



Northeast Site Solutions
Denise Sabo
4 Angela's Way, Burlington CT 06013
203-435-3640
denise@northeastsitesolutions.com

November 23, 2021

Members of the Siting Council
Connecticut Siting Council
Ten Franklin Square
New Britain, CT 06051

RE: Exempt Modification Application
186 Minortown Road, Woodbury, CT 06798
Latitude: 41.567997
Longitude: -73.179680
Site #: 876405_Crown_VZW

Dear Ms. Bachman:

Verizon Wireless is requesting to file an exempt modification for an existing tower located at 186 Minortown Road, Woodbury, CT 06798. Verizon Wireless currently maintains nine (9) antennas at the 108-foot level of the existing 110-foot tower. The property is owned by Raymond Hardisty and tower is owned by Crown Castle. Verizon now intends to replace six (6) antennas and add three (3) antennas. The new antennas would be installed at the 108-foot level of the tower. This modification includes B2, B5 hardware that is both 4G (LTE), and 5G capable.

Verizon Planned Modifications:

Remove:

(6) 1-5/8" Coax

Remove and Replace:

(3) BXA-171063 Antennas (REMOVE) – (3) JAHH-65B-R3B Antennas (REPLACE)
(3) BXA-70063-6CF Antennas (REMOVE) – (3) JAHH-65B-R3B Antennas (REPLACE)

Install New:

(3) 64T64R / VZS01 Sub6 Antennas
(3) Samsung RRH - BR049 RFV01U D1A
(3) Samsung RRH - BR04C RFV01U D2A
(3) Commscope Diplexers
(1) RFS OVP
(1) Hybrid Line

Existing to Remain:

(3) ANTEL Antennas
(6) 1-5/8" Coax

The facility was approved by the Connecticut Siting Council , Docket No. 235 on June 19, 2003. Please see attached.



NSS **NORTHEAST**
SITE SOLUTIONS

Turnkey Wireless Development

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Barbara Perkinson, First Selectman and William Agresta, Town Planner for the Town of Woodbury. A copy is also being sent to the tower owner and property owner.

The planned modifications to the facility fall squarely within those activities explicitly provided for in R.C.S.A. § 16-50j-72(b)(2).

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications 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 Communications 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 Wireless respectfully submits that the proposed modifications to the above referenced telecommunications facility constitute an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Sincerely,

Denise Sabo
Mobile: 203-435-3640
Fax: 413-521-0558
Office: 4 Angela's Way, Burlington CT 06013
E-mail: denise@northeastsitesolutions.com



NSS **NORTHEAST**
SITE SOLUTIONS
Turnkey Wireless Development

Attachments

Cc: Barbara Perkinson, First Selectman
Town of Woodbury
281 Main St. South
Woodbury, CT 06798

William Agresta, Town Planner
Town of Woodbury
281 Main St. South
Woodbury, CT 06798

Raymond Hardisty
186 Minortown Road
Woodbury, CT 06798

Crown Castle, Tower Owner

Exhibit A

Original Facility Approval

Connecticut Siting Council

Decisions

DOCKET NO. 235 - Sprint Spectrum L.P. application for a } Connecticut
Certificate of Environmental Compatibility and Public Need }
for the construction, maintenance and operation of a } Siting
wireless telecommunications facility at 186 Minortown }
Road or Main Street North, North Woodbury, Connecticut. } Council

June 19, 2003

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Sprint Spectrum L.P. d/b/a Sprint PCS for the construction, maintenance and operation of a wireless telecommunications facility at 186 Minortown Road, Woodbury, Connecticut. The Council denies certification of Site B located at Main Street North, Woodbury, Connecticut.

The facility shall be constructed, operated, and maintained substantially as specified in the Council's record in this matter, and subject to the following conditions:

1. The tower shall be constructed no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Sprint PCS, AT&T Wireless PCS, LLC and other entities, both public and private, but such tower shall not exceed a height of 100 feet above ground level.
2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be submitted to and approved by the Council prior to the commencement of facility construction and shall include:
 - a. Visual simulations of the monopole and stealth options for a 100-foot tower at the site including a flagpole and tree tower;
 - b. a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas, equipment building, access road, utility line, and landscaping; and
 - c. construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.
3. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council if and when circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.
4. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.
5. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or

economic reasons precluding such tower sharing.

6. If the facility does not initially provide wireless services within one year of completion of construction or ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.
7. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.
8. Unless otherwise approved by the Council, this Decision and Order shall be void if the facility authorized herein is not operational within one year of the effective date of this Decision and Order or within one year after all appeals to this Decision and Order have been resolved.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Waterbury Republican American, and Voices Sunday – The Weekly Star.

By this Decision and Order, the Council disposes of the legal rights, duties, and privileges of each party named or admitted to the proceeding in accordance with Section 16-50j-17 of the Regulations of Connecticut State Agencies.

The parties and intervenors to this proceeding are:

Applicant

Sprint Spectrum L.P. d/b/a Sprint PCS

Its Representative

Thomas J. Regan, Esq.
Brown Rudnick Berlack Israels LLP
CityPlace I, 38th Floor
185 Asylum Street
Hartford, CT 06103-6522
860-509-6522

Intervenor

AT&T Wireless PCS, LLC d/b/a AT&T Wireless

Its Representative

Daniel F. Leary, Esq.
Cuddy & Feder LLP
90 Maple Avenue
White Plains, New York 10601
(914) 761-1300

Party

Anthony J. Vallillo

Connecticut Siting Council

Petition Staff Reports

Petition No. 678 - Project Summary

Cellco Partnership

North Woodbury, Connecticut

July 13, 2004

Introduction

Cellco Partnership d/b/a as Verizon Wireless (Cellco) seeks to extend the height of a Sprint Spectrum L.P. (Sprint) owned 100-foot monopole located in North Woodbury, Connecticut. The existing tower was approved by the Council on June 19, 2003 under Docket 235. The tower currently supports the antennas of Sprint (100-foot centerline) and AT&T Wireless PCS LLC (90-foot centerline). Cellco is seeking a declaratory ruling that no Certificate of Environmental Compatibility and Public Need is required for the tower extension. A copy of the Petition was provided to the Town. Additionally, Cellco contacted the First Selectman to discuss the proposal. The Town has no comment on the proposed tower extension. Abutting property owners were also notified of the proposed extension. No abutters commented on the proposal.

Proposed Modification

Cellco seeks to extend the height of the approved tower from 100 feet to 110 feet. Cellco would install three flush mounted PCS panel antennas a centerline height of 110 feet, bringing the total height of the facility to 112 feet above ground level. Cellco would expand the compound by 20 feet to the north to accommodate a 12-foot by 30-foot equipment shelter. The proposed compound expansion is within Sprint's 100-foot by 100-foot lease area and would require minimal grading. Additional site clearing would not be required.

Visibility Impact

Extending the tower from 100 feet agl to 110 feet agl would increase visibility from 27-acres to 34-acres within a two-mile radius of the site, mainly as a result of the expansion of existing areas with visibility. In addition, approximately 4 acres of seasonal visibility would occur from the open areas immediately southeast of the site. The extended tower would be seasonally visible from 0.2 miles of North Main Street, 0.1 miles of Minortown Road, and 0.2 miles of Middle Road Turnpike.

Power Density

The conservative worst-case approximation of electromagnetic radiofrequency emissions for telecommunications operations at the site would increase from 22.4% to 24.2% of the applicable standard for uncontrolled environments.

Exhibit B

Property Card



Town of Woodbury, CT

Property Listing Report

Map Block Lot

025-036

Building #

Unique Identifier

346710

Property Information

Property Location	186 MINORTOWN RD
Mailing Address	PMB 331 MC MURRAY PA 15317
Land Use	Broadcasting Facility
Zoning Code	OS60
Neighborhood	26

Owner	HARDISTY RAYMOND A
Co-Owner	
Book / Page	281/ 769
Land Class	Commercial
Census Tract	3621
Acreage	1.38

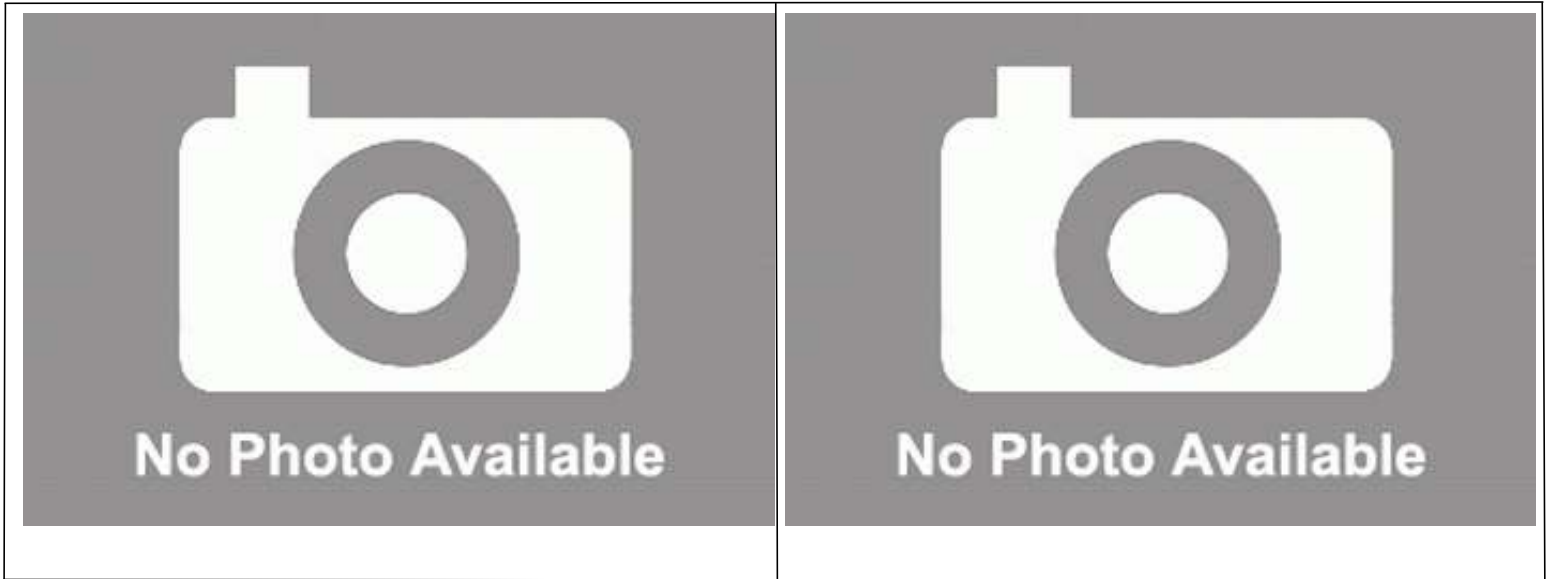
Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	0	0
Outbuildings	274238	191970
Land	131100	91770
Total	405338	0

Utility Information

Electric	No
Gas	No
Sewer	No
Public Water	No
Well	No



Primary Construction Details

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

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

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

Report Created On

5/10/2021

Exhibit C

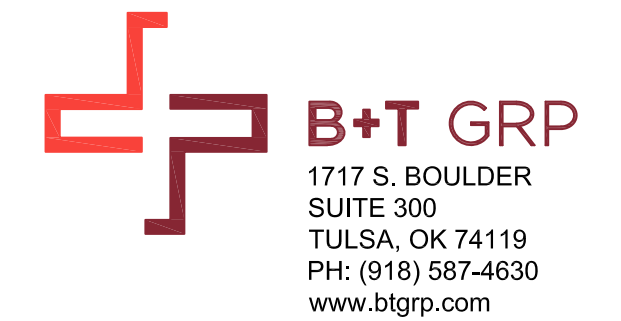
Construction Drawings



VERIZON SITE NUMBER: 468304
VERIZON SITE NAME: WOODBURY CT
SITE TYPE: MONOPOLE
TOWER HEIGHT: 110'-0"

BUSINESS UNIT #: 876405
SITE ADDRESS: 186 MINOR TOWN WOODBURY, CT 06798
COUNTY: LITCHFIELD
JURISDICTION: TOWN OF WOODBURY

VERIZON 5G L-SUB6 - CARRIER ADD



VERIZON SITE NUMBER: 468304
BUSINESS UNIT #: 876405
WOODBURY NORTH
 186 MINOR TOWN WOODBURY, CT 06798
 EXISTING 110'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/26/21	DDK	CONSTRUCTION	YXI

SITE INFORMATION	
CROWN CASTLE USA INC. SITE NAME:	WOODBURY NORTH
SITE ADDRESS:	186 MINOR TOWN WOODBURY, CT 06798
COUNTY:	LITCHFIELD
MAP/PARCEL #:	025-036
AREA OF CONSTRUCTION:	EXISTING
LATITUDE:	41.567996
LONGITUDE:	-73.179681
LAT/LONG TYPE:	NAD83
GROUND ELEVATION:	459'
CURRENT ZONING:	OSD 60
JURISDICTION:	TOWN OF WOODBURY
OCCUPANCY CLASSIFICATION:	U
TYPE OF CONSTRUCTION:	IIB
A.D.A. COMPLIANCE:	FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION
PROPERTY OWNER:	HARDISTY RAYMOND A 200 MINORTOWN ROAD WOODBURY, CT 06798
TOWER OWNER:	CROWN CASTLE 2000 CORPORATE DRIVE CANONSBURG, PA 15317
CARRIER/APPLICANT:	VERIZON WIRELESS 20 ALEXANDER DRIVE, 2ND FLOOR WALLINGFORD, CT 06492
ELECTRIC PROVIDER:	CONNECTICUT LIGHT AND POWER
TELCO PROVIDER:	NOT PROVIDED

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 ANALYSIS

ALL DRAWINGS CONTAINED HEREIN ARE FORMATTED FOR 22X34. 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.

LOCATION MAP

DRIVING DIRECTIONS FROM BRADLEY INTERNATIONAL AIRPORT:
 HEAD NORTH TOWARD BRADLEY INTERNATIONAL AIRPORT. SLIGHT LEFT ONTO BRADLEY INTERNATIONAL AIRPORT. CONTINUE STRAIGHT. CONTINUE ONTO BRADLEY INTERNATIONAL AIRPORT CON. CONTINUE ONTO CT-20 E/BRADLEY INTERNATIONAL AIRPORT CON. TAKE THE EXIT ONTO I-91 S TOWARD HARTFORD. TAKE EXIT 32A-32B FOR I-84 W TOWARD WATERBURY. MERGE WITH I-84. KEEP LEFT TO STAY ON I-84. TAKE EXIT 17 FOR CT-64 TOWARD CT-63/MIDDLEBURY/WATERTOWN. CONTINUE ONTO CT-64 W/CHASE PKWY. CONTINUE TO FOLLOW CT-64 W. TURN RIGHT TO STAY ON CT-64 W. TURN RIGHT ONTO TUTTLE RD. TUTTLE RD TURNS LEFT AND BECOMES WHITE DEER ROCK RD. TURN RIGHT ONTO ASH SWAMP RD. TURN RIGHT ONTO MIDDLE RD TURNPIKE. TURN LEFT ONTO MINORTOWN RD. TURN RIGHT.

APPROVALS	
SIGNATURE	DATE
_____	_____
_____	_____
_____	_____
_____	_____

CONTRACTOR PMI REQUIREMENTS	
PMI ACCESSED AT	https://pmi.vxwsmart.com
SMART TOOL VENDOR	----
PROJECT NUMBER	----
VzW LOCATION CODE (PSLC)	----

*** PMI AND REQUIREMENTS ALSO EMBEDDED IN MOUNT ANALYSIS REPORT

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

APPLICABLE CODES/REFERENCE DOCUMENTS

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

CODE TYPE	CODE
BUILDING	2015 IBC
MECHANICAL	2015 IMC
ELECTRICAL	2017 NEC

REFERENCE DOCUMENTS:

STRUCTURAL ANALYSIS:	TEP
DATED:	5/18/21
MOUNT ANALYSIS:	PAUL J FORD & COMPANY
DATED:	10/14/21
RFDS REVISION:	N/A
DATED:	2/10/21
ORDER ID:	554035
REVISION:	1

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

PROJECT DESCRIPTION

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

TOWER SCOPE OF WORK:

- REMOVE (6) ANTENNAS
- REMOVE (6) DIPLEXERS
- REMOVE (6) COAX
- RELOCATE (3) ANTENNAS
- INSTALL (3) ANTENNA BRACKETS
- INSTALL (9) ANTENNAS
- INSTALL (6) RADIOS
- INSTALL (3) DIPLEXERS
- INSTALL (1) PENDANT
- INSTALL (1) HYBRID CABLE

GROUND SCOPE OF WORK:

- REMOVE (3) RADIOS

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



B&T ENGINEERING, INC.
 PEC.0001564
 Expires 2/10/22
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SHEET NUMBER:	REVISION:
T-1	0

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CROWN CASTLE USA INC. SITE ACTIVITY REQUIREMENTS:

- 1. NOTICE TO PROCEED-- NO WORK SHALL COMMENCE PRIOR TO CROWN CASTLE USA INC. WRITTEN NOTICE TO PROCEED (NTP) AND THE ISSUANCE OF A PURCHASE ORDER. PRIOR TO ACCESSING/ENTERING THE SITE YOU MUST CONTACT THE CROWN CASTLE USA INC. NOC AT 800-788-7011 & THE CROWN CASTLE USA INC. CONSTRUCTION MANAGER.

GREENFIELD GROUNDING NOTES:

- 1. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION AND AC POWER GES'S) SHALL BE BONDED TOGETHER AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

GENERAL NOTES:

- 1. 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.

CONCRETE, FOUNDATIONS, AND REINFORCING STEEL:

- 1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.

ELECTRICAL INSTALLATION NOTES:

- 1. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE FEDERAL, STATE, AND LOCAL CODES/ORDINANCES.

Table with 3 columns: SYSTEM, CONDUCTOR, COLOR. Rows include 120/240V, 10; 120/208V, 30; 277/480V, 30; DC VOLTAGE.

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



VERIZON SITE NUMBER: 468304
BU #: 876405
WOODBURY NORTH
186 MINOR TOWN WOODBURY, CT 06798
EXISTING 110'-0" MONOPOLE

Table with 5 columns: REV, DATE, DRWN, DESCRIPTION, DES./QA. Row 1: 0, 10/26/21, DDK, CONSTRUCTION, YXI

ISSUED FOR:
Professional Engineer Seal for B&T ENGINEERING, INC. No. 23924, Expires 2/10/22. Text: IT IS A VIOLATION OF LAW FOR ANY PERSON, UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER, TO ALTER THIS DOCUMENT.

SHEET NUMBER: T-2 REVISION: 0

VERIZON SITE NUMBER:
468304

BU #: **876405**
WOODBURY NORTH

186 MINOR TOWN
 WOODBURY, CT 06798

EXISTING 110'-0" MONOPOLE

ISSUED FOR:

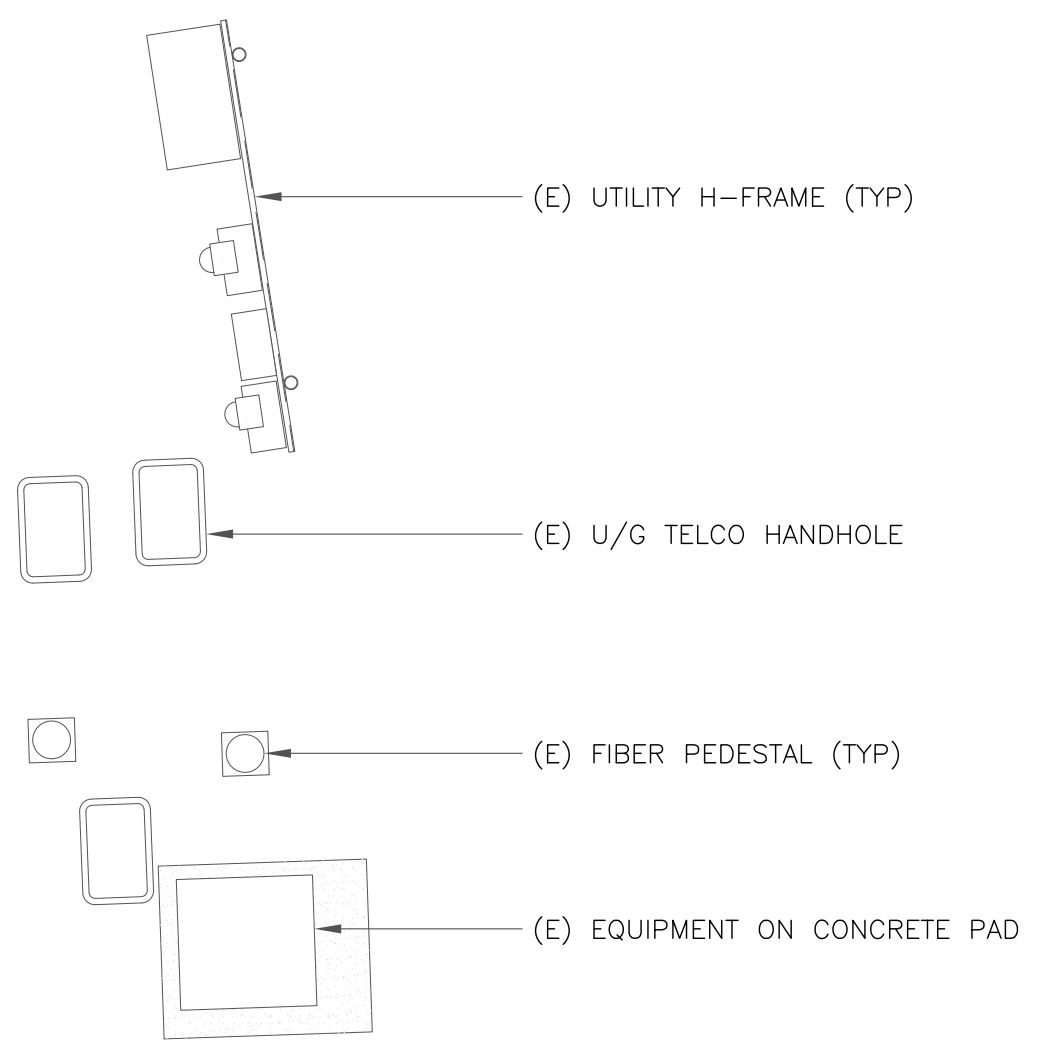
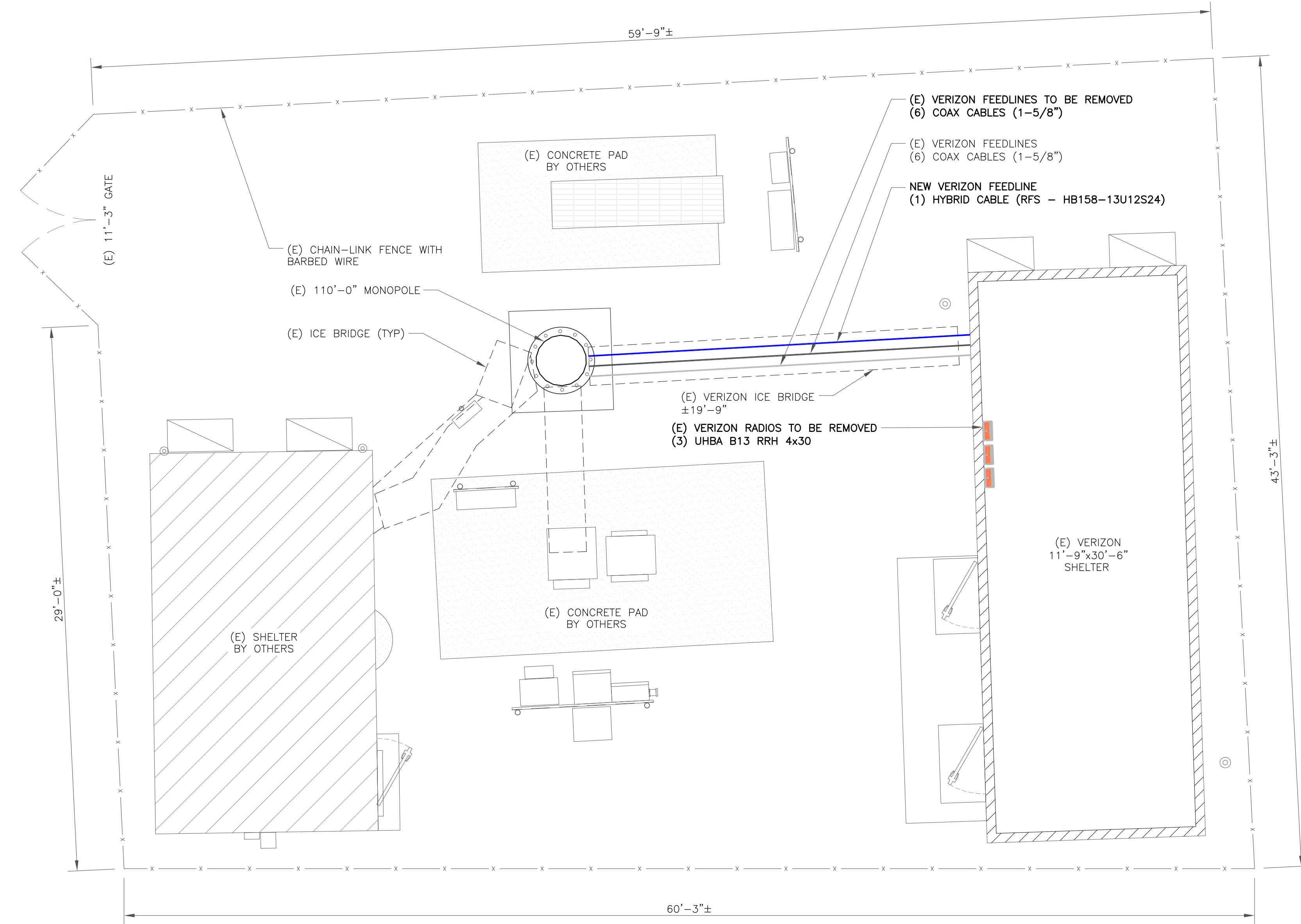
REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/26/21	DDK	CONSTRUCTION	YXI



