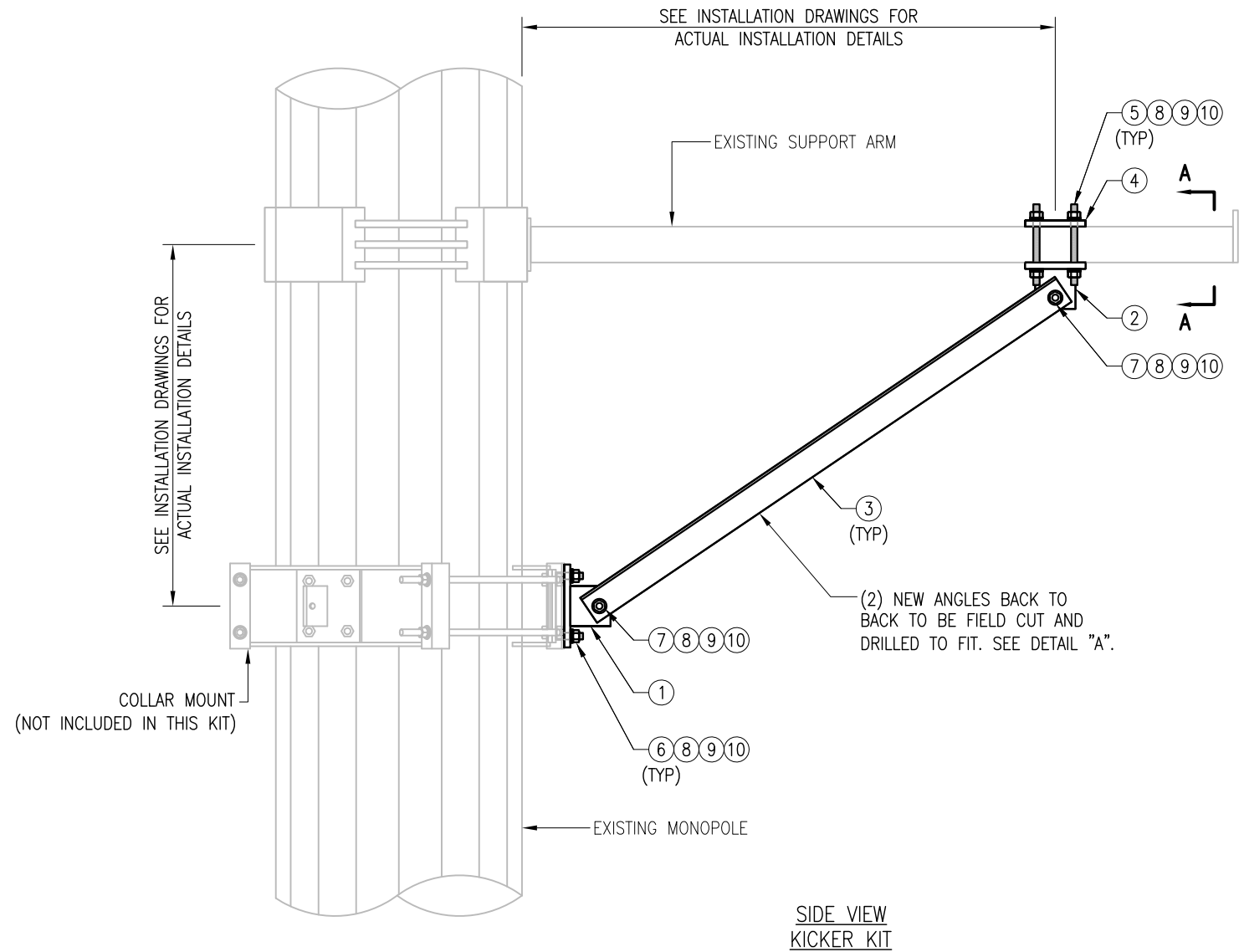
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VZWSMART-PLK1
 SUPPORT RAIL KIT

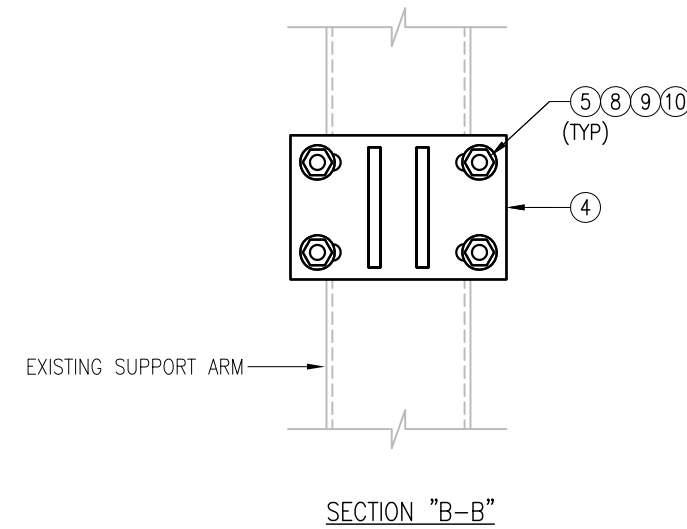
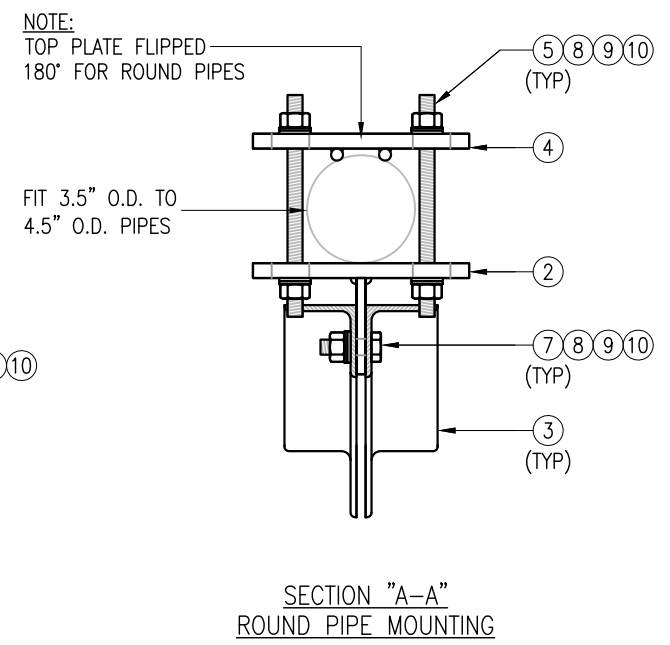
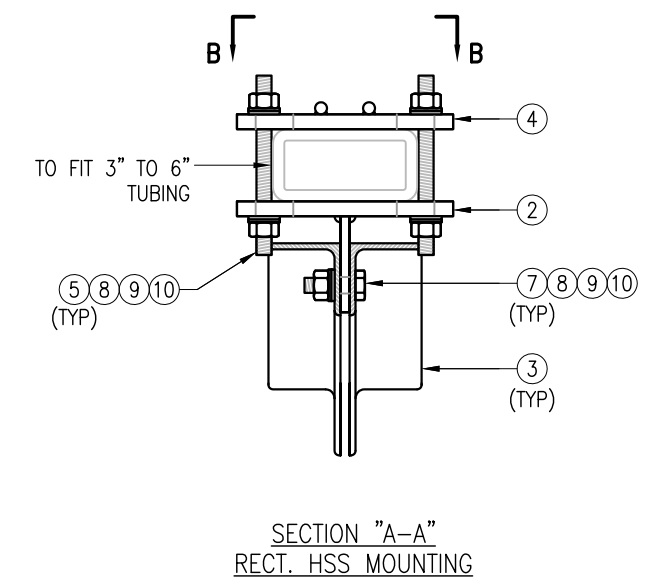
SHEET NUMBER: REV #:

VZWSMART-PLK1 0

NOTE:
THE LOCATION OF KICKER AND EXISTING ANTENNA MOUNT SHOWN ON THE DRAWING IS FOR REPRESENTATION PURPOSE ONLY. SEE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION OF DETAILS.



NOTES:
1. ALL HOLES ARE 11/16" DIA. U.N.O
2. HOT-DIPPED GALVANIZED PER ASTM A123.
3. FIT UP TO 6" SQ. TUBING OR 4 1/2" O.D. PIPE



VZSMART-PLK5 (KICKER KIT)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	BRKW-XXX	BRACKET WELDMENT A36	PLK5-F3	43.8
2	3	BRKW-XXXX	BRACKET WELDMENT A36	PLK5-F2	35.7
3	6	L331875-8	L 3" X 3" X 3/16" X 8'-0" A36	PLK5-F4	182.9
4	3	PL-KI	PL 5/8" X 6" X 9" A36	PLK5-F1	29.0
5	12	---	THREADED ROD 5/8" DIA. X 1'-0" F1554-36 HDG	---	---
6	6	---	BOLT 5/8" X 2 1/4" A325	---	---
7	12	---	BOLT 5/8" X 2" A325	---	---
8	42	FW-625	5/8" HDG USS FLAT WASHER	---	3
9	42	LW-625	5/8" HDG LOCK WASHER	---	1
10	42	NUT-625	5/8" HDG HEX NUT	---	5
GALVANIZED WT					291

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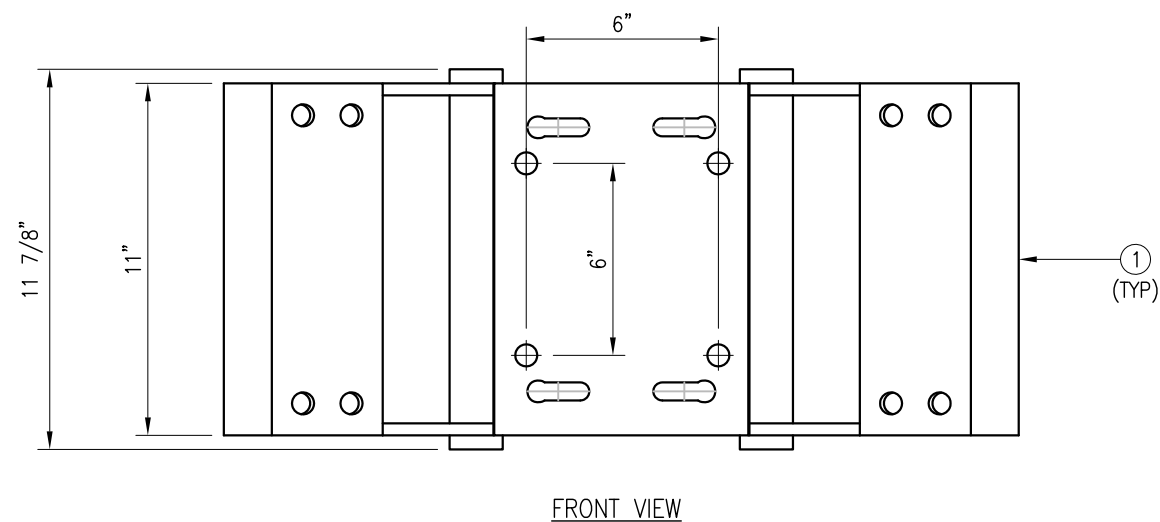
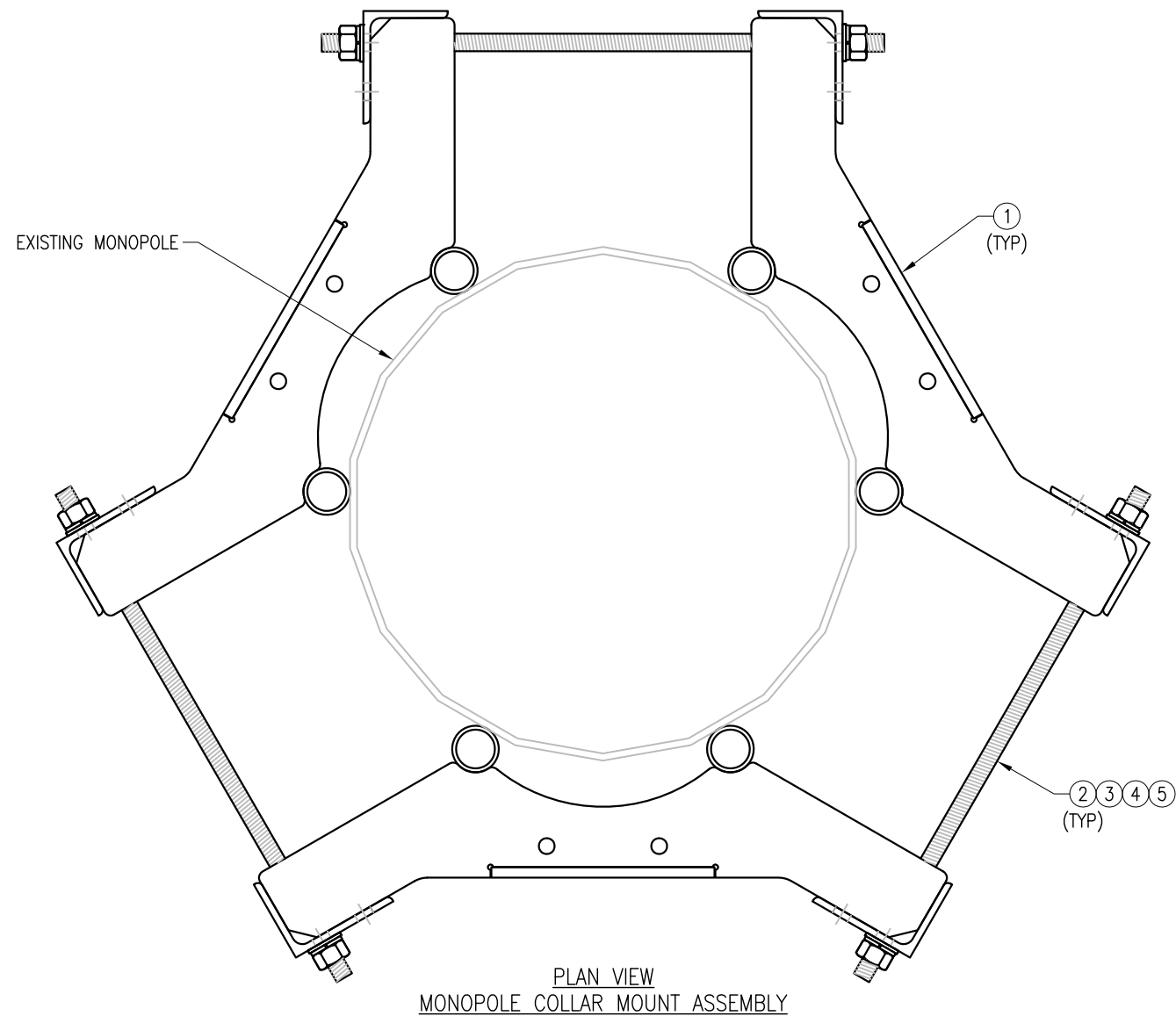
DRAWN BY: BT CHECKED BY: HMA/KW

REV.	DESCRIPTION	BY	DATE
△	FIRST ISSUE	BT	05/08/20
△			
△			
△			

SHEET TITLE:
**VZSMART-PLK5
KICKER KIT**

SHEET NUMBER: **VZSMART-PLK5** REV #: **0**

VzW
SMART Tool[®]
 Vendor



- NOTES:**
 1. FIT 12" TO 45" DIA MONOPOLE.
 2. HOT-DIPPED GALVANIZED PER ASTM A123.

VZSMART-PLK7 (MONOPOLE COLLAR MOUNT ASSEMBLY)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	CM-1245	COLLAR MOUNT ASSEMBLY	PLK7-F1	147
2	6	---	THREADED ROD 5/8" X 4'-0" A193-B7	---	
3	12	FW-625	5/8" HDG USS FLAT WASHER	---	1
4	12	LW-625	5/8" HDG LOCK WASHER	---	0
5	12	NUT-625	5/8" HDG HEX NUT	---	1
GALVANIZED WT					150

DRAWN BY: BT CHECKED BY: HMA/KW

REV.	DESCRIPTION	BY	DATE
△	FIRST ISSUE	BT	05/11/20
△			
△			
△			

SHEET TITLE:
 VZSMART-PLK7
 MONOPOLE COLLAR
 MOUNT ASSEMBLY

SHEET NUMBER: VZSMART-PLK7 REV #: 0



Network Building + Consulting, LLC
1777 Sentry Parkway West, VEVA 17 Suite 400
Blue Bell, MD 21075
(267)460-0122
NBC_SmartTool@nbcllc.com

Post-Modification Antenna Mount Analysis Report and PMI Requirements

Mount Fix

SMART Tool Project #: 10128550

January 24, 2022

Site Information

Site ID: 467706-VZW / WATERBURY S CT
Site Name: WATERBURY S CT
Carrier Name: Verizon Wireless
Address: 150 MATTATUCK HGTS
Waterbury, Connecticut 06705,
New Haven County
Latitude: 41.537958°
Longitude: -72.984106°

Structure Information

Tower Type: 130-Ft Monopole
Mount Type: 12.83-Ft

FUZE ID # 16244089

Analysis Results

Platform: 49.6% **Pass w/ Modifications***

***Antennas and equipment to be installed in compliance with PMI Requirements of this mount analysis.**

*****Contractor PMI Requirements:**

**Included at the end of this MA report
Available & Submitted via portal at <https://pmi.vzwsmart.com>
For additional questions and support, please reach out to:
vzwpmisupport@nbcllc.com**

Report Prepared By: Connor Rice, EIT



Executive Summary:

The objective of this report is to summarize the analysis results of the antenna support mount including the proposed modifications at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards.

This analysis is inclusive of the mount structure only and does not address the structural capacity of the supporting structure. This mounting frame was not analyzed as an anchor attachment point for fall protection. All climbing activities are required to have a fall protection plan completed by a competent person.

Sources of Information:

Document Type	Remarks
Radio Frequency Data Sheet	Verizon RFDS, Site ID: 325071, dated December 7, 2021
Mount Mapping Report	Hudson Design Group LLC, Site Name: Waterbury S Ct, dated March 24, 2021
Previous Mount Analysis	NB+C, Project #: 100820, dated January 20, 2021
Mount Modification Drawings	NB+C, Project #: 100820, dated January 24, 2021

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H	
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT} :	118 mph
	Ice Wind Speed (3-sec. Gust):	50 mph
	Design Ice Thickness:	1.50 in
	Risk Category:	II
	Exposure Category:	B
	Topographic Category:	1
	Topographic Feature Considered:	N/A
	Topographic Method:	N/A
	Ground Elevation Factor, K_e :	0.977
Seismic Parameters:	S_s :	.195g
	S_1 :	.054g
Maintenance Parameters:	Wind Speed (3-sec. Gust):	30 mph
	Maintenance Live Load, L_v :	250 lbs.
	Maintenance Live Load, L_m :	500 lbs.
Analysis Software:	RISA-3D (V17)	

Final Loading Configuration:

The following equipment has been considered for the analysis of the mount:

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
108.0	110.0	3	Samsung	MT6407-77A	Added
		3	Samsung	B2/B66A RRH-BR049 (RFV01U-D1A)	Retained
		3	Samsung	B5/B13 RRH-BR04C (RFV01U-D2A)	
		6	Andrew	SBNHH-1D65B	
		3	Antel	BXA-80063/4	
		1	Raycap	RHSDC-6627-PF-48	

The recent mount mapping did not report existing OVP units. However, it is acceptable to install up to any three (3) of the OVP model numbers listed below as required at any location other than the mount face without affecting the structural capacity of the mount. If OVP units are installed on the mount face, a mount re-analysis may be required.

Model Number	Ports	AKA
RHSDC-1064-PF-48	2	OVP-2
RC3DC-3315-PF-48	6	OVP-6
RC3DC-3300-PF-48	6	OVP-6
RC3DC-4750-PF-48	6	OVP-6
RHSDC-6627-PF-48	12	OVP-12
RHSDC-6600-PF-48	12	OVP-12

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Network Building + Consulting, LLC and used in this analysis is current and correct. The existing equipment loading has been applied at locations determined from the supplied documentation. Any deviation from the loading locations specified in this report shall be communicated to Network Building + Consulting, LLC to verify deviation will not adversely impact the analysis.
2. Mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.

Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping and reported in the Mount Mapping Report are assumed to be corrected and documented as part of the PMI process and are not considered in the mount analysis.

The mount analysis and the mount mapping are not a condition assessment of the mount. Proper maintenance and condition assessments are still required post analysis.

3. For mount analyses completed from other data sources (including new replacement mounts) and not specifically mapped in accordance with the NSTD-446 Standard, the mounts are assumed to have been properly fabricated, installed and maintained in good condition, twist free and plumb in accordance with its original design and manufacturer's specifications.
4. All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.

5. The mount was checked up to, and including, the bolts that fasten it to the mount collar/attachment and threaded rod connections in collar members if applicable. Local deformation and interaction between the mount collar/attachment and the supporting tower structure are outside the scope of this analysis.
6. All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Network Building + Consulting, LLC is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.
7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
 - o Channel, Solid Round, Angle, Plate ASTM A36 (Gr. 36)
 - o HSS (Rectangular) ASTM 500 (Gr. B-46)
 - o Pipe ASTM A53 (Gr. B-35)
 - o Threaded Rod F1554 (Gr. 36)
 - o Bolts ASTM A325
8. Any mount modifications listed under Sources of Information are assumed to have been installed per the design specifications.

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Network Building + Consulting, LLC.

Analysis Results:

Component	Utilization %	Pass/Fail
HSS Tube	19.5 %	Pass
Face Horizontal Angle	19.6 %	Pass
Support Rail Angle	18.1 %	Pass
Mount Pipe	30.6 %	Pass
Angle Connection	45.4 %	Pass
Platform Angle	45.0 %	Pass
Horizontal connection	49.6 %	Pass
Kicker	12.0 %	Pass
MOD	35.8 %	Pass

Structure Rating – (Controlling Utilization of all Components)	49.6%
---	--------------

Mount Steel (EPA)a per ANSI/TIA-222-H Section 2.6.11.2:

Ice Thickness (In)	Mount Pipes Excluded		Mount Pipes Included	
	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)	Front (EPA)a (Sq. Ft.)	Side (EPA)a (Sq. Ft.)
0	42.2	42.2	57.9	57.9
0.5	50.4	50.4	72.9	72.9
1	57.7	57.7	86.9	86.9

Notes:

- (EPA)a values listed above may be used in the absence of more precise information
- (EPA)a values in the table above include 3 sector(s).
- Ka factors included in (EPA)a calculations

Requirements:

The existing mount(s) will be **SUFFICIENT** for the final loading configuration (attachment 2) **after the modifications detailed in attachment 3 are successfully completed.**

ANSI/ASSP rigging plan review services compliant with the requirements of ANSI/TIA 322 are available for a Construction Class IV site or other, if required. Separate review fees will apply.

Attachments:

1. Contractor Required PMI Report Deliverables
2. Antenna Placement Diagrams
3. Mount Modification Drawings
4. Mount Photos
5. Mount Mapping Report (for reference only)
6. Analysis Calculations

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – Mount Modification

Electronic pdf version of this can be downloaded at <https://pmi.vzwsmart.com>

For additional questions and support, please reach out to vzwpmisupport@nbcllc.com

PSLC #: 467706

SMART Project #: 10128550

Fuze Project ID: 16244089

Purpose – to upload the proper documentation to the SMART Tool in order to allow the SMART Tool engineering vendor to complete the required Mount Desktop review of the Post Modification Inspection Report.

- Contractor is responsible for making certain the photos provided as noted below provide confirmation that the modification was completed in accordance with the modification drawings.
- Contractor shall relay any data that can impact the performance of the mount or the mount modification, this includes safety issues.