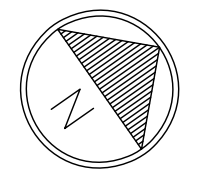
B&T ENGINEERING, INC.
 PEC.0001564
 Expires 2/10/22

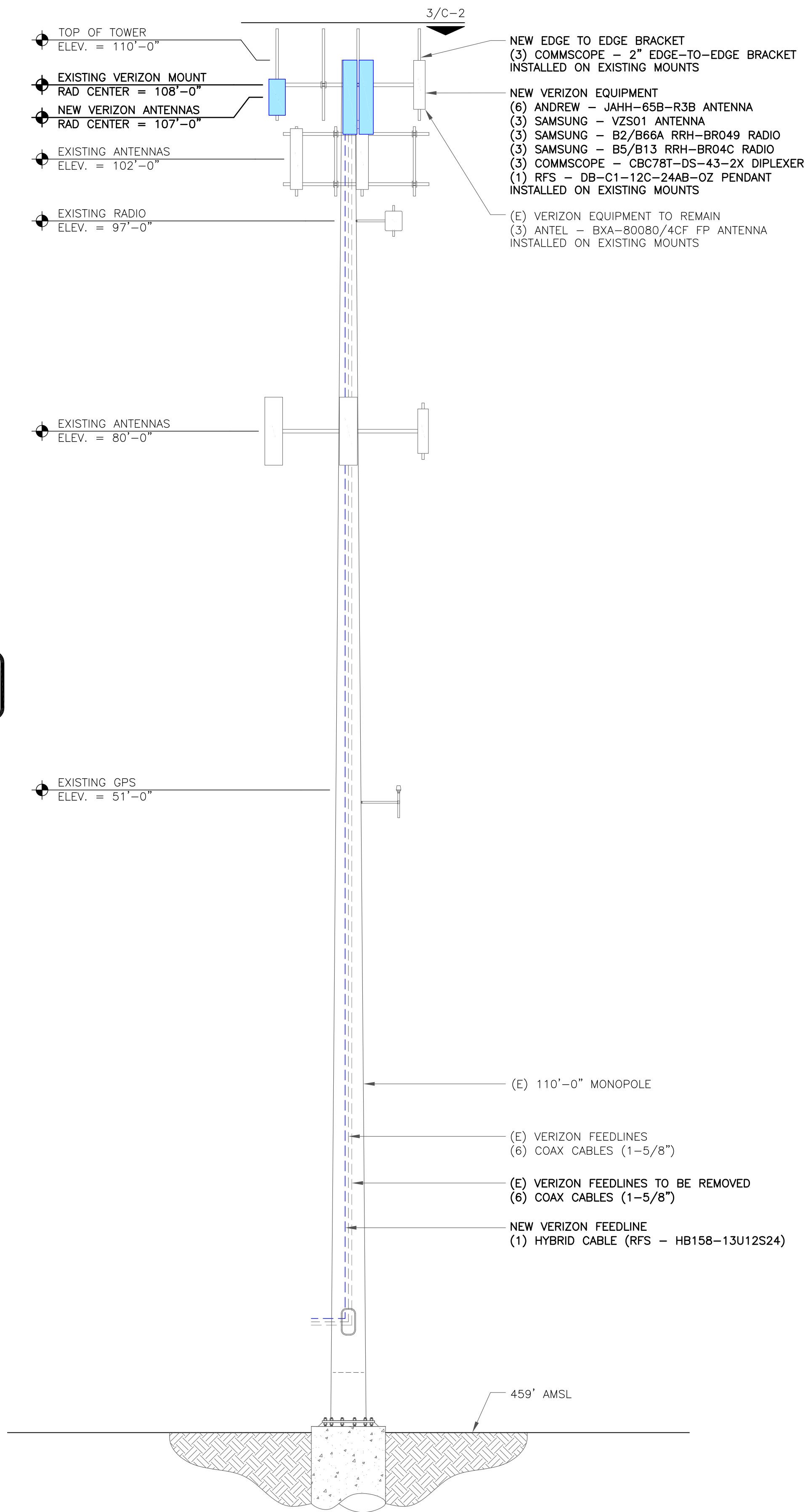
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SHEET NUMBER: **C-1** REVISION: **0**



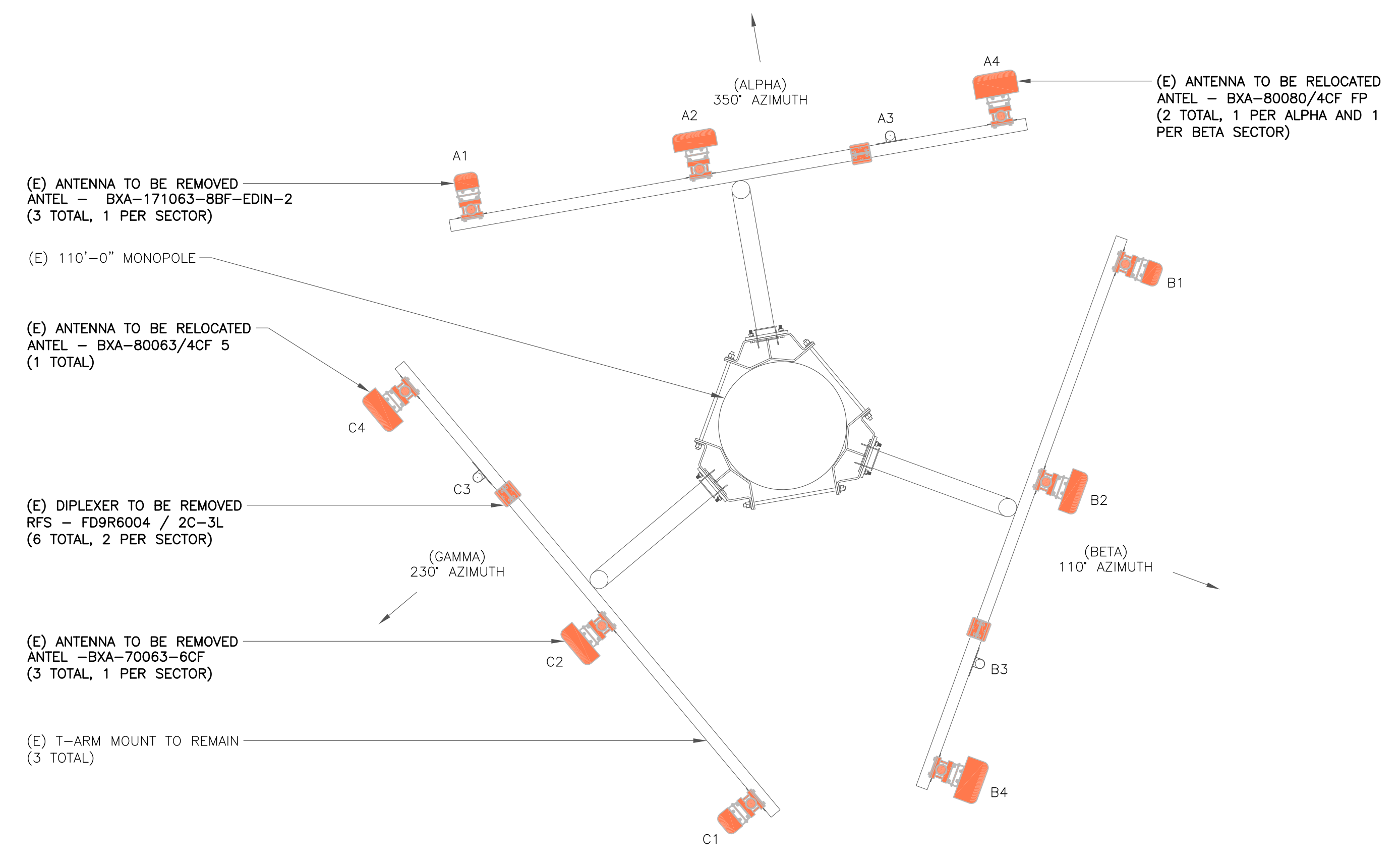
1 SITE PLAN
 SCALE: 1/4"=1'-0" (FULL SIZE)
 1/8"=1'-0" (11x17)



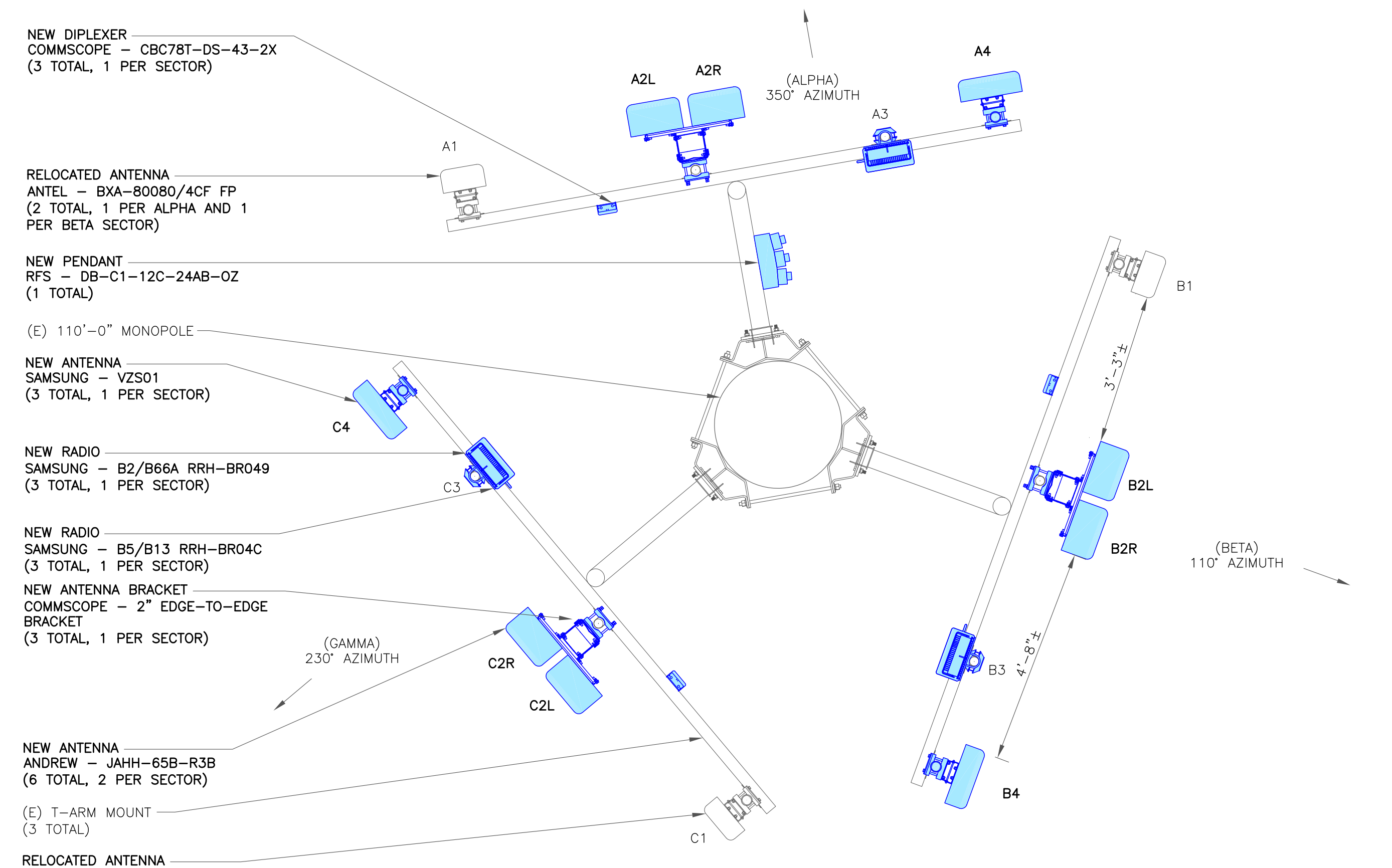


VERIZON EQUIPMENT
 ANTENNA CL: 107'-0"
 MOUNT CL: 108'-0"

1 TOWER ELEVATION
 SCALE: NOT TO SCALE



2 EXISTING ANTENNA PLAN
 SCALE: NOT TO SCALE



3 NEW ANTENNA PLAN
 SCALE: NOT TO SCALE

verizon
 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:
468304

BU #: **876405**
WOODBURY NORTH

186 MINOR TOWN
 WOODBURY, CT 06798

EXISTING 110'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/26/21	DDK	CONSTRUCTION	YXI

B&T ENGINEERING, INC.
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SHEET NUMBER: **C-2** REVISION: **0**

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VERIZON SITE NUMBER:
468304

BU #: **876405**
WOODBURY NORTH

186 MINOR TOWN
 WOODBURY, CT 06798

EXISTING 110'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/26/21	DDK	CONSTRUCTION	YXI



B&T ENGINEERING, INC.
 PEC.0001564
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SHEET NUMBER: **C-3** REVISION: **0**

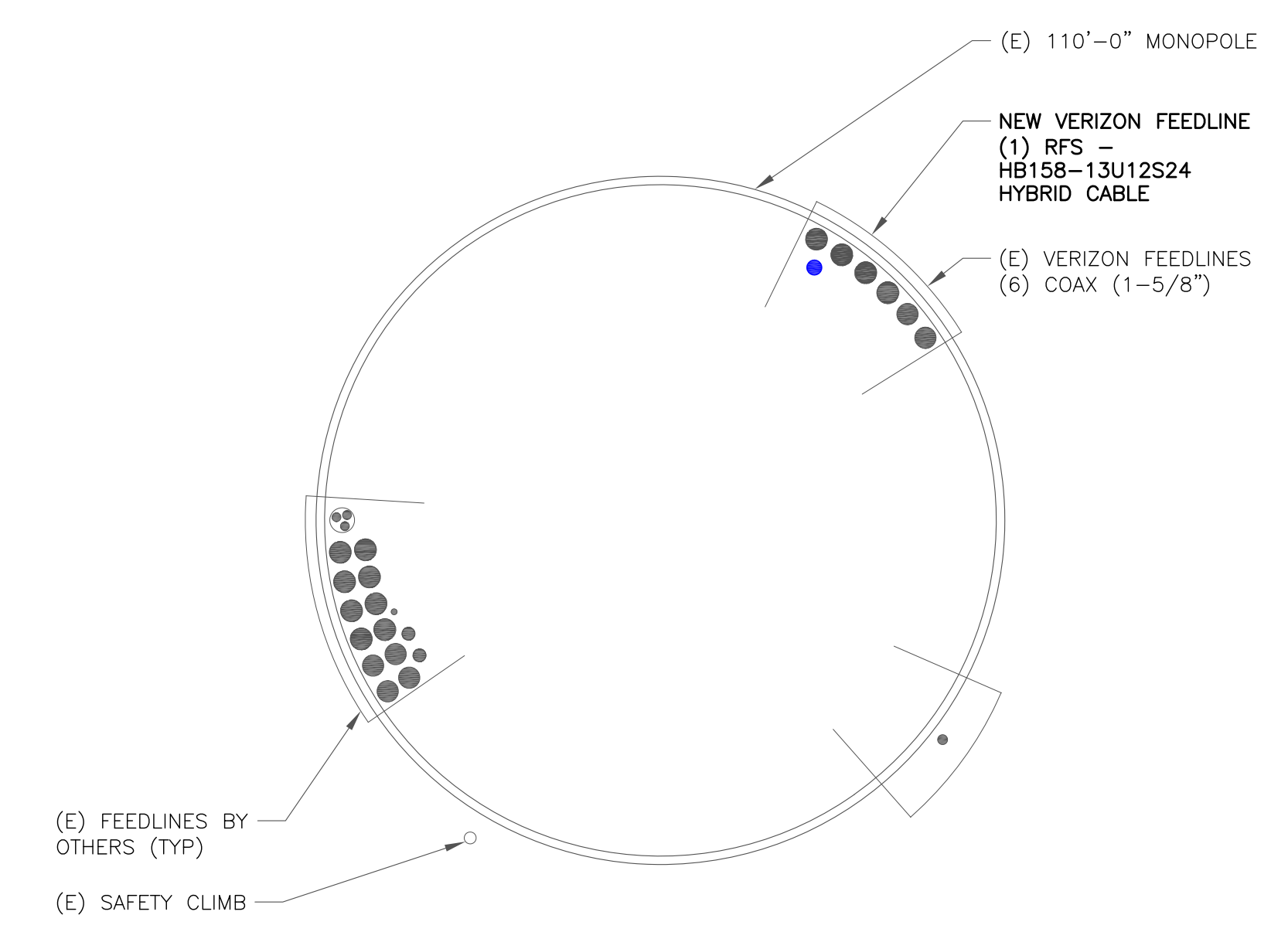
ANTENNA/RRH SCHEDULE

SECTOR	STATUS	ANTENNA MANUFACTURER	ANTENNA MODEL	ANTENNA CENTERLINE	AZIMUTH	MECHANICAL DOWNTILTS	ELECTRICAL DOWNTILTS	TOWER EQUIPMENT MANUFACTURER	TOWER EQUIPMENT QTY/MODEL
A1	EXISTING	ANTEL	BXA-80080/4CF FP	108'-0"	350°	6'	0'	-	-
A2L	NEW	ANDREW	JAHH-65B-R3B	107'-0"	350°	0'	4'/4' 2'/2'	SAMSUNG COMMSCOPE	(1) B2/B66A RRH-BR049 (RFV01U-D1A) (1) CBC78T-DS-43-2X
A2R	NEW	ANDREW	JAHH-65B-R3B	107'-0"	350°	0'	4'/4' 2'/2'	SAMSUNG	(1) B5/B13 RRH-BR04C (RFV01U-D2A)
A3	-	-	EMPTY MOUNT PIPE	-	-	-	-	-	-
A4	NEW	SAMSUNG	VZS01	107'-0"	350°	0'	6'	RFS	(1) DB-C1-12C-24AB-OZ PENDANT
B1	EXISTING	ANTEL	BXA-80080/4CF FP	108'-0"	110°	3'	0'	-	-
B2L	NEW	ANDREW	JAHH-65B-R3B	107'-0"	110°	0'	2'/2' 0'/0'	SAMSUNG COMMSCOPE	(1) B2/B66A RRH-BR049 (RFV01U-D1A) (1) CBC78T-DS-43-2X
B2R	NEW	ANDREW	JAHH-65B-R3B	107'-0"	110°	0'	2'/2' 0'/0'	SAMSUNG	(1) B5/B13 RRH-BR04C (RFV01U-D2A)
B3	-	-	EMPTY MOUNT PIPE	-	-	-	-	-	-
B4	NEW	SAMSUNG	VZS01	107'-0"	110°	0'	6'	-	-
C1	EXISTING	ANTEL	BXA-80063/4CF 5	108'-0"	230°	2'	5'	-	-
C2L	NEW	ANDREW	JAHH-65B-R3B	107'-0"	230°	0'	2'/2' 0'/0'	SAMSUNG COMMSCOPE	(1) B2/B66A RRH-BR049 (RFV01U-D1A) (1) CBC78T-DS-43-2X
C2R	NEW	ANDREW	JAHH-65B-R3B	107'-0"	230°	0'	2'/2' 0'/0'	SAMSUNG	(1) B5/B13 RRH-BR04C (RFV01U-D2A)
C3	-	-	EMPTY MOUNT PIPE	-	-	-	-	-	-
C4	NEW	SAMSUNG	VZS01	107'-0"	230°	0'	6'	-	-