Base Requirements:

- If installation of the modification will cause damage to the structure, the climbing facility, or safety climb if present or any installed system, SMART Tool vendor to be notified prior to install. Any special photos outside of the standard requirements will be indicated on the drawings.
- Provide “as built drawings” showing contractor’s name, preparer’s signature, and date. Any deviations from the drawings (proposed modification) shall be shown. NOTE: If loading is different than what is conveyed in the post-modification passing mount analysis (MA) contact the SMART Tool vendor immediately.
- Each photo shall be time and date stamped.
- Photos should be high resolution.
- Contractor shall ensure that the safety climb wire rope is not adversely impacted by the install of the modification components. This may involve the install of wire rope guides, or other items to protect the wire rope. If there is conflict, contact the SMART Tool engineer for recommendations.
- The PMI can be accessed at the following portal: <https://pmi.vzwsmart.com>

Photo Requirements:

- Photos taken at ground level
 - Photo of Gate Signs showing the tower owner, site name, and number.
 - Overall tower structure after installation of the modifications.
 - Photos of the mount after installation of the modifications; if the mounts are at different rad elevations, pictures must be provided for all elevations that the modifications were installed
- Photos taken at Mount Elevation
 - Photos showing the safety climb wire rope above and below the mount prior to modification.
 - Photos showing the climbing facility and safety climb if present.

- Photos showing each individual sector after installation of modifications. Each entire sector must be in one photo to show the interconnection of members.
 - These photos shall also certify that the placement and geometry of the equipment on the mount is as depicted in the antenna placement diagram in this form.
- Photos that show the model number of each antenna and piece of equipment installed per sector.
- Photos of each installed modification per the modification drawings; pictures shall also include connection hardware (U-bolts, bolts, nuts, all-threaded rods, etc.)
- Photos showing the distances (relative distance between collars) of the installed modifications from the appropriate reference locations shown in the modification drawings.
- Photos showing the installed modifications onto the tower (i.e. ring/collar mounts, tie-backs, V-bracing kits, etc.); if the existing mount elevation needs to be changed according to the modification drawings, an elevation measurement shall be provided before the elevation change.

Material Certification:

- Materials utilized must be as per specification on the drawings or the equivalent as validated by the SMART Tool vendor.
 - If the materials are as specified on the drawings
 - The contractor shall provide the packing list, or the materials certifications for the materials utilized to perform the mount modification
 - Commscope, Metrosite, Perfect Vision, Sabre, and Site Pro have all agreed to support Verizon vendors with the necessary material certifications
 - If seeking permission to use an equivalent
 - It is required that the SMART Tool engineering vendor approval of such is included in the contractor submission package. There may be an additional charge for approval if the equivalent submission doesn't meet specifications as prescribed in the drawings.

All hardware has been properly installed, and the existing hardware was inspected.

The material utilized was as specified on the SMART Tool engineering vendor Mount Modification Drawings and included in the material certification folder is a packing list or invoice for these materials.

OR

The material utilized was approved by a SMART Tool engineering vendor as an "equivalent" and this approval is included as part of the contractor submission.

Antenna & Equipment Placement and Geometry Confirmation:

The contractor certifies that the photos support and the equipment on the mount is as depicted on the sketch and table included in this form and with the mount analysis provided.

OR

The contractor notes that the equipment on the mount is not in accordance with the sketch and has noted the differences below and provided photo documentation of any alterations.

Comments:

Was the mount modification completed in conjunction with the equipment change / installation?

Yes No

Special Instructions / Validation as required from the MA or Mod Drawings:

Issue:

Response:

Special Instruction Confirmation:

The contractor has read and acknowledges the above special instructions.

Comments:

Contractor certifies that the climbing facility / safety climb was not damaged prior to starting work:

Yes No

Contractor certifies no new damage created during the current installation:

Yes No

Contractor to certify the condition of the safety climb and verify no damage when leaving the site:

Safety Climb in Good Condition Safety Climb Damaged

Comments:

--

Certifying Individual:

Company:	
Employee Name:	
Contact Phone:	
Email:	
Date:	

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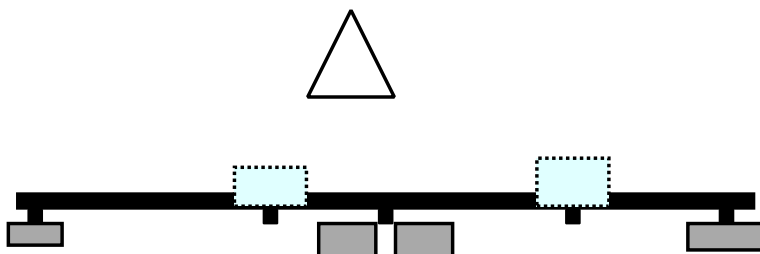
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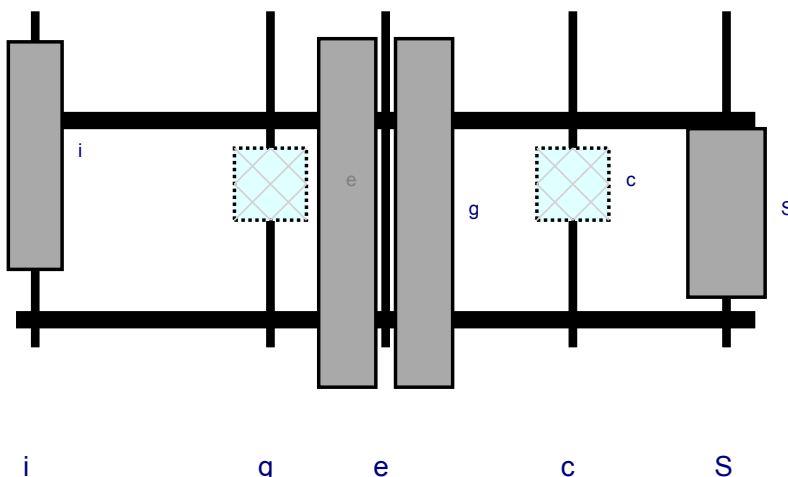


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Plan View



Front View - 0 0



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c	cFll 0 D Igp0 IS DS :	Si	Si	SSI	c	el	I I efgfcl cS
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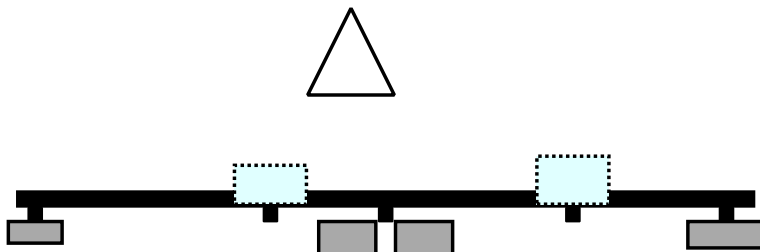
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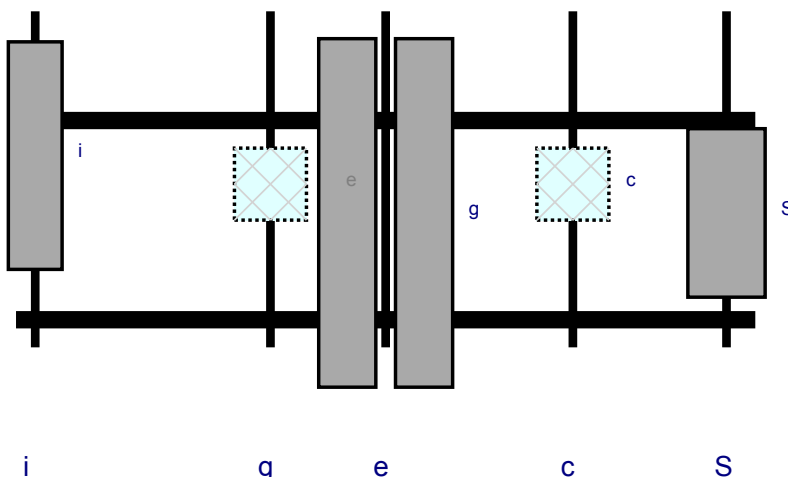


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Plan View



Front View - 0 0



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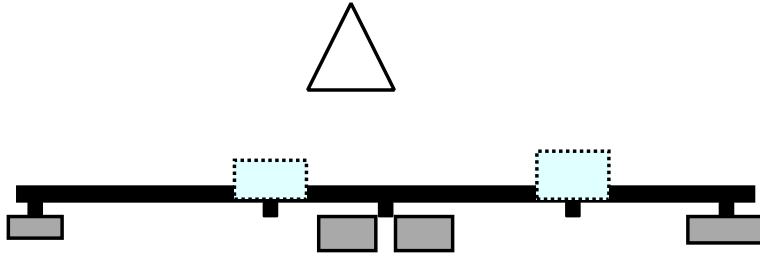
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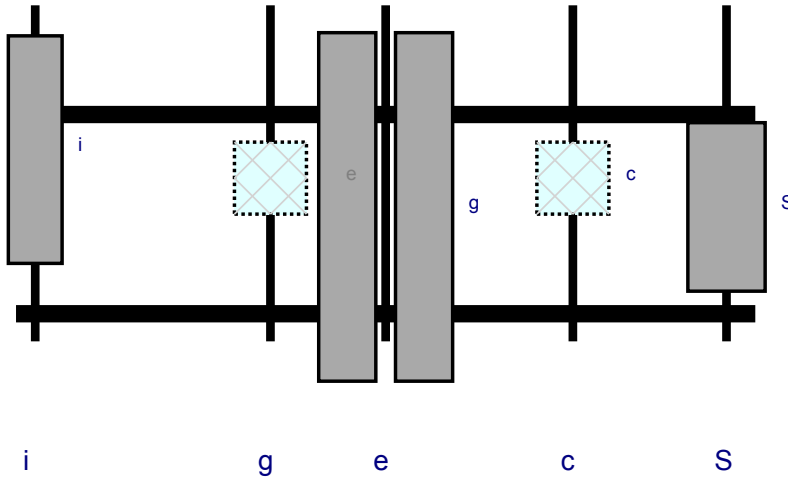


uE

Plan View



Front View - 0 0



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c	cFll 0 D Igp0 IS DS :	Si	Si	SSI	c	el	I I efgfcl cS
g	D li	ncE	SSp	nn	e	gc	o I efgfcl cS
g	D li	ncE	SSp	nn	e	gc	D I efgfcl cS
e	i F Se0 D I g 0 IS D c :	Si	Si	i e	g	el	I I efgfcl cS
i	D l l efg	gnfg	SSe	g	i	el E I	I I efgfcl cS

MOUNT MODIFICATION DRAWINGS

PROPOSED CARRIER: VERIZON

TOWER OWNER: CROWN CASTLE

TOWER OWNER SITE #: 876317

CARRIER SITE NAME: WATERBURY S CT

CARRIER SITE #: 467706

COORDINATES (LATITUDE: 41.537958°, LONGITUDE: 72.985106°)

FUZE ID #: 16244089

ENGINEER



APPLICANT



SITE INFORMATION

SITE NAME: WATERBURY S CT
 PSLC: 467706
 NB+C JOB NO: 100820
 SITE ADDRESS:
 150 MATTATUCK HGTS
 WATERBURY, CT 06705
 NEW HAVEN COUNTY

DESIGN RECORD

REVISIONS			
REV	DATE	DESCRIPTION	BY
1	01/24/22	MODIFICATION DRAWINGS	DS
0	06/11/21	MODIFICATION DRAWINGS	PHJ

PROFESSIONAL STAMP



ENGINEER

KRUPAKARAN KOLANDAIVELU, P.E.
 STATE OF CONNECTICUT
 PROFESSIONAL ENGINEER
 LICENSE #PEN.0028997

SHEET TITLE

TITLE SHEET

SHEET NUMBER

ST-1

CONTRACTOR PMI REQUIREMENTS	
PMI ACCESSED AT:	HTTPS://PMI.VZWSMART.COM
SMART TOOL VENDOR PROJECT NUMBER:	10071588
VZW LOCATION CODE (PSLC):	467706
POST MOD ANALYSIS REPORT PROJECT NUMBER:	100820
REPORT DATED	01/24/2022
*** PMI AND REQUIREMENTS EMBEDDED IN MOUNT ANALYSIS REPORT	
VZW APPROVED SMART KIT VENDORS	
REFER TO BILL OF MATERIALS PAGE FOR VZW SMART KIT APPROVED VENDORS	

DRAWING INDEX	
ST-1	TITLE SHEET
SBOM	BILL OF MATERIALS
SGN-1	GENERAL NOTES
SCF-1	CLIMBING FACILITY DETAILS
SS-1	ANTENNA MOUNT MODIFICATION DETAILS
SS-2	ANTENNA MOUNT PHOTOS
-	SPECIFICATION SHEETS

GENERAL NOTES

GENERAL NOTES:

- ALL WORK SHALL BE DONE IN ACCORDANCE WITH ALL APPLICABLE FEDERAL, STATE AND LOCAL CODES AND ORDINANCES. IT IS THE CONTRACTOR'S RESPONSIBILITY TO OBTAIN ALL PERMITS NECESSARY TO COMPLETE THE PROJECT AND ABIDE BY ALL CONDITIONS AND REQUIREMENTS OF THE PERMITS.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR VERIFICATION OF ALL DIMENSIONS, ELEVATIONS AND EXISTING CONDITIONS AT THE SITE BEFORE ORDERING ANY MATERIALS OR DOING ANY WORK. NO EXTRA CHARGE OR COMPENSATION SHALL BE ALLOWED DUE TO DIFFERENCE BETWEEN ACTUAL DIMENSIONS AND DIMENSIONS INDICATED ON THE CONSTRUCTION DRAWINGS. ANY SUCH DISCREPANCY IN DIMENSION WHICH MAY BE FOUND SHALL BE SUBMITTED TO NB+C ENGINEERING SERVICES, LLC. FOR CONSIDERATION BEFORE THE CONTRACTOR PROCEEDS WITH THE WORK IN THE AFFECTED AREAS.
- INCORRECTLY FABRICATED, DAMAGED, OTHERWISE MISFITTING, OR NON-CONFORMING MATERIALS AND CONDITIONS SHALL BE REPORTED TO NB+C ENGINEERING SERVICES, LLC. PRIOR TO ANY REMEDIAL OR CORRECTIVE ACTION. ALL ACTIONS SHALL REQUIRE NB+C ENGINEERING SERVICES, LLC. APPROVAL.
- IT IS THE CONTRACTOR'S SOLE RESPONSIBILITY TO DETERMINE ERECTION PROCEDURE AND SEQUENCE TO ENSURE THE SAFETY OF THE STRUCTURE AND ITS COMPONENT PARTS DURING ERECTION AND/OR FIELD MODIFICATIONS. THIS INCLUDES, BUT IS NOT LIMITED TO, THE ADDITION OF TEMPORARY BRACING, GUYS OR TIE DOWNS THAT MAY BE NECESSARY. SUCH MATERIAL SHALL BE REMOVED AFTER THE COMPLETION OF THE PROJECT.
- CONTRACTOR SHALL PROMPTLY REMOVE ANY & ALL DEBRIS FROM SITE AND RESTORE AS BEST AS POSSIBLE TO PRECONSTRUCTION CONDITION.
- 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 ASSP A10.48 (LATEST EDITION), OSHA, AND GENERAL INDUSTRY STANDARDS. ALL RIGGING PLANS SHALL ADHERE TO ASSP A10.48 AND ANSI/TIA-322 (LATEST EDITIONS) INCLUDING THE REQUIRED INVOLVEMENT OF A QUALIFIED ENGINEER FOR CLASS IV CONSTRUCTION.
- THE USE OF GAS TORCH OR WELDER ARE NOT ALLOWED ON ANY TOWER STRUCTURE WITHOUT THE CONSENT OF THE TOWER OWNER.

CONTRACTOR QUALIFICATION NOTES:

- ALL REPAIRS SHALL BE PERFORMED BY A TOWER CONTRACTOR WITH A MINIMUM 5 YEARS EXPERIENCE IN TOWER ERECTION AND RETROFIT AND WITH WORKING KNOWLEDGE OF THE ANSI/TIA-222-H "STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS AND SMALL WIND TURBINE SUPPORT STRUCTURES".
- CONTRACTOR IS RESPONSIBLE FOR ALL CONSTRUCTION MEANS AND METHODS. SHOULD THE CONTRACTOR REQUIRE DIRECT CONSULTATION, NB+C ENGINEERING SERVICES, LLC. IS WILLING TO OFFER SERVICES BASED UPON AN AGREED FEE FOR THE WORK REQUIRED.
- ALL SUBMITTAL INFORMATION MUST BE SENT TO PMI INSPECTOR. ANY VARIATION OF THESE SPECIFICATIONS OR DRAWINGS WITHOUT CONSENT FROM NB+C ENGINEERING SERVICES, LLC. WILL VOID ANY RESPONSIBILITY OR LIABILITY FOR DAMAGE (MATERIAL OR PHYSICAL) TOWARDS NB+C ENGINEERING SERVICES, LLC.
- ALL CONSTRUCTION TO BE IN ACCORDANCE WITH THE ASSP A10.48 AND ANSI/TIA-322 STANDARDS.

JOB SITE SAFETY & NOTES:

- NEITHER THE PROFESSIONAL ACTIVITIES OF NB+C ENGINEERING SERVICES, LLC. NOR THE PRESENCE OF NB+C ENGINEERING SERVICES, LLC. OR EMPLOYEES AND SUB-CONSULTANTS AT THE CONSTRUCTION SITE, SHALL RELIEVE THE GENERAL CONTRACTOR AND OR SUBCONTRACTORS AND ANY OTHER ENTITY OF THEIR OBLIGATIONS, DUTIES AND RESPONSIBILITIES INCLUDING, BUT NOT LIMITED TO, CONSTRUCTION MEANS, METHODS, SEQUENCE, TECHNIQUES OR PROCEDURES NECESSARY FOR PERFORMING, SUPERINTENDING OR COORDINATING ALL PORTIONS OF THE WORK OF CONSTRUCTION IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND ANY HEALTH OR SAFETY PRECAUTIONS REQUIRED BY ANY REGULATORY AGENCIES. THE GENERAL CONTRACTOR AND OR SUBCONTRACTOR IS SOLELY RESPONSIBLE FOR JOB SAFETY, AND WARRANTS THAT THIS INTENT IS EVIDENT BY ACCEPTING THIS WORK.

COLD GALVANIZATION/SURFACE PREPARATION NOTES:

- CONTRACTOR TO USE ZINGA COLD GALVANIZATION COMPOUNDS.
- PREPARE RUSTED/CORRODED SURFACE FOR TREATMENT ACCORDING TO MANUFACTURERS RECOMMENDATIONS.
- CONTRACTOR TO APPLY (2) COATS OF COLD GALVANIZATION COMPOUND PER MANUFACTURER'S RECOMMENDATION. DRYING AND CURING TIMES MUST BE UTILIZED PER MANUFACTURER'S RECOMMENDATION.
- APPLY ALL COATINGS BY BRUSH IN CALM WIND CONDITIONS. THE USE OF AEROSOL IS NOT PERMITTED.
- IF THE TOWER IS PAINTED, BRUSH PAINT ALL TREATED AREAS TO MATCH TOWER AFTER COLD GALVANIZATION COMPOUND IS ALLOWED TO CURE.

STEEL :

- ALL PROPOSED MEMBERS TO USE THE PREFERRED MATERIAL SPECIFICATION AS DEFINED BY THE AISC CODE AND ASTM SPECIFICATIONS.
- ALL CONNECTIONS OF STRUCTURAL STEEL MEMBERS SHALL BE MADE USING SPECIFIED WELDS WITH WELDING ELECTRODES E-70XX OR SPECIFIED HIGH STRENGTH BOLTS TO BE ASTM A325N, THREAD INCLUDED WITH SHEAR PLANE (UNLESS OTHERWISE NOTED).
- ALL BOLTED CONNECTIONS TO BE INSTALLED TO A SNUG-TIGHTENED CONDITION IN ACCORDANCE WITH AISC 15 PART 16.2, "SPECIFICATION FOR STRUCTURAL JOINTS USING HIGH STRENGTH BOLTS, SECTION 8.1, UNLESS OTHERWISE SPECIFIED. WHEN "X" TYPE BOLTS ARE USED, CONTRACTOR MAY BE REQUIRED TO STACK ADDITIONAL WASHERS TO OBTAIN PROPER SNUG TIGHT INSTALLATION. ALL NUTS SHALL BE HEAVY HEX UNLESS OTHERWISE NOTED.
- ALL STEEL, AFTER FABRICATION, SHALL BE HOT DIPPED GALVANIZED PER ASTM A-123. ALL DAMAGED SURFACES, WELDED AREAS AND AUTHORIZED NON-GALVANIZED MEMBERS OR PARTS (EXISTING OR NEW) SHALL BE PAINTED WITH MULTIPLE COATS OF ZRC COLD GALVANIZING COMPOUND ACHIEVING A MINIMUM OF 4 MILS DRY FILM PER ASTM A 780.
- ALL SHOP AND FIELD WELDING SHALL BE DONE BY WELDERS QUALIFIED AS DESCRIBED IN THE "AMERICAN WELDING SOCIETY'S STANDARD QUALIFICATION PROCEDURE" TO PERFORM THE TYPE OF WORK REQUIRED. CONTRACTOR IS REQUIRED TO PROVIDE NB+C ENGINEERING SERVICES, LLC. WITH A PASSING CERTIFIED WELDING INSPECTION FOR ALL WELDS.
- STRUCTURAL STEEL MAY NOT BE TORCH CUT FOR FABRICATION. ALL STEEL FABRICATION MUST FOLLOW AISC STANDARDS.
- ALL STEEL SHALL MEET OR EXCEED THE MINIMUM STRENGTH AS SPECIFIED IN THE DRAWINGS. IF YIELD STRENGTH WAS NOT NOTED IN THE DRAWINGS, CONTRACTORS SHALL CONTACT NB+C FOR DIRECTION.

MISC. NOTES:

- ALL MODIFICATIONS ARE ASSUMED TO BE MADE ON AN EMPTY TOWER. CONTRACTOR IS RESPONSIBLE TO MAKE PROVISIONS TO SUPPORT OR WORK AROUND EXISTING ANTENNAS AND TRANSMISSION LINES. MODIFICATIONS MUST BE CONTINUOUS THROUGH ALL AREAS SHOWN.
- CONTRACTOR TO FIELD VERIFY ALL DIMENSIONS PRIOR TO CONSTRUCTION.

FABRICATION NOTES:

- ALL DIMENSIONS ARE PRELIMINARY UNTIL FIELD VERIFIED BY CONTRACTOR. ANY CHANGES MUST BE APPROVED BY ENGINEER OF RECORD IN WRITING PRIOR TO FABRICATION AND INSTALLATION.
- NEW STEEL MEMBERS MUST HAVE SINGLE DRILLED HOLES. SLOTTED AND DOUBLE DRILLED HOLES ARE NOT ACCEPTABLE MEANS OF FABRICATION UNLESS OTHERWISE NOTED.