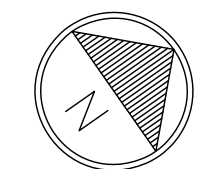
1 VERIZON TOWER EQUIPMENT SCHEDULE
 SCALE: NOT TO SCALE

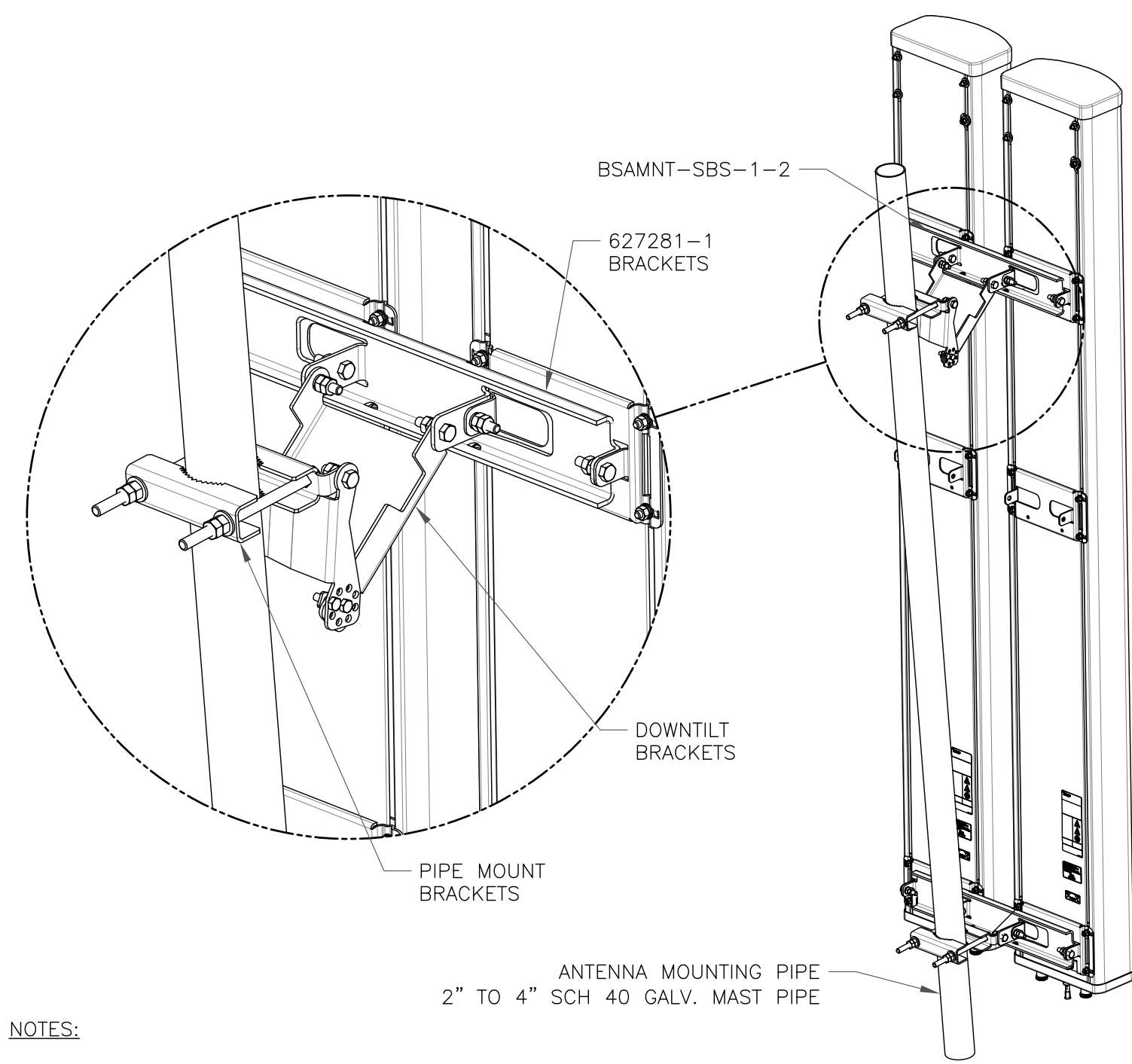
CABLE SCHEDULE

STATUS	CABLE TYPE	SIZE	LENGTH	QTY
EXISTING	COAX	1-5/8"	158'-0"±	6
NEW	HYBRID	-	158'-0"±	1
TOTAL CABLE QTY:				7



2 BASE LEVEL DETAIL
 SCALE: NOT TO SCALE



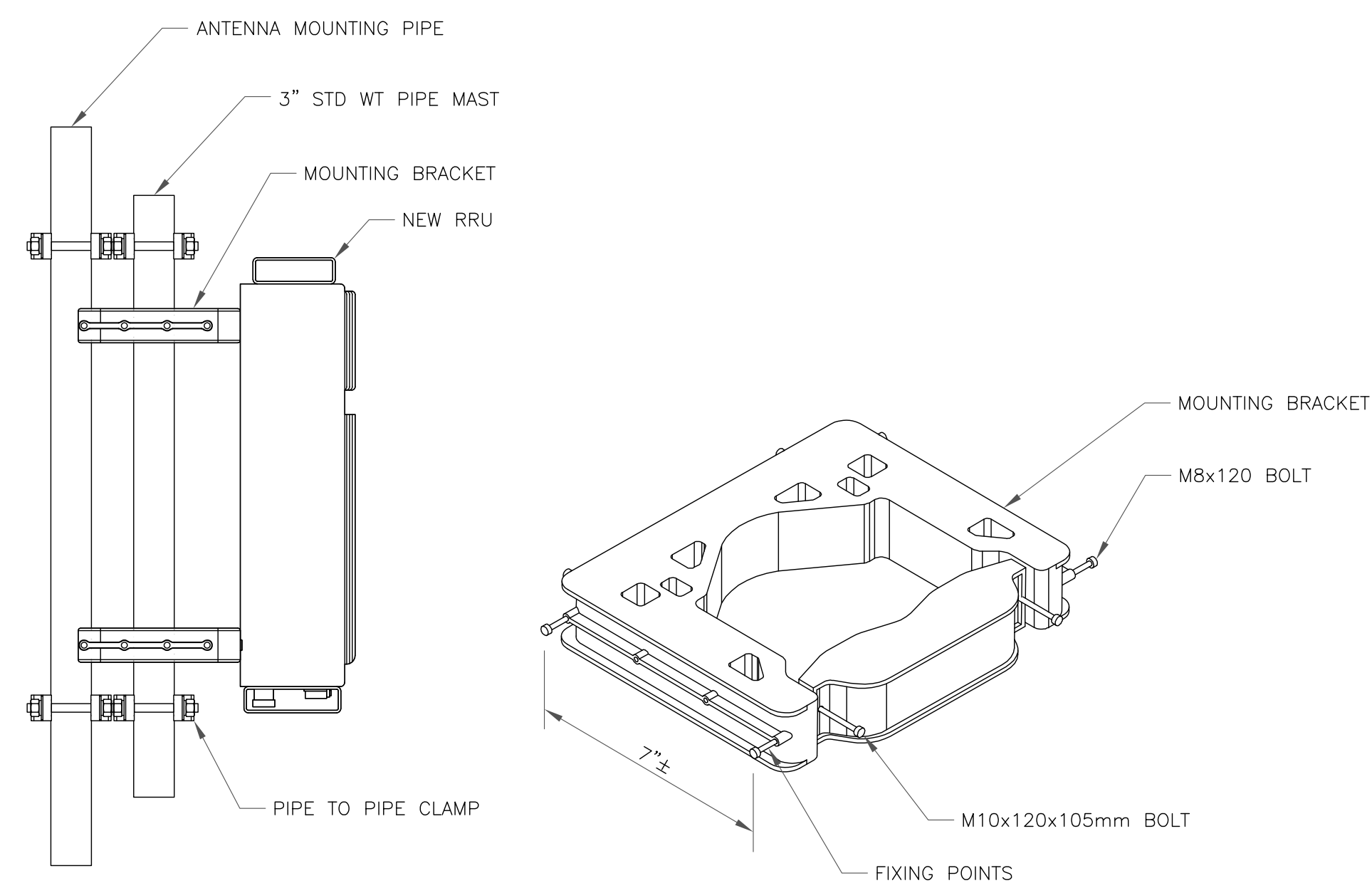


NOTES:

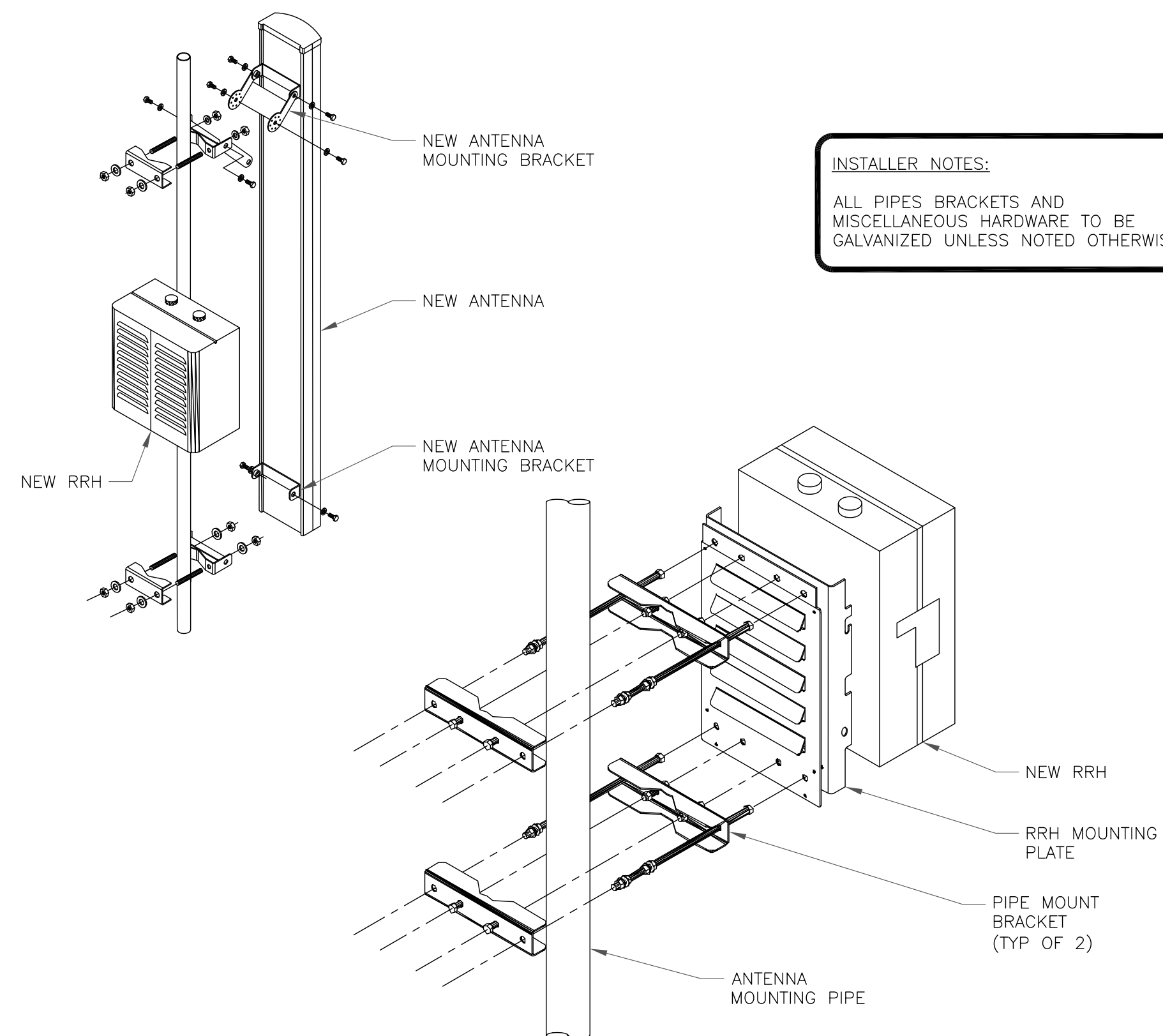
- BSAMNT-SBS-1-2 KIT CONTAINS (2) 627281 MOUNTING BRACKETS.
- TORQUE THE M10 BOLT ASSEMBLY TO 37 N.m. PER MANUFACTURE'S RECOMMENDATIONS.

1 COMMSCOPE - BSAMNT-SBS-1-2
SCALE: NOT TO SCALE

2 NOT USED
SCALE: NOT TO SCALE



3 NOKIA - FPKA BRACKET MOUNTING DETAIL
SCALE: NOT TO SCALE



INSTALLER NOTES:
ALL PIPES BRACKETS AND MISCELLANEOUS HARDWARE TO BE GALVANIZED UNLESS NOTED OTHERWISE.

4 ANTENNA & RRH MOUNTING DETAIL
SCALE: NOT TO SCALE

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

VERIZON SITE NUMBER:
468304

BU #: **876405**
WOODBURY NORTH

186 MINOR TOWN
WOODBURY, CT 06798

EXISTING 110'-0" MONOPOLE

ISSUED FOR:

REV	DATE	DRWN	DESCRIPTION	DES./QA
0	10/26/21	DDK	CONSTRUCTION	YXI

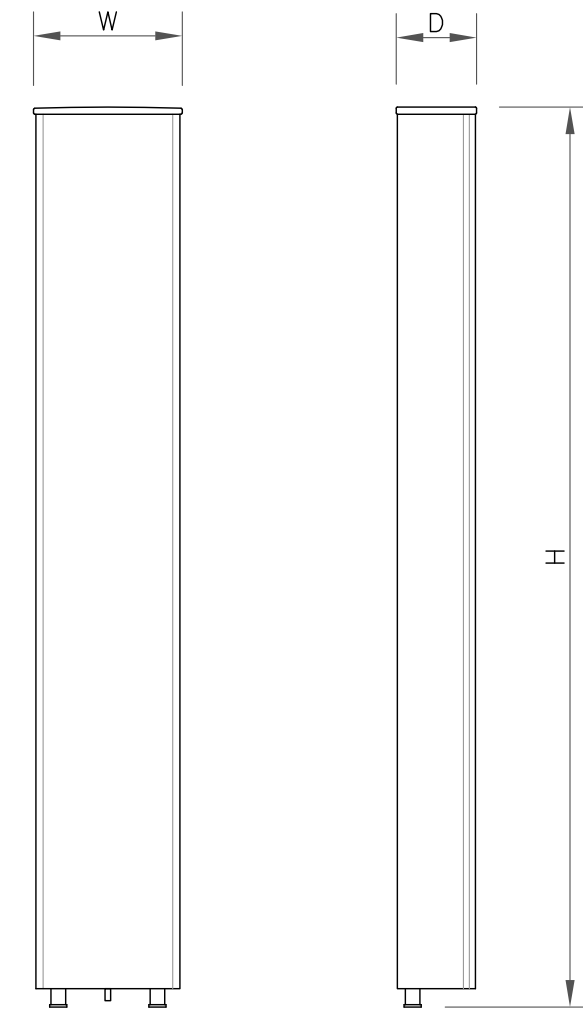


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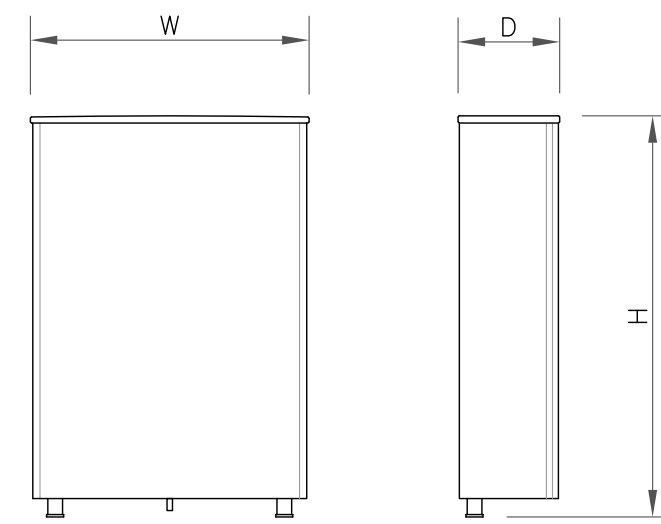
SHEET NUMBER:
C-4

REVISION:
0



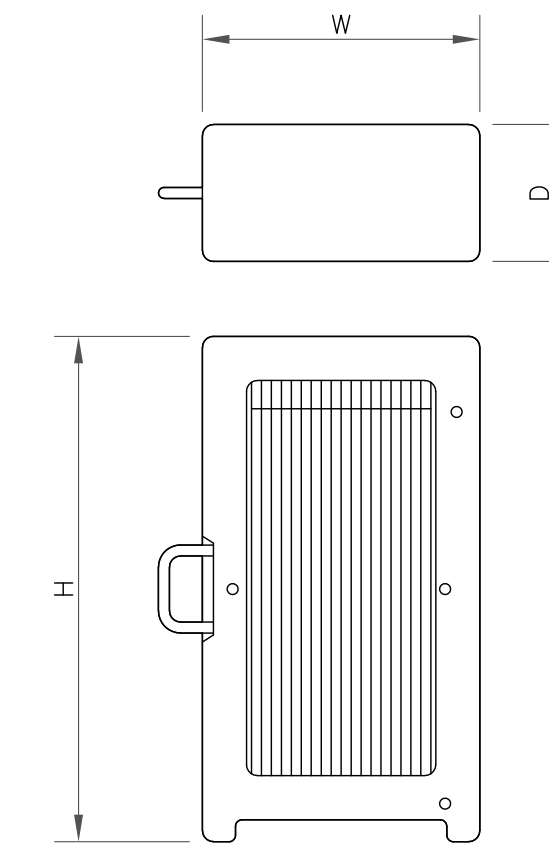
ANTENNA SPECS	
MANUFACTURER	ANDREW
MODEL #	JAHH-65B-R3B
WIDTH	13.8"
DEPTH	8.2"
HEIGHT	72"
WEIGHT	63.3 LBS

1 ANTENNA SPECS
SCALE: NOT TO SCALE



ANTENNA SPECS	
MANUFACTURER	SAMSUNG
MODEL #	VZS01
WIDTH	16.06"
DEPTH	5.51"
HEIGHT	35.12"
WEIGHT	87.1 LBS

2 ANTENNA SPECS
SCALE: NOT TO SCALE



RRU SPECIFICATIONS	
MANUFACTURER	SAMSUNG
MODEL #	B5/B13 RRH-BR04C
WIDTH	15"
DEPTH	8.1"
HEIGHT	15"
WEIGHT	70.3 LBS

3 RRU SPECS
SCALE: NOT TO SCALE

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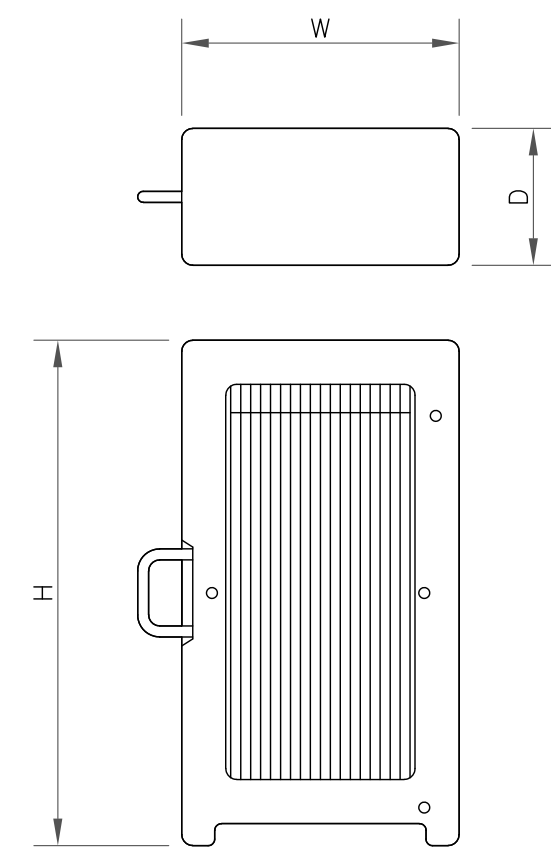
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RRU SPECIFICATIONS	
MANUFACTURER	SAMSUNG
MODEL #	B2/B66A RRH-BR049
WIDTH	15"
DEPTH	10"
HEIGHT	15"
WEIGHT	84.4 LBS

4 RRU SPECS
SCALE: NOT TO SCALE



DIPLEXER SPECIFICATIONS	
MANUFACTURER	COMMSCOPE
MODEL #	CBC78T-DS-43-2X
WIDTH	6.9"
DEPTH	9.6"
HEIGHT	6.4"
WEIGHT	20.7 LBS

5 DIPLEXER SPECS
SCALE: NOT TO SCALE



PENDANT SPECIFICATIONS	
MANUFACTURER	RFS
MODEL #	DB-C1-12C-24AB-0Z
WIDTH	16.5"
DEPTH	12.6"
HEIGHT	29.5"
WEIGHT	32 LBS

6 PENDANT SPECS
SCALE: NOT TO SCALE



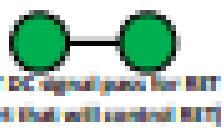
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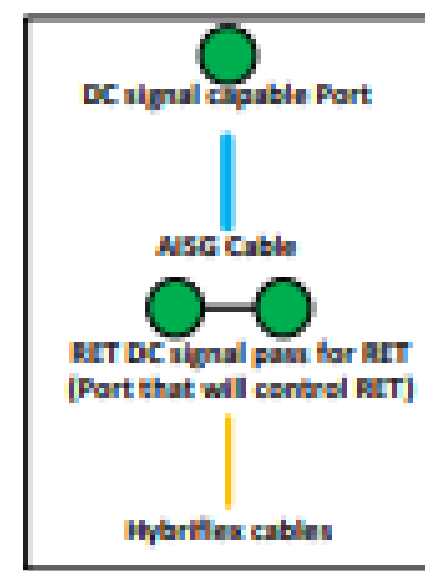
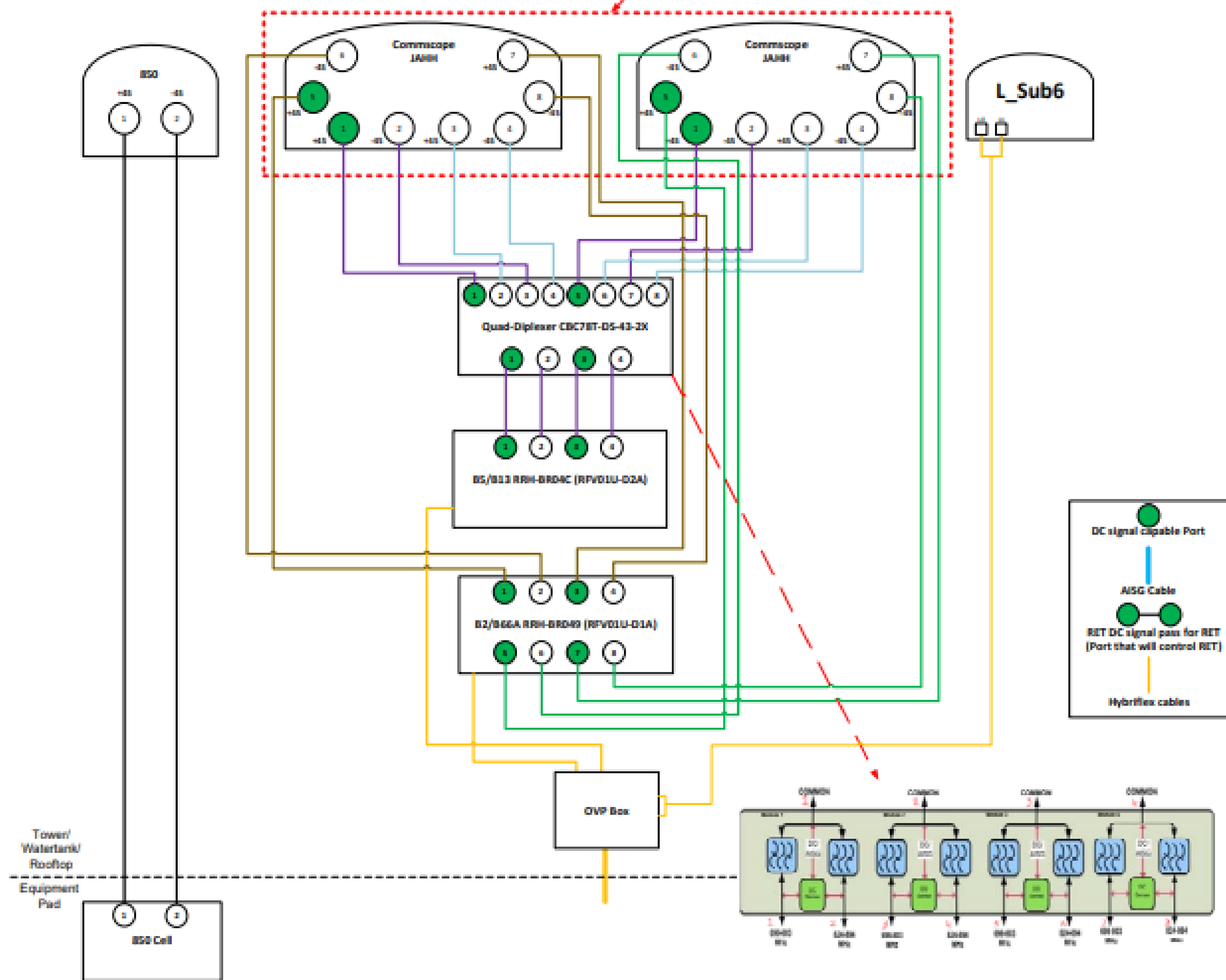