SUBSTITUTES AND/OR EQUALS:

- IF CONTRACTOR WISHES TO FURNISH OR USE A SUBSTITUTE ITEM OF MATERIAL OR EQUIPMENT, CONTRACTOR SHALL FIRST MAKE WRITTEN APPLICATION TO ENGINEER OF RECORD FOR ACCEPTANCE THEREOF, CERTIFYING THAT THE PROPOSED SUBSTITUTE WILL PERFORM ADEQUATELY THE FUNCTIONS AND ACHIEVE THE RESULTS CALLED FOR BY THE GENERAL DESIGN, BE SIMILAR IN SUBSTANCE TO THAT SPECIFIED AND SUITED TO THE SAME USE AS THAT SPECIFIED. ALL VARIATIONS OF THE PROPOSED SUBSTITUTE FROM THAT SPECIFIED WILL BE IDENTIFIED IN THE APPLICATION AND AVAILABLE MAINTENANCE, REPAIR AND REPLACEMENT SERVICE WILL BE INDICATED. THE APPLICATION WILL ALSO CONTAIN AN ITEMIZED ESTIMATE OF ALL COSTS OR CREDITS THAT WILL RESULT DIRECTLY OR INDIRECTLY FROM ACCEPTANCE OF SUCH SUBSTITUTE INCLUDING COSTS OF REDESIGN AND CLAIMS OF OTHER CONTRACTORS AFFECTED BY THE RESULTING CHANGE. ALL OF WHICH WILL BE CONSIDERED BY ENGINEER OF RECORD IN EVALUATION OF THE PROPOSED SUBSTITUTE. ENGINEER OF RECORD MAY REQUIRE CONTRACTOR TO FURNISH ADDITIONAL DATA ABOUT THE PROPOSED SUBSTITUTE.

FIELD HOT WORK PLAN NOTES:

- ALL CONTRACTORS RESPONSIBILITY TO COMPLETE A HOT WORK PLAN IF AWARDED PER CUSTOMER SPECIFICATIONS GUIDELINES FOR WELDING, CUTTING & SPARK PRODUCING WORK.
- HAVE A FIRE PLAN APPROVED BY THE CUSTOMER AND THEIR SAFETY MANAGEMENT DEPARTMENT.
- CONTRACTOR MUST OBTAIN THE CONTACT INFO OF THE LOCAL FIRE DEPARTMENT AND THE 911 ADDRESS OF THE TOWER SITE BEFORE CONSTRUCTION.
- CONTRACTOR SHALL MAKE SURE THAT CELL PHONE COVERAGE IS AVAILABLE IN THE TOWER SITE. IF CELL COVERAGE IS NOT AVAILABLE, AN IMMEDIATE AVAILABLE MEANS OF DIRECT COMMUNICATION WITH THE FIRE DEPARTMENT SHALL BE DETERMINED PRIOR TO CONSTRUCTION START.
- ALL CONSTRUCTION SHALL BE PERFORMED UNDER WIND SPEED LESS THAN 10 MPH ON THE GROUND LEVEL. IF WIND SPEED INCREASES, CONTRACTOR MUST DETERMINE IF CONSTRUCTION SHALL BE DISCONTINUED.
- FIRE SUPPRESSION EQUIPMENT MUST BE MADE AVAILABLE ON SITE AND READY TO USE.
- CONTRACTOR SHALL ASSIGN A FIRE WATCHER TO PERFORM FIRE-FIGHTING DUTIES.
- ALL WELDERS SHALL BE AWS OR STATE CERTIFIED. THEY MUST ALSO BE EXPERIENCED IN WELDING ON GALVANIZED MATERIALS.
- IF IT IS POSSIBLE, ALL EXISTING COAX NEAR WELDING AREA SHALL BE TEMPORARILY MOVED AWAY FROM THE WELDING AREA BEFORE WELDING.
- PLEASE REPORT ANY FIELD ISSUE TO NB+C @ 267-460-0122

BOLT HOLE DIMENSIONS

BOLT DIAMETER	STANDARD HOLE DIAMETER	OVERSIZED HOLE DIAMETER	SHORT SLOTTED (WIDTH X LENGTH)	DETAIL	LONG SLOTTED (WIDTH X LENGTH)	DETAIL
1/2"	9/16"	5/8"	9/16" x 11/16"	o	9/16" x 1-1/4"	o
5/8"	11/16"	13/16"	11/16" x 7/8"	o	11/16" x 1-9/16"	o
3/4"	13/16"	15/16"	13/16" x 1"	o	13/16" x 1-7/8"	o
7/8"	15/16"	1-1/16"	15/16" x 1-1/8"	o	15/16" x 2-3/16"	o
1"	1-1/16"	1-1/4"	1-1/16" x 1-5/16"	o	1-1/16" x 2-1/2"	o

MINIMUM EDGE DISTANCES

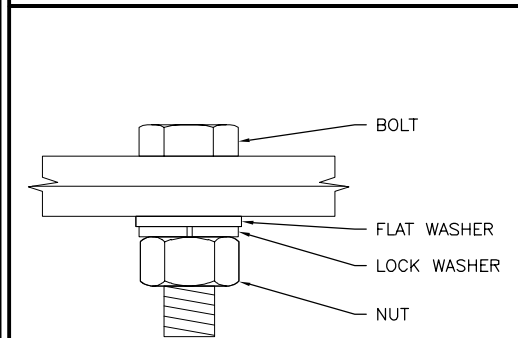
BOLT DIAMETER	MINIMUM EDGE DISTANCE
1/2"	7/8"
5/8"	1-1/8"
3/4"	1-1/4"
7/8"	1-1/2" [a]
1"	1-3/4" [a]
1-1/8"	2"
1-1/4"	2-1/4"
OVER 1-1/4"	1-3/4" x d

NUT ROTATION FROM SNUG-TIGHT CONDITION^{a,b}

BOLT LENGTH ^c	DISPOSITION OF OUTER FACE OF BOLTED PARTS		
	BOTH FACES NORMAL TO BOLT AXIS	ONE FACE NORMAL TO BOLT AXIS, OTHER SLOPED NOT MORE THAN 1:20 ^d	BOTH FACES SLOPED NOT MORE THAN 1:20 FROM NORMAL TO BOLT AXIS ^d
NOT MORE THAN 4d _b	1/3 TURN	1/2 TURN	2/3 TURN
MORE THAN 4d _b BUT NOT MORE THAN 8d _b	1/2 TURN	2/3 TURN	5/6 TURN
MORE THAN 8d _b BUT NOT MORE THAN 12d _b	2/3 TURN	5/6 TURN	1 TURN

- NOTES:**
- NUT ROTATION IS RELATIVE TO BOLT REGARDLESS OF THE ELEMENT (NUT OR BOLT) BEING TURNED. FOR REQUIRED NUT ROTATIONS OF 1/2 TURN AND LESS, THE TOLERANCE IS PLUS OR MINUS 30 DEGREES; FOR REQUIRED NUT ROTATIONS OF 2/3 TURN AND MORE, THE TOLERANCE IS PLUS OR MINUS 45 DEGREES.
 - APPLICABLE ONLY TO JOINTS IN WHICH ALL MATERIAL WITHIN THE GRIP IS STEEL
 - WHEN THE BOLT LENGTH EXCEEDS 12d_b, THE REQUIRED NUT ROTATION SHALL BE DETERMINED BY ACTUAL TESTING IN A SUITABLE TENSION CALIBRATION THAT SIMULATE THE CONDITIONS OF SOLIDLY FITTING STEEL
 - BEVELED WASHER NOT USED.

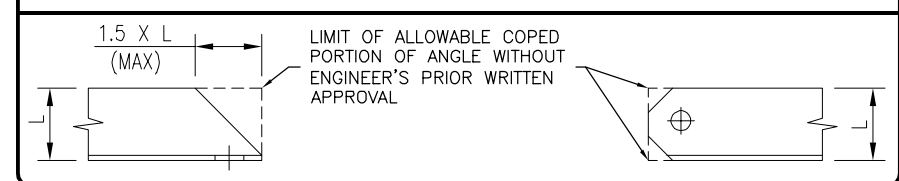
TYPICAL BOLT ASSEMBLY



WORKABLE GAGES

ANGLE SIZE	GAGE
1 3/4"	1"
2"	1 1/8"
2 1/2"	1 3/8"
3"	1 3/4"
3 1/2"	2"
4"	2 1/2"

WORKABLE COPING



NOTES:

- ALL DIMENSIONS REPRESENTED IN THIS SHEET ARE AISC MINIMUM REQUIREMENTS. CONTRACTOR SHALL VERIFY EXISTING CONDITIONS IN FIELD AND NOTIFY ENGINEER IF DISTANCES ARE LESS THAN THOSE PROVIDED
- THE DIMENSIONS PROVIDED ARE MINIMUM REQUIREMENTS. ACTUAL DIMENSIONS OF PROPOSES MEMBERS WITH THESE DRAWINGS MAY VARY FROM AISC MIN. REQUIREMENTS
- SHORT SLOT HOLES SHALL ONLY BE USED WHEN DEPICTED IN THE DRAWINGS.
- MATCH EXISTING HOLES GAGES WHEN APPLICABLE, UNLESS MINIMUM EDGE DISTANCE ARE COMPROMISED

ENGINEER

APPLICANT

SITE INFORMATION

DESIGN RECORD

PROFESSIONAL STAMP

ENGINEER

SHEET TITLE

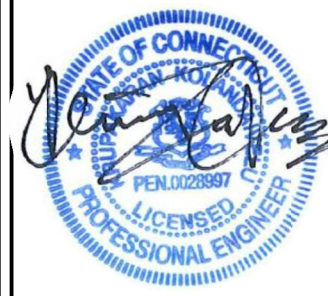
SHEET NUMBER



SITE NAME: WATERBURY S CT
 PSLC: 467706
 NB+C JOB NO: 100820
SITE ADDRESS:
 150 MATTATUCK HGTS
 WATERBURY, CT 06705
 NEW HAVEN COUNTY

REVISIONS

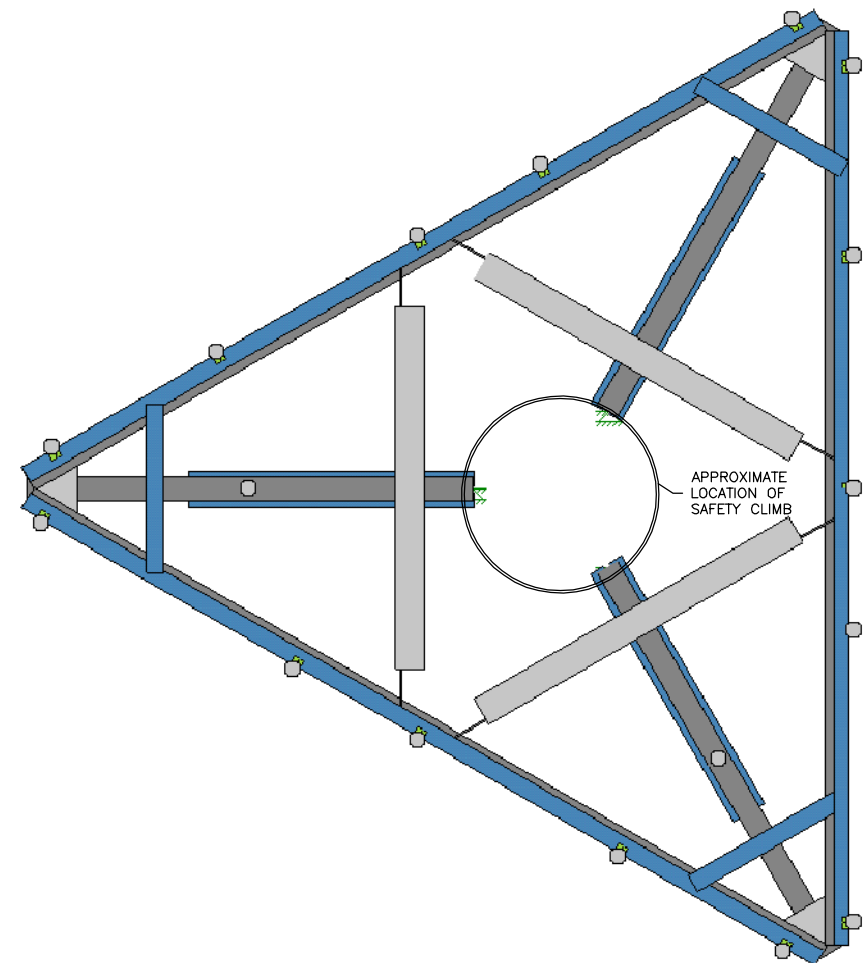
REV	DATE	DESCRIPTION	BY
1	01/24/22	MODIFICATION DRAWINGS	DS
0	06/11/21	MODIFICATION DRAWINGS	PHJ



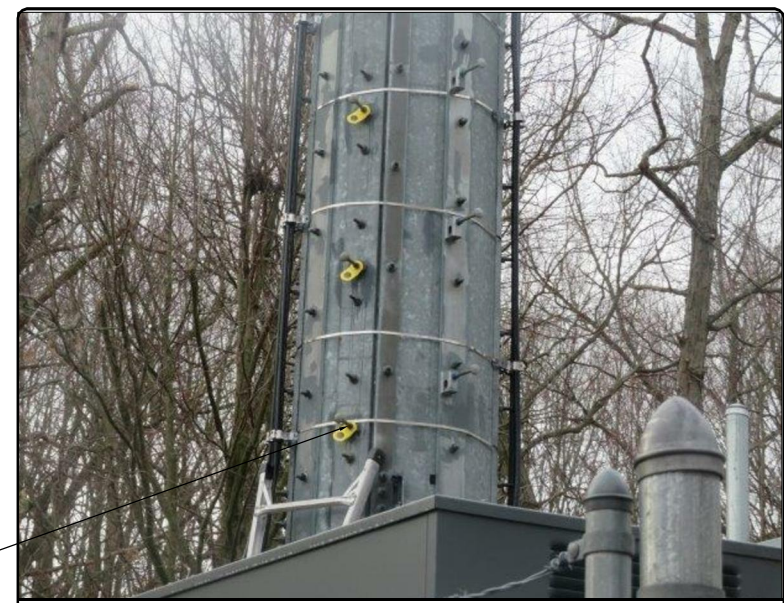
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 STATE OF CONNECTICUT
 PROFESSIONAL ENGINEER
 LICENSE #PEN.0028997

GENERAL NOTES

SGN-1

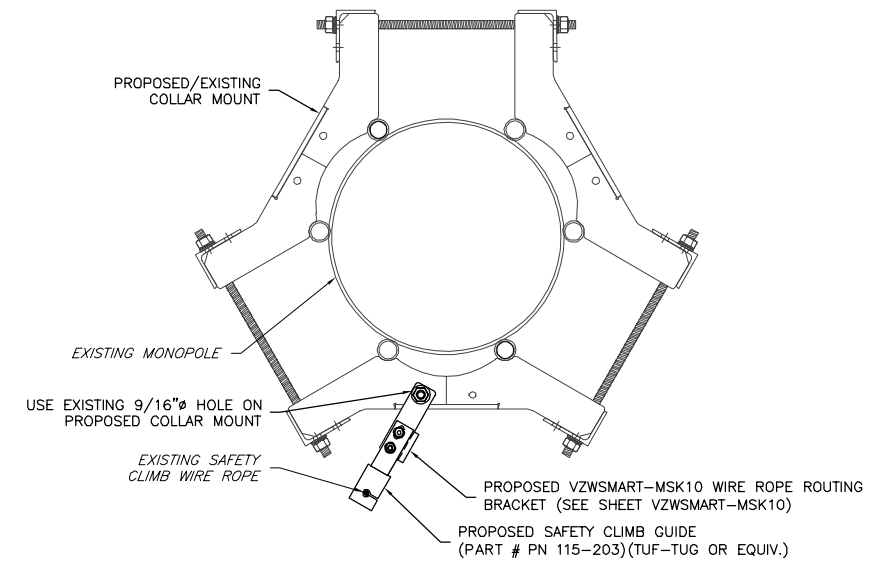


1 SAFETY CLIMB LOCATION - TOP VIEW
SCALE: NTS
SCF-1






EXISTING LOCATION OF SAFETY CLIMB

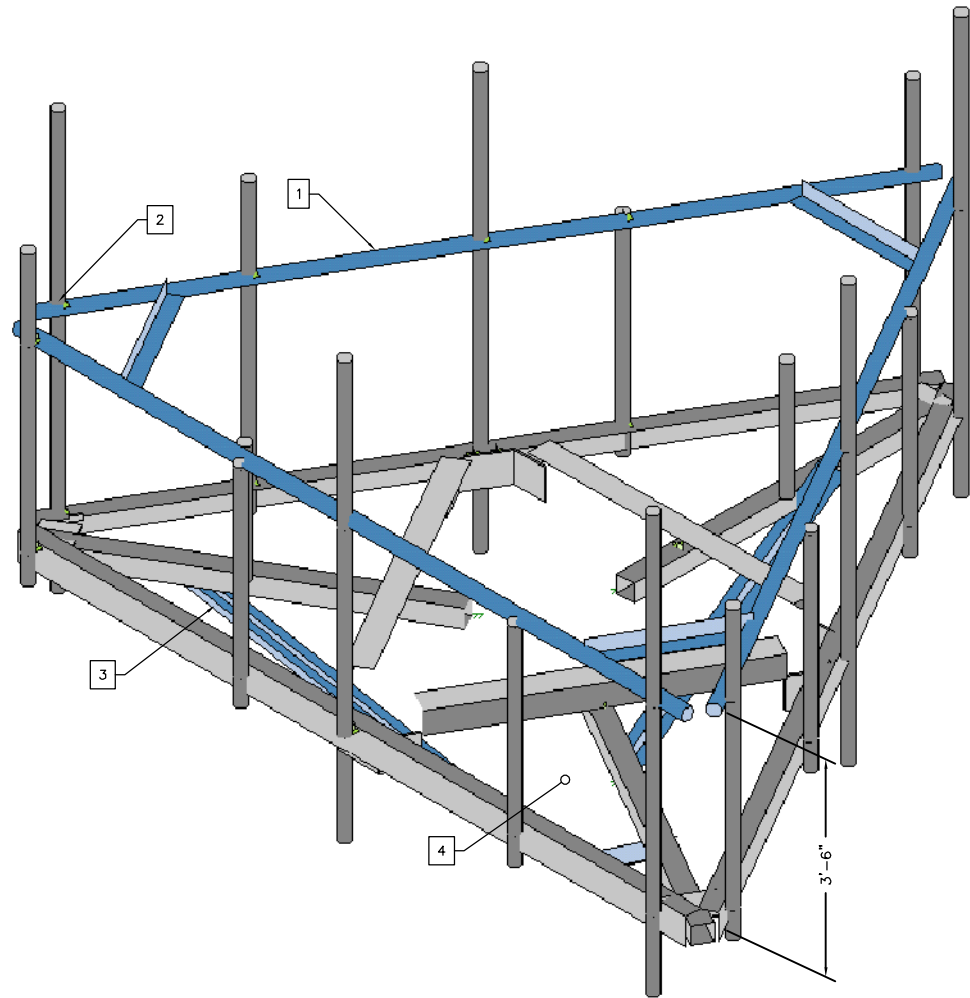
PHOTO OF SAFETY CLIMB



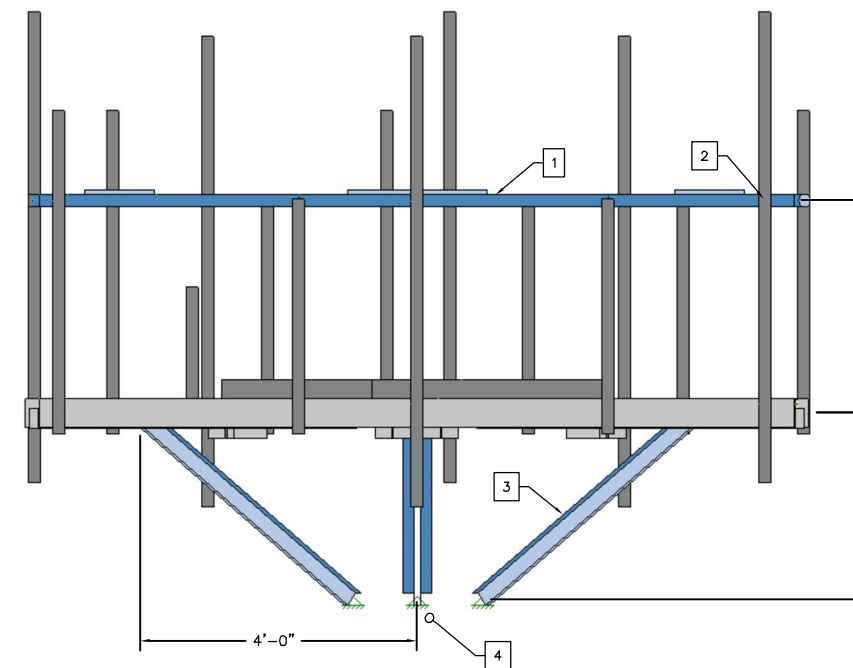
2 SAFETY CLIMB DETAIL
SCALE: NTS
SCF-1

NOTE:
INSTALL SHALL NOT CAUSE HARM TO THE
STRUCTURE, CLIMBING FACILITY, SAFETY CLIMB OR
ANY SYSTEM INSTALLED ON THE STRUCTURE

ENGINEER	 TOTALLY COMMITTED. NB+C ENGINEERING SERVICES, LLC. <small>1777 SENTRY PARKWAY WEST VENA 17, SUITE 200 BLUE BELT, PA 19022 (267) 460-0122</small>																
APPLICANT																	
SITE INFORMATION	SITE NAME: WATERBURY SCT PSLC: 467706 NB+C JOB NO: 100820 SITE ADDRESS: 150 MATTATUCK HGTS WATERBURY, CT 06705 NEW HAVEN COUNTY																
DESIGN RECORD	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4" style="text-align: center;">REVISIONS</th> </tr> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>01/24/22</td> <td>MODIFICATION DRAWINGS</td> <td>DS</td> </tr> <tr> <td>0</td> <td>06/11/21</td> <td>MODIFICATION DRAWINGS</td> <td>PHJ</td> </tr> </tbody> </table>	REVISIONS				REV	DATE	DESCRIPTION	BY	1	01/24/22	MODIFICATION DRAWINGS	DS	0	06/11/21	MODIFICATION DRAWINGS	PHJ
REVISIONS																	
REV	DATE	DESCRIPTION	BY														
1	01/24/22	MODIFICATION DRAWINGS	DS														
0	06/11/21	MODIFICATION DRAWINGS	PHJ														
PROFESSIONAL STAMP																	
ENGINEER	KRUPAKARAN KOLANDAIVELU, P.E. STATE OF CONNECTICUT PROFESSIONAL ENGINEER LICENSE #PEN.0028997																
SHEET TITLE	CLIMBING FACILITY DETAILS																
SHEET NUMBER	SCF-1																



1 MODIFICATION - ISOMETRIC VIEW
 SS-1 SCALE: NTS MOUNT ELEVATION: 108.0'



2 MODIFICATION - FRONT VIEW
 SS-1 SCALE: NTS MOUNT ELEVATION: 108.0'

SL NO.	MOUNT MODIFICATION SCHEDULE	REFERENCE SHEET NO.
1	REPLACE EXISTING SUPPORT RAIL W/ NEW VZSMART SUPPORT RAIL KIT	VZSMART-PLK1
2	INSTALL NEW VZSMART CROSSOVER PLATE TO EXISTING MOUNTING PIPES IN POS. 5	VZSMART-MSK1
3	INSTALL NEW VZSMART KICKER KIT	VZSMART-PLK5
4	INSTALL NEW VZSMART MONOPOLE COLLAR	VZSMART-PLK7

NOTES

- APPURTENANCES MAY INTERFERE WITH PROPOSED MODIFICATIONS
- ALL MODIFICATIONS TO BE INSTALLED CONTINUOUSLY THROUGH EXISTING EQUIPMENT. ALL EXISTING EQUIPMENT NOT TO BE DAMAGED OR TAKEN OFF AIR DURING INSTALLATION. CONTRACTOR TO COORDINATE WITH CARRIER PRIOR TO MODIFICATION INSTALLATION TO DETERMINE IF EXISTING ANTENNAS NEED TO BE TURNED DOWN.
- ANTENNA & COAX GRAPHICS NOT SHOWN FOR CLARITY. SEE MOUNT ANALYSIS REPORT FOR EXISTING ANTENNA LOADING & COAX CONFIGURATION.
- CONTRACTOR TO FIELD VERIFY ALL LENGTHS AND QUANTITIES PRIOR TO MATERIAL ORDERS, FABRICATION, AND INSTALLATION.
- IF EXISTING TOWER IS PAINTED CONTRACTOR TO VERIFY WITH TOWER OWNER IF NEW MODIFICATION MEMBERS ARE TO BE PAINTED TO MATCH EXISTING TOWER FINISHES.
- IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO VERIFY THAT THERE ARE NO INTERFERENCES WITH SAFETY CLIMB BRACKETS, TRANSMISSION LINES, ETC. PRIOR TO MOBILIZATION AND INSTALLATION OF THESE MODIFICATIONS. PLEASE NOTIFY NB+C ES IMMEDIATELY IF ANY INSTALLATION ISSUES OCCUR RELATED TO THIS DRAWING.
- MEMBERS SHADED IN BLUE COLOR ARE NEW REINFORCEMENTS AND MEMBERS IN A AQUA COLOR (IF SHOW) ARE RELOCATED MEMBERS.
- FIELD CUTTING AND FIELD DRILLING MAY BE NECESSARY TO ACHIEVE THE REQUIRED DIMENSIONS
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE CLEAN-UP, REMOVAL, AND DISPOSAL OF EXCESS MATERIALS USED AND REMOVED FROM THE STRUCTURE AT THE COMPLETION OF THE PROJECT.



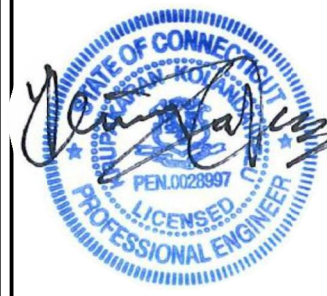
ENGINEER																	
APPLICANT																	
SITE INFORMATION	SITE NAME: WATERBURY SCT PSLC: 467706 NB+C JOB NO: 100820 SITE ADDRESS: 150 MATTATUCK HGTS WATERBURY, CT 06705 NEW HAVEN COUNTY																
DESIGN RECORD	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th colspan="4">REVISIONS</th> </tr> <tr> <th>REV</th> <th>DATE</th> <th>DESCRIPTION</th> <th>BY</th> </tr> </thead> <tbody> <tr> <td>1</td> <td>01/24/22</td> <td>MODIFICATION DRAWINGS</td> <td>DS</td> </tr> <tr> <td>0</td> <td>06/11/21</td> <td>MODIFICATION DRAWINGS</td> <td>PHJ</td> </tr> </tbody> </table>	REVISIONS				REV	DATE	DESCRIPTION	BY	1	01/24/22	MODIFICATION DRAWINGS	DS	0	06/11/21	MODIFICATION DRAWINGS	PHJ
REVISIONS																	
REV	DATE	DESCRIPTION	BY														
1	01/24/22	MODIFICATION DRAWINGS	DS														
0	06/11/21	MODIFICATION DRAWINGS	PHJ														
PROFESSIONAL STAMP																	
ENGINEER	KRUPAKARAN KOLANDAIVELU, P.E. STATE OF CONNECTICUT PROFESSIONAL ENGINEER LICENSE #PEN.0028997																
SHEET TITLE	ANTENNA MOUNT MODIFICATION DETAILS																
SHEET NUMBER	SS-1																



PHOTO 1

EXISTING VERIZON ANTENNA
MOUNT AT 108.0' ELEV



PHOTO 2



PHOTO 3



PHOTO 4

ENGINEER

NB+C
TOTALLY COMMITTED.
NB+C ENGINEERING SERVICES, LLC.
1777 SENTRY PARKWAY WEST
VENA 17, SUITE 200
BLUE BELL, PA 19022
(267) 460-0122

APPLICANT



SITE INFORMATION

SITE NAME: WATERBURY SCT
PSLC: 467706
NB+C JOB NO: 100820
SITE ADDRESS:
150 MATTATUCK HGTS
WATERBURY, CT 06705
NEW HAVEN COUNTY

DESIGN RECORD

REVISIONS			
REV	DATE	DESCRIPTION	BY
1	01/24/22	MODIFICATION DRAWINGS	DS
0	06/11/21	MODIFICATION DRAWINGS	PHU

PROFESSIONAL STAMP



ENGINEER

KRUPAKARAN KOLANDAIVELU, P.E.
STATE OF CONNECTICUT
PROFESSIONAL ENGINEER
LICENSE #PEN.0028997

SHEET TITLE

**ANTENNA
MOUNT
PHOTOS**

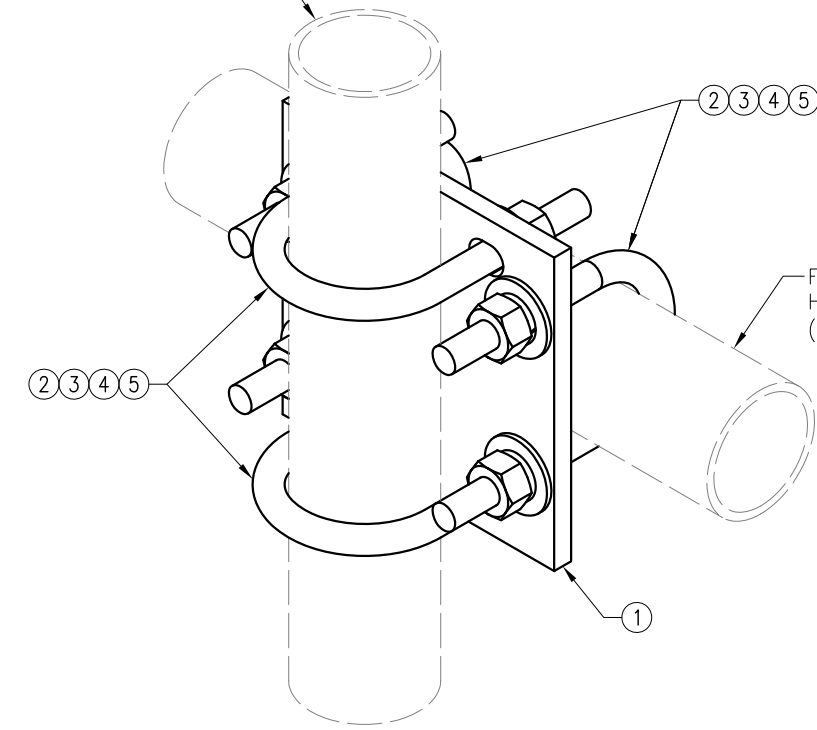
SHEET NUMBER

SS-2

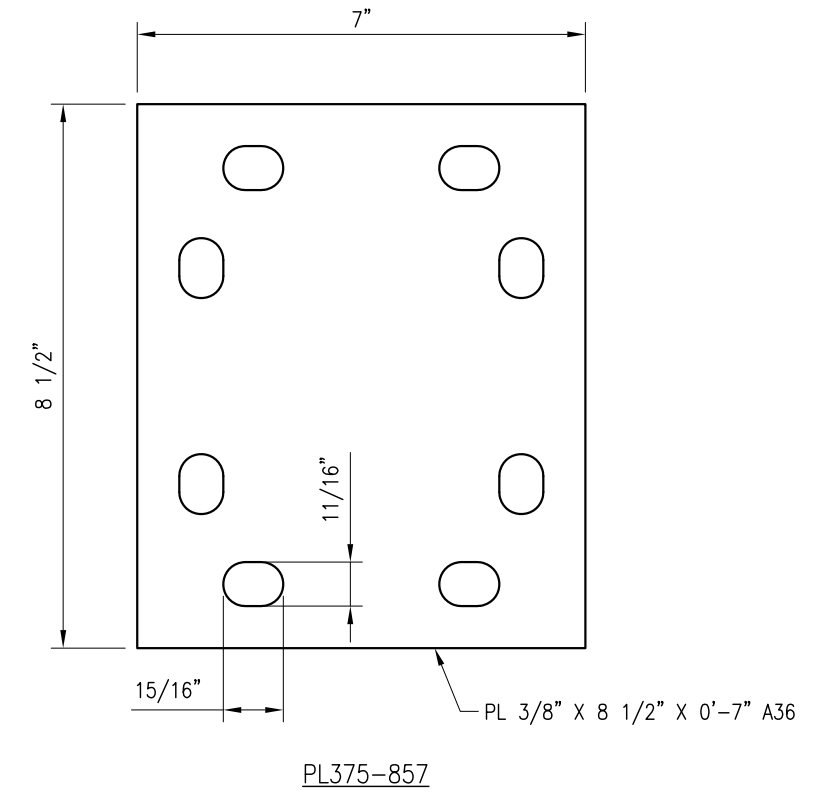
VzW
SMART Tool[®]
Vendor



FITS 2.375" O.D. AND 2.875" O.D.
 VERTICAL PIPE.
 (NOT INCLUDED IN THIS KIT)



FITS 2.375" O.D. AND 2.875" O.D.
 HORIZONTAL PIPE.
 (NOT INCLUDED IN THIS KIT)



NOTES:
 1. HOT-DIPPED GALVANIZED PER ASTM A123.

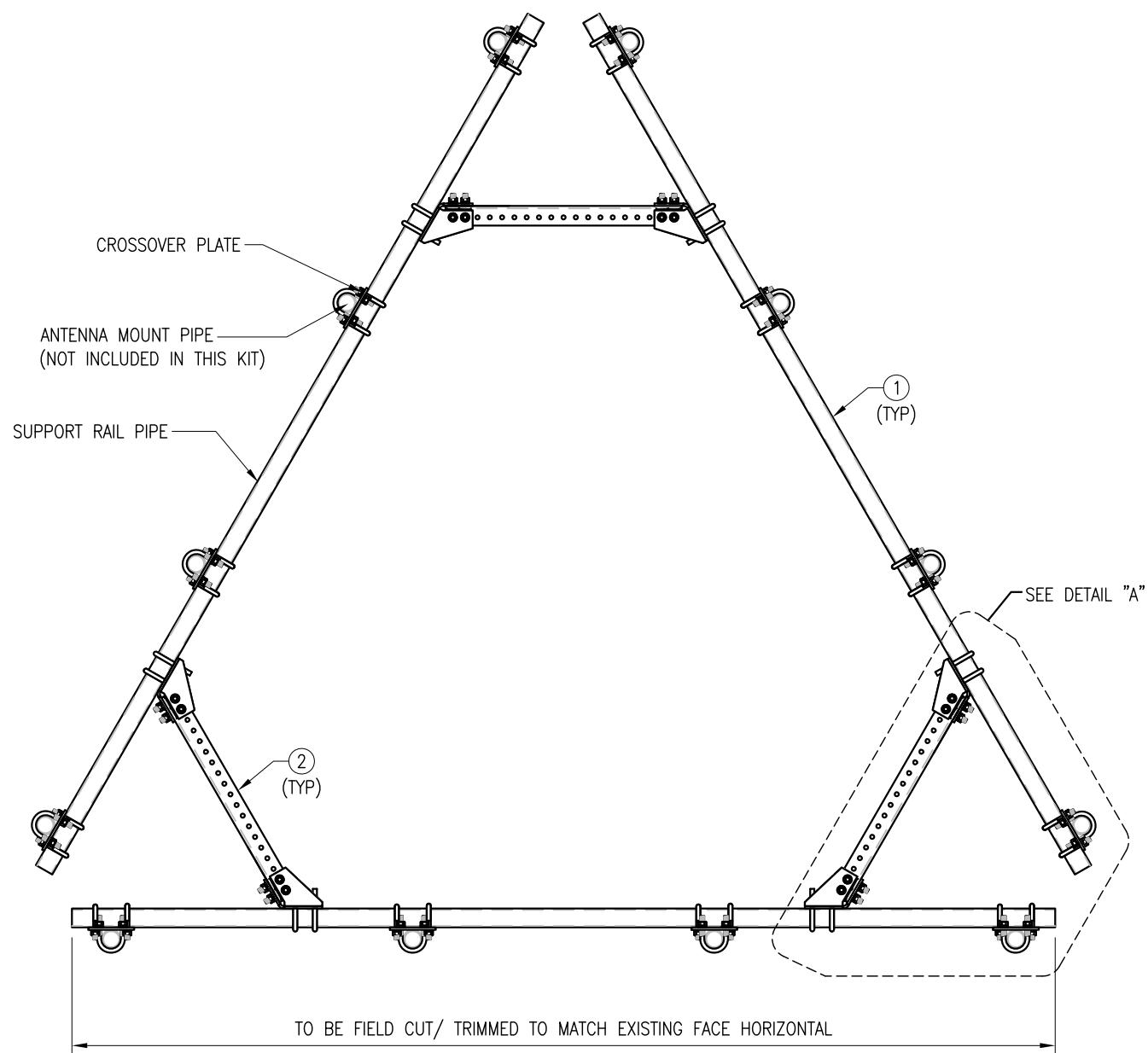
VZWSMART-MSK1 (CROSSOVER PLATE)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	1	PL375-857	PL 3/8" X 8 1/2" X 0'-7" A36	MSK1-F1	6
2	4	MS02-625-300-500	RU-BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)	RBC-1	5
3	8	FW-625	5/8" HDG USS FLAT WASHER	---	1
4	8	LW-625	5/8" HDG LOCK WASHER	---	0
5	8	NUT-625	5/8" HDG HEX NUT	---	1
GALVANIZED WT					14

DRAWN BY: H.R. CHECKED BY: HMA

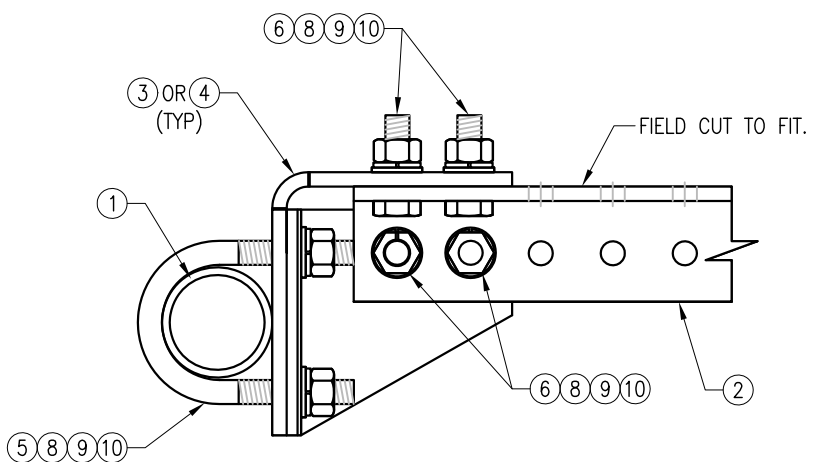
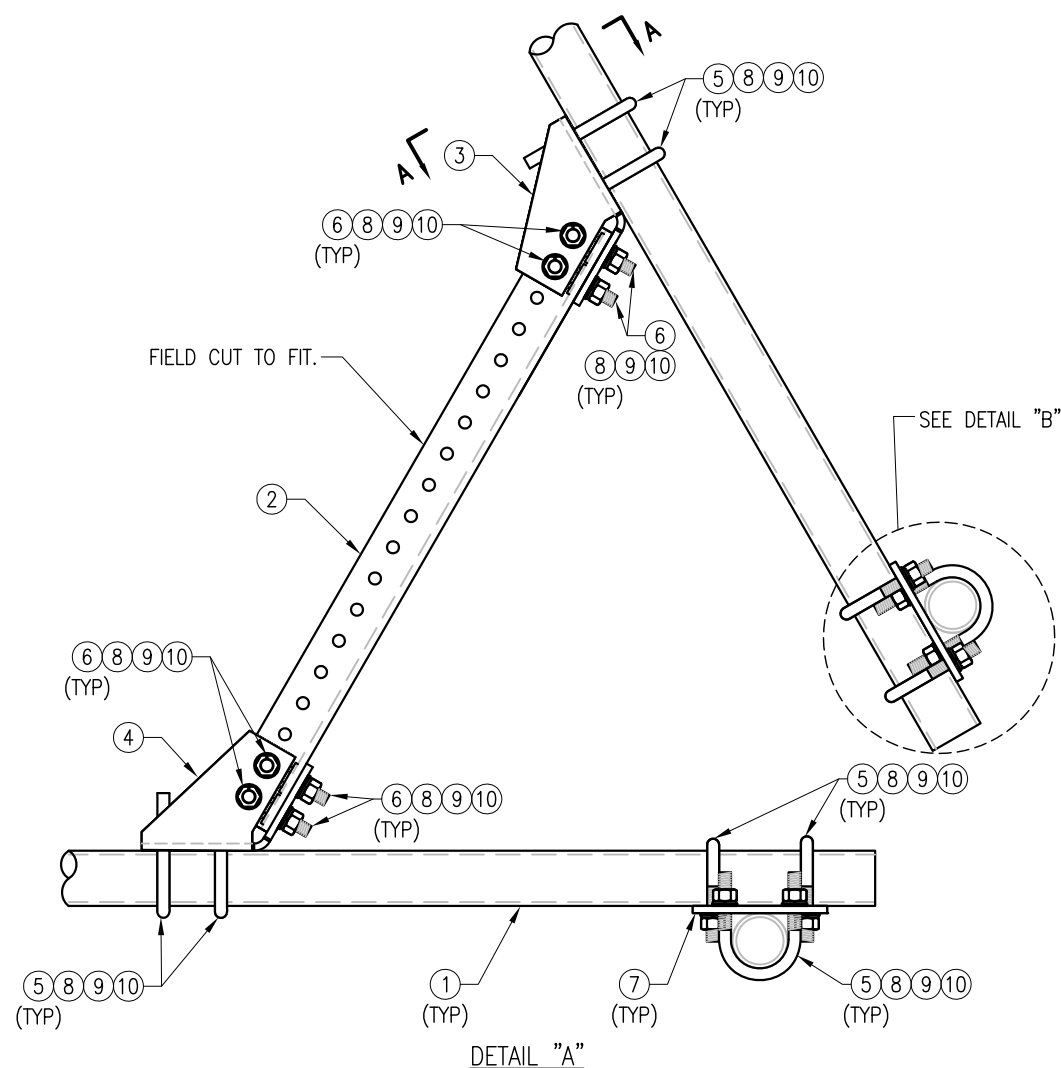
REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	H.R.	05/08/20

SHEET TITLE:
VZWSMART-MSK1
CROSSOVER PLATE

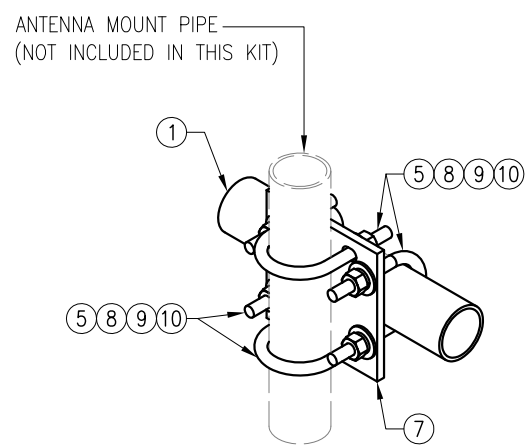
SHEET NUMBER: **VZWSMART-MSK1** REV #: **0**



PLAN VIEW



SECTION "A-A"



DETAIL "B"

NOTES:

1. HOT-DIPPED GALVANIZED PER ASTM A123.

VZW SMART-PLK1 (SUPPORT RAIL KIT)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	PST2875-12.5	2.5" PST (2.875" O.D. X 0.203" THK.) X 12'-6" A53 GR-B	PLK1-F1	292
2	3	L33375-3	L 3" X 3" X 3/8" X 3'-0" A36	PLK1-F1	66
3	3	CBP-L	CORNER BENT PLATE BRACKET	PLK1-F2	28
4	3	CBP-R	CORNER BENT PLATE BRACKET	PLK1-F2	28
5	60	MS02-625-300-500	RU-BOLT 5/8" X 3" I.W. X 5" I.L. A36 (OR EQUIV.)	RBC-1	82
6	24	---	BOLT 5/8" X 2" A325	---	9
7	12	PL375-857	PL 3/8" X 8 1/2" X 7" A36	PLK1-F3	77
8	144	FW-625	5/8" HDG USS FLAT WASHER	---	12
9	144	LW-625	5/8" HDG LOCK WASHER	---	3
10	144	NUT-625	5/8" HDG HEX NUT	---	17
GALVANIZED WT					504

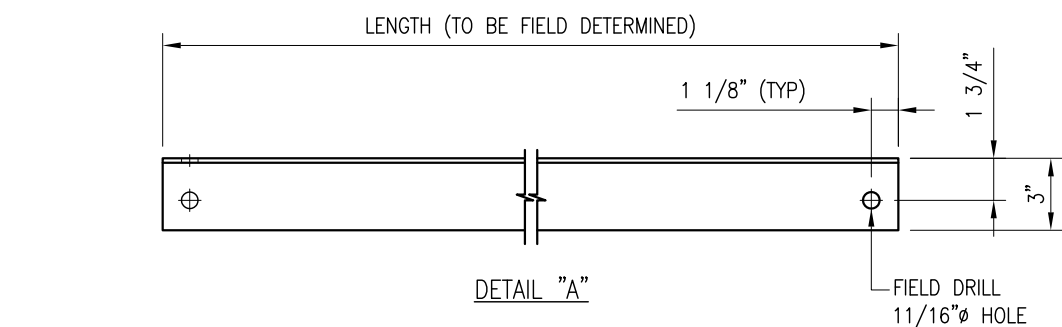
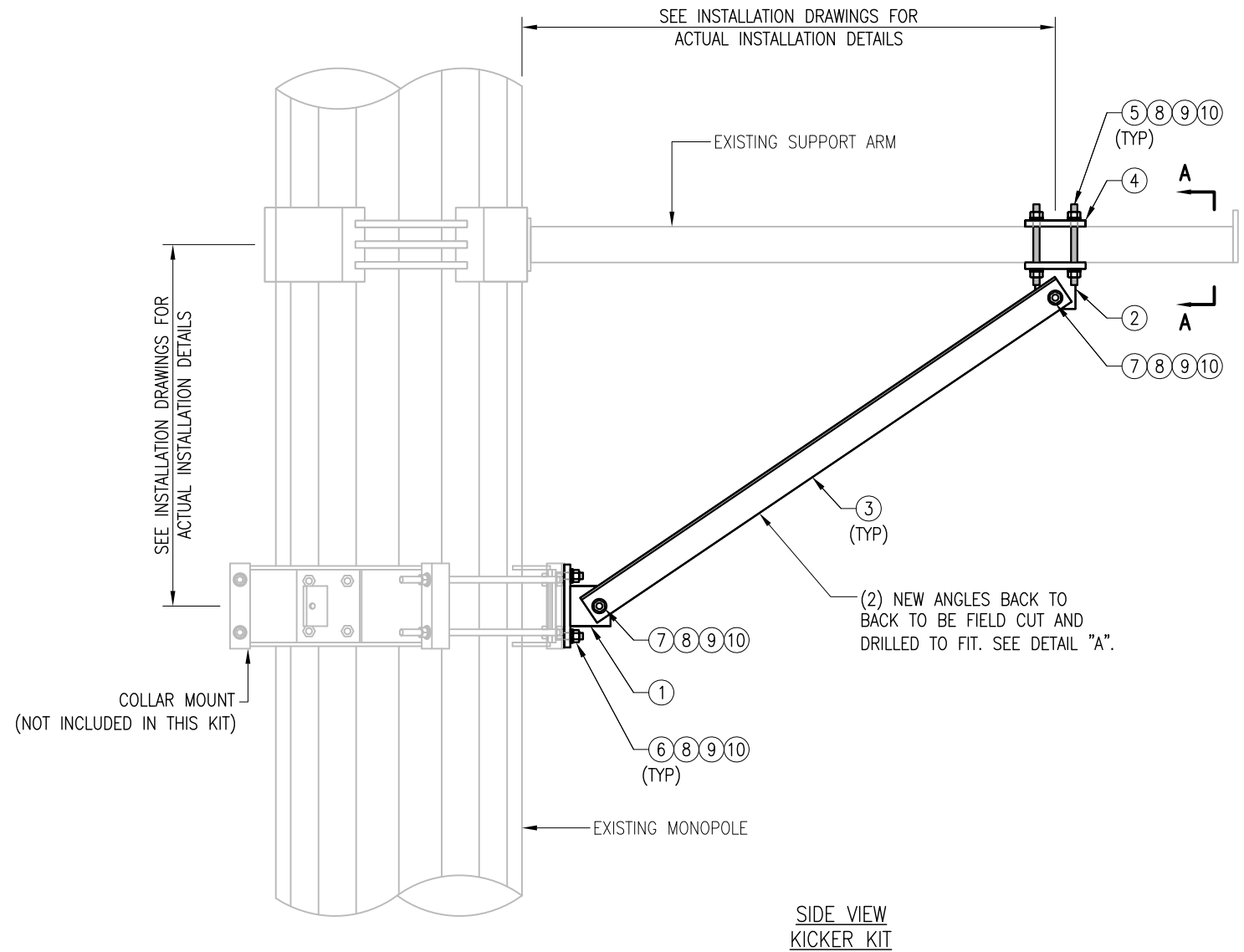
DRAWN BY: H.R. CHECKED BY: HMA