- Port 1 & 2 are for low band (698-787 MHz).
- Port 3 & 4 are for low band (824-894 MHz).
- Port 3,4,5, & 6 are for high band (1695-2360 MHz).
- Antenna Smart Bias Tee (SBT) is through port 1 for low band and port 5 for high band.
- AISG cable is only needed when drawn in the diagrams below, if it is 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 configuration as viewed from standing behind the antennas.
 Antennas will be installed in that order from left to right.
 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)

2" Side By Side Mount



1:39:24:002.01_WOODBURY NORTH.dwg - Sheet-C-6 - User: yxiong - Oct 26, 2021 - 1:33pm

1 PLUMBING DIAGRAM
 SCALE: NOT TO SCALE

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VERIZON SITE NUMBER:
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BU #: **876405**
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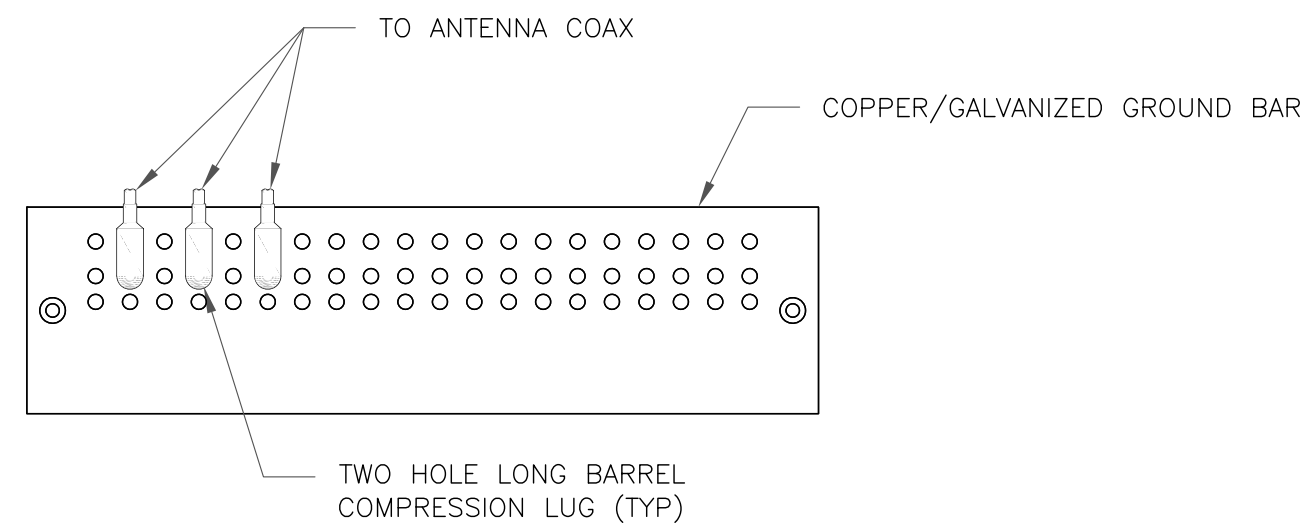
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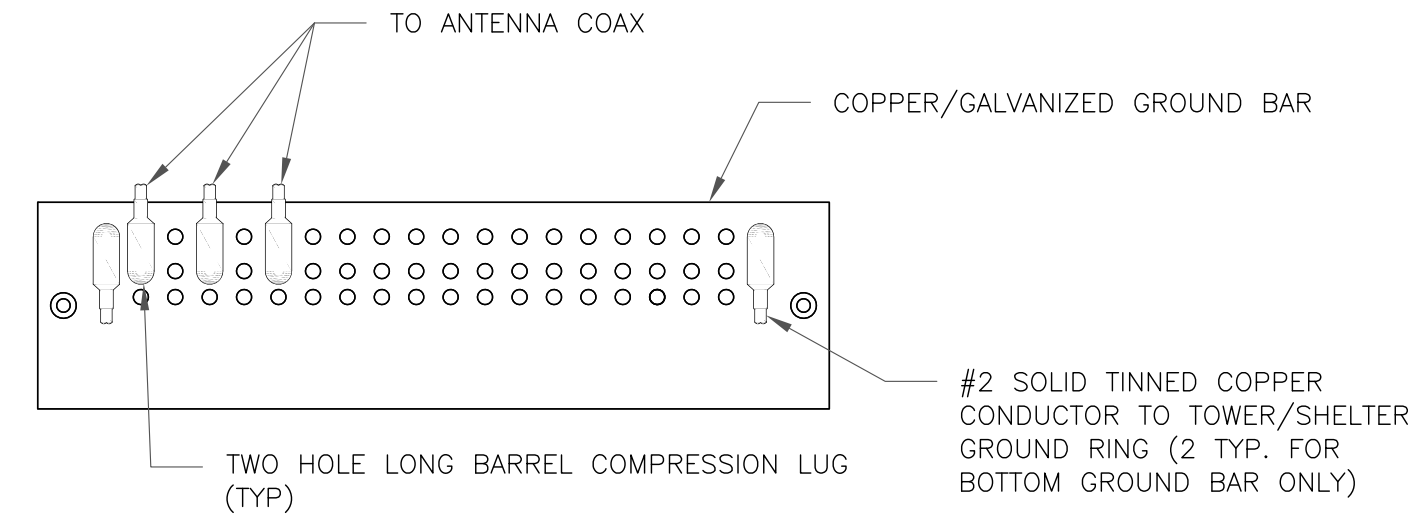
SHEET NUMBER: **C-6** REVISION: **0**



NOTES:

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

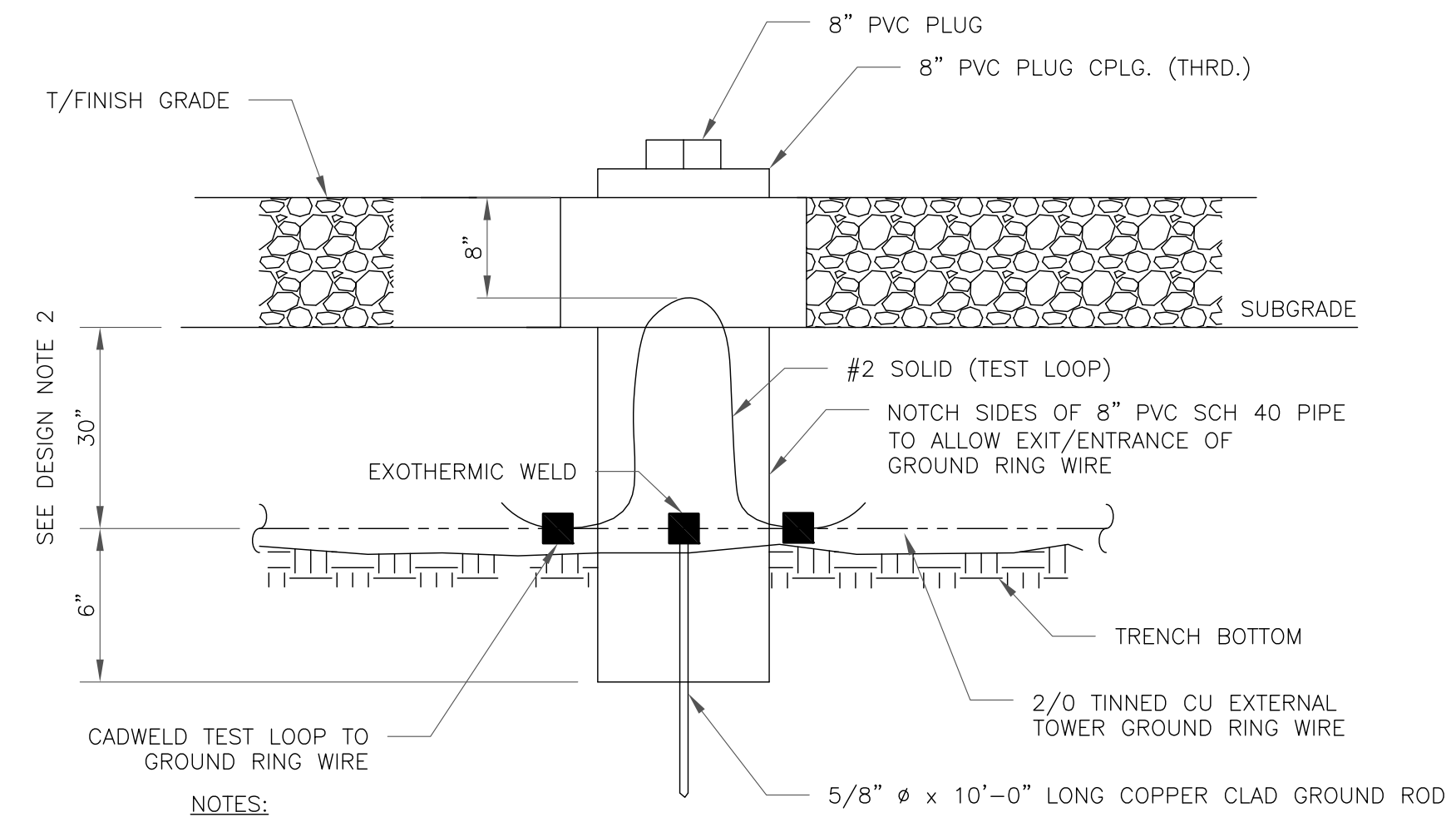
1 ANTENNA SECTOR GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

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

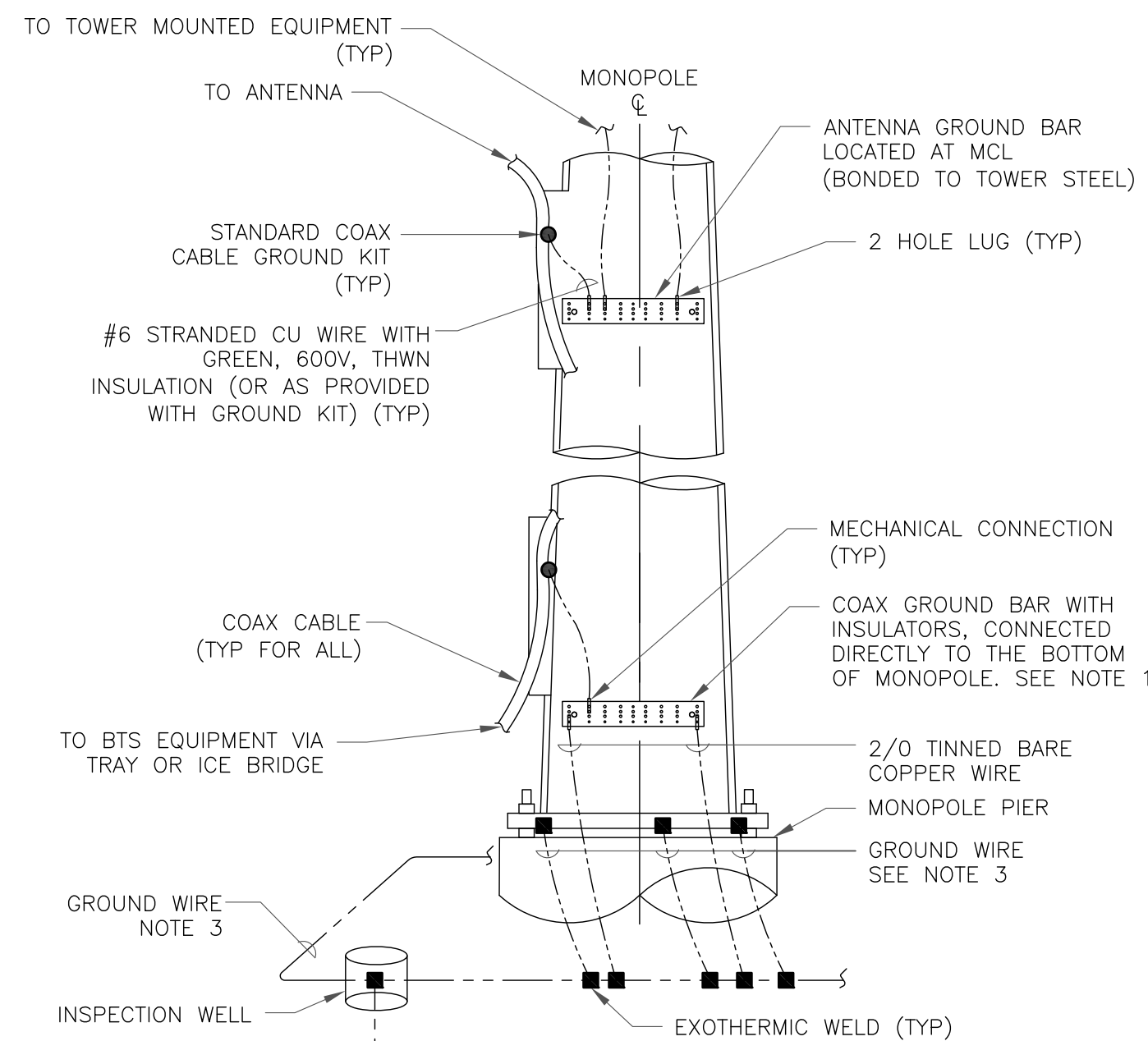
2 TOWER/SHELTER GROUND BAR DETAIL
SCALE: NOT TO SCALE



NOTES:

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

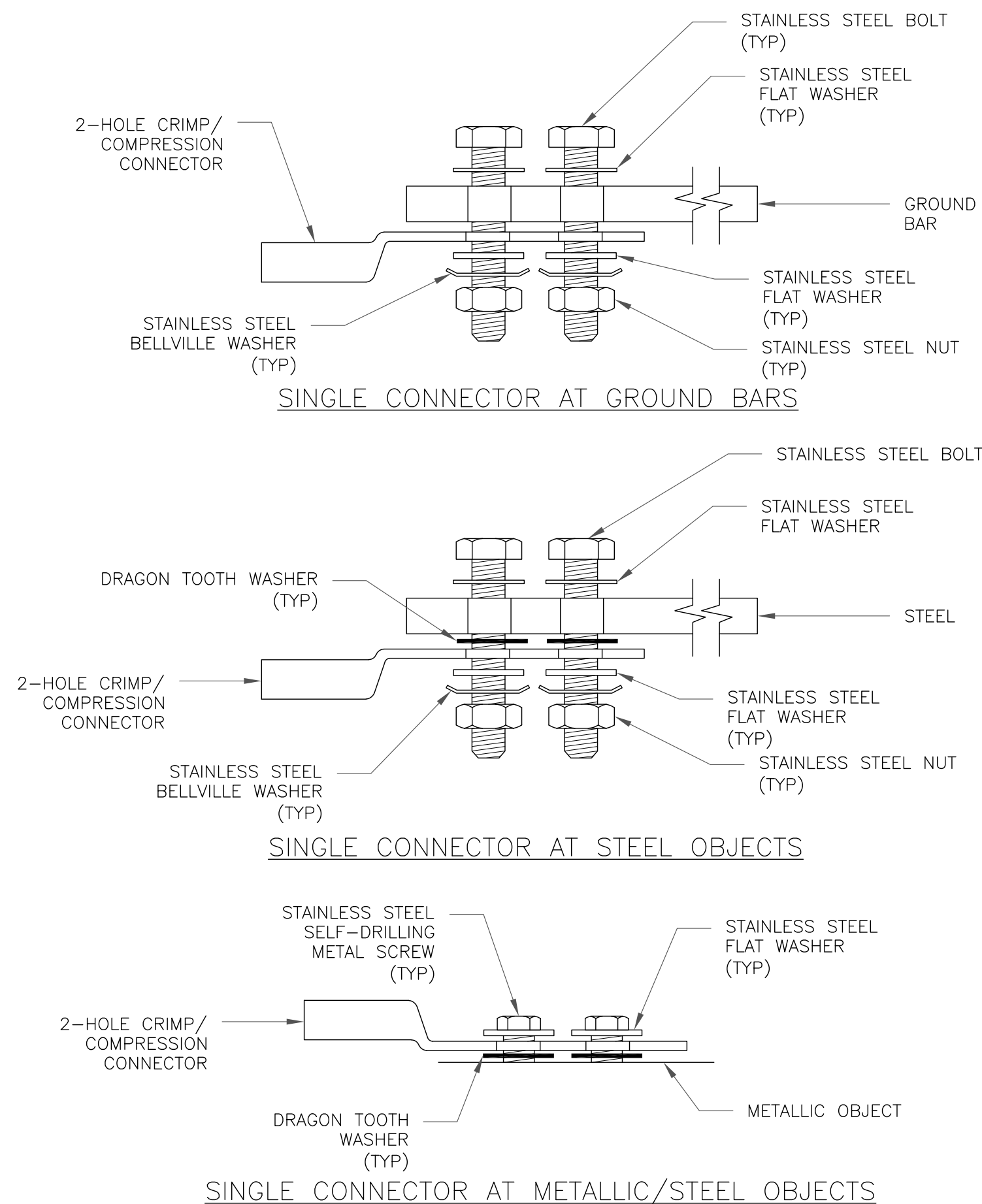
3 INSPECTION WELL DETAIL
SCALE: NOT TO SCALE



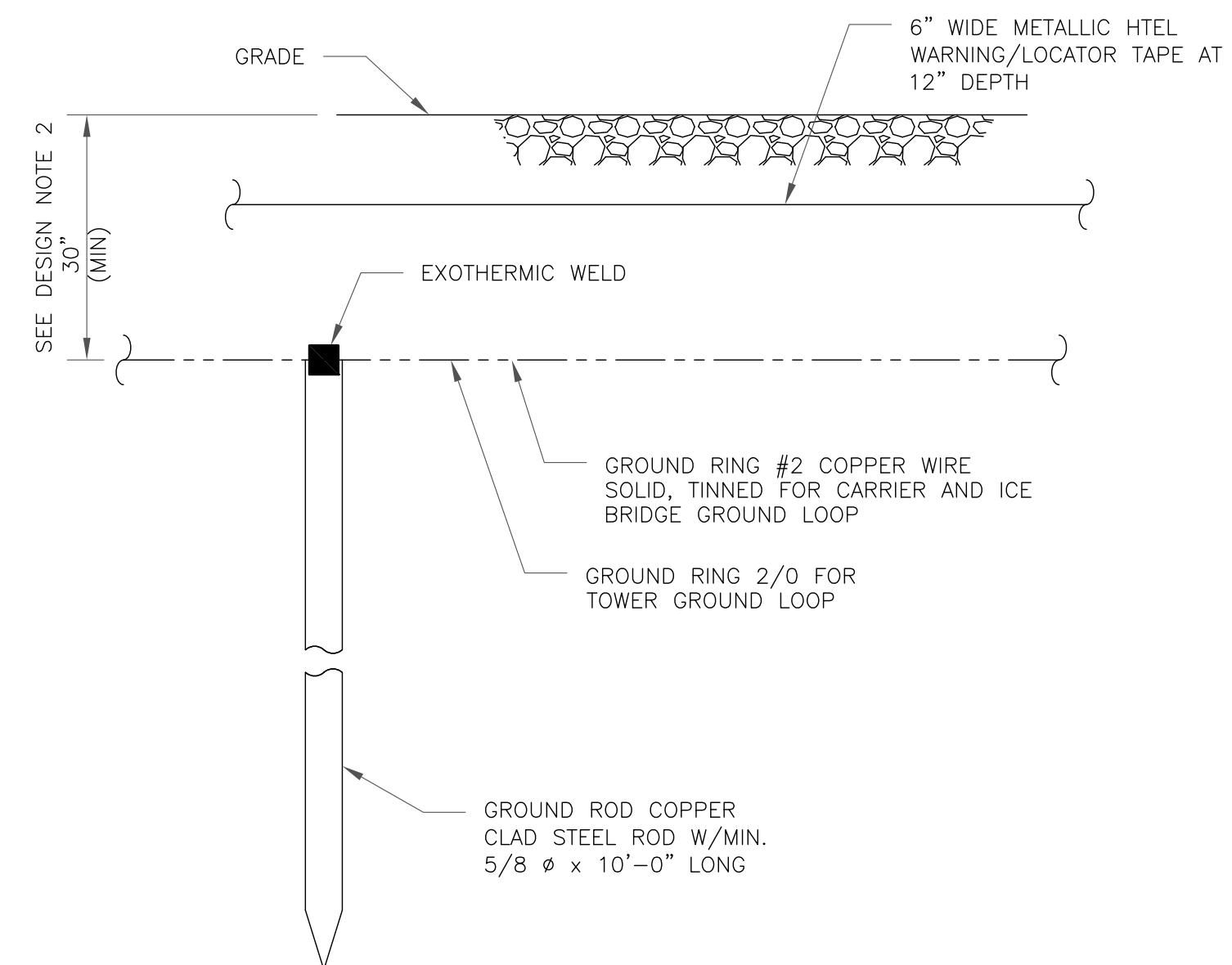
NOTES:

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

4 TYPICAL ANTENNA CABLE GROUNDING
SCALE: NOT TO SCALE



5 HARDWARE DETAIL FOR EXTERIOR CONNECTIONS
SCALE: NOT TO SCALE



NOTES:

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

6 GROUND ROD DETAIL
SCALE: NOT TO SCALE

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SUITE 300
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VERIZON SITE NUMBER:
468304

BU #: 876405
WOODBURY NORTH

186 MINOR TOWN
WOODBURY, CT 06798

EXISTING 110'-0" MONOPOLE

ISSUED FOR:

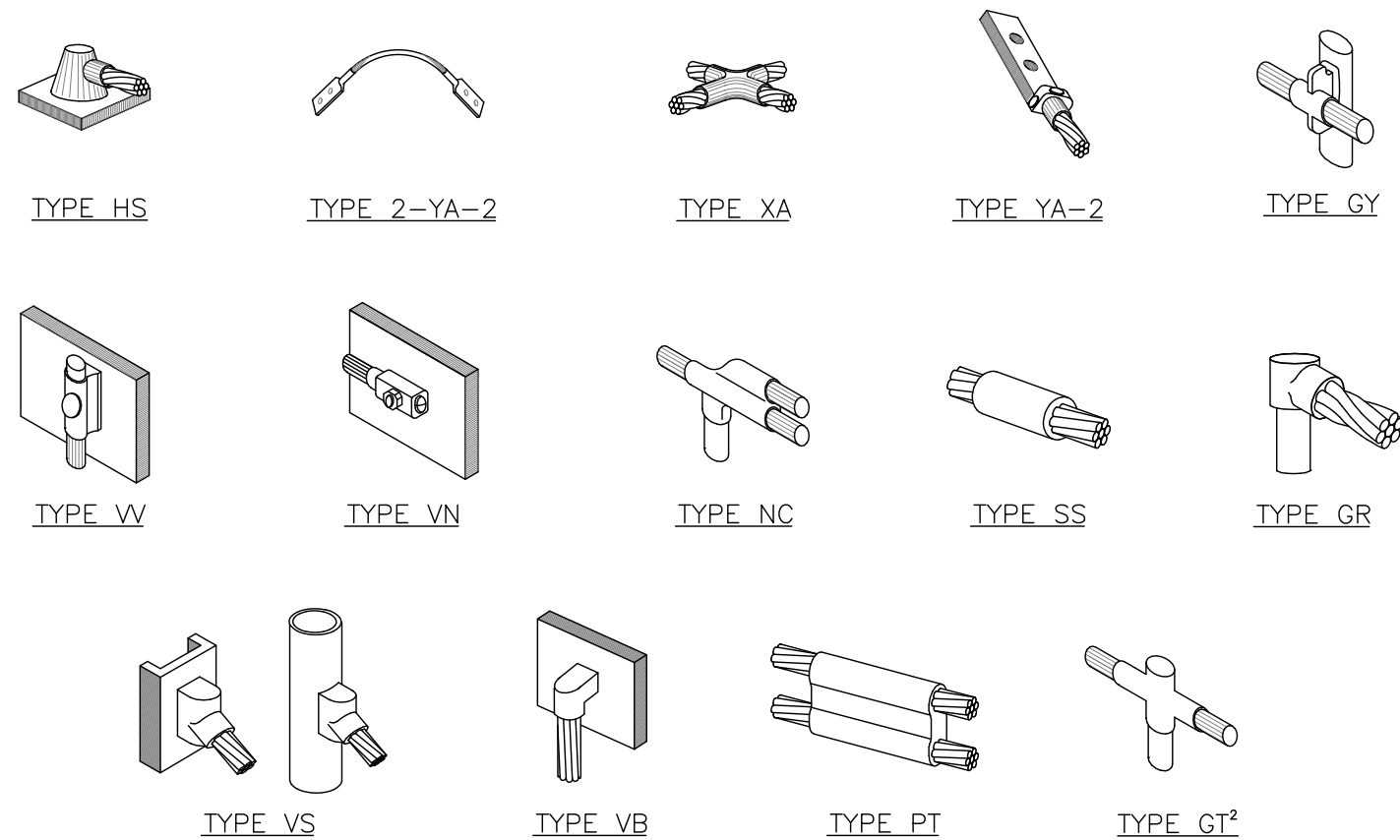
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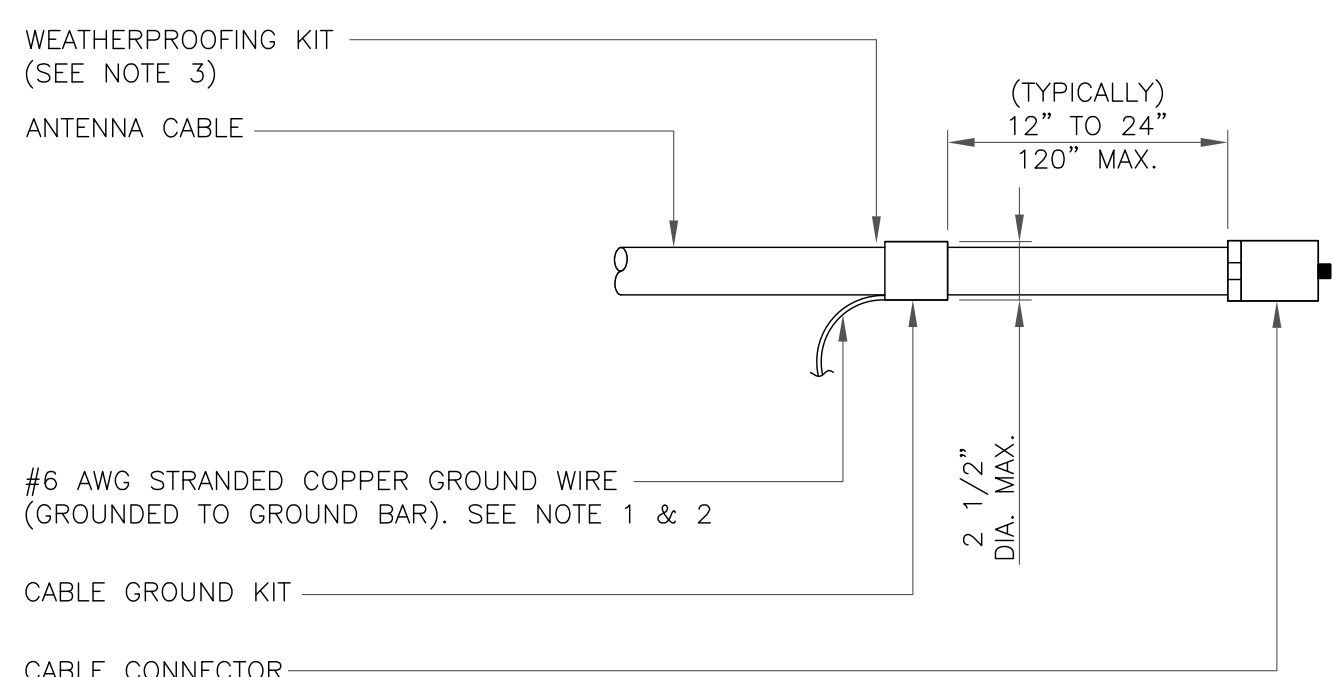
SHEET NUMBER: **G-1** REVISION: **0**



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.

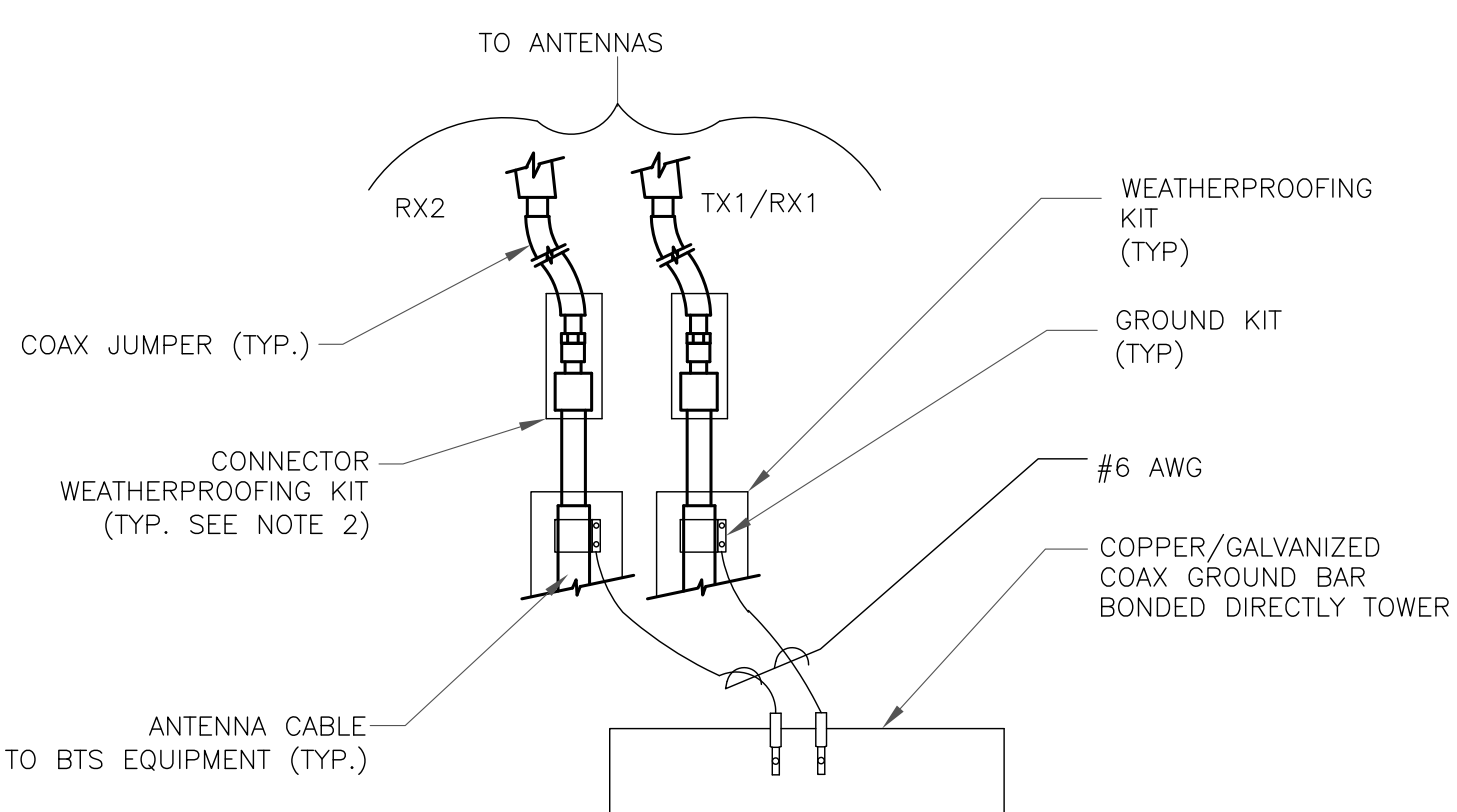
1 CADWELD GROUNDING CONNECTIONS
SCALE: NOT TO SCALE



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.

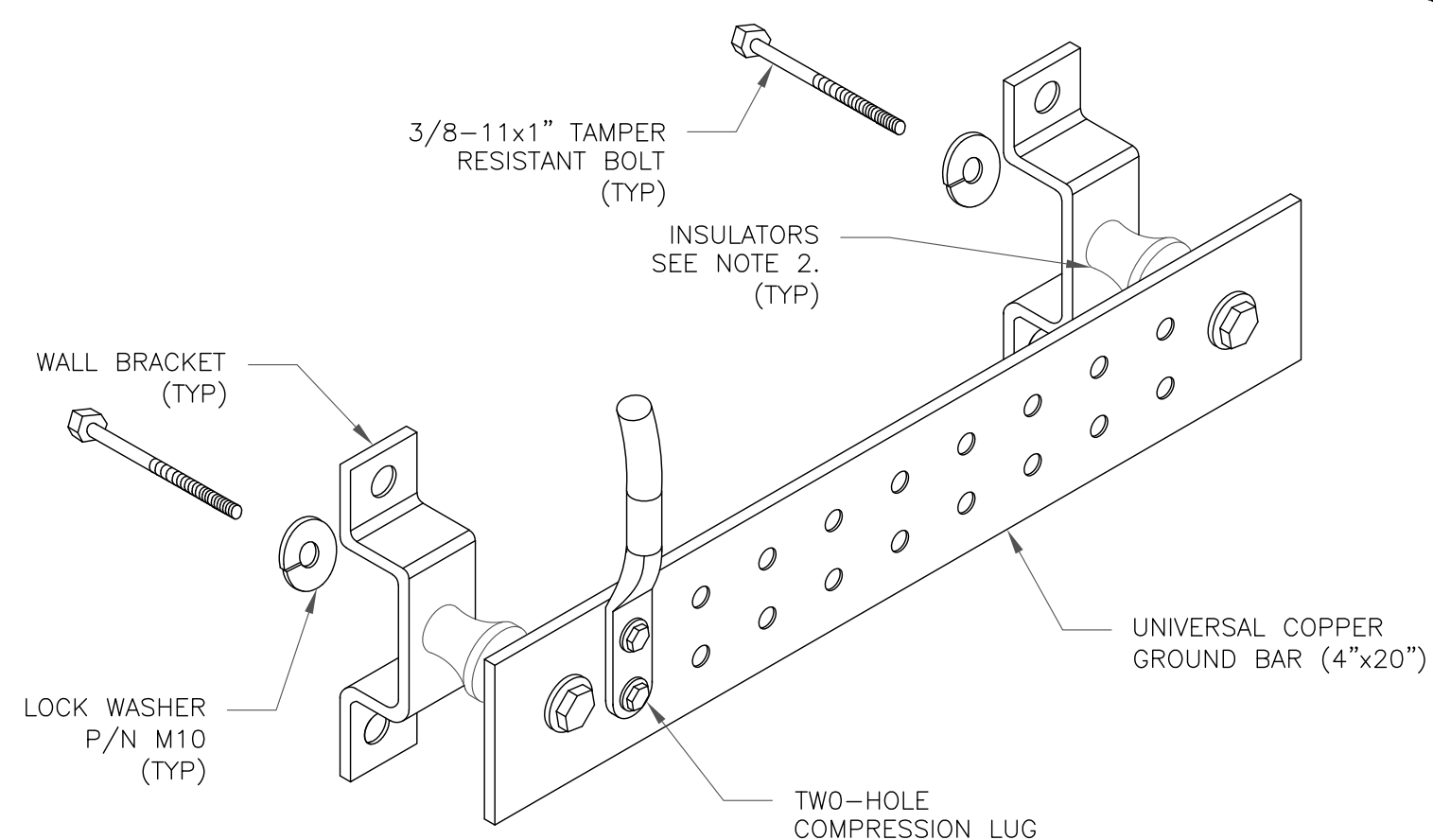
3 CABLE GROUND KIT CONNECTION
SCALE: NOT TO SCALE



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.

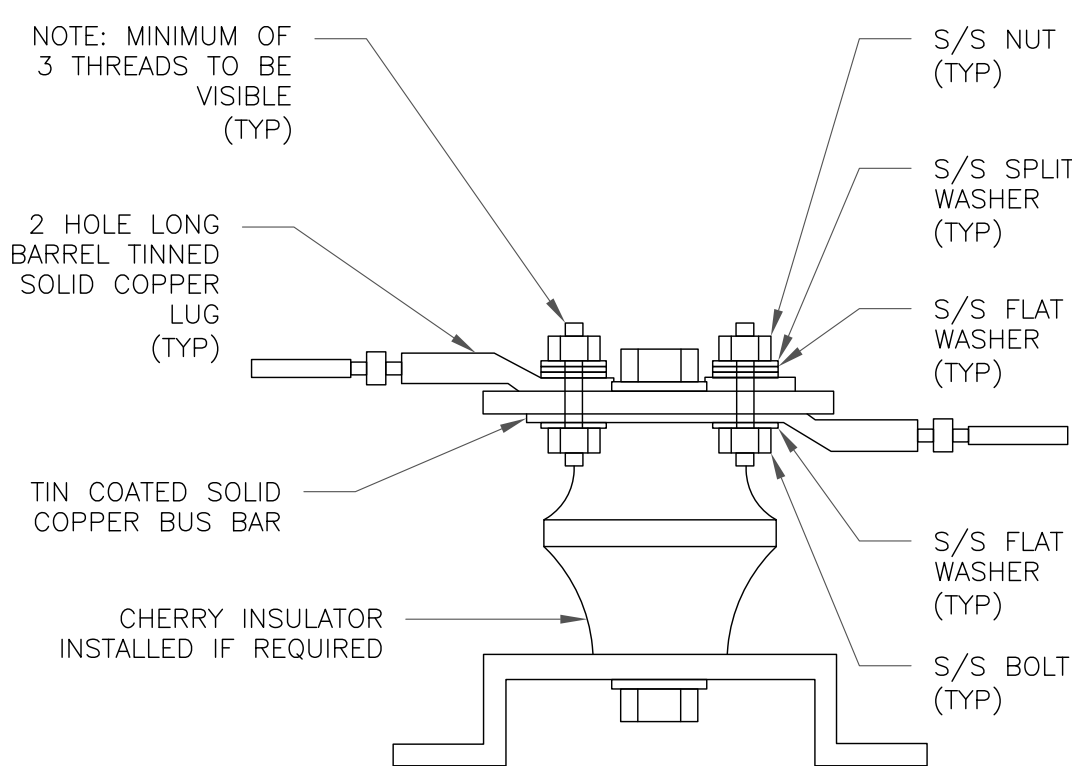
4 GROUND CABLE CONNECTION
SCALE: NOT TO SCALE



NOTES:

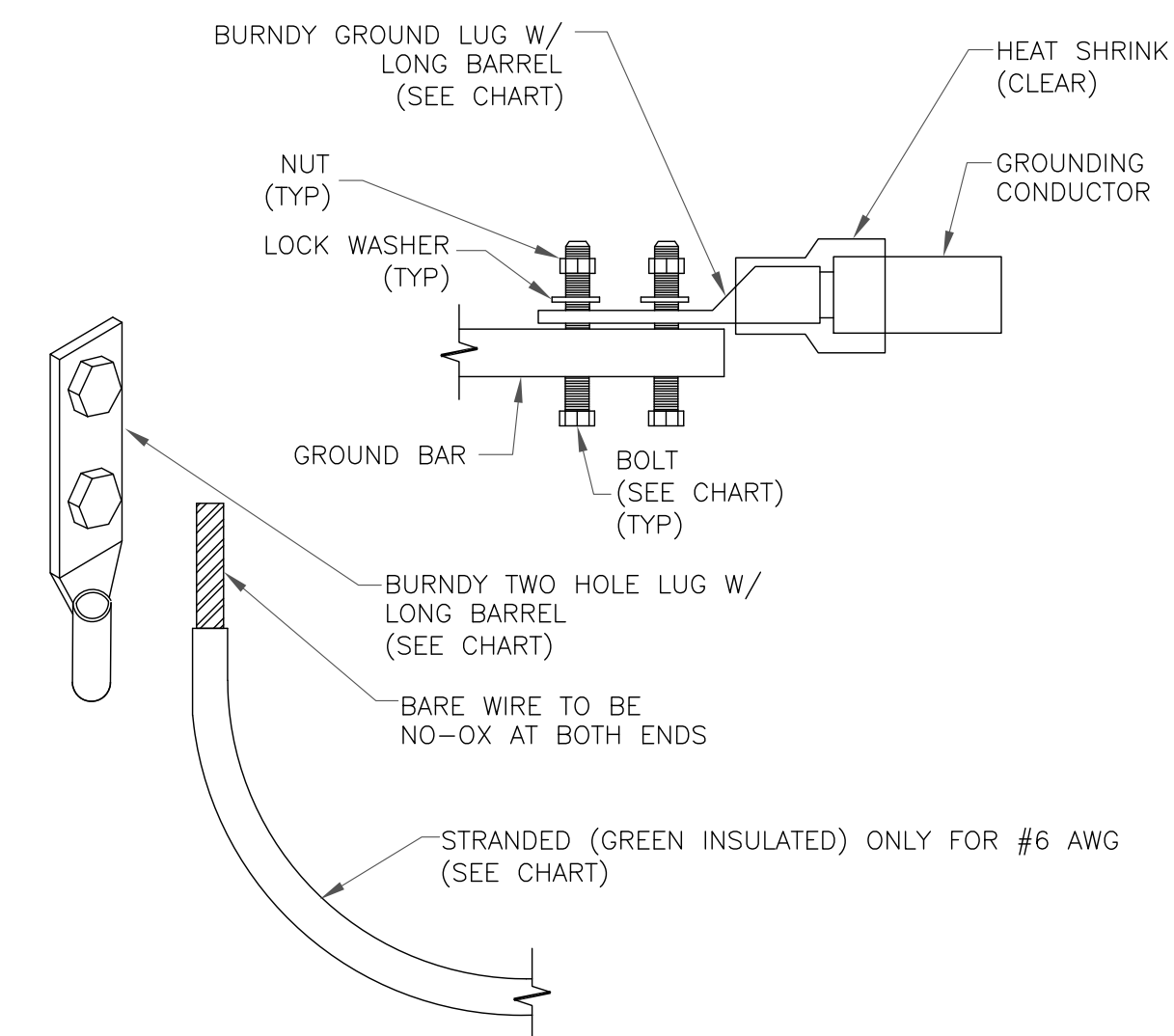
1. DOWN LEAD (HOME RUN) CONDUCTORS ARE NOT TO BE INSTALLED ON CROWN CASTLE USA INC. TOWER, PER THE GROUNDING DOWN CONDUCTOR POLICY QAS-STD-10091. NO MODIFICATION OR DRILLING TO TOWER STEEL IS ALLOWED IN ANY FORM OR FASHION, CAD-WELDING ON THE TOWER AND/OR IN THE AIR ARE NOT PERMITTED.
2. OMIT INSULATOR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

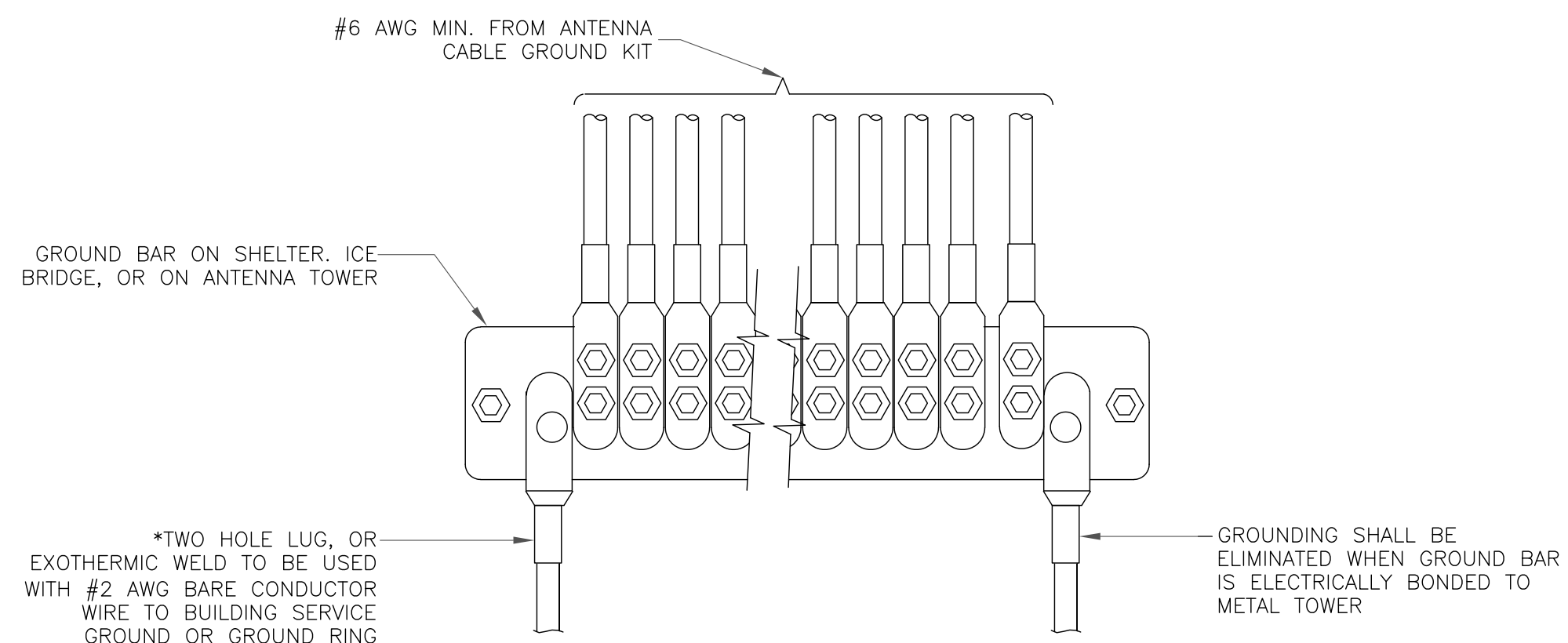
WIRE SIZE	BURNDY LUG	BOLT SIZE
#6 AWG GREEN INSULATED	YA6C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG SOLID TINNED	YA3C-2TC38	3/8" - 16 NC S 2 BOLT
#2 AWG STRANDED	YA2C-2TC38	3/8" - 16 NC S 2 BOLT
#2/0 AWG STRANDED	YA26-2TC38	3/8" - 16 NC S 2 BOLT
#4/0 AWG STRANDED	YA28-2N	1/2" - 16 NC S 2 BOLT



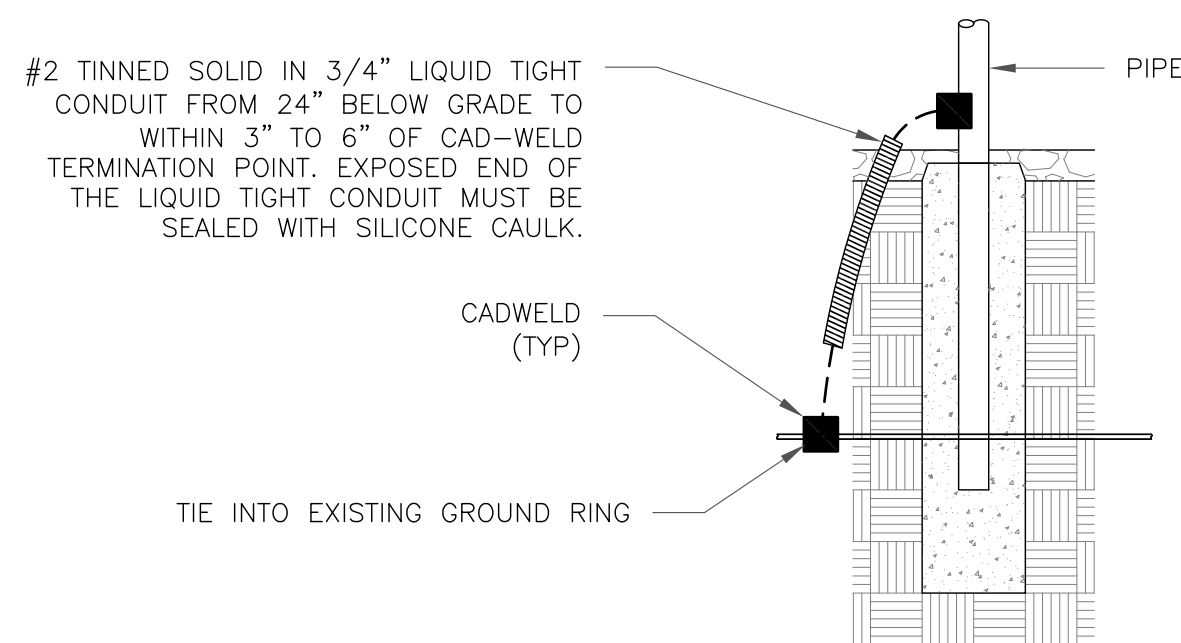
NOTES:

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.