REV.	DESCRIPTION	BY	DATE
1	FIRST ISSUE	H.R.	04/20/21

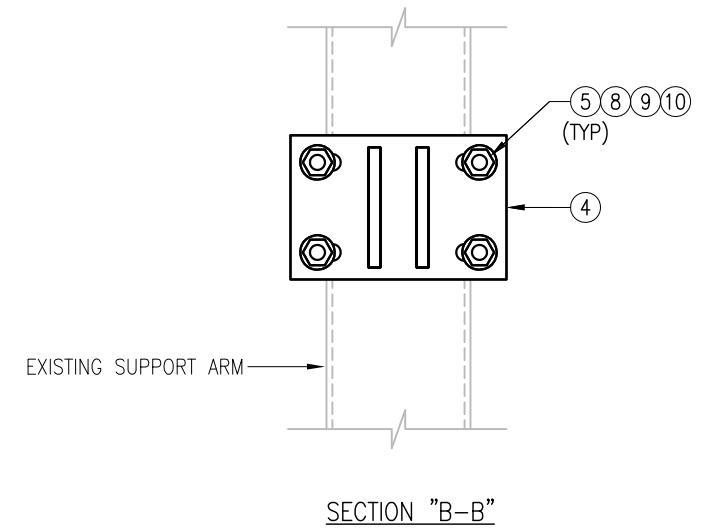
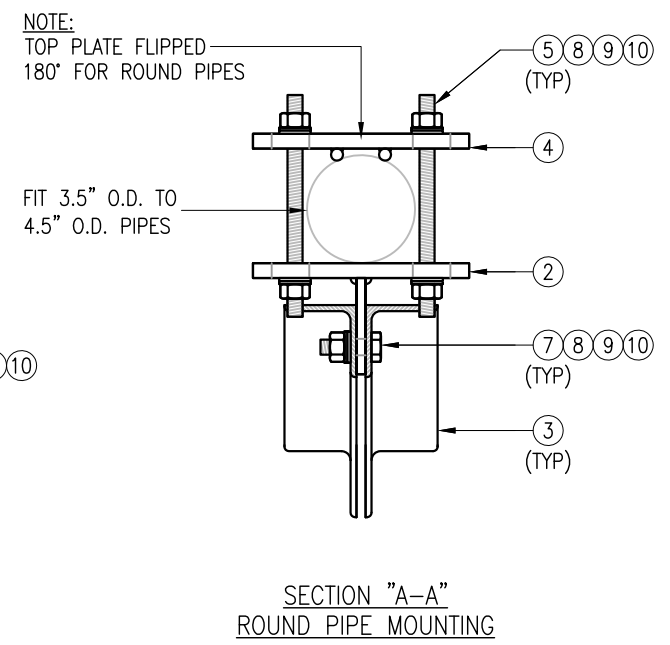
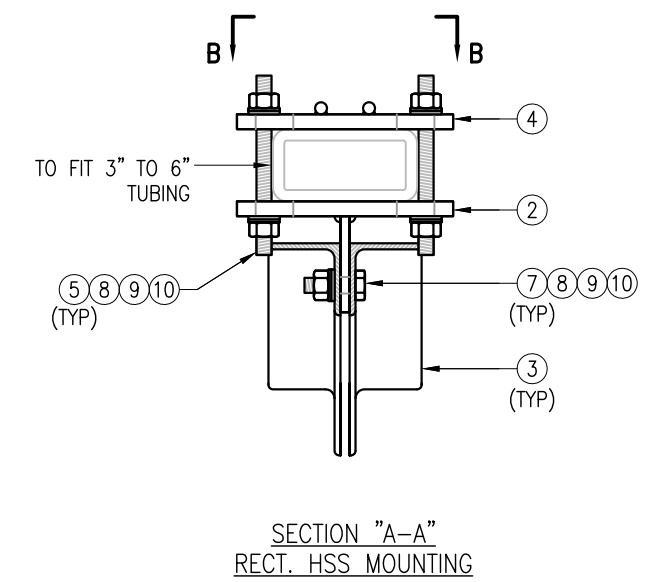
SHEET TITLE:
**VZWSMART-PLK1
 SUPPORT RAIL KIT**

SHEET NUMBER: **VZWSMART-PLK1** REV #: **0**

NOTE:
THE LOCATION OF KICKER AND EXISTING ANTENNA MOUNT SHOWN ON THE DRAWING IS FOR REPRESENTATION PURPOSE ONLY. SEE INSTALLATION DRAWINGS FOR ACTUAL INSTALLATION OF DETAILS.



NOTES:
1. ALL HOLES ARE 11/16" DIA. U.N.O
2. HOT-DIPPED GALVANIZED PER ASTM A123.
3. FIT UP TO 6" SQ. TUBING OR 4 1/2" O.D. PIPE



VZSMART-PLK5 (KICKER KIT)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	BRKW-XXX	BRACKET WELDMENT A36	PLK5-F3	43.8
2	3	BRKW-XXXX	BRACKET WELDMENT A36	PLK5-F2	35.7
3	6	L331875-8	L 3" X 3" X 3/16" X 8'-0" A36	PLK5-F4	182.9
4	3	PL-KI	PL 5/8" X 6" X 9" A36	PLK5-F1	29.0
5	12	---	THREADED ROD 5/8" DIA. X 1'-0" F1554-36 HDG	---	---
6	6	---	BOLT 5/8" X 2 1/4" A325	---	---
7	12	---	BOLT 5/8" X 2" A325	---	---
8	42	FW-625	5/8" HDG USS FLAT WASHER	---	3
9	42	LW-625	5/8" HDG LOCK WASHER	---	1
10	42	NUT-625	5/8" HDG HEX NUT	---	5
GALVANIZED WT					291

VzW
SMART Tool[®]
Vendor



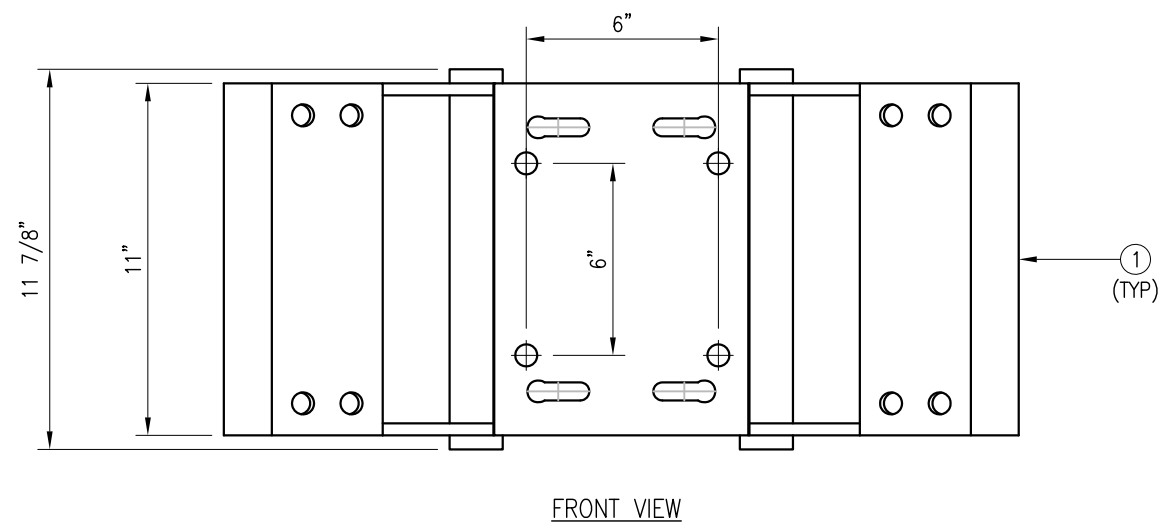
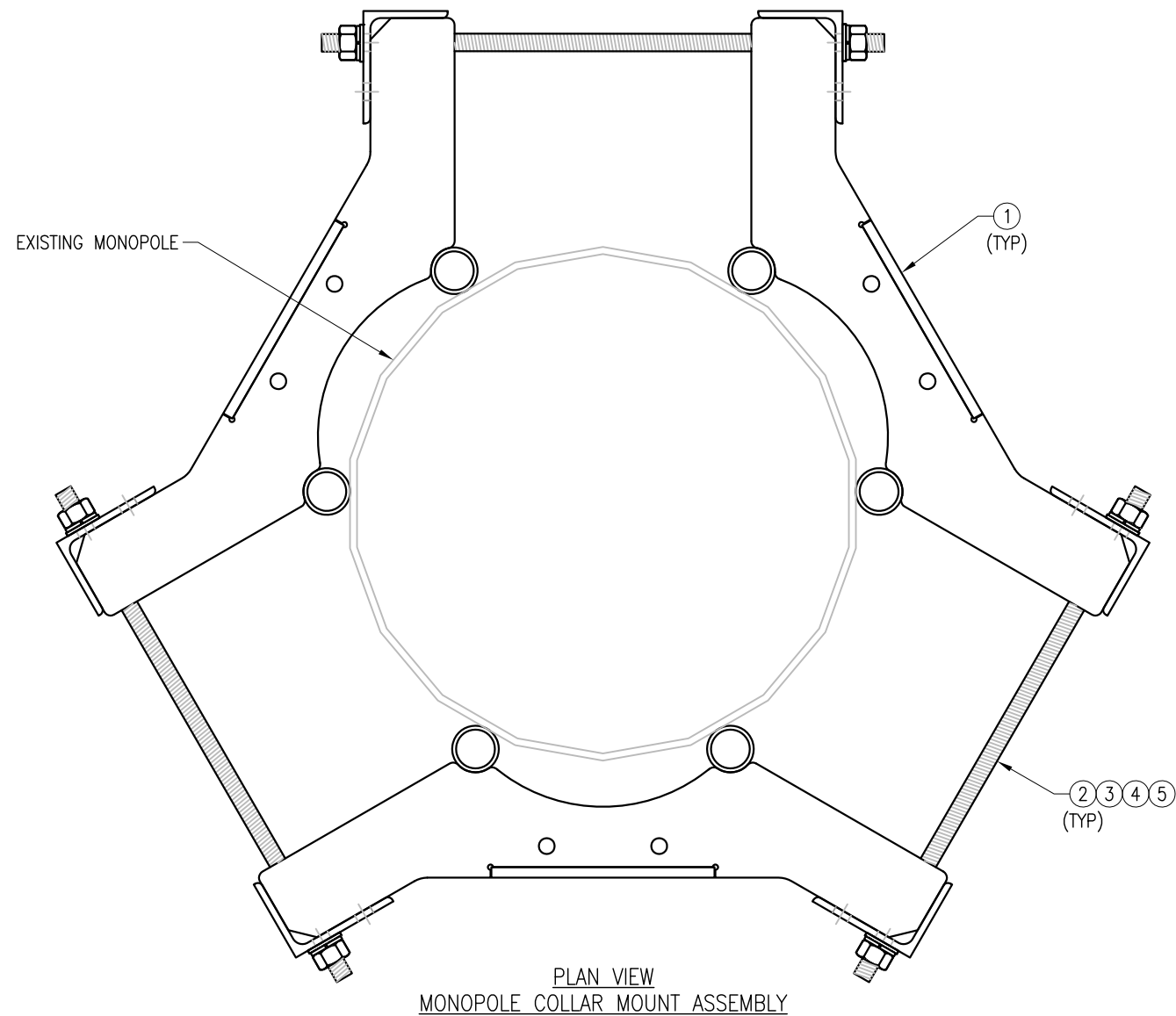
DRAWN BY: BT CHECKED BY: HMA/KW

REV.	DESCRIPTION	BY	DATE
△	FIRST ISSUE	BT	05/08/20
△			
△			
△			

SHEET TITLE:
**VZSMART-PLK5
KICKER KIT**

SHEET NUMBER: **VZSMART-PLK5** REV #: **0**

VzW
SMART Tool[®]
 Vendor



- NOTES:**
 1. FIT 12" TO 45" DIA MONOPOLE.
 2. HOT-DIPPED GALVANIZED PER ASTM A123.

VZSMART-PLK7 (MONOPOLE COLLAR MOUNT ASSEMBLY)					
ITEM NO.	QTY.	PART NO.	DESCRIPTION	SHEET #	WT
1	3	CM-1245	COLLAR MOUNT ASSEMBLY	PLK7-F1	147
2	6	---	THREADED ROD 5/8" X 4'-0" A193-B7	---	
3	12	FW-625	5/8" HDG USS FLAT WASHER	---	1
4	12	LW-625	5/8" HDG LOCK WASHER	---	0
5	12	NUT-625	5/8" HDG HEX NUT	---	1
GALVANIZED WT					150


DRAWN BY: BT CHECKED BY: HMA/KW

REV.	DESCRIPTION	BY	DATE
△	FIRST ISSUE	BT	05/11/20
△			
△			
△			

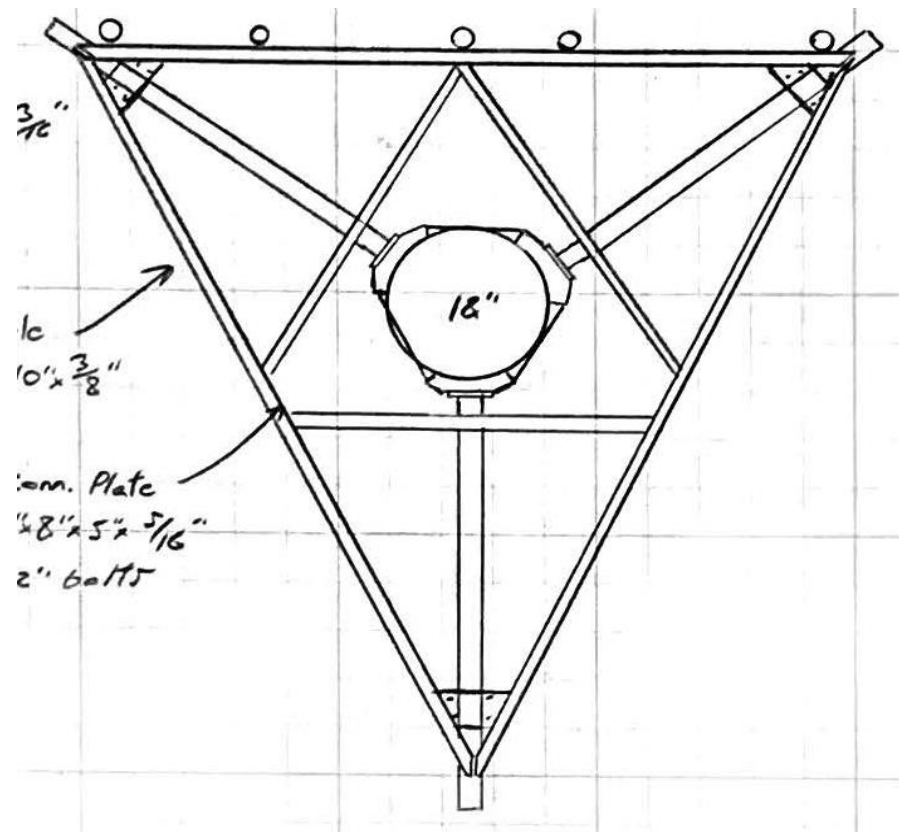
SHEET TITLE:
 VZSMART-PLK7
 MONOPOLE COLLAR
 MOUNT ASSEMBLY

SHEET NUMBER: VZSMART-PLK7 REV #: 0

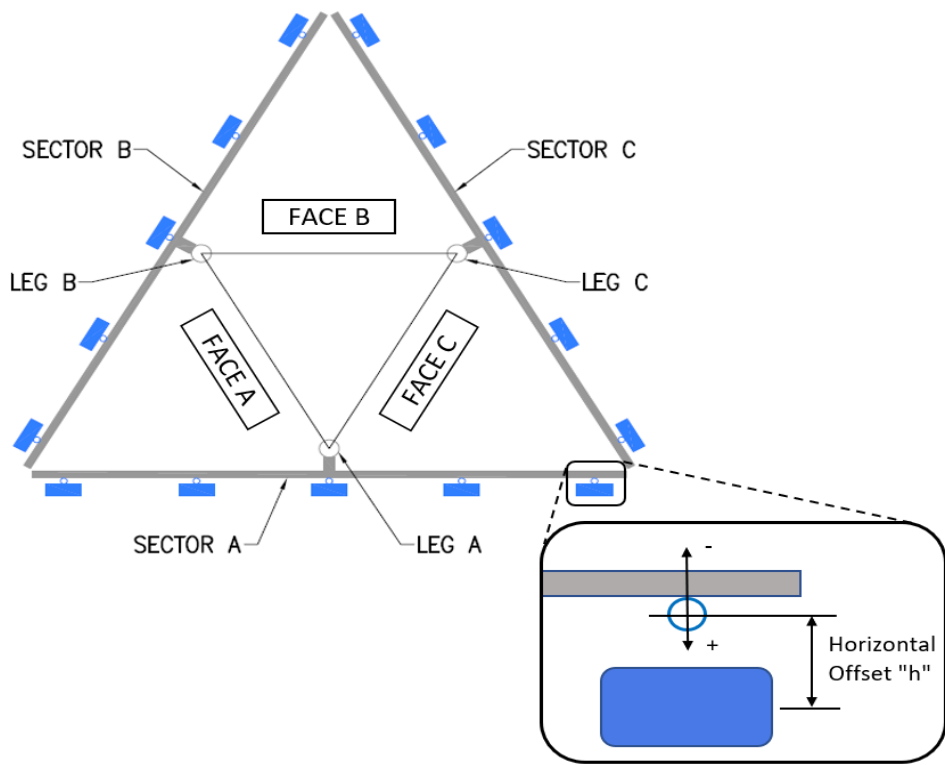


	Antenna Mount Mapping Form (PATENT PENDING)			FCC #
	Tower Owner:	CROWN CASTLE	Mapping Date:	3/24/2021
	Site Name:	WATERBURY S CT	Tower Type:	Monopole
	Site Number or ID:	467706	Tower Height (Ft.):	
Mapping Contractor:	HUDSON DESIGN GROUP, LLC.	Mount Elevation (Ft.):	111.75	

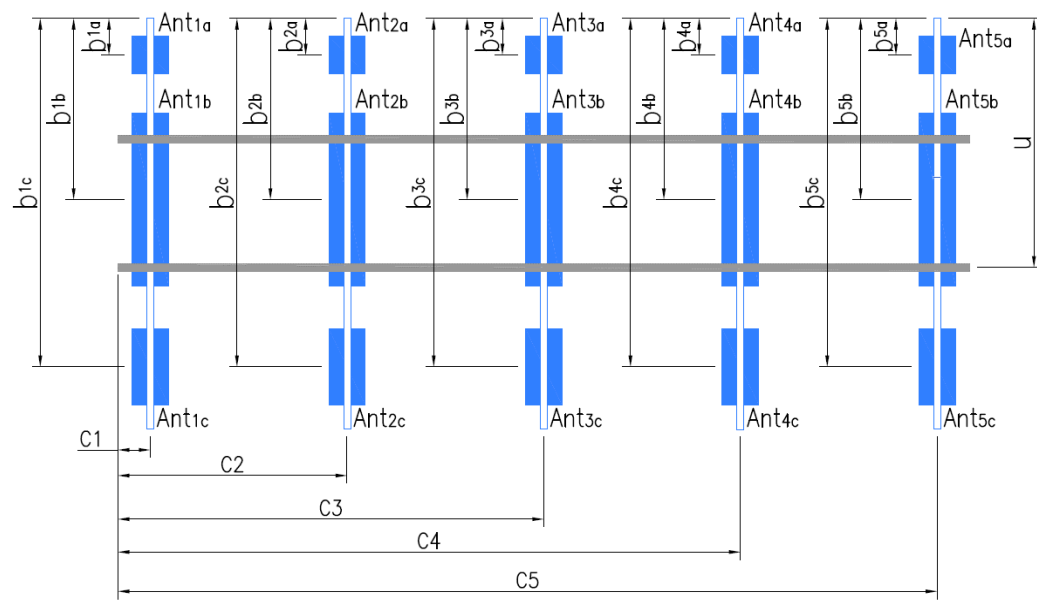
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Mount Pipe Configuration and Geometries [Unit = Inches]							
Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."	Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "u"	Horizontal Offset "C1, C2, C3, etc."
A1	2" STD. PIPE X 96" LONG	80.00	6.00	C1	2" STD. PIPE X 96" LONG	80.00	6.00
A2	2" STD. PIPE X 48" LONG	42.00	38.00	C2	2" STD. PIPE X 48" LONG	42.00	38.00
A3	2" STD. PIPE X 96" LONG	75.00	77.00	C3	2" STD. PIPE X 96" LONG	75.00	77.00
A4	2" STD. PIPE X 48" LONG	42.00	101.00	C4	2" STD. PIPE X 48" LONG	42.00	101.00
A5	2" STD. PIPE X 66" LONG	60.00	150.00	C5	2" STD. PIPE X 66" LONG	60.00	150.00
A6				C6			
B1	2" STD. PIPE X 96" LONG	80.00	6.00	D1			
B2	2" STD. PIPE X 66" LONG	60.00	38.00	D2			
B3	2" STD. PIPE X 96" LONG	75.00	77.00	D3			
B4	2" STD. PIPE X 48" LONG	42.00	101.00	D4			
B5	2" STD. PIPE X 66" LONG	60.00	150.00	D5			
B6				D6			
Distance between bottom rail and mount CL elevation (dim d). Unit is inches. See 'Mount Elev Ref' tab for details. :							6.00
Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.) :							3.46
Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.) :							
Please enter additional information or comments below.							
MONOPOLE WALL THICKNESS: 0.250"							
Tower Face Width at Mount Elev. (ft.):		Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.):				18	