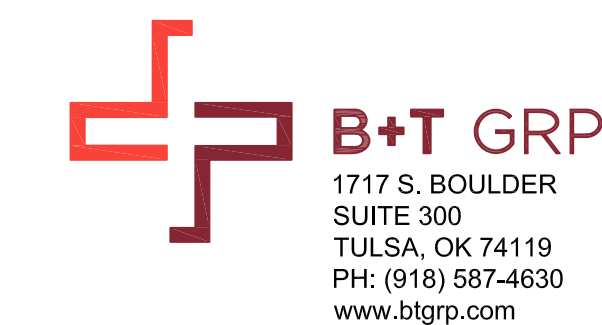
2 MECHANICAL LUG CONNECTION
SCALE: NOT TO SCALE



5 GROUNDWIRE INSTALLATION
SCALE: NOT TO SCALE



8 TRANSITIONING GROUND DETAIL
SCALE: NOT TO SCALE



VERIZON SITE NUMBER:
468304

BU #: **876405**
WOODBURY NORTH

186 MINOR TOWN
WOODBURY, CT 06798

EXISTING 110'-0" MONOPOLE

ISSUED FOR:

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Exhibit D

Structural Analysis Report

Date: **May 18, 2021**



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

Subject: Structural Analysis Report

Carrier Designation: **Verizon Wireless Co-Locate**
Site Number: 468304
Site Name: Woodbury CT

Crown Castle Designation: **BU Number:** 876405
Site Name: WOODBURY NORTH
JDE Job Number: 645911
Work Order Number: 1961966
Order Number: 554035 Rev. 1

Engineering Firm Designation: **TEP Project Number:** 25640.543262

Site Data: **186 Minortown, Woodbury, Litchfield County, CT 06798**
Latitude 41° 34' 4.79", Longitude -73° 10' 46.85"
110 Foot - Monopole Tower

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

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

LC7: Proposed Equipment Configuration

Sufficient Capacity – 91.1%

This analysis utilizes an ultimate 3-second gust wind speed of 120 mph as required by the 2018 Connecticut State. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

Structural analysis prepared by: Thomas Ware, P.E. / DEN

Respectfully submitted by:

Aaron T. Rucker, P.E.



Electronic Copy

05/18/2021

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tnxTower Output

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7) APPENDIX C

Additional Calculations

1) INTRODUCTION

This tower is a 100-ft monopole tower designed by Engineered Endeavors, Inc. The tower has been modified multiple times in the past to accommodate additional loading. The tower was previously extended 10-ft, bringing the overall tower height to 110-ft.

2) ANALYSIS CRITERIA

TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor:	1.0
Ice Thickness:	1.5 in
Wind Speed with Ice:	50 mph
Service Wind Speed:	60 mph

Table 1 - Proposed Equipment Configuration

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
108.0	108.0	2	Antel	BXA-80080/4CF w/ Mount Pipe	6 1	1-5/8 1-1/4
		1	Antel	BXA-80063/4CFx5 w/ Mount Pipe		
		3	Vzw	Sub6 Antenna - VZS01 w/ Mount Pipe		
		6	Commscope	JAHH-65B-R3B w/ Mount Pipe		
		1	RFS Celwave	DB-C1-12C-24AB-0Z		
		3	Samsung Telecom.	RFV01U-D1A		
		3	Samsung Telecom.	RFV01U-D2A		
		3	Commscope	CBC78T-DS-43-2X		
		1	Tower Mounts	T-Arm Mount [TA 602-3]		

Table 2 - Other Considered Equipment

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
102.0	102.0	3	RFS Celwave	APX16DWV-16DWV-S-E-A20 w/ Mount Pipe	4	1-5/8
		3	RFS Celwave	APXVAALL24_43-U-NA20_TMO w/ Mount Pipe		
		3	Ericsson	AIR6449 B41_T-MOBILE w/ Mount Pipe		
		3	Ericsson	RADIO 4415 B66A_CCIV3		
		3	Ericsson	RADIO 4424 B25_TMO		
		3	Ericsson	RADIO 4449 B71 B85A_T-MOBILE		
		1	Tower Mounts	SitePro1 RMQP-4096-HK		

Mounting Level (ft)	Center Line Elevation (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Number of Feed Lines	Feed Line Size (in)
97.0	97.0	3	Alcatel Lucent	1900MHz RRH (65MHz)	-	-
		3	Alcatel Lucent	800MHZ RRH		
		1	Tower Mounts	Side Arm Mount [SO 701-3]		
80.0	80.0	3	Powerwave Technologies	7770.00 w/ Mount Pipe	12 2 2 2	1-5/8 7/8 3/8 7/16
		4	Cci Antennas	DMP65R-BU6D w/ Mount Pipe		
		2	Cci Antennas	DMP65R-BU4D w/ Mount Pipe		
		6	Powerwave Technologies	LGP21401		
		3	Ericsson	RRUS 8843 B2/B66A		
		3	Ericsson	RRUS 4478 B14		
		1	Raycap	DC6-48-60-0-8C-EV		
		1	Raycap	DC6-48-60-18-8F		
		1	Tower Mounts	T-Arm Mount [TA 602-3]		
75.0	75.0	3	Ericsson	RRUS 4449 B5/B12	-	-
		1	Tower Mounts	Side Arm Mount [SO 901-3]		
50.0	51.0	1	Lucent	KS24019-L112A	1	1/2
	50.0	1	Tower Mounts	Side Arm Mount [SO 701-1]		

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Reference	Source
Geotechnical Report	2158106	CCISites
Tower Foundation Drawings	1613643	CCISites
Tower Manufacturer Drawings	1614551	CCISites
Post-Modification Inspection	1956156	CCISites
Tower Reinforcement Drawings	2055775	CCISites
Tower Reinforcement Drawings	2177138	CCISites
Post-Modification Inspection	2309564	CCISites
Post-Modification Inspection	3373272	CCISites
Tower Reinforcement Drawings	3382709	CCISites
Post-Modification Inspection	3849745	CCISites

3.1) Analysis Method

tnxTower (version 8.0.9.0), a commercially available analysis software package, was used to create a three-dimensional model of the tower and calculate member stresses for various loading cases. Selected output from the analysis is included in Appendix A. When applicable, Crown Castle has calculated and provided the effective area for panel antennas using approved methods following the intent of the TIA-222 Standard.

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

3.2) Assumptions

- 1) The tower and structures were maintained in accordance with the TIA-222 Standard.
- 2) The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in Tables 1 and 2, and the referenced drawings.

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

4) ANALYSIS RESULTS

Table 4 - Section Capacity (Summary)^{1,2}

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
110 - 105	Pole	TP13.693x12.7x0.1875	Pole	7.4%	Pass
105 - 100	Pole	TP14.686x13.693x0.1875	Pole	22.0%	Pass
100 - 98.5	Pole	TP14.984x14.686x0.1875	Pole	27.4%	Pass
98.5 - 93.5	Pole	TP16.477x15.5x0.1875	Pole	41.4%	Pass
93.5 - 88.5	Pole	TP17.454x16.477x0.1875	Pole	54.2%	Pass
88.5 - 83.5	Pole	TP18.431x17.454x0.1875	Pole	64.8%	Pass
83.5 - 78.67	Pole	TP19.375x18.431x0.1875	Pole	75.6%	Pass
78.67 - 78.42	Pole + Reinf.	TP19.424x19.375x0.55	Reinf. 5 Bolt-Shaft Bearing	41.5%	Pass
78.42 - 73.42	Pole + Reinf.	TP20.401x19.424x0.525	Reinf. 5 Tension Rupture	49.0%	Pass
73.42 - 68.42	Pole + Reinf.	TP21.378x20.401x0.5	Reinf. 5 Tension Rupture	56.3%	Pass
68.42 - 63.42	Pole + Reinf.	TP22.355x21.378x0.4875	Reinf. 5 Tension Rupture	62.8%	Pass
63.42 - 58.67	Pole + Reinf.	TP23.283x22.355x0.475	Reinf. 5 Bolt-Shaft Bearing	69.0%	Pass
58.67 - 58.42	Pole + Reinf.	TP23.332x23.283x0.475	Reinf. 4 Bolt-Shaft Bearing	69.3%	Pass
58.42 - 53.42	Pole + Reinf.	TP24.309x23.332x0.4563	Reinf. 4 Tension Rupture	74.0%	Pass
53.42 - 50.87	Pole + Reinf.	TP25.54x24.309x0.45	Reinf. 4 Tension Rupture	76.5%	Pass
50.87 - 45.87	Pole + Reinf.	TP25.397x24.432x0.5125	Reinf. 4 Tension Rupture	72.6%	Pass
45.87 - 40.87	Pole + Reinf.	TP26.362x25.397x0.5	Reinf. 4 Tension Rupture	76.1%	Pass
40.87 - 35.87	Pole + Reinf.	TP27.327x26.362x0.4875	Reinf. 4 Tension Rupture	79.2%	Pass
35.87 - 30.87	Pole + Reinf.	TP28.292x27.327x0.475	Reinf. 4 Tension Rupture	81.9%	Pass
30.87 - 28.67	Pole + Reinf.	TP28.717x28.292x0.475	Reinf. 4 Tension Rupture	83.0%	Pass
28.67 - 28.42	Pole + Reinf.	TP28.765x28.717x0.475	Reinf. 7 Tension Rupture	83.2%	Pass
28.42 - 23.42	Pole + Reinf.	TP29.73x28.765x0.4625	Reinf. 7 Tension Rupture	85.5%	Pass

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
23.42 - 18.42	Pole + Reinf.	TP30.695x29.73x0.4563	Reinf. 7 Tension Rupture	87.6%	Pass
18.42 - 14.17	Pole + Reinf.	TP31.515x30.695x0.45	Reinf. 7 Tension Rupture	89.1%	Pass
14.17 - 13.92	Pole + Reinf.	TP31.563x31.515x0.55	Reinf. 3 Tension Rupture	79.3%	Pass
13.92 - 13.67	Pole + Reinf.	TP31.612x31.563x0.55	Reinf. 3 Tension Rupture	79.4%	Pass
13.67 - 13.42	Pole + Reinf.	TP31.66x31.612x0.4688	Reinf. 6 Tension Rupture	88.5%	Pass
13.42 - 8.42	Pole + Reinf.	TP32.625x31.66x0.4625	Reinf. 6 Tension Rupture	90.2%	Pass
8.42 - 5.75	Pole + Reinf.	TP33.14x32.625x0.4625	Reinf. 6 Tension Rupture	91.1%	Pass
5.75 - 5.5	Pole + Reinf.	TP33.189x33.14x0.525	Reinf. 3 Tension Rupture	82.0%	Pass
5.5 - 3.57	Pole + Reinf.	TP33.561x33.189x0.5875	Reinf. 1 Compression	67.8%	Pass
3.57 - 3.32	Pole + Reinf.	TP33.609x33.561x0.5875	Reinf. 1 Compression	67.9%	Pass
3.32 - 3.17	Pole + Reinf.	TP33.638x33.609x0.5875	Reinf. 1 Compression	67.9%	Pass
3.17 - 2.92	Pole + Reinf.	TP33.686x33.638x0.5	Reinf. 1 Compression	78.0%	Pass
2.92 - 2.75	Pole + Reinf.	TP33.719x33.686x0.5	Reinf. 1 Compression	78.0%	Pass
2.75 - 2.5	Pole + Reinf.	TP33.768x33.719x0.4875	Reinf. 1 Compression	77.4%	Pass
2.5 - 0	Pole + Reinf.	TP34.25x33.768x0.4875	Reinf. 1 Compression	78.0%	Pass
				Summary	
			Pole	75.6%	Pass
			Reinforcement	91.1%	Pass
			Overall	91.1%	Pass

Table 5 - Tower Component Stresses vs. Capacity - LC7

Notes	Component	Elevation (ft)	% Capacity	Pass / Fail
1,2	Flange Connection	98.5	73.4	Pass
1,2	Anchor Rods	-	59.9	Pass
1,2	Base Plate	-	87.1	Pass
1,2	Base Foundation Soil Interaction	-	82.7	Pass
1,2	Base Foundation Structural	-	52.4	Pass

Structure Rating (max from all components) =	91.1%
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Notes:

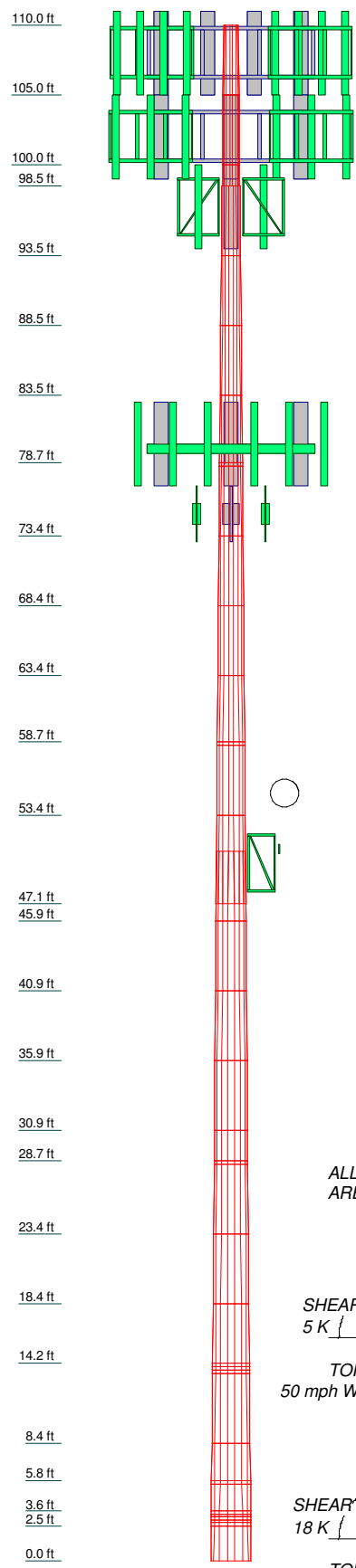
- 1) See additional documentation in "Appendix C - Additional Calculations" for calculations supporting the % capacity listed.
- 2) Rating per TIA-222-H Section 15.5

4.1) Recommendations

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

APPENDIX A
TNXTOWER OUTPUT

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	5.00	18	0.1875	0.1875	12.7000	13.6932	0.1	0.1
2	5.00	18	0.1875	0.1875	15.5000	16.4770	0.1	0.1
3	5.00	18	0.1875	0.1875	16.4770	17.4541	0.0	0.0
4	5.00	18	0.1875	0.1875	17.4541	18.4311	0.2	0.2
5	5.00	18	0.1875	0.1875	18.4311	19.4082	0.2	0.2
6	5.00	18	0.1875	0.1875	19.4082	20.3853	0.2	0.2
7	5.00	18	0.1875	0.1875	20.3853	21.3624	0.2	0.2
8	5.00	18	0.1875	0.1875	21.3624	22.3395	0.2	0.2
9	5.00	18	0.1875	0.1875	22.3395	23.3166	0.2	0.2
10	5.00	18	0.1875	0.1875	23.3166	24.2937	0.2	0.2
11	5.00	18	0.1875	0.1875	24.2937	25.2708	0.2	0.2
12	5.00	18	0.1875	0.1875	25.2708	26.2479	0.2	0.2
13	5.00	18	0.1875	0.1875	26.2479	27.2250	0.2	0.2
14	5.00	18	0.1875	0.1875	27.2250	28.2021	0.2	0.2
15	5.00	18	0.1875	0.1875	28.2021	29.1792	0.2	0.2
16	5.00	18	0.1875	0.1875	29.1792	30.1563	0.2	0.2
17	5.00	18	0.1875	0.1875	30.1563	31.1334	0.2	0.2
18	5.00	18	0.1875	0.1875	31.1334	32.1105	0.2	0.2
19	5.00	18	0.1875	0.1875	32.1105	33.0876	0.2	0.2
20	5.00	18	0.1875	0.1875	33.0876	34.0647	0.2	0.2
21	5.00	18	0.1875	0.1875	34.0647	35.0418	0.2	0.2
22	5.00	18	0.1875	0.1875	35.0418	36.0189	0.2	0.2
23	5.00	18	0.1875	0.1875	36.0189	37.0000	0.2	0.2
24	5.00	18	0.1875	0.1875	37.0000	38.0000	0.2	0.2
25	5.00	18	0.1875	0.1875	38.0000	39.0000	0.2	0.2
26	5.00	18	0.1875	0.1875	39.0000	40.0000	0.2	0.2
27	5.00	18	0.1875	0.1875	40.0000	41.0000	0.2	0.2
28	5.00	18	0.1875	0.1875	41.0000	42.0000	0.2	0.2
29	5.00	18	0.1875	0.1875	42.0000	43.0000	0.2	0.2
30	5.00	18	0.1875	0.1875	43.0000	44.0000	0.2	0.2
31	5.00	18	0.1875	0.1875	44.0000	45.0000	0.2	0.2
32	5.00	18	0.1875	0.1875	45.0000	46.0000	0.2	0.2
33	5.00	18	0.1875	0.1875	46.0000	47.0000	0.2	0.2
34	5.00	18	0.1875	0.1875	47.0000	48.0000	0.2	0.2
35	5.00	18	0.1875	0.1875	48.0000	49.0000	0.2	0.2
36	5.00	18	0.1875	0.1875	49.0000	50.0000	0.2	0.2
37	5.00	18	0.1875	0.1875	50.0000	51.0000	0.2	0.2
38	5.00	18	0.1875	0.1875	51.0000	52.0000	0.2	0.2
39	5.00	18	0.1875	0.1875	52.0000	53.0000	0.2	0.2
40	5.00	18	0.1875	0.1875	53.0000	54.0000	0.2	0.2
41	5.00	18	0.1875	0.1875	54.0000	55.0000	0.2	0.2
42	5.00	18	0.1875	0.1875	55.0000	56.0000	0.2	0.2
43	5.00	18	0.1875	0.1875	56.0000	57.0000	0.2	0.2
44	5.00	18	0.1875	0.1875	57.0000	58.0000	0.2	0.2
45	5.00	18	0.1875	0.1875	58.0000	59.0000	0.2	0.2
46	5.00	18	0.1875	0.1875	59.0000	60.0000	0.2	0.2
47	5.00	18	0.1875	0.1875	60.0000	61.0000	0.2	0.2
48	5.00	18	0.1875	0.1875	61.0000	62.0000	0.2	0.2
49	5.00	18	0.1875	0.1875	62.0000	63.0000	0.2	0.2
50	5.00	18	0.1875	0.1875	63.0000	64.0000	0.2	0.2
51	5.00	18	0.1875	0.1875	64.0000	65.0000	0.2	0.2
52	5.00	18	0.1875	0.1875	65.0000	66.0000	0.2	0.2
53	5.00	18	0.1875	0.1875	66.0000	67.0000	0.2	0.2
54	5.00	18	0.1875	0.1875	67.0000	68.0000	0.2	0.2
55	5.00	18	0.1875	0.1875	68.0000	69.0000	0.2	0.2
56	5.00	18	0.1875	0.1875	69.0000	70.0000	0.2	0.2
57	5.00	18	0.1875	0.1875	70.0000	71.0000	0.2	0.2
58	5.00	18	0.1875	0.1875	71.0000	72.0000	0.2	0.2
59	5.00	18	0.1875	0.1875	72.0000	73.0000	0.2	0.2
60	5.00	18	0.1875	0.1875	73.0000	74.0000	0.2	0.2
61	5.00	18	0.1875	0.1875	74.0000	75.0000	0.2	0.2
62	5.00	18	0.1875	0.1875	75.0000	76.0000	0.2	0.2
63	5.00	18	0.1875	0.1875	76.0000	77.0000	0.2	0.2
64	5.00	18	0.1875	0.1875	77.0000	78.0000	0.2	0.2
65	5.00	18	0.1875	0.1875	78.0000	79.0000	0.2	0.2
66	5.00	18	0.1875	0.1875	79.0000	80.0000	0.2	0.2
67	5.00	18	0.1875	0.1875	80.0000	81.0000	0.2	0.2
68	5.00	18	0.1875	0.1875	81.0000	82.0000	0.2	0.2
69	5.00	18	0.1875	0.1875	82.0000	83.0000	0.2	0.2
70	5.00	18	0.1875	0.1875	83.0000	84.0000	0.2	0.2
71	5.00	18	0.1875	0.1875	84.0000	85.0000	0.2	0.2
72	5.00	18	0.1875	0.1875	85.0000	86.0000	0.2	0.2
73	5.00	18	0.1875	0.1875	86.0000	87.0000	0.2	0.2
74	5.00	18	0.1875	0.1875	87.0000	88.0000	0.2	0.2
75	5.00	18	0.1875	0.1875	88.0000	89.0000	0.2	0.2
76	5.00	18	0.1875	0.1875	89.0000	90.0000	0.2	0.2
77	5.00	18	0.1875	0.1875	90.0000	91.0000	0.2	0.2
78	5.00	18	0.1875	0.1875	91.0000	92.0000	0.2	0.2
79	5.00	18	0.1875	0.1875	92.0000	93.0000	0.2	0.2
80	5.00	18	0.1875	0.1875	93.0000	94.0000	0.2	0.2
81	5.00	18	0.1875	0.1875	94.0000	95.0000	0.2	0.2
82	5.00	18	0.1875	0.1875	95.0000	96.0000	0.2	0.2
83	5.00	18	0.1875	0.1875	96.0000	97.0000	0.2	0.2
84	5.00	18	0.1875	0.1875	97.0000	98.0000	0.2	0.2
85	5.00	18	0.1875	0.1875	98.0000	99.0000	0.2	0.2
86	5.00	18	0.1875	0.1875	99.0000	100.0000	0.2	0.2
87	5.00	18	0.1875	0.1875	100.0000	101.0000	0.2	0.2
88	5.00	18	0.1875	0.1875	101.0000	102.0000	0.2	0.2
89	5.00	18	0.1875	0.1875	102.0000	103.0000	0.2	0.2
90	5.00	18	0.1875	0.1875	103.0000	104.0000	0.2	0.2
91	5.00	18	0.1875	0.1875	104.0000	105.0000	0.2	0.2
92	5.00	18	0.1875	0.1875	105.0000	106.0000	0.2	0.2
93	5.00	18	0.1875	0.1875	106.0000	107.0000	0.2	0.2
94	5.00	18	0.1875	0.1875	107.0000	108.0000	0.2	0.2
95	5.00	18	0.1875	0.1875	108.0000	109.0000	0.2	0.2
96	5.00	18	0.1875	0.1875	109.0000	110.0000	0.2	0.2

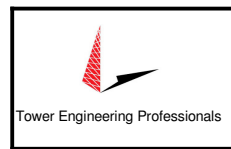
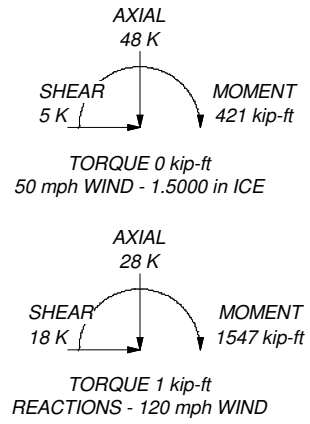


MATERIAL STRENGTH					
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-65	65 ksi	80 ksi			

TOWER DESIGN NOTES

1. Tower is located in Litchfield County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.50 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 91.1%

ALL REACTIONS ARE FACTORED



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

Job: Woodbury North (BU 876405)		
Project: TEP No. 25640.543262		
Client: Crown Castle	Drawn by: tware	App'd:
Code: TIA-222-H	Date: 05/18/21	Scale: NTS
Path:		Dwg No. E-1

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tnxTower Tower Engineering Professionals Inc. 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job Woodbury North (BU 876405)	Page 1 of 37
	Project TEP No. 25640.543262	Date 09:09:27 05/18/21
	Client Crown Castle	Designed by tware

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 Litchfield County, Connecticut.