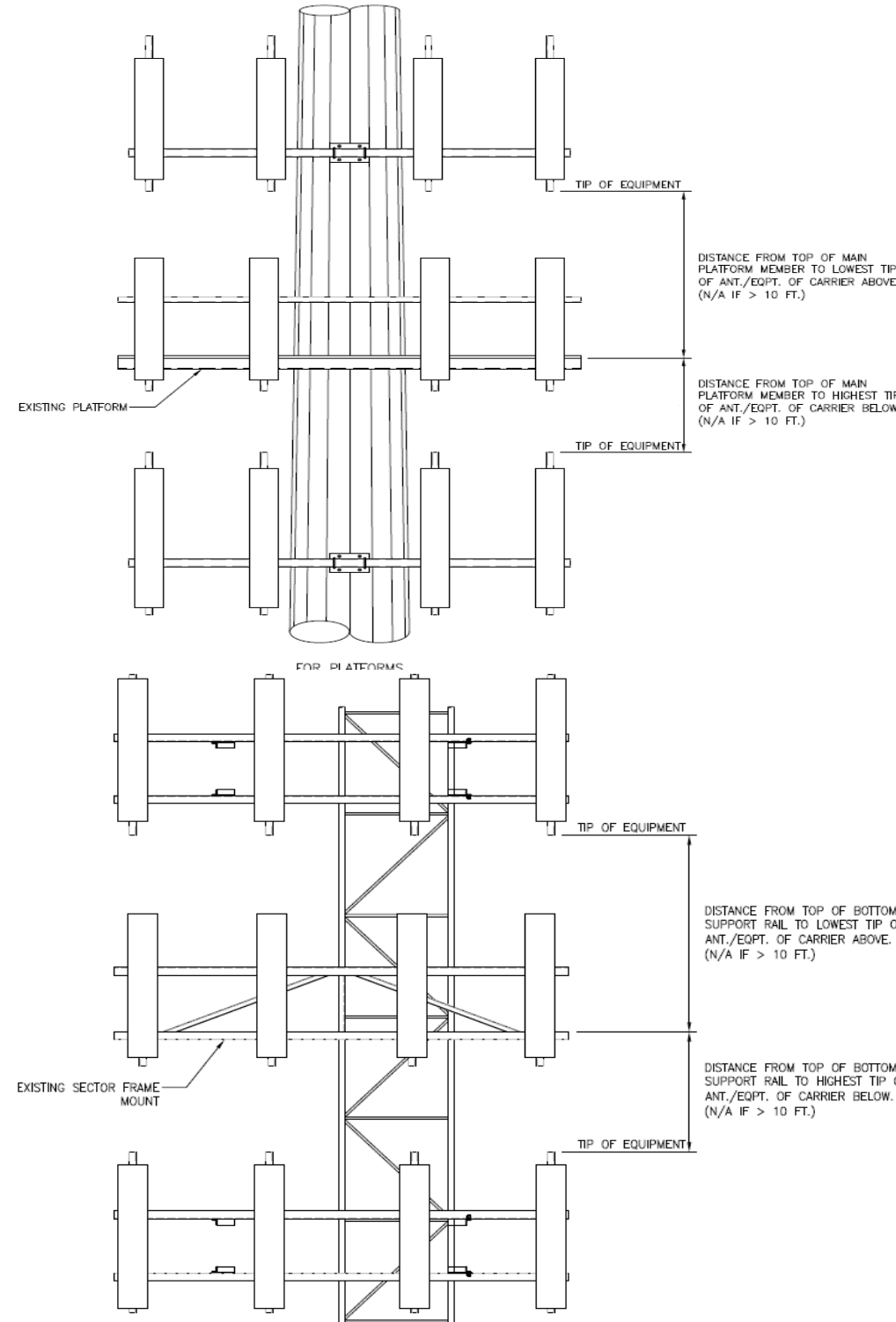


Ants. Items	Enter antenna model. If not labeled, enter "Unknown".						Mounting Locations [Units are inches and degrees]			Photos of antennas
	Antenna Models if Known	Width (in.)	Depth (in.)	Height (in.)	Coax Size and Qty	Antenna Center-line (Ft.)	Vertical Distances "b _{1a} , b _{2a} , b _{3a} , b _{1b} ..." (Inches)	Horiz. Offset "h" (Use "-" if Ant. is behind)	Antenna Azimuth (Degrees)	
Sector A										
Ant _{1a}										
Ant _{1b}										
Ant _{1c}	FD9R6004/2C-3C	6.50	0.75	5.00		112.833	61.00	-3.00		48,70
Ant _{2a}										
Ant _{2b}	RFV01U-D1A	16.00	12.00	16.00		113.75	12.00	-9.00		51,70
Ant _{2c}										
Ant _{3a}										
Ant _{3b}	(2) SBNHH-1D65B	12.00	7.00	73.00		113.583	47.00	10.00	40.00	54,70
Ant _{3c}										
Ant _{4a}										
Ant _{4b}	RFV01U-D2A	16.00	10.00	16.00		113.75	12.00	-8.00		56,71
Ant _{4c}										
Ant _{5a}										
Ant _{5b}	BXA80063/4CF	11.00	5.00	47.50		113.75	30.00	9.00	40.00	60,71
Ant _{5c}	FD9R6004/2C-3C	6.50	0.75	5.00		113	39.00	-3.00		48,61,71
Ant on Standoff										
Ant on Standoff										
Ant on Tower										
Ant on Tower										



Antenna Layout (Looking Out From Tower)

Mount Azimuth (Degree) for Each Sector				Tower Leg Azimuth (Degree) for Each Sector				Sector B																		
Sector A:	50.00	Deg	Leg A:		Deg	Ant _{1a}																				
Sector B:	170.00	Deg	Leg B:		Deg	Ant _{1b}																				
Sector C:	290.00	Deg	Leg C:		Deg	Ant _{1c}	FD9R6004/2C-3C	6.50	0.75	5.00	112.833	61.00	-3.00											48,61,72		
Sector D:		Deg	Leg D:		Deg	Ant _{2a}																				
Climbing Facility Information						Ant _{2b}	RFV01U-D1A	16.00	12.00	16.00	113.75	30.00	-9.00											51,72		
Location:	5.00	Deg	N/A			Ant _{2c}																				
Climbing Facility	Corrosion Type:		Good condition.			Ant _{3a}																				
	Access:		Climbing path was unobstructed.			Ant _{3b}	(2) SBNHH-1D65B	12.00	7.00	73.00	113.583	47.00	10.00	160.00										54,73		
	Condition:		Good condition.			Ant _{3c}																				
						Ant _{4a}																				
						Ant _{4b}	RFV01U-D2A	16.00	10.00	16.00	113.75	12.00	-8.00											56,73		
						Ant _{4c}																				
						Ant _{5a}	GPS				116.25													73		
						Ant _{5b}	BXA80063/4CF	11.00	5.00	47.50	113.75	30.00	9.00	160.00											60,73	
						Ant _{5c}	FD9R6004/2C-3C	6.50	0.75	5.00	113	39.00	-3.00											48,73		
						Ant on Standoff	RHSDC-6627-PF-48	15.00	10.00	28.00														62,63,73,74		
						Ant on Standoff																				
						Ant on Tower																				
						Ant on Tower																				
Sector C																										
						Ant _{1a}																				
						Ant _{1b}																				
						Ant _{1c}	FD9R6004/2C-3C	6.50	0.75	5.00	112.833	61.00	-3.00												48,74	
						Ant _{2a}																				
						Ant _{2b}	RFV01U-D1A	16.00	12.00	16.00	113.75	12.00	-9.00												51,74	
						Ant _{2c}																				
						Ant _{3a}																				
						Ant _{3b}	(2) SBNHH-1D65B	12.00	7.00	73.00	113.583	47.00	10.00	290.00											54,74	
						Ant _{3c}																				
						Ant _{4a}																				
						Ant _{4b}	RFV01U-D2A	16.00	10.00	16.00	113.75	12.00	-8.00												56,74	
						Ant _{4c}																				
						Ant _{5a}																				
						Ant _{5b}	BXA80063/4CF	11.00	5.00	47.50	113.75	30.00	9.00	290.00											60,75	
						Ant _{5c}	FD9R6004/2C-3C	6.50	0.75	5.00	113	39.00	-3.00											48,75		
						Ant on Standoff																				
						Ant on Standoff																				
						Ant on Tower																				
						Ant on Tower																				
Sector D																										
						Ant _{1a}																				
						Ant _{1b}																				
						Ant _{1c}																				
						Ant _{2a}																				
						Ant _{2b}																				
						Ant _{2c}																				
						Ant _{3a}																				
						Ant _{3b}																				
						Ant _{3c}																				
						Ant _{4a}																				
						Ant _{4b}																				
						Ant _{4c}																				
						Ant _{5a}																				
						Ant _{5b}																				
						Ant _{5c}																				
						Ant on Standoff																				
						Ant on Standoff																				
						Ant on Tower																				
						Ant on Tower																				



Observed Safety and Structural Issues During the Mount Mapping

Issue #	Description of Issue	Photo #
---------	----------------------	---------

1		
2	(12) 1-5/8"∅ COAX, (2) 1-1/4"∅ HYBRID, (1) 1/2"∅ COAX	84-88
3		
4		
5		
6		
7		
8		

Mapping Notes

1. Please report any visible structural or safety issues observed on the antenna mounts (Damaged members, loose connections, tilting mounts, safety climb issues, etc.)
2. If the thickness of the existing pipes or tubing can't be obtained from a general tool (such as Caliper), please use an ultrasonic measurement tool (thickness gauge) to measure the thickness.
3. Please create all required detail sketches of the mounts and insert them into the "Sketches" tab.
4. Please measure and enter the bolt sizes and types under the Members Box in the spreadsheet of the mount type.
5. Take and label the photos of the tower, mounts, connections, antennas and all measurements. Minimum 50 photos are required.
6. Please measure and report the size and length of all existing antenna mounting pipes.
7. Please measure and report the antenna information for all sectors.
8. Don't delete or rearrange any sheet or contents of any sheet from this mapping form.

Standard Conditions

1. Obvious safety and structural issues/deficiencies noticed at the time of the mount mapping are to be reported in this mapping. However, this mount mapping is not a condition assessment of the mount.



Antenna Mount Mapping Form (PATENT PENDING)

FCC #

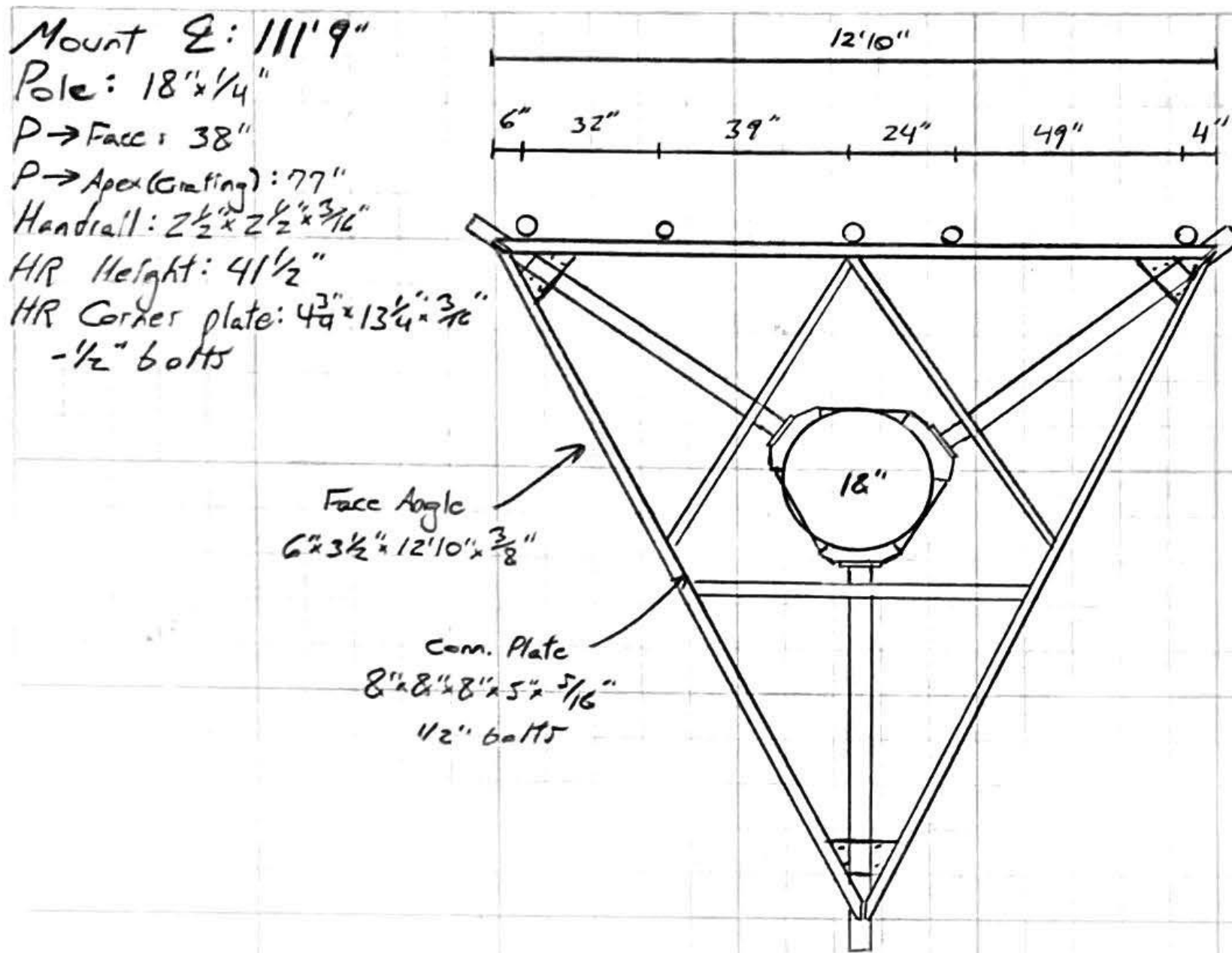
Tower Owner:	CROWN CASTLE	Mapping Date:	3/24/2021
Site Name:	WATERBURY S CT	Tower Type:	Monopole
Site Number or ID:	467706	Tower Height (Ft.):	
Mapping Contractor:	HUDSON DESIGN GROUP, LLC.	Mount Elevation (Ft.):	111.75

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Please Insert Sketches of the Antenna Mount

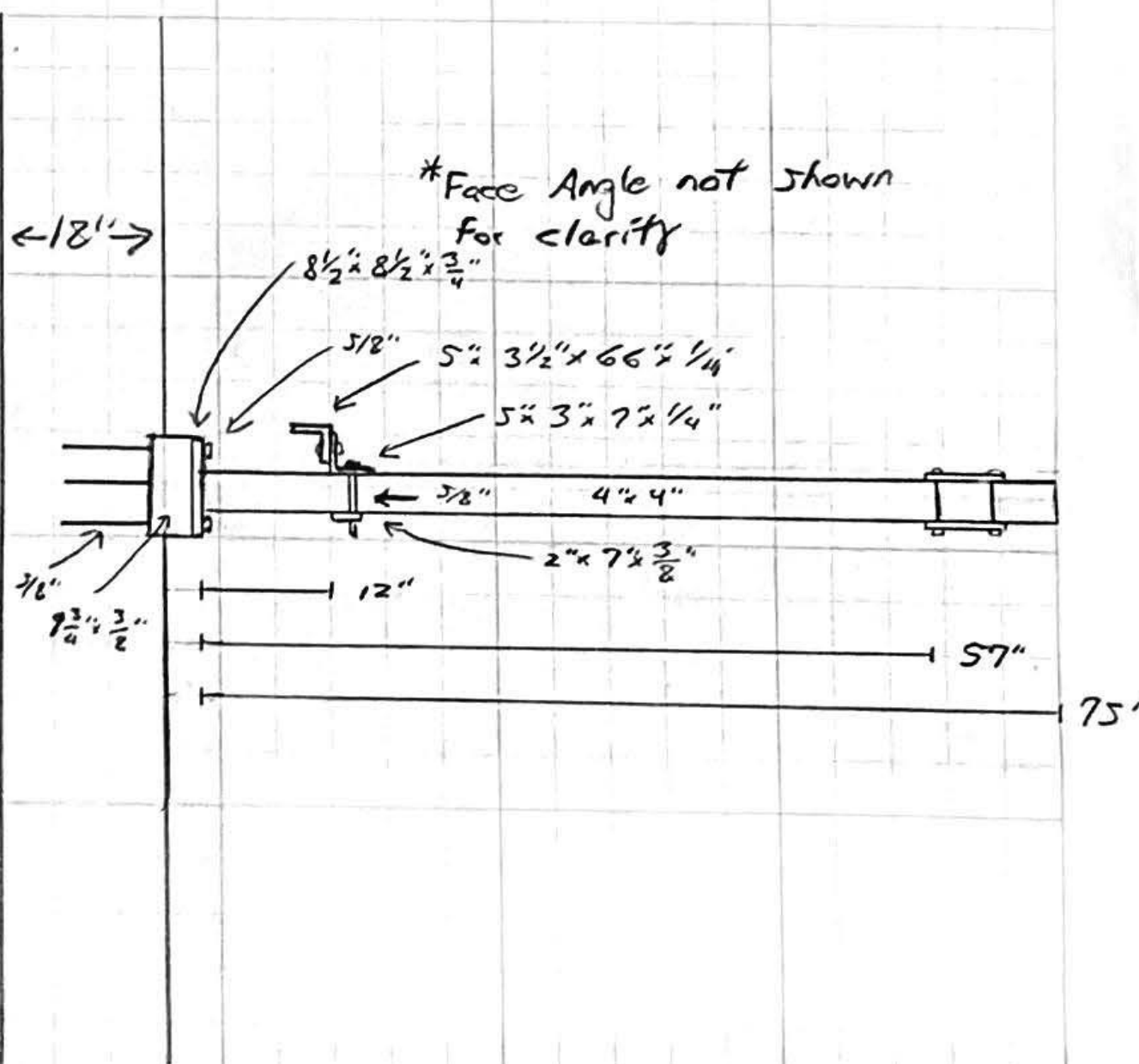
DATE: 3-24-21
 Project Name: Waterbury S CT
 Project No.: _____
 Design By: Josh Chk'd By: _____ Page ____ of ____

45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586



Inventory

- P1 (1) RFJ Diplexer
- P2 RFV01U-D1A
- P3 (2) JBNHH-1065B
- P4 RFV01U-D2A
- P5 BXA8006314CF
(1) RFJ Diplexer



157132

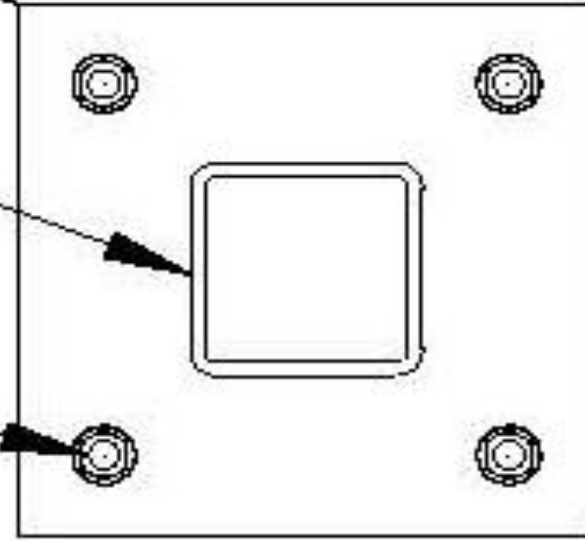
(2) OVPs mounted to grating

Please Insert Sketches of the Antenna Mount, cont'd

8" X 8" X 3/4" THK.
PLATE

4" X 4" X 1/4" THK.
HSS

(4) 5/8"Ø BOLTS

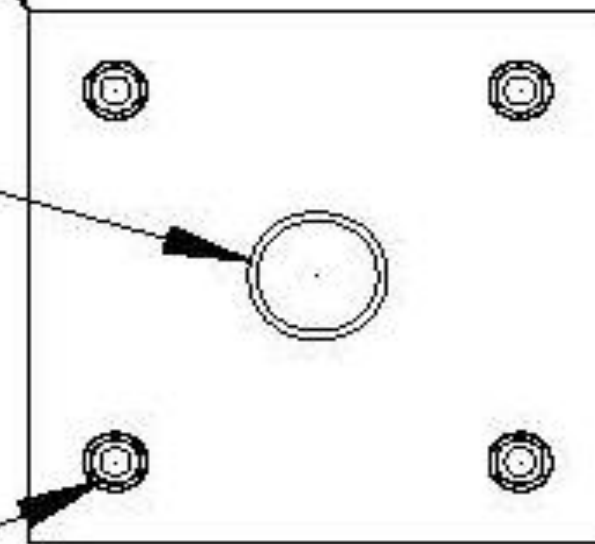


**STANDOFF TO RING
MOUNT CONNECTION**

(2) 8" X 8" PLATES

2"Ø STD. PIPE

(2) 1/2"Ø BOLTS



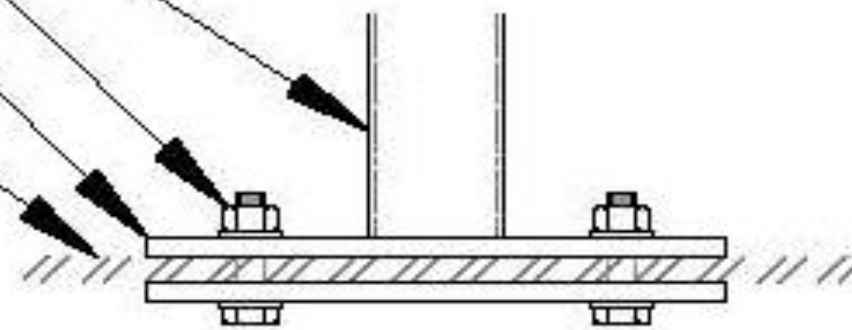
S.O. MOUNT DETAIL

2"Ø STD. PIPE

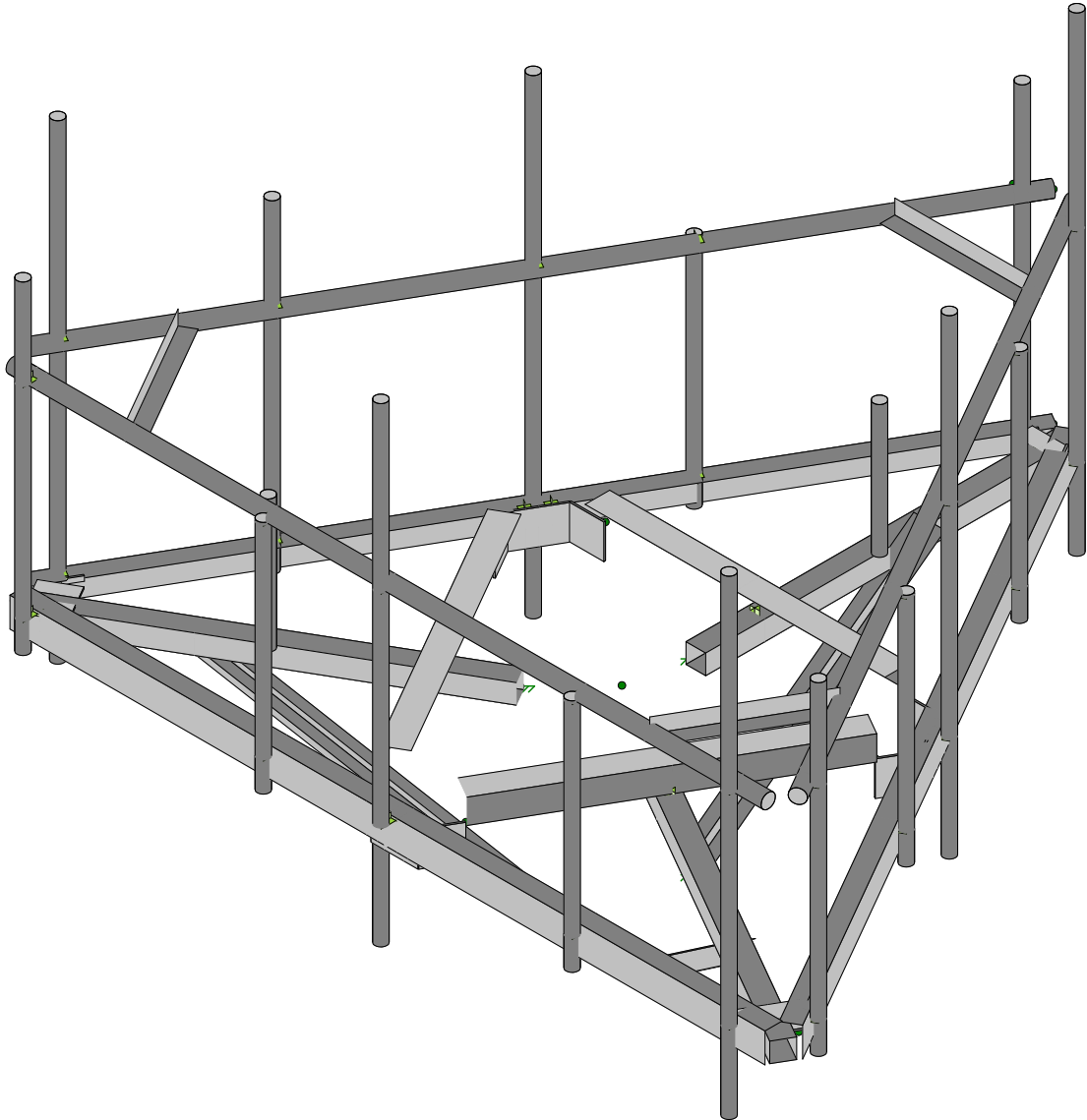
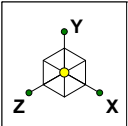
(4) BOLTS (TYP.)

(2) BASE PLATES

EXISTING GRATING



TYP. OVP MOUNT SIDE DETAIL



Envelope Only Solution

NB+C ES		SK - 1
Connor Rice, EIT	467706-Waterbury S Ct	Jan 24, 2022 at 9:50 AM
100820	Model Rendering	467706-VZW_MT_LO_H.r3d



Company : NB+C ES
 Designer : Connor Rice, EIT
 Job Number : 100820
 Model Name : 467706-Waterbury S Ct

Jan 24, 2022
 9:51 AM
 Checked By: _____

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
1	Antenna D	None					84		
2	Antenna Di	None					84		
3	Antenna Wo (0 Deg)	None					84		
4	Antenna Wo (30 Deg)	None					84		
5	Antenna Wo (60 Deg)	None					84		
6	Antenna Wo (90 Deg)	None					84		
7	Antenna Wo (120 Deg)	None					84		
8	Antenna Wo (150 Deg)	None					84		
9	Antenna Wo (180 Deg)	None					84		
10	Antenna Wo (210 Deg)	None					84		
11	Antenna Wo (240 Deg)	None					84		
12	Antenna Wo (270 Deg)	None					84		
13	Antenna Wo (300 Deg)	None					84		
14	Antenna Wo (330 Deg)	None					84		
15	Antenna Wi (0 Deg)	None					84		
16	Antenna Wi (30 Deg)	None					84		
17	Antenna Wi (60 Deg)	None					84		
18	Antenna Wi (90 Deg)	None					84		
19	Antenna Wi (120 Deg)	None					84		
20	Antenna Wi (150 Deg)	None					84		
21	Antenna Wi (180 Deg)	None					84		
22	Antenna Wi (210 Deg)	None					84		
23	Antenna Wi (240 Deg)	None					84		
24	Antenna Wi (270 Deg)	None					84		
25	Antenna Wi (300 Deg)	None					84		
26	Antenna Wi (330 Deg)	None					84		
27	Antenna Wm (0 Deg)	None					84		
28	Antenna Wm (30 Deg)	None					84		
29	Antenna Wm (60 Deg)	None					84		
30	Antenna Wm (90 Deg)	None					84		
31	Antenna Wm (120 De...	None					84		
32	Antenna Wm (150 De...	None					84		
33	Antenna Wm (180 De...	None					84		
34	Antenna Wm (210 De...	None					84		
35	Antenna Wm (240 De...	None					84		
36	Antenna Wm (270 De...	None					84		
37	Antenna Wm (300 De...	None					84		
38	Antenna Wm (330 De...	None					84		
39	Structure D	None		-1					3
40	Structure Di	None						53	3
41	Structure Wo (0 Deg)	None						106	
42	Structure Wo (30 Deg)	None						106	
43	Structure Wo (60 Deg)	None						106	
44	Structure Wo (90 Deg)	None						106	
45	Structure Wo (120 D...	None						106	
46	Structure Wo (150 D...	None						106	
47	Structure Wo (180 D...	None						106	
48	Structure Wo (210 D...	None						106	
49	Structure Wo (240 D...	None						106	
50	Structure Wo (270 D...	None						106	
51	Structure Wo (300 D...	None						106	
52	Structure Wo (330 D...	None						106	
53	Structure Wi (0 Deg)	None						106	
54	Structure Wi (30 Deg)	None						106	
55	Structure Wi (60 Deg)	None						106	
56	Structure Wi (90 Deg)	None						106	



Company : NB+C ES
 Designer : Connor Rice, EIT
 Job Number : 100820
 Model Name : 467706-Waterbury S Ct

Jan 24, 2022
 9:51 AM
 Checked By: _____

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
57	Structure Wi (120 De...	None						106	
58	Structure Wi (150 De...	None						106	
59	Structure Wi (180 De...	None						106	
60	Structure Wi (210 De...	None						106	
61	Structure Wi (240 De...	None						106	
62	Structure Wi (270 De...	None						106	
63	Structure Wi (300 De...	None						106	
64	Structure Wi (330 De...	None						106	
65	Structure Wm (0 Deg)	None						106	
66	Structure Wm (30 De...	None						106	
67	Structure Wm (60 De...	None						106	
68	Structure Wm (90 De...	None						106	
69	Structure Wm (120 D...	None						106	
70	Structure Wm (150 D...	None						106	
71	Structure Wm (180 D...	None						106	
72	Structure Wm (210 D...	None						106	
73	Structure Wm (240 D...	None						106	
74	Structure Wm (270 D...	None						106	
75	Structure Wm (300 D...	None						106	
76	Structure Wm (330 D...	None						106	
77	Lm1	None					1		
78	Lm2	None					1		
79	Lv1	None					1		
80	Lv2	None					1		
81	Antenna Ev	None					84		
82	Antenna Eh (0 Deg)	None					56		
83	Antenna Eh (90 Deg)	None					56		
84	Structure Ev	ELY							3
85	Structure Eh (0 Deg)	ELZ			-03				3
86	Structure Eh (90 Deg)	ELX	.03						3
87	BLC 39 Transient Are...	None						83	
88	BLC 40 Transient Are...	None						83	

Load Combinations

	Description	So...	P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
1	1.2D+1.0Wo (0 Deg)	Yes	Y		1	1.2	39	1.2	3	1	41	1					
2	1.2D+1.0Wo (30 Deg)	Yes	Y		1	1.2	39	1.2	4	1	42	1					
3	1.2D+1.0Wo (60 Deg)	Yes	Y		1	1.2	39	1.2	5	1	43	1					
4	1.2D+1.0Wo (90 Deg)	Yes	Y		1	1.2	39	1.2	6	1	44	1					
5	1.2D+1.0Wo (120 D...	Yes	Y		1	1.2	39	1.2	7	1	45	1					
6	1.2D+1.0Wo (150 D...	Yes	Y		1	1.2	39	1.2	8	1	46	1					
7	1.2D+1.0Wo (180 D...	Yes	Y		1	1.2	39	1.2	9	1	47	1					
8	1.2D+1.0Wo (210 D...	Yes	Y		1	1.2	39	1.2	10	1	48	1					
9	1.2D+1.0Wo (240 D...	Yes	Y		1	1.2	39	1.2	11	1	49	1					
10	1.2D+1.0Wo (270 D...	Yes	Y		1	1.2	39	1.2	12	1	50	1					
11	1.2D+1.0Wo (300 D...	Yes	Y		1	1.2	39	1.2	13	1	51	1					
12	1.2D+1.0Wo (330 D...	Yes	Y		1	1.2	39	1.2	14	1	52	1					
13	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1	
14	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1	
15	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1	
16	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1	56	1	
17	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1	57	1	
18	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1	
19	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	21	1	59	1	
20	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	22	1	60	1	



Company : NB+C ES
 Designer : Connor Rice, EIT
 Job Number : 100820
 Model Name : 467706-Waterbury S Ct

Jan 24, 2022
 9:51 AM
 Checked By: _____

Load Combinations (Continued)

	Description	So...	P...	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..			
21	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	23	1	61	1				
22	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	24	1	62	1				
23	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	25	1	63	1				
24	1.2D + 1.0Di + 1.0Wi...	Yes	Y		1	1.2	39	1.2	2	1	40	1	26	1	64	1				
25	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	27	1	65	1						
26	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	28	1	66	1						
27	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	29	1	67	1						
28	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	30	1	68	1						
29	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	31	1	69	1						
30	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	32	1	70	1						
31	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	33	1	71	1						
32	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	34	1	72	1						
33	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	35	1	73	1						
34	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	36	1	74	1						
35	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	37	1	75	1						
36	1.2D + 1.5Lm1 + 1.0...	Yes	Y		1	1.2	39	1.2	77	1.5	38	1	76	1						
37	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	27	1	65	1						
38	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	28	1	66	1						
39	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	29	1	67	1						
40	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	30	1	68	1						
41	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	31	1	69	1						
42	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	32	1	70	1						
43	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	33	1	71	1						
44	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	34	1	72	1						
45	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	35	1	73	1						
46	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	36	1	74	1						
47	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	37	1	75	1						
48	1.2D + 1.5Lm2 + 1.0...	Yes	Y		1	1.2	39	1.2	78	1.5	38	1	76	1						
49	1.2D + 1.5Lv1		Y		1	1.2	39	1.2	79	1.5										
50	1.2D + 1.5Lv2		Y		1	1.2	39	1.2	80	1.5										
51	1.4D		Y		1	1.4	39	1.4												
52	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	1	83	ELZ	1	ELX		
53	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	.5	ELZ	.866	ELX	.5
54	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	.866	ELZ	.5	ELX	.866
55	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82		83	1	ELZ		ELX	1
56	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	.866	ELZ	-.5	ELX	.866
57	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	-.866	83	.5	ELZ	-.866	ELX	.5
58	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	-1	83		ELZ	-1	ELX	
59	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	-.866	83	-.5	ELZ	-.866	ELX	-.5
60	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	-.5	83	-.866	ELZ	-.5	ELX	-.866
61	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82		83	-1	ELZ		ELX	-1
62	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	.5	83	-.866	ELZ	.5	ELX	-.866
63	1.2D + 1.0Ev + 1.0E...		Y		1	1.2	39	1.2	81	1	ELY	1	82	.866	83	-.5	ELZ	.866	ELX	-.5
64	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	1	83		ELZ	1	ELX	
65	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	.866	83	.5	ELZ	.866	ELX	.5
66	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	.5	83	.866	ELZ	.5	ELX	.866
67	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82		83	1	ELZ		ELX	1
68	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	-.5	83	.866	ELZ	-.5	ELX	.866
69	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	-.866	83	.5	ELZ	-.866	ELX	.5
70	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	-1	83		ELZ	-1	ELX	
71	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	-.866	83	-.5	ELZ	-.866	ELX	-.5
72	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	-.5	83	-.866	ELZ	-.5	ELX	-.866
73	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82		83	-1	ELZ		ELX	-1
74	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	.5	83	-.866	ELZ	.5	ELX	-.866
75	0.9D - 1.0Ev + 1.0Eh...		Y		1	.9	39	.9	81	-1	ELY	-1	82	.866	83	-.5	ELZ	.866	ELX	-.5



Company : NB+C ES
 Designer : Connor Rice, EIT
 Job Number : 100820
 Model Name : 467706-Waterbury S Ct

Jan 24, 2022
 9:51 AM
 Checked By: _____

Joint Coordinates and Temperatures

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
1	N1	2.820603	- .25	7.049479	0	
2	N2	-2.5918	- .25	10.174332	0	
3	N3	5.01273	- .25	7.049479	0	
4	N4	10.425133	- .25	10.174332	0	
5	N5	3.916667	- .25	5.151042	0	
6	N6	3.916667	- .25	-1.098663	0	
7	N8	-2.5	0	10.333333	0	
8	N9	10.333333	0	10.333333	0	
9	N10	-2.5	3.458333	10.333333	0	
10	N11	10.333333	3.458333	10.333333	0	
11	N12	-2.166667	3.458333	10.333333	0	
12	N13	-2.166667	3.458333	10.5	0	
13	N14	-2.166667	0	10.333333	0	
14	N15	-2.166667	0	10.5	0	
15	N16	1.916667	3.458333	10.333333	0	
16	N17	1.916667	3.458333	10.5	0	
17	N18	1.916667	0	10.333333	0	
18	N19	1.916667	0	10.5	0	
19	N20	3.916667	3.458333	10.333333	0	
20	N21	3.916667	3.458333	10.5	0	
21	N22	3.916667	0	10.333333	0	
22	N23	3.916667	0	10.5	0	
23	N24	7.166667	3.458333	10.333333	0	
24	N25	7.166667	3.458333	10.5	0	
25	N26	7.166667	0	10.333333	0	
26	N27	7.166667	0	10.5	0	
27	N28	9.833333	3.458333	10.5	0	
28	N29	9.833333	0	10.5	0	
29	N30	-2.166667	- .5	10.5	0	
30	N31	-2.166667	5	10.5	0	
31	N32	1.916667	- .5	10.5	0	
32	N33	1.916667	3.5	10.5	0	
33	N34	3.916667	-1.75	10.5	0	
34	N35	3.916667	6.25	10.5	0	
35	N36	7.166667	- .5	10.5	0	
36	N37	7.166667	3.5	10.5	0	
37	N38	9.833333	-1.333333	10.5	0	
38	N39	9.833333	6.666667	10.5	0	
39	N40	10.516933	0	10.01533	0	
40	N41	4.100266	0	-1.098663	0	
41	N42	10.516933	3.458333	10.01533	0	
42	N43	4.100266	3.458333	-1.098663	0	
43	N44	10.350266	3.458333	9.726655	0	
44	N45	10.494604	3.458333	9.643321	0	
45	N46	10.350266	0	9.726655	0	
46	N47	10.494604	0	9.643321	0	
47	N48	8.308599	3.458333	6.190384	0	
48	N49	8.452937	3.458333	6.107051	0	
49	N50	8.308599	0	6.190384	0	
50	N51	8.452937	0	6.107051	0	
51	N52	7.308599	3.458333	4.458333	0	
52	N53	7.452937	3.458333	4.375	0	
53	N54	7.308599	0	4.458333	0	
54	N55	7.452937	0	4.375	0	
55	N56	5.683599	3.458333	1.643751	0	
56	N57	5.827937	3.458333	1.560417	0	



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Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
57	N58	5.683599	0	1.643751	0	
58	N59	5.827937	0	1.560417	0	
59	N60	4.494604	3.458333	-0.748984	0	
60	N62	4.494604	0	-0.748984	0	
61	N63	10.494604	-.5	9.643321	0	
62	N64	10.494604	5	9.643321	0	
63	N65	8.452937	-.5	6.107051	0	
64	N66	8.452937	3.5	6.107051	0	
65	N67	7.452937	-1.75	4.375	0	
66	N68	7.452937	6.25	4.375	0	
67	N69	5.827937	-.5	1.560417	0	
68	N70	5.827937	3.5	1.560417	0	
69	N71	4.494604	-1.333333	-0.748984	0	
70	N72	4.494604	6.666667	-0.748984	0	
71	N73	3.733067	0	-1.098663	0	
72	N74	-2.683599	0	10.01533	0	
73	N75	3.733067	3.458333	-1.098663	0	
74	N76	-2.683599	3.458333	10.01533	0	
75	N77	3.566401	3.458333	-0.809988	0	
76	N78	3.422063	3.458333	-0.893321	0	
77	N79	3.566401	0	-0.809988	0	
78	N80	3.422063	0	-0.893321	0	
79	N81	1.524734	3.458333	2.726283	0	
80	N82	1.380396	3.458333	2.642949	0	
81	N83	1.524734	0	2.726283	0	
82	N84	1.380396	0	2.642949	0	
83	N85	0.524734	3.458333	4.458333	0	
84	N86	0.380396	3.458333	4.375	0	
85	N87	0.524734	0	4.458333	0	
86	N88	0.380396	0	4.375	0	
87	N89	-1.100266	3.458333	7.272916	0	
88	N90	-1.244604	3.458333	7.189583	0	
89	N91	-1.100266	0	7.272916	0	
90	N92	-1.244604	0	7.189583	0	
91	N93	-2.577937	3.458333	9.498984	0	
92	N94	-2.577937	0	9.498984	0	
93	N95	3.422063	-.5	-0.893321	0	
94	N96	3.422063	5	-0.893321	0	
95	N97	1.380396	-.5	2.642949	0	
96	N98	1.380396	3.5	2.642949	0	
97	N99	0.380396	-1.75	4.375	0	
98	N100	0.380396	6.25	4.375	0	
99	N101	-2.577937	-1.333333	9.498984	0	
100	N102	-2.577937	6.666667	9.498984	0	
101	N103	-2	0	10.333333	0	
102	N104	-2.433599	0	9.582317	0	
103	N105	10.266933	0	9.582317	0	
104	N106	9.833333	0	10.333333	0	
105	N107	7.486014	0	4.765625	0	
106	N108	4.271497	0	10.333333	0	
107	N109	0.702149	0	4.151042	0	
108	N110	7.131185	0	4.151042	0	
109	N111	3.561837	0	10.333333	0	
110	N112	0.347319	0	4.765625	0	
111	N113	4.350266	3.458333	-0.66565	0	
112	N114	3.483067	3.458333	-0.66565	0	
113	N115	-2	3.458333	10.333333	0	



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Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
114	N116	-2.433599	3.458333	9.582317	0	
115	N117	10.266933	3.458333	9.582317	0	
116	N118	9.833333	3.458333	10.333333	0	
117	N119	-1.244604	-.5	7.189583	0	
118	N120	-1.244604	5	7.189583	0	
119	N136	3.916667	0	6.416667	0	
120	N134	0.114402	-.25	8.611905	0	
121	N135	0.114402	2	8.611905	0	
122	N136A	-2.2168	0	9.957825	0	
123	N137	1.954578	0	7.549479	0	
124	N138	10.050133	0	9.957825	0	
125	N139	5.878755	0	7.549479	0	
126	N140	3.916667	-0.083333	-0.66565	0	
127	N141	3.916667	0	4.151042	0	
128	N142	3.916667	-.25	2.026189	0	
129	N143	3.916668	2	2.026189	0	
130	N144	-2.2168	-.25	9.957825	0	
131	N145	1.954578	-.25	7.549479	0	
132	N146	10.050133	-.25	9.957825	0	
133	N147	5.878755	-.25	7.549479	0	
134	N148	3.916667	-.25	-0.66565	0	
135	N149	3.916667	-.25	4.151042	0	
136	N150	-2.433599	3.541667	9.582317	0	
137	N151	-.2	3.541667	10.333333	0	
138	N152	4.350266	3.625	-0.66565	0	
139	N153	3.483067	3.625	-0.66565	0	
140	N154	10.266933	3.625	9.582317	0	
141	N155	9.833333	3.625	10.333333	0	
142	N156	0.680652	0	5.342975	0	
143	N157	3.228503	0	9.755983	0	
144	N161	4.60483	0	9.755983	0	
145	N162	7.152681	0	5.342975	0	
146	N166	6.464518	0	4.151042	0	
147	N167	1.368815	0	4.151042	0	
148	N150A	0.388986	0	4.837794	0	
149	N151A	0.785482	0	4.151042	0	
150	N152A	0.587234	0	4.494418	0	
151	N154A	4.313163	0	10.261165	0	
152	N155A	3.52017	0	10.261165	0	
153	N158	7.047851	0	4.151042	0	
154	N159	7.444348	0	4.837794	0	
155	N160	7.246099	0	4.494418	0	
156	N159A	-2.058599	0	10.231836	0	
157	N160A	-2.391933	0	9.654486	0	
158	N161A	4.350266	0	-0.66565	0	
159	N162A	4.308599	-0.083333	-0.66565	0	
160	N163	3.525266	-0.083333	-0.66565	0	
161	N164	4.308599	0	-0.66565	0	
162	N165	3.525266	0	-0.66565	0	
163	N166A	3.483067	0	-0.66565	0	
164	N166B	-2.2168	-0.083333	9.957825	0	
165	N169	-2.412766	-0.083333	9.618401	0	
166	N170	-2.021099	-0.083333	10.296788	0	
167	N171	-2.412766	0	9.618401	0	
168	N172	-2.021099	0	10.296788	0	
169	N175	10.050133	-0.083333	9.957825	0	
170	N178	9.854167	-0.083333	10.297249	0	



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Joint Coordinates and Temperatures (Continued)

	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
171	N179	10.245833	-0.083333	9.618862	0	
172	N180	9.854167	0	10.297249	0	
173	N181	10.245833	0	9.618862	0	
174	N175A	4.083333	0	10.333333	0	
175	N176	4.083333	0	10.261165	0	
176	N177	3.75	0	10.333333	0	
177	N178A	3.75	0	10.261165	0	
178	N178B	7.225266	0	4.313996	0	
179	N179A	7.162766	0	4.35008	0	
180	N180A	7.391933	0	4.602671	0	
181	N181A	7.329433	0	4.638755	0	
182	N182	0.441401	0	4.602671	0	
183	N183	0.503901	0	4.638755	0	
184	N184	0.608067	0	4.313996	0	
185	N185	0.670567	0	4.35008	0	
186	N186	3.916667	-3.25	5.151042	0	
187	N187	3.916667	-.25	1.151042	0	
188	N188	-.5	3.458333	10.333333	0	
189	N189	8.333333	3.458333	10.333333	0	
190	N191	9.516933	3.458333	8.283279	0	
191	N192	5.100266	3.458333	0.633388	0	
192	N194	2.733067	3.458333	0.633388	0	
193	N195	-1.683599	3.458333	8.283279	0	
194	N195A	2.820603	-3.25	7.049479	0	
195	N196	-0.643498	-.25	9.049479	0	
196	N198	5.01273	-3.25	7.049479	0	
197	N199	8.476832	-.25	9.049479	0	