Tower base elevation above sea level: 460.00 ft.

Basic wind speed of 120 mph.

Risk Category II.

Exposure Category C.

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

Topographic Category: 1.

Crest Height: 0.00 ft.

Nominal ice thickness of 1.5000 in.

Ice thickness is considered to increase with height.

Ice density of 56.00 pcf.

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

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

TOWER RATING: 91.1%.

A non-linear (P-delta) analysis was used.

Pressures are calculated at each section.

Stress ratio used in pole design is 1.

Tower analysis based on target reliabilities in accordance with Annex S.

Load Modification Factors used: $K_{es}(F_w) = 0.95$, $K_{es}(t_i) = 0.85$.

Maximum demand-capacity ratio is: 1.05.

Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

<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="text-align: center;">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 Tower Engineering Professionals Inc. 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350	Job	Woodbury North (BU 876405)	Page	2 of 37
	Project	TEP No. 25640.543262	Date	09:09:27 05/18/21
	Client	Crown Castle	Designed by	tware

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	110.00-105.00	5.00	0.00	18	12.7000	13.6932	0.1875	0.7500	A572-65 (65 ksi)
L2	105.00-100.00	5.00	0.00	18	13.6932	14.6863	0.1875	0.7500	A572-65 (65 ksi)
L3	100.00-98.50	1.50	0.00	18	14.6863	14.9843	0.1875	0.7500	A572-65 (65 ksi)
L4	98.50-93.50	5.00	0.00	18	15.5000	16.4770	0.1875	0.7500	A572-65 (65 ksi)
L5	93.50-88.50	5.00	0.00	18	16.4770	17.4541	0.1875	0.7500	A572-65 (65 ksi)
L6	88.50-83.50	5.00	0.00	18	17.4541	18.4311	0.1875	0.7500	A572-65 (65 ksi)
L7	83.50-78.67	4.83	0.00	18	18.4311	19.3749	0.1875	0.7500	A572-65 (65 ksi)
L8	78.67-78.42	0.25	0.00	18	19.3749	19.4238	0.5500	2.2000	A572-65 (65 ksi)
L9	78.42-73.42	5.00	0.00	18	19.4238	20.4008	0.5250	2.1000	A572-65 (65 ksi)
L10	73.42-68.42	5.00	0.00	18	20.4008	21.3778	0.5000	2.0000	A572-65 (65 ksi)
L11	68.42-63.42	5.00	0.00	18	21.3778	22.3549	0.4875	1.9500	A572-65 (65 ksi)
L12	63.42-58.67	4.75	0.00	18	22.3549	23.2831	0.4750	1.9000	A572-65 (65 ksi)
L13	58.67-58.42	0.25	0.00	18	23.2831	23.3319	0.4750	1.9000	A572-65 (65 ksi)
L14	58.42-53.42	5.00	0.00	18	23.3319	24.3089	0.4562	1.8250	A572-65 (65 ksi)
L15	53.42-47.12	6.30	3.75	18	24.3089	25.5400	0.4500	1.8000	A572-65 (65 ksi)
L16	47.12-45.87	5.00	0.00	18	24.4322	25.3972	0.5125	2.0500	A572-65 (65 ksi)
L17	45.87-40.87	5.00	0.00	18	25.3972	26.3622	0.5000	2.0000	A572-65 (65 ksi)
L18	40.87-35.87	5.00	0.00	18	26.3622	27.3272	0.4875	1.9500	A572-65 (65 ksi)
L19	35.87-30.87	5.00	0.00	18	27.3272	28.2922	0.4750	1.9000	A572-65 (65 ksi)
L20	30.87-28.67	2.20	0.00	18	28.2922	28.7168	0.4750	1.9000	A572-65 (65 ksi)
L21	28.67-28.42	0.25	0.00	18	28.7168	28.7650	0.4750	1.9000	A572-65 (65 ksi)
L22	28.42-23.42	5.00	0.00	18	28.7650	29.7300	0.4625	1.8500	A572-65 (65 ksi)
L23	23.42-18.42	5.00	0.00	18	29.7300	30.6950	0.4562	1.8250	A572-65 (65 ksi)
L24	18.42-14.17	4.25	0.00	18	30.6950	31.5152	0.4500	1.8000	A572-65 (65 ksi)
L25	14.17-13.92	0.25	0.00	18	31.5152	31.5635	0.5500	2.2000	A572-65 (65 ksi)
L26	13.92-13.67	0.25	0.00	18	31.5635	31.6117	0.5500	2.2000	A572-65 (65 ksi)
L27	13.67-13.42	0.25	0.00	18	31.6117	31.6600	0.4688	1.8750	A572-65 (65 ksi)
L28	13.42-8.42	5.00	0.00	18	31.6600	32.6250	0.4625	1.8500	A572-65 (65 ksi)
L29	8.42-5.75	2.67	0.00	18	32.6250	33.1403	0.4625	1.8500	A572-65 (65 ksi)

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Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L30	5.75-5.50	0.25	0.00	18	33.1403	33.1885	0.5250	2.1000	A572-65 (65 ksi)
L31	5.50-3.57	1.93	0.00	18	33.1885	33.5610	0.5875	2.3500	A572-65 (65 ksi)
L32	3.57-3.32	0.25	0.00	18	33.5610	33.6092	0.5875	2.3500	A572-65 (65 ksi)
L33	3.32-3.17	0.15	0.00	18	33.6092	33.6382	0.5875	2.3500	A572-65 (65 ksi)
L34	3.17-2.92	0.25	0.00	18	33.6382	33.6864	0.5000	2.0000	A572-65 (65 ksi)
L35	2.92-2.75	0.17	0.00	18	33.6864	33.7193	0.5000	2.0000	A572-65 (65 ksi)
L36	2.75-2.50	0.25	0.00	18	33.7193	33.7675	0.4875	1.9500	A572-65 (65 ksi)
L37	2.50-0.00	2.50		18	33.7675	34.2500	0.4875	1.9500	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in ²	I in ⁴	r in	C in	I/C in ³	J in ⁴	I/Q in ²	w in	w/t
L1	12.8670	7.4465	147.2916	4.4419	6.4516	22.8302	294.7770	3.7240	1.9052	10.161
	13.8755	8.0376	185.2228	4.7945	6.9561	26.6273	370.6893	4.0195	2.0800	11.093
L2	13.8755	8.0376	185.2228	4.7945	6.9561	26.6273	370.6893	4.0195	2.0800	11.093
	14.8840	8.6286	229.1639	5.1471	7.4607	30.7163	458.6293	4.3151	2.2548	12.026
L3	14.8840	8.6286	229.1639	5.1471	7.4607	30.7163	458.6293	4.3151	2.2548	12.026
	15.1865	8.8059	243.5842	5.2529	7.6120	31.9999	487.4888	4.4038	2.3072	12.305
L4	15.7102	9.1129	269.9504	5.4359	7.8740	34.2838	540.2560	4.5573	2.3980	12.789
	16.7023	9.6943	324.9912	5.7828	8.3703	38.8266	650.4101	4.8481	2.5700	13.706
L5	16.7023	9.6943	324.9912	5.7828	8.3703	38.8266	650.4101	4.8481	2.5700	13.706
	17.6944	10.2758	387.0470	6.1296	8.8667	43.6519	774.6033	5.1389	2.7419	14.624
L6	17.6944	10.2758	387.0470	6.1296	8.8667	43.6519	774.6033	5.1389	2.7419	14.624
	18.6865	10.8572	456.5385	6.4765	9.3630	48.7599	913.6777	5.4296	2.9139	15.541
L7	18.6865	10.8572	456.5385	6.4765	9.3630	48.7599	913.6777	5.4296	2.9139	15.541
	19.6449	11.4189	531.1230	6.8115	9.8425	53.9624	1062.9449	5.7105	3.0800	16.427
L8	19.5890	32.8627	1471.3168	6.6828	9.8425	149.4867	2944.5697	16.4345	2.4420	4.44
	19.6386	32.9479	1482.8011	6.7002	9.8673	150.2746	2967.5533	16.4771	2.4506	4.456
L9	19.6424	31.4920	1421.0330	6.7091	9.8673	144.0147	2843.9358	15.7490	2.4946	4.752
	20.6345	33.1200	1653.0183	7.0559	10.3636	159.5022	3308.2117	16.5632	2.6665	5.079
L10	20.6384	31.5826	1580.2511	7.0648	10.3636	152.4808	3162.5816	15.7943	2.7105	5.421
	21.6305	33.1331	1824.6132	7.4116	10.8599	168.0132	3651.6274	16.5697	2.8825	5.765
L11	21.6324	32.3241	1782.1952	7.4161	10.8599	164.1073	3566.7354	16.1651	2.9045	5.958
	22.6245	33.8359	2044.1307	7.7629	11.3563	180.0001	4090.9510	16.9212	3.0765	6.311
L12	22.6265	32.9872	1995.1346	7.7674	11.3563	175.6857	3992.8944	16.4967	3.0985	6.523
	23.5690	34.3866	2259.9694	8.0969	11.8278	191.0728	4522.9126	17.1965	3.2618	6.867
L13	23.5690	34.3866	2259.9694	8.0969	11.8278	191.0728	4522.9126	17.1965	3.2618	6.867
	23.6186	34.4602	2274.5220	8.1142	11.8526	191.9006	4552.0368	17.2334	3.2704	6.885
L14	23.6215	33.1271	2190.1192	8.1209	11.8526	184.7795	4383.1202	16.5667	3.3034	7.24
	24.6136	34.5420	2482.8997	8.4677	12.3489	201.0618	4969.0665	17.2743	3.4754	7.617
L15	24.6145	34.0777	2450.8129	8.4699	12.3489	198.4634	4904.8506	17.0421	3.4864	7.747
	25.8646	35.8360	2850.0919	8.9070	12.9743	219.6718	5703.9341	17.9214	3.7030	8.229
L16	25.4650	38.9096	2812.5923	8.4915	12.4116	226.6105	5628.8856	19.4585	3.3981	6.63
	25.7099	40.4793	3166.9124	8.8341	12.9018	245.4632	6337.9918	20.2435	3.5679	6.962
L17	25.7119	39.5119	3094.3289	8.8385	12.9018	239.8373	6192.7294	19.7597	3.5899	7.18
	26.6917	41.0433	3468.2522	9.1811	13.3920	258.9795	6941.0681	20.5256	3.7597	7.519
L18	26.6937	40.0366	3386.4515	9.1855	13.3920	252.8713	6777.3590	20.0221	3.7817	7.757

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Description	Sector	Exclude From Torque Calculation	Component Type	Placement ft	Total Number	Number Per Row	Start/End Position	Width or Diameter in	Perimeter in	Weight plf
MP3-05 (1.25in)	C	No	Surface Af (CaAa)	31.17 - 0.00	1	1	0.000 0.000	5.3300	14.8400	0.00
MP3-05 (1.25in)	B	No	Surface Af (CaAa)	31.17 - 0.00	1	1	0.000 0.000	5.3300	14.8400	0.00

MP3-05 (1.25in)	C	No	Surface Af (CaAa)	61.17 - 31.17	1	1	0.000 0.000	5.3300	14.8400	0.00
MP3-05 (1.25in)	B	No	Surface Af (CaAa)	61.17 - 31.17	1	1	0.000 0.000	5.3300	14.8400	0.00
MP3-05 (1.25in)	A	No	Surface Af (CaAa)	61.17 - 31.17	1	1	0.000 0.000	5.3300	14.8400	0.00

MP3-05 (1.25in)	C	No	Surface Af (CaAa)	81.17 - 61.17	1	1	0.000 0.000	5.3300	14.8400	0.00
MP3-05 (1.25in)	B	No	Surface Af (CaAa)	81.17 - 61.17	1	1	0.000 0.000	5.3300	14.8400	0.00
MP3-05 (1.25in)	A	No	Surface Af (CaAa)	81.17 - 61.17	1	1	0.000 0.000	5.3300	14.8400	0.00

MP3-08.5 (1.25")	A	No	Surface Af (CaAa)	16.17 - 0.00	1	1	0.333 0.333	3.8400	13.2800	0.00
MP3-08.5 (1.25")	A	No	Surface Af (CaAa)	16.17 - 0.00	1	1	-0.333 -0.333	3.8400	13.2800	0.00

MP3-05 (1.25in)	A	No	Surface Af (CaAa)	31.17 - 11.17	1	1	0.000 0.000	5.3300	14.8400	0.00

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight plf
LDF7-50A(1-5/8)	C	No	No	Inside Pole	108.00 - 0.00	6	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
							No Ice	0.00	0.82
HB158-21U6S24-xx M_TMO(1-5/8)	C	No	No	Inside Pole	102.00 - 0.00	4	No Ice	0.00	2.50
							1/2" Ice	0.00	2.50
							1" Ice	0.00	2.50
							2" Ice	0.00	2.50
							No Ice	0.00	2.50
LDF7-50A(1-5/8)	C	No	No	Inside Pole	80.00 - 0.00	12	No Ice	0.00	0.82
							1/2" Ice	0.00	0.82
							1" Ice	0.00	0.82
							2" Ice	0.00	0.82
							No Ice	0.00	0.82
WR-VG66ST-BRD(7/8)	C	No	No	Inside Pole	80.00 - 0.00	2	No Ice	0.00	0.91
							1/2" Ice	0.00	0.91
							1" Ice	0.00	0.91
							2" Ice	0.00	0.91
							No Ice	0.00	0.91
FB-L98B-002-75000(3/8)	C	No	No	Inside Pole	80.00 - 0.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
							No Ice	0.00	0.06
2" Flexible Conduit	C	No	No	Inside Pole	80.00 - 0.00	1	No Ice	0.00	0.34
							1/2" Ice	0.00	0.34
							1" Ice	0.00	0.34
							2" Ice	0.00	0.34
							No Ice	0.00	0.34

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C _{AA} ft ² /ft	Weight plf
WR-VG122ST-BRD A(7/16)	C	No	No	Inside Pole	80.00 - 0.00	2	No Ice	0.00	0.14
							1/2" Ice	0.00	0.14
							1" Ice	0.00	0.14
							2" Ice	0.00	0.14
FB-L98B-034-XXX(3/8)	C	No	No	Inside Pole	80.00 - 0.00	1	No Ice	0.00	0.06
							1/2" Ice	0.00	0.06
							1" Ice	0.00	0.06
							2" Ice	0.00	0.06
3/8" Ground	C	No	No	Inside Pole	110.00 - 0.00	2	No Ice	0.00	0.22
							1/2" Ice	0.00	0.22
							1" Ice	0.00	0.22
							2" Ice	0.00	0.22
1/2" Ground	C	No	No	Inside Pole	110.00 - 0.00	2	No Ice	0.00	0.52
							1/2" Ice	0.00	0.52
							1" Ice	0.00	0.52
							2" Ice	0.00	0.52

HB114-13U3M12-XXF(1-1/4)	C	No	No	Inside Pole	108.00 - 0.00	1	No Ice	0.00	0.99
							1/2" Ice	0.00	0.99
							1" Ice	0.00	0.99
							2" Ice	0.00	0.99

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	110.00-105.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.03
L2	105.00-100.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.06
L3	100.00-98.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.03
L4	98.50-93.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.09
L5	93.50-88.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.09
L6	88.50-83.50	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.00
		C	0.000	0.000	0.000	0.000	0.09
L7	83.50-78.67	A	0.000	0.000	2.221	0.000	0.00
		B	0.000	0.000	2.221	0.000	0.00
		C	0.000	0.000	2.221	0.000	0.10
L8	78.67-78.42	A	0.000	0.000	0.222	0.000	0.00
		B	0.000	0.000	0.222	0.000	0.00
		C	0.000	0.000	0.222	0.000	0.01
L9	78.42-73.42	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.442	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.15

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<i>Tower Section</i>	<i>Tower Elevation</i> <i>ft</i>	<i>Face</i>	<i>A_R</i> <i>ft²</i>	<i>A_F</i> <i>ft²</i>	<i>C_{AA}</i> <i>In Face</i> <i>ft²</i>	<i>C_{AA}</i> <i>Out Face</i> <i>ft²</i>	<i>Weight</i> <i>K</i>
L10	73.42-68.42	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.442	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.15
L11	68.42-63.42	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.442	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.15
L12	63.42-58.67	A	0.000	0.000	4.220	0.000	0.00
		B	0.000	0.000	4.220	0.000	0.00
		C	0.000	0.000	4.220	0.000	0.14
L13	58.67-58.42	A	0.000	0.000	0.222	0.000	0.00
		B	0.000	0.000	0.222	0.000	0.00
		C	0.000	0.000	0.222	0.000	0.01
L14	58.42-53.42	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.442	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.15
L15	53.42-47.12	A	0.000	0.000	5.596	0.000	0.00
		B	0.000	0.000	5.777	0.000	0.00
		C	0.000	0.000	5.596	0.000	0.19
L16	47.12-45.87	A	0.000	0.000	1.110	0.000	0.00
		B	0.000	0.000	1.189	0.000	0.00
		C	0.000	0.000	1.110	0.000	0.04
L17	45.87-40.87	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.754	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.15
L18	40.87-35.87	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.754	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.15
L19	35.87-30.87	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.754	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.15
L20	30.87-28.67	A	0.000	0.000	1.954	0.000	0.00
		B	0.000	0.000	2.092	0.000	0.00
		C	0.000	0.000	1.954	0.000	0.07
L21	28.67-28.42	A	0.000	0.000	0.222	0.000	0.00
		B	0.000	0.000	0.238	0.000	0.00
		C	0.000	0.000	0.222	0.000	0.01
L22	28.42-23.42	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.754	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.15
L23	23.42-18.42	A	0.000	0.000	4.442	0.000	0.00
		B	0.000	0.000	4.754	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.15
L24	18.42-14.17	A	0.000	0.000	6.335	0.000	0.00
		B	0.000	0.000	4.041	0.000	0.00
		C	0.000	0.000	3.775	0.000	0.13
L25	14.17-13.92	A	0.000	0.000	0.542	0.000	0.00
		B	0.000	0.000	0.238	0.000	0.00
		C	0.000	0.000	0.222	0.000	0.01
L26	13.92-13.67	A	0.000	0.000	0.542	0.000	0.00
		B	0.000	0.000	0.238	0.000	0.00
		C	0.000	0.000	0.222	0.000	0.01
L27	13.67-13.42	A	0.000	0.000	0.542	0.000	0.00
		B	0.000	0.000	0.238	0.000	0.00
		C	0.000	0.000	0.222	0.000	0.01
L28	13.42-8.42	A	0.000	0.000	8.399	0.000	0.00
		B	0.000	0.000	4.754	0.000	0.00
		C	0.000	0.000	4.442	0.000	0.15
L29	8.42-5.75	A	0.000	0.000	5.353	0.000	0.00
		B	0.000	0.000	2.539	0.000	0.00
		C	0.000	0.000	2.372	0.000	0.08
L30	5.75-5.50	A	0.000	0.000	0.514	0.000	0.00

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	Client	Crown Castle	Designed by	tware

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
L31	5.50-3.57	B	0.000	0.000	0.238	0.000	0.00
		C	0.000	0.000	0.222	0.000	0.01
		A	0.000	0.000	3.965	0.000	0.00
L32	3.57-3.32	B	0.000	0.000	1.835	0.000	0.00
		C	0.000	0.000	1.714	0.000	0.06
		A	0.000	0.000	0.514	0.000	0.00
L33	3.32-3.17	B	0.000	0.000	0.238	0.000	0.00
		C	0.000	0.000	0.222	0.000	0.01
		A	0.000	0.000	0.308	0.000	0.00
L34	3.17-2.92	B	0.000	0.000	0.143	0.000	0.00
		C	0.000	0.000	0.133	0.000	0.00
		A	0.000	0.000	0.514	0.000	0.00
L35	2.92-2.75	B	0.000	0.000	0.238	0.000	0.00
		C	0.000	0.000	0.222	0.000	0.01
		A	0.000	0.000	5.136	0.000	0.00
L36	2.75-2.50	B	0.000	0.000	2.377	0.000	0.00
		C	0.000	0.000	2.221	0.000	0.07
		A	0.000	0.000	0.514	0.000	0.00
L37	2.50-0.00	B	0.000	0.000	0.238	0.000	0.00
		C	0.000	0.000	0.222	0.000	0.01
		A	0.000	0.000	0.514	0.000	0.00