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Mount Pi...	PIPE 2.0	Column	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
2	Support ...	PIPE 2.5	Beam	Single Angle	A53 Gr.B	Typical	1.61	1.45	1.45	2.89
3	HSS Tube	HSS4X4...	Beam	SquareTube	A500 Gr.B Rect	Typical	3.37	7.8	7.8	12.8
4	Face Ho...	L6X3.5X6	Beam	Single Angle	A36 Gr.36	Typical	3.44	3.33	12.9	.168
5	Platform ...	L5X3.5X4	Beam	Single Angle	A36 Gr.36	Typical	2.07	2.2	5.36	.046
6	Plate Co...	PL5x3/16	Beam	RECT	A36 Gr.36	Typical	.938	.003	1.953	.011
7	Angle C...	PL3/8x7	Beam	RECT	A36 Gr.36	Typical	2.625	.031	10.719	.119
8	Horizont...	PL3/8x7	Beam	RECT	A36 Gr.36	Typical	2.625	.031	10.719	.119
9	Kicker	LL3x3x3...	Beam	Double Angle (3/8 Gap)	A36 Gr.36	Typical	2.18	4.09	1.9	.027
10	MOD	L3X3X4	Beam	Single Angle	A36 Gr.36	Typical	1.44	1.23	1.23	.031

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	.49	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	.49	50	1.4	65	1.3
8	A913 Gr.65	29000	11154	.3	.65	.49	65	1.1	80	1.1



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Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2			HSS Tube	Beam	SquareTube	A500 Gr.B...	Typical
2	M2	N3	N4			HSS Tube	Beam	SquareTube	A500 Gr.B...	Typical
3	M3	N5	N6			HSS Tube	Beam	SquareTube	A500 Gr.B...	Typical
4	M5	N8	N9		180	Face Horizont...	Beam	Single Angle	A36 Gr.36	Typical
5	M6	N10	N11		180	Support Rail A...	Beam	Single Angle	A53 Gr.B	Typical
6	M7	N12	N13			RIGID	None	None	RIGID	Typical
7	M8	N14	N15			RIGID	None	None	RIGID	Typical
8	M9	N16	N17			RIGID	None	None	RIGID	Typical
9	M10	N18	N19			RIGID	None	None	RIGID	Typical
10	M11	N20	N21			RIGID	None	None	RIGID	Typical
11	M12	N22	N23			RIGID	None	None	RIGID	Typical
12	M13	N24	N25			RIGID	None	None	RIGID	Typical
13	M14	N26	N27			RIGID	None	None	RIGID	Typical
14	M15	N118	N28			RIGID	None	None	RIGID	Typical
15	M16	N106	N29			RIGID	None	None	RIGID	Typical
16	MP5A	N31	N30		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
17	MP4A	N33	N32		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
18	MP3A	N35	N34		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
19	MP2A	N37	N36		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
20	MP1A	N39	N38		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
21	M22	N40	N41		180	Face Horizont...	Beam	Single Angle	A36 Gr.36	Typical
22	M23	N42	N43		180	Support Rail A...	Beam	Single Angle	A53 Gr.B	Typical
23	M24	N44	N45			RIGID	None	None	RIGID	Typical
24	M25	N46	N47			RIGID	None	None	RIGID	Typical
25	M26	N48	N49			RIGID	None	None	RIGID	Typical
26	M27	N50	N51			RIGID	None	None	RIGID	Typical
27	M28	N52	N53			RIGID	None	None	RIGID	Typical
28	M29	N54	N55			RIGID	None	None	RIGID	Typical
29	M30	N56	N57			RIGID	None	None	RIGID	Typical
30	M31	N58	N59			RIGID	None	None	RIGID	Typical
31	M32	N113	N60			RIGID	None	None	RIGID	Typical
32	M33	N161A	N62			RIGID	None	None	RIGID	Typical
33	MP5C	N64	N63		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
34	MP4C	N66	N65		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
35	MP3C	N68	N67		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
36	MP2C	N70	N69		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
37	MP1C	N72	N71		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
38	M39	N73	N74		180	Face Horizont...	Beam	Single Angle	A36 Gr.36	Typical
39	M40	N76	N75		90	Support Rail A...	Beam	Single Angle	A53 Gr.B	Typical
40	M41	N77	N78			RIGID	None	None	RIGID	Typical
41	M42	N79	N80			RIGID	None	None	RIGID	Typical
42	M43	N81	N82			RIGID	None	None	RIGID	Typical
43	M44	N83	N84			RIGID	None	None	RIGID	Typical
44	M45	N85	N86			RIGID	None	None	RIGID	Typical
45	M46	N87	N88			RIGID	None	None	RIGID	Typical
46	M47	N89	N90			RIGID	None	None	RIGID	Typical
47	M48	N91	N92			RIGID	None	None	RIGID	Typical
48	M49	N116	N93			RIGID	None	None	RIGID	Typical
49	M50	N104	N94			RIGID	None	None	RIGID	Typical
50	MP5B	N96	N95		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
51	MP4B	N98	N97		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
52	MP3B	N100	N99		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
53	MP1B	N102	N101		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
54	M59	N150A	N151A		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
55	MP2B	N120	N119		90	Mount Pipe	Column	Pipe	A53 Gr.B	Typical
56	M70	N135	N134			Mount Pipe	Column	Pipe	A53 Gr.B	Typical



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Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
57	M71	N143	N142			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
58	M73	N137	N145			RIGID	None	None	RIGID	Typical
59	M74	N139	N147			RIGID	None	None	RIGID	Typical
60	M76	N141	N149			RIGID	None	None	RIGID	Typical
61	M77	N140	N148			RIGID	None	None	RIGID	Typical
62	M84	N155A	N157		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
63	M85	N157	N156		90	Platform Angle	Beam	Single Angle	A36 Gr.36	Typical
64	M84A	N154A	N161		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
65	M85A	N159	N162		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
66	M86	N162	N161		90	Platform Angle	Beam	Single Angle	A36 Gr.36	Typical
67	M87	N158	N166		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
68	M89	N167	N166		90	Platform Angle	Beam	Single Angle	A36 Gr.36	Typical
69	M84B	N150A	N156		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
70	M85B	N151A	N167		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
71	M86A	N154A	N155A		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
72	M88	N158	N159		180	Angle Connect...	Beam	RECT	A36 Gr.36	Typical
73	M92	N162A	N163		270	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
74	M94	N163	N165		60	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
75	M95	N162A	N164		300	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
76	M96	N161A	N164		270	RIGID	None	None	RIGID	Typical
77	M97	N165	N166A		270	RIGID	None	None	RIGID	Typical
78	M90	N166B	N144			RIGID	None	None	RIGID	Typical
79	M91	N169	N170		270	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
80	M92A	N170	N172		180	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
81	M93	N169	N171		60	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
82	M94A	N104	N171		270	RIGID	None	None	RIGID	Typical
83	M95A	N172	N103		270	RIGID	None	None	RIGID	Typical
84	M96A	N175	N146			RIGID	None	None	RIGID	Typical
85	M97A	N178	N179		270	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
86	M98	N179	N181		300	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
87	M99	N178	N180		180	Horizontal con...	Beam	RECT	A36 Gr.36	Typical
88	M100	N106	N180		270	RIGID	None	None	RIGID	Typical
89	M101	N181	N105		270	RIGID	None	None	RIGID	Typical
90	M102	N175A	N176			RIGID	None	None	RIGID	Typical
91	M103	N177	N178A			RIGID	None	None	RIGID	Typical
92	M101A	N178B	N179A			RIGID	None	None	RIGID	Typical
93	M102A	N180A	N181A			RIGID	None	None	RIGID	Typical
94	M103A	N182	N183			RIGID	None	None	RIGID	Typical
95	M104	N184	N185			RIGID	None	None	RIGID	Typical
96	M105	N186	N187			Kicker	Beam	Double Angle (...)	A36 Gr.36	Typical
97	M106	N188	N195			MOD	Beam	Single Angle	A36 Gr.36	Typical
98	M107	N194	N192			MOD	Beam	Single Angle	A36 Gr.36	Typical
99	M108	N189	N191			MOD	Beam	Single Angle	A36 Gr.36	Typical
100	M100A	N195A	N196			Kicker	Beam	Double Angle (...)	A36 Gr.36	Typical
101	M101B	N198	N199			Kicker	Beam	Double Angle (...)	A36 Gr.36	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes	Default			None
2	M2						Yes				None
3	M3						Yes				None
4	M5						Yes				None
5	M6						Yes				None
6	M7						Yes	** NA **			None
7	M8						Yes	** NA **			None



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 Designer : Connor Rice, EIT
 Job Number : 100820
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Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
8	M9						Yes	** NA **			None
9	M10						Yes	** NA **			None
10	M11						Yes	** NA **			None
11	M12						Yes	** NA **			None
12	M13						Yes	** NA **			None
13	M14						Yes	** NA **			None
14	M15						Yes	** NA **			None
15	M16						Yes	** NA **			None
16	MP5A						Yes	** NA **			None
17	MP4A						Yes	** NA **			None
18	MP3A						Yes	** NA **			None
19	MP2A						Yes	** NA **			None
20	MP1A						Yes	** NA **			None
21	M22						Yes	Default			None
22	M23						Yes	Default			None
23	M24						Yes	** NA **			None
24	M25						Yes	** NA **			None
25	M26						Yes	** NA **			None
26	M27						Yes	** NA **			None
27	M28						Yes	** NA **			None
28	M29						Yes	** NA **			None
29	M30						Yes	** NA **			None
30	M31						Yes	** NA **			None
31	M32						Yes	** NA **			None
32	M33						Yes	** NA **			None
33	MP5C						Yes	** NA **			None
34	MP4C						Yes	** NA **			None
35	MP3C						Yes	** NA **			None
36	MP2C						Yes	** NA **			None
37	MP1C						Yes	** NA **			None
38	M39						Yes	** NA **			None
39	M40						Yes	Default			None
40	M41						Yes	** NA **			None
41	M42						Yes	** NA **			None
42	M43						Yes	** NA **			None
43	M44						Yes	** NA **			None
44	M45						Yes	** NA **			None
45	M46						Yes	** NA **			None
46	M47						Yes	** NA **			None
47	M48						Yes	** NA **			None
48	M49						Yes	** NA **			None
49	M50						Yes	** NA **			None
50	MP5B						Yes	** NA **			None
51	MP4B						Yes	** NA **			None
52	MP3B						Yes	** NA **			None
53	MP1B						Yes	** NA **			None
54	M59						Yes	Default	+y		None
55	MP2B						Yes	** NA **			None
56	M70						Yes	** NA **			None
57	M71						Yes	** NA **			None
58	M73	OOOOOX					Yes	** NA **			None
59	M74	OOOOOX					Yes	** NA **			None
60	M76	OOOOXO					Yes	** NA **			None
61	M77						Yes	** NA **			None
62	M84						Yes	Default	+y		None
63	M85	BenPIN	BenPIN				Yes	Default	-z		None
64	M84A						Yes	Default	+y		None



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Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
65	M85A						Yes	Default	+y		None
66	M86	BenPIN	BenPIN				Yes	Default	-z		None
67	M87						Yes	Default	+y		None
68	M89	BenPIN	BenPIN				Yes	Default	-z		None
69	M84B						Yes		+y		None
70	M85B						Yes		+y		None
71	M86A						Yes	Default	+y		None
72	M88						Yes	Default	+y		None
73	M92						Yes				None
74	M94						Yes				None
75	M95						Yes				None
76	M96						Yes	** NA **			None
77	M97						Yes	** NA **			None
78	M90						Yes	** NA **			None
79	M91						Yes				None
80	M92A						Yes				None
81	M93						Yes				None
82	M94A						Yes	** NA **			None
83	M95A						Yes	** NA **			None
84	M96A						Yes	** NA **			None
85	M97A						Yes	Default			None
86	M98						Yes				None
87	M99						Yes				None
88	M100						Yes	** NA **			None
89	M101						Yes	** NA **			None
90	M102						Yes	** NA **			None
91	M103						Yes	** NA **			None
92	M101A						Yes	** NA **			None
93	M102A						Yes	** NA **			None
94	M103A						Yes	** NA **			None
95	M104						Yes	** NA **			None
96	M105		BenPIN				Yes				None
97	M106						Yes				None
98	M107						Yes				None
99	M108						Yes				None
100	M100A		BenPIN				Yes				None
101	M101B		BenPIN				Yes				None

Member Area Loads (BLC 39 : Structure D)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N8	N74	N112	N111	Y	Two Way	-.005
2	N108	N107	N40	N9	Y	Two Way	-.005
3	N109	N73	N41	N110	Y	Two Way	-.005

Member Area Loads (BLC 40 : Structure Di)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N8	N74	N112	N111	Y	Two Way	-.013
2	N108	N107	N40	N9	Y	Two Way	-.013
3	N109	N73	N41	N110	Y	Two Way	-.013

Member Area Loads (BLC 84 : Structure Ev)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N8	N74	N112	N111	Y	Two Way	0
2	N108	N107	N40	N9	Y	Two Way	0



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Member Area Loads (BLC 84 : Structure Ev) (Continued)

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
3	N109	N73	N41	N110	Y	Two Way	0

Member Area Loads (BLC 85 : Structure Eh (0 Deg))

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N8	N74	N112	N111	Z	Two Way	-.000156
2	N108	N107	N40	N9	Z	Two Way	-.000156
3	N109	N73	N41	N110	Z	Two Way	-.000156

Member Area Loads (BLC 86 : Structure Eh (90 Deg))

	Joint A	Joint B	Joint C	Joint D	Direction	Distribution	Magnitude[ksf]
1	N8	N74	N112	N111	X	Two Way	.000156
2	N108	N107	N40	N9	X	Two Way	.000156
3	N109	N73	N41	N110	X	Two Way	.000156

Envelope Joint Reactions

Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [k-ft]	LC	MY [k-ft]	LC	MZ [k-ft]	LC	
1	N1	max	3157.19	9	594.13	3	1768.359	3	.54	11	1.44	12	.657	8
2		min	-2951.54	3	-547.87	9	-1922.222	9	-.455	5	-1.471	6	-.475	2
3	N5	max	1136.107	10	567.409	7	3597.763	1	.485	7	1.252	4	.407	4
4		min	-1137.861	4	-532.844	1	-3328.773	7	-.737	1	-1.262	10	-.375	10
5	N3	max	2978.639	11	529.285	11	1600.876	11	.35	3	1.225	8	.379	11
6		min	-3090.752	5	-506.084	5	-1717.098	5	-.318	9	-1.206	2	-.634	5
7	N186	max	33.732	10	3370.706	13	175.032	7	0	48	0	48	0	48
8		min	-33.759	4	-125.002	7	-4405.424	13	0	1	0	1	0	1
9	N195A	max	168.37	3	3478.589	21	2274.793	21	0	48	0	48	0	48
10		min	-3939.797	21	-139.537	3	-97.19	3	0	1	0	1	0	1
11	N198	max	3744.294	17	3309.293	17	2161.592	17	0	48	0	48	0	48
12		min	-161.805	11	-133.867	11	-93.445	11	0	1	0	1	0	1
13	Totals:	max	4086.799	10	9269.659	16	4109.07	1						
14		min	-4086.793	4	3429.516	10	-4109.068	7						

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

Member	Shape	Code Check	Lo...	LC	She...	Lo...	phi*P...	phi*P...	phi*...	phi*...	Eqn		
1	M1	HSS4X...	.193	4.0...	21	.073	0	z 6	1184...	1395...	16.181	16.181	H1-1b
2	M2	HSS4X...	.191	4.0...	17	.060	0	z 8	1184...	1395...	16.181	16.181	H1-1b
3	M3	HSS4X...	.195	4.0...	13	.060	0	z 4	1184...	1395...	16.181	16.181	H1-1b
4	M5	L6X3.5...	.191	4.4...	22	.195	6.4...	y...	1907...	1114...	4.002	11.674	H2-1
5	M6	PIPE 2.5	.178	6.4...	7	.121	2.0...	7	1381...	50715	3.596	3.596	H1-1b
6	MP5A	PIPE 2.0	.266	4.9...	10	.067	4.9...	8	2235...	32130	1.872	1.872	H1-1b
7	MP4A	PIPE 2.0	.299	3.5	10	.098	3.5	8	2652...	32130	1.872	1.872	H1-1b
8	MP3A	PIPE 2.0	.285	6.25	10	.104	6.25	...	1491...	32130	1.872	1.872	H1-1b
9	MP2A	PIPE 2.0	.255	3.5	4	.091	3.5	6	2652...	32130	1.872	1.872	H1-1b
10	MP1A	PIPE 2.0	.258	6.6...	5	.066	3.25	8	1491...	32130	1.872	1.872	H1-1b
11	M22	L6X3.5...	.194	4.4...	18	.196	6.4...	y...	1907...	1114...	4.002	11.715	H2-1
12	M23	PIPE 2.5	.178	6.4...	3	.124	10...	3	1381...	50715	3.596	3.596	H1-1b
13	MP5C	PIPE 2.0	.267	4.9...	6	.062	4.0...	7	2235...	32130	1.872	1.872	H1-1b
14	MP4C	PIPE 2.0	.295	3.5	6	.090	3.5	4	2652...	32130	1.872	1.872	H1-1b
15	MP3C	PIPE 2.0	.281	6.25	6	.103	6.25	6	1491...	32130	1.872	1.872	H1-1b
16	MP2C	PIPE 2.0	.258	3.5	12	.099	3.5	2	2652...	32130	1.872	1.872	H1-1b
17	MP1C	PIPE 2.0	.267	6.6...	1	.071	3.25	3	1491...	32130	1.872	1.872	H1-1b
18	M39	L6X3.5...	.195	4.4...	14	.191	6.2...	y...	1907...	1114...	4.002	11.716	H2-1
19	M40	PIPE 2.5	.181	6.4...	11	.124	2.0...	...	1381...	50715	3.596	3.596	H1-1b
20	MP5B	PIPE 2.0	.270	4.9...	2	.065	4.9...	...	2235...	32130	1.872	1.872	H1-1b



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 Designer : Connor Rice, EIT
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Envelope AISC 15th(360-16): LRFD Steel Code Checks (Continued)

Member	Shape	Code Check	Lo...	LC	She... Lo...	phi*P...	phi*P...	phi*...	phi*...	Eqn	
21	MP4B	PIPE_2.0	.306	3.5	2	.098 3.5	2652...	32130	1.872	1.872	H1-1b
22	MP3B	PIPE_2.0	.295	6.25	2	.102 6.25	2 1491...	32130	1.872	1.872	H1-1b
23	MP1B	PIPE_2.0	.270	6.6...	9	.073 3.25	1491...	32130	1.872	1.872	H1-1b
24	M59	PL3/8x7	.158	.223	12	.443 .793 y	5680...	85050	.664	12.404	H1-1b
25	MP2B	PIPE_2.0	.282	4.9...	8	.096 4.9...	2235...	32130	1.872	1.872	H1-1b
26	M70	PIPE_2.0	.089	2.25	12	.014 2.25	3023...	32130	1.872	1.872	H1-1b
27	M71	PIPE_2.0	.007	2.25	1	.001 2.25	1 3023...	32130	1.872	1.872	1 H1-1b
28	M84	PL3/8x7	.101	0	24	.113 .583 y	6836...	85050	.664	12.404	H1-1b
29	M85	L5X3.5...	.450	2.5...	24	.044 2.5... z	5194...	67068	2.629	7.37	H2-1
30	M84A	PL3/8x7	.101	0	14	.114 .583 y	6836...	85050	.664	12.404	H1-1b
31	M85A	PL3/8x7	.099	0	20	.109 .583 y	6836...	85050	.664	12.404	H1-1b
32	M86	L5X3.5...	.442	2.5...	14	.044 2.5... z	5194...	67068	2.629	7.371	H2-1
33	M87	PL3/8x7	.060	0	22	.045 .583 y	6 6836...	85050	.664	12.404	H1-1b
34	M89	L5X3.5...	.441	2.5...	16	.058 2.5... z	5194...	67068	2.629	7.371	H2-1
35	M84B	PL3/8x7	.099	0	22	.112 .583 y	6836...	85050	.664	12.404	H1-1b
36	M85B	PL3/8x7	.060	0	16	.040 .583 y	6836...	85050	.664	12.404	H1-1b
37	M86A	PL3/8x7	.155	.223	7	.454 .793 y	5680...	85050	.664	12.404	H1-1b
38	M88	PL3/8x7	.145	.223	4	.448 .793 y	5680...	85050	.664	12.404	H1-1b
39	M92	PL3/8x7	.490	.392	14	.203 0 y	5736...	85050	.664	12.404	H1-1b
40	M94	PL3/8x7	.196	.083	15	.262 0 y	8467...	85050	.664	12.404	H1-1b
41	M95	PL3/8x7	.226	.083	24	.286 0 y	8467...	85050	.664	12.404	H1-1b
42	M91	PL3/8x7	.496	.392	22	.202 .4 y	5736...	85050	.664	12.404	H1-1b
43	M92A	PL3/8x7	.193	.083	23	.266 0 y	8467...	85050	.664	12.404	H1-1b
44	M93	PL3/8x7	.229	.083	20	.288 0 y	8467...	85050	.664	12.404	H1-1b
45	M97A	PL3/8x7	.484	.392	18	.202 .4 y	7770...	85050	.664	11.939	1 H1-1b
46	M98	PL3/8x7	.197	.083	19	.267 0 y	8467...	85050	.664	12.404	H1-1b
47	M99	PL3/8x7	.227	.083	15	.290 0 y	8467...	85050	.664	12.404	H1-1b
48	M105	LL3x3x...	.116	0	13	.002 0 y	4766...	70632	5.543	3.751	1 H1-...
49	M106	L3X3X4	.236	0	11	.041 .025 z	4120...	46656	1.688	3.756	H2-1
50	M107	L3X3X4	.220	0	2	.039 0 z	4 4120...	46656	1.688	3.756	H2-1
51	M108	L3X3X4	.358	2.3...	7	.044 0 z	8 4120...	46656	1.688	3.756	H2-1
52	M100A	LL3x3x...	.120	0	21	.002 0 y	4766...	70632	5.543	3.751	1 H1-...
53	M101B	LL3x3x...	.114	0	17	.002 5 y	4766...	70632	5.543	3.751	1 H1-...

Connection Check Summary

Site Name	Waterbury CT
Site ID	467706
NB+C Project No.	100820

Connection Properties				Joint Reactions			
Plate Properties				Shear	F_Y	570	lbs
Thickness	t	0.75	in		Tension	F_Z	1140
Plate length	L	8.5	in	Bending	F_X	3600	lbs
Plate Grade	F_Y	36	ksi		M_Z	0.737	k-ft
Connected Part Dimensions	Width	4	in	Torsion	M_Y	1.262	k-ft
	Height	4	in		M_X	0.407	k-ft
Horizontal Bolt Separation	d_x	6	in	Connection Capacities (% Usage)			
Vertical Bolt Separation	d_y	6	in	Connection Capacities (% Usage)			
Bolt Properties				Plate Capacity	Shear	3.5%	Pass
Bolt Grade		A325			Bending	4.5%	Pass
Bolt Diameter	d_b	0.625	in	Bolt Capacity	Shear	4.9%	Pass
Number of Bolts	N_b	4	Bolts		Tension	14.0%	Pass
Weld Properties				Weld Capacity	% Usage	15.6%	Pass
Weld Shape		Square					
Standoff Arm Height	d	4	in				
Standoff Arm Width	b	4	in				
Fillet Weld Size	a	1/4	in				