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	110.00-105.00	A	1.435	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.03
L2	105.00-100.00	A	1.428	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.06
L3	100.00-98.50	A	1.423	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.03
L4	98.50-93.50	A	1.419	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.09
L5	93.50-88.50	A	1.411	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.09
L6	88.50-83.50	A	1.403	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.00
		C		0.000	0.000	0.000	0.000	0.09
L7	83.50-78.67	A	1.395	0.000	0.000	2.918	0.000	0.03
		B		0.000	0.000	2.918	0.000	0.03
		C		0.000	0.000	2.918	0.000	0.13
L8	78.67-78.42	A	1.390	0.000	0.000	0.292	0.000	0.00
		B		0.000	0.000	0.292	0.000	0.00
		C		0.000	0.000	0.292	0.000	0.01
L9	78.42-73.42	A	1.386	0.000	0.000	5.827	0.000	0.05
		B		0.000	0.000	5.827	0.000	0.05
		C		0.000	0.000	5.827	0.000	0.20
L10	73.42-68.42	A	1.376	0.000	0.000	5.818	0.000	0.05
		B		0.000	0.000	5.818	0.000	0.05

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	Client	Crown Castle	Designed by	tware

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
L11	68.42-63.42	C		0.000	0.000	5.818	0.000	0.20
		A	1.366	0.000	0.000	5.808	0.000	0.05
		B		0.000	0.000	5.808	0.000	0.05
		C		0.000	0.000	5.808	0.000	0.20
L12	63.42-58.67	A	1.356	0.000	0.000	5.508	0.000	0.05
		B		0.000	0.000	5.508	0.000	0.05
		C		0.000	0.000	5.508	0.000	0.19
L13	58.67-58.42	A	1.350	0.000	0.000	0.290	0.000	0.00
		B		0.000	0.000	0.290	0.000	0.00
		C		0.000	0.000	0.290	0.000	0.01
L14	58.42-53.42	A	1.344	0.000	0.000	5.786	0.000	0.05
		B		0.000	0.000	5.786	0.000	0.05
		C		0.000	0.000	5.786	0.000	0.20
L15	53.42-47.12	A	1.330	0.000	0.000	7.272	0.000	0.06
		B		0.000	0.000	8.218	0.000	0.07
		C		0.000	0.000	7.272	0.000	0.25
L16	47.12-45.87	A	1.319	0.000	0.000	1.443	0.000	0.01
		B		0.000	0.000	1.853	0.000	0.02
		C		0.000	0.000	1.443	0.000	0.05
L17	45.87-40.87	A	1.310	0.000	0.000	5.752	0.000	0.05
		B		0.000	0.000	7.375	0.000	0.07
		C		0.000	0.000	5.752	0.000	0.20
L18	40.87-35.87	A	1.294	0.000	0.000	5.736	0.000	0.05
		B		0.000	0.000	7.343	0.000	0.07
		C		0.000	0.000	5.736	0.000	0.20
L19	35.87-30.87	A	1.276	0.000	0.000	5.718	0.000	0.05
		B		0.000	0.000	7.307	0.000	0.06
		C		0.000	0.000	5.718	0.000	0.20
L20	30.87-28.67	A	1.262	0.000	0.000	2.510	0.000	0.02
		B		0.000	0.000	3.202	0.000	0.03
		C		0.000	0.000	2.510	0.000	0.09
L21	28.67-28.42	A	1.257	0.000	0.000	0.285	0.000	0.00
		B		0.000	0.000	0.363	0.000	0.00
		C		0.000	0.000	0.285	0.000	0.01
L22	28.42-23.42	A	1.245	0.000	0.000	5.686	0.000	0.05
		B		0.000	0.000	7.243	0.000	0.06
		C		0.000	0.000	5.686	0.000	0.20
L23	23.42-18.42	A	1.218	0.000	0.000	5.660	0.000	0.05
		B		0.000	0.000	7.190	0.000	0.06
		C		0.000	0.000	5.660	0.000	0.20
L24	18.42-14.17	A	1.188	0.000	0.000	8.296	0.000	0.07
		B		0.000	0.000	6.061	0.000	0.05
		C		0.000	0.000	4.785	0.000	0.16
L25	14.17-13.92	A	1.171	0.000	0.000	0.718	0.000	0.01
		B		0.000	0.000	0.355	0.000	0.00
		C		0.000	0.000	0.281	0.000	0.01
L26	13.92-13.67	A	1.169	0.000	0.000	0.717	0.000	0.01
		B		0.000	0.000	0.355	0.000	0.00
		C		0.000	0.000	0.281	0.000	0.01
L27	13.67-13.42	A	1.166	0.000	0.000	0.717	0.000	0.01
		B		0.000	0.000	0.354	0.000	0.00
		C		0.000	0.000	0.280	0.000	0.01
L28	13.42-8.42	A	1.141	0.000	0.000	11.195	0.000	0.10
		B		0.000	0.000	7.037	0.000	0.06
		C		0.000	0.000	5.583	0.000	0.19
L29	8.42-5.75	A	1.093	0.000	0.000	6.821	0.000	0.06
		B		0.000	0.000	3.706	0.000	0.03
		C		0.000	0.000	2.956	0.000	0.10
L30	5.75-5.50	A	1.068	0.000	0.000	0.650	0.000	0.01
		B		0.000	0.000	0.345	0.000	0.00
		C		0.000	0.000	0.275	0.000	0.01

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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
L31	5.50-3.57	A	1.045	0.000	0.000	4.994	0.000	0.04
		B		0.000	0.000	2.642	0.000	0.02
		C		0.000	0.000	2.118	0.000	0.07
L32	3.57-3.32	A	1.017	0.000	0.000	0.643	0.000	0.01
		B		0.000	0.000	0.339	0.000	0.00
		C		0.000	0.000	0.273	0.000	0.01
L33	3.32-3.17	A	1.011	0.000	0.000	0.386	0.000	0.00
		B		0.000	0.000	0.203	0.000	0.00
		C		0.000	0.000	0.164	0.000	0.01
L34	3.17-2.92	A	1.005	0.000	0.000	0.642	0.000	0.01
		B		0.000	0.000	0.338	0.000	0.00
		C		0.000	0.000	0.272	0.000	0.01
L35	2.92-2.75	A	0.998	0.000	0.000	0.436	0.000	0.00
		B		0.000	0.000	0.229	0.000	0.00
		C		0.000	0.000	0.185	0.000	0.01
L36	2.75-2.50	A	0.990	0.000	0.000	0.640	0.000	0.01
		B		0.000	0.000	0.337	0.000	0.00
		C		0.000	0.000	0.272	0.000	0.01
L37	2.50-0.00	A	0.919	0.000	0.000	6.308	0.000	0.05
		B		0.000	0.000	3.296	0.000	0.02
		C		0.000	0.000	2.680	0.000	0.09

Feed Line Center of Pressure

Section	Elevation ft	CP _x	CP _z	CP _x	CP _z
		in	in	Ice in	Ice in
L1	110.00-105.00	0.0000	0.0000	0.0000	0.0000
L2	105.00-100.00	0.0000	0.0000	0.0000	0.0000
L3	100.00-98.50	0.0000	0.0000	0.0000	0.0000
L4	98.50-93.50	0.0000	0.0000	0.0000	0.0000
L5	93.50-88.50	0.0000	0.0000	0.0000	0.0000
L6	88.50-83.50	0.0000	0.0000	0.0000	0.0000
L7	83.50-78.67	0.0000	0.0000	0.0000	0.0000
L8	78.67-78.42	0.0000	0.0000	0.0000	0.0000
L9	78.42-73.42	0.0000	0.0000	0.0000	0.0000
L10	73.42-68.42	0.0000	0.0000	0.0000	0.0000
L11	68.42-63.42	0.0000	0.0000	0.0000	0.0000
L12	63.42-58.67	0.0000	0.0000	0.0000	0.0000
L13	58.67-58.42	0.0000	0.0000	0.0000	0.0000
L14	58.42-53.42	0.0000	0.0000	0.0000	0.0000
L15	53.42-47.12	0.0757	-0.0437	0.2628	-0.1517
L16	47.12-45.87	0.1636	-0.0945	0.5570	-0.3216
L17	45.87-40.87	0.1660	-0.0958	0.5595	-0.3230
L18	40.87-35.87	0.1697	-0.0980	0.5671	-0.3274
L19	35.87-30.87	0.1733	-0.1000	0.5737	-0.3312
L20	30.87-28.67	0.1758	-0.1015	0.5776	-0.3335
L21	28.67-28.42	0.1767	-0.1020	0.5787	-0.3341
L22	28.42-23.42	0.1785	-0.1030	0.5808	-0.3354
L23	23.42-18.42	0.1818	-0.1050	0.5834	-0.3368
L24	18.42-14.17	-0.4685	-0.4595	-0.0538	-0.6343
L25	14.17-13.92	-1.0450	-0.7723	-0.6279	-0.9021
L26	13.92-13.67	-1.0458	-0.7729	-0.6286	-0.9024
L27	13.67-13.42	-1.0464	-0.7734	-0.6292	-0.9026
L28	13.42-8.42	0.1769	-0.0840	0.4263	-0.3315
L29	8.42-5.75	-0.6752	-0.5682	-0.1970	-0.6614
L30	5.75-5.50	-0.7978	-0.6384	-0.3019	-0.7135

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	Client	Crown Castle	Designed by	tware

Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
L31	5.50-3.57	-0.8000	-0.6405	-0.3086	-0.7123
L32	3.57-3.32	-0.8022	-0.6424	-0.3169	-0.7102
L33	3.32-3.17	-0.8026	-0.6428	-0.3187	-0.7097
L34	3.17-2.92	-0.8029	-0.6431	-0.3205	-0.7089
L35	2.92-2.75	-0.8033	-0.6434	-0.3226	-0.7083
L36	2.75-2.50	-0.8037	-0.6438	-0.3249	-0.7075
L37	2.50-0.00	-0.8064	-0.6463	-0.3461	-0.6990

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
L7	25	MP3-05 (1.25in)	78.67 - 81.17	1.0000	1.0000
L7	26	MP3-05 (1.25in)	78.67 - 81.17	1.0000	1.0000
L7	27	MP3-05 (1.25in)	78.67 - 81.17	1.0000	1.0000
L8	25	MP3-05 (1.25in)	78.42 - 78.67	1.0000	1.0000
L8	26	MP3-05 (1.25in)	78.42 - 78.67	1.0000	1.0000
L8	27	MP3-05 (1.25in)	78.42 - 78.67	1.0000	1.0000
L9	25	MP3-05 (1.25in)	73.42 - 78.42	1.0000	1.0000
L9	26	MP3-05 (1.25in)	73.42 - 78.42	1.0000	1.0000
L9	27	MP3-05 (1.25in)	73.42 - 78.42	1.0000	1.0000
L10	25	MP3-05 (1.25in)	68.42 - 73.42	1.0000	1.0000
L10	26	MP3-05 (1.25in)	68.42 - 73.42	1.0000	1.0000
L10	27	MP3-05 (1.25in)	68.42 - 73.42	1.0000	1.0000
L11	25	MP3-05 (1.25in)	63.42 - 68.42	1.0000	1.0000
L11	26	MP3-05 (1.25in)	63.42 - 68.42	1.0000	1.0000
L11	27	MP3-05 (1.25in)	63.42 - 68.42	1.0000	1.0000
L12	21	MP3-05 (1.25in)	58.67 - 61.17	1.0000	1.0000
L12	22	MP3-05 (1.25in)	58.67 - 61.17	1.0000	1.0000
L12	23	MP3-05 (1.25in)	58.67 - 61.17	1.0000	1.0000
L12	25	MP3-05 (1.25in)	61.17 - 63.42	1.0000	1.0000
L12	26	MP3-05 (1.25in)	61.17 - 63.42	1.0000	1.0000
L12	27	MP3-05 (1.25in)	61.17 - 63.42	1.0000	1.0000
L13	21	MP3-05 (1.25in)	58.42 - 58.67	1.0000	1.0000
L13	22	MP3-05 (1.25in)	58.42 - 58.67	1.0000	1.0000
L13	23	MP3-05 (1.25in)	58.42 - 58.67	1.0000	1.0000
L14	21	MP3-05 (1.25in)	53.42 - 58.42	1.0000	1.0000
L14	22	MP3-05 (1.25in)	53.42 - 58.42	1.0000	1.0000
L14	23	MP3-05 (1.25in)	53.42 - 58.42	1.0000	1.0000
L15	12	LDF4-50A(1/2)	47.12 - 50.00	1.0000	1.0000
L15	21	MP3-05 (1.25in)	47.12 - 53.42	1.0000	1.0000
L15	22	MP3-05 (1.25in)	47.12 - 53.42	1.0000	1.0000
L15	23	MP3-05 (1.25in)	47.12 - 53.42	1.0000	1.0000
L16	12	LDF4-50A(1/2)	45.87 - 47.12	1.0000	1.0000
L16	21	MP3-05 (1.25in)	45.87 - 47.12	1.0000	1.0000
L16	22	MP3-05 (1.25in)	45.87 - 47.12	1.0000	1.0000
L16	23	MP3-05 (1.25in)	45.87 - 47.12	1.0000	1.0000
L17	12	LDF4-50A(1/2)	40.87 - 45.87	1.0000	1.0000
L17	21	MP3-05 (1.25in)	40.87 - 45.87	1.0000	1.0000
L17	22	MP3-05 (1.25in)	40.87 - 45.87	1.0000	1.0000
L17	23	MP3-05 (1.25in)	40.87 - 45.87	1.0000	1.0000
L18	12	LDF4-50A(1/2)	35.87 - 40.87	1.0000	1.0000

<p>tnxTower</p> <p>Tower Engineering Professionals Inc. 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	Job Woodbury North (BU 876405)	Page 13 of 37
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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K_a No Ice	K_a Ice
L18	21	MP3-05 (1.25in)	35.87 - 40.87	1.0000	1.0000
L18	22	MP3-05 (1.25in)	35.87 - 40.87	1.0000	1.0000
L18	23	MP3-05 (1.25in)	35.87 - 40.87	1.0000	1.0000
L19	12	LDF4-50A(1/2)	30.87 - 35.87	1.0000	1.0000
L19	18	MP3-05 (1.25in)	30.87 - 31.17	1.0000	1.0000
L19	19	MP3-05 (1.25in)	30.87 - 31.17	1.0000	1.0000
L19	21	MP3-05 (1.25in)	31.17 - 35.87	1.0000	1.0000
L19	22	MP3-05 (1.25in)	31.17 - 35.87	1.0000	1.0000
L19	23	MP3-05 (1.25in)	31.17 - 35.87	1.0000	1.0000
L19	32	MP3-05 (1.25in)	30.87 - 31.17	1.0000	1.0000
L20	12	LDF4-50A(1/2)	28.67 - 30.87	1.0000	1.0000
L20	18	MP3-05 (1.25in)	28.67 - 30.87	1.0000	1.0000
L20	19	MP3-05 (1.25in)	28.67 - 30.87	1.0000	1.0000
L20	32	MP3-05 (1.25in)	28.67 - 30.87	1.0000	1.0000
L21	12	LDF4-50A(1/2)	28.42 - 28.67	1.0000	1.0000
L21	18	MP3-05 (1.25in)	28.42 - 28.67	1.0000	1.0000
L21	19	MP3-05 (1.25in)	28.42 - 28.67	1.0000	1.0000
L21	32	MP3-05 (1.25in)	28.42 - 28.67	1.0000	1.0000
L22	12	LDF4-50A(1/2)	23.42 - 28.42	1.0000	1.0000
L22	18	MP3-05 (1.25in)	23.42 - 28.42	1.0000	1.0000
L22	19	MP3-05 (1.25in)	23.42 - 28.42	1.0000	1.0000
L22	32	MP3-05 (1.25in)	23.42 - 28.42	1.0000	1.0000
L23	12	LDF4-50A(1/2)	18.42 - 23.42	1.0000	1.0000
L23	18	MP3-05 (1.25in)	18.42 - 23.42	1.0000	1.0000
L23	19	MP3-05 (1.25in)	18.42 - 23.42	1.0000	1.0000
L23	32	MP3-05 (1.25in)	18.42 - 23.42	1.0000	1.0000
L24	12	LDF4-50A(1/2)	14.17 - 18.42	1.0000	1.0000
L24	18	MP3-05 (1.25in)	14.17 - 18.42	1.0000	1.0000
L24	19	MP3-05 (1.25in)	14.17 - 18.42	1.0000	1.0000
L24	29	MP3-08.5 (1.25")	14.17 - 16.17	1.0000	1.0000
L24	30	MP3-08.5 (1.25")	14.17 - 16.17	1.0000	1.0000
L24	32	MP3-05 (1.25in)	14.17 - 18.42	1.0000	1.0000
L25	12	LDF4-50A(1/2)	13.92 - 14.17	1.0000	1.0000
L25	18	MP3-05 (1.25in)	13.92 - 14.17	1.0000	1.0000
L25	19	MP3-05 (1.25in)	13.92 - 14.17	1.0000	1.0000
L25	29	MP3-08.5 (1.25")	13.92 - 14.17	1.0000	1.0000
L25	30	MP3-08.5 (1.25")	13.92 - 14.17	1.0000	1.0000
L25	32	MP3-05 (1.25in)	13.92 - 14.17	1.0000	1.0000
L26	12	LDF4-50A(1/2)	13.67 - 13.92	1.0000	1.0000
L26	18	MP3-05 (1.25in)	13.67 - 13.92	1.0000	1.0000
L26	19	MP3-05 (1.25in)	13.67 - 13.92	1.0000	1.0000
L26	29	MP3-08.5 (1.25")	13.67 - 13.92	1.0000	1.0000
L26	30	MP3-08.5 (1.25")	13.67 - 13.92	1.0000	1.0000
L26	32	MP3-05 (1.25in)	13.67 - 13.92	1.0000	1.0000
L27	12	LDF4-50A(1/2)	13.42 - 13.67	1.0000	1.0000
L27	18	MP3-05 (1.25in)	13.42 - 13.67	1.0000	1.0000
L27	19	MP3-05 (1.25in)	13.42 - 13.67	1.0000	1.0000
L27	29	MP3-08.5 (1.25")	13.42 - 13.67	1.0000	1.0000
L27	30	MP3-08.5 (1.25")	13.42 - 13.67	1.0000	1.0000
L27	32	MP3-05 (1.25in)	13.42 - 13.67	1.0000	1.0000
L28	12	LDF4-50A(1/2)	8.42 - 13.42	1.0000	1.0000
L28	18	MP3-05 (1.25in)	8.42 - 13.42	1.0000	1.0000
L28	19	MP3-05 (1.25in)	8.42 - 13.42	1.0000	1.0000
L28	29	MP3-08.5 (1.25")	8.42 - 13.42	1.0000	1.0000
L28	30	MP3-08.5 (1.25")	8.42 - 13.42	1.0000	1.0000
L28	32	MP3-05 (1.25in)	11.17 - 13.42	1.0000	1.0000
L29	12	LDF4-50A(1/2)	5.75 - 8.42	1.0000	1.0000
L29	16	MP3-05 (1.25in)	5.75 - 8.25	1.0000	1.0000
L29	18	MP3-05 (1.25in)	5.75 - 8.42	1.0000	1.0000
L29	19	MP3-05 (1.25in)	5.75 - 8.42	1.0000	1.0000
L29	29	MP3-08.5 (1.25")	5.75 - 8.42	1.0000	1.0000
L29	30	MP3-08.5 (1.25")	5.75 - 8.42	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	12	LDF4-50A(1/2)	5.50 - 5.75	1.0000	1.0000
L30	16	MP3-05 (1.25in)	5.50 - 5.75	1.0000	1.0000
L30	18	MP3-05 (1.25in)	5.50 - 5.75	1.0000	1.0000
L30	19	MP3-05 (1.25in)	5.50 - 5.75	1.0000	1.0000
L30	29	MP3-08.5 (1.25")	5.50 - 5.75	1.0000	1.0000
L30	30	MP3-08.5 (1.25")	5.50 - 5.75	1.0000	1.0000
L31	12	LDF4-50A(1/2)	3.57 - 5.50	1.0000	1.0000
L31	16	MP3-05 (1.25in)	3.57 - 5.50	1.0000	1.0000
L31	18	MP3-05 (1.25in)	3.57 - 5.50	1.0000	1.0000
L31	19	MP3-05 (1.25in)	3.57 - 5.50	1.0000	1.0000
L31	29	MP3-08.5 (1.25")	3.57 - 5.50	1.0000	1.0000
L31	30	MP3-08.5 (1.25")	3.57 - 5.50	1.0000	1.0000
L32	12	LDF4-50A(1/2)	3.32 - 3.57	1.0000	1.0000
L32	16	MP3-05 (1.25in)	3.32 - 3.57	1.0000	1.0000
L32	18	MP3-05 (1.25in)	3.32 - 3.57	1.0000	1.0000
L32	19	MP3-05 (1.25in)	3.32 - 3.57	1.0000	1.0000
L32	29	MP3-08.5 (1.25")	3.32 - 3.57	1.0000	1.0000
L32	30	MP3-08.5 (1.25")	3.32 - 3.57	1.0000	1.0000
L33	12	LDF4-50A(1/2)	3.17 - 3.32	1.0000	1.0000
L33	16	MP3-05 (1.25in)	3.17 - 3.32	1.0000	1.0000
L33	18	MP3-05 (1.25in)	3.17 - 3.32	1.0000	1.0000
L33	19	MP3-05 (1.25in)	3.17 - 3.32	1.0000	1.0000
L33	29	MP3-08.5 (1.25")	3.17 - 3.32	1.0000	1.0000
L33	30	MP3-08.5 (1.25")	3.17 - 3.32	1.0000	1.0000
L34	12	LDF4-50A(1/2)	2.92 - 3.17	1.0000	1.0000
L34	16	MP3-05 (1.25in)	2.92 - 3.17	1.0000	1.0000
L34	18	MP3-05 (1.25in)	2.92 - 3.17	1.0000	1.0000
L34	19	MP3-05 (1.25in)	2.92 - 3.17	1.0000	1.0000
L34	29	MP3-08.5 (1.25")	2.92 - 3.17	1.0000	1.0000
L34	30	MP3-08.5 (1.25")	2.92 - 3.17	1.0000	1.0000
L35	12	LDF4-50A(1/2)	2.75 - 2.92	1.0000	1.0000
L35	16	MP3-05 (1.25in)	2.75 - 2.92	1.0000	1.0000
L35	18	MP3-05 (1.25in)	2.75 - 2.92	1.0000	1.0000
L35	19	MP3-05 (1.25in)	2.75 - 2.92	1.0000	1.0000
L35	29	MP3-08.5 (1.25")	2.75 - 2.92	1.0000	1.0000
L35	30	MP3-08.5 (1.25")	2.75 - 2.92	1.0000	1.0000
L36	12	LDF4-50A(1/2)	2.50 - 2.75	1.0000	1.0000
L36	16	MP3-05 (1.25in)	2.50 - 2.75	1.0000	1.0000
L36	18	MP3-05 (1.25in)	2.50 - 2.75	1.0000	1.0000
L36	19	MP3-05 (1.25in)	2.50 - 2.75	1.0000	1.0000
L36	29	MP3-08.5 (1.25")	2.50 - 2.75	1.0000	1.0000
L36	30	MP3-08.5 (1.25")	2.50 - 2.75	1.0000	1.0000
L37	12	LDF4-50A(1/2)	0.00 - 2.50	1.0000	1.0000
L37	16	MP3-05 (1.25in)	0.00 - 2.50	1.0000	1.0000
L37	18	MP3-05 (1.25in)	0.00 - 2.50	1.0000	1.0000
L37	19	MP3-05 (1.25in)	0.00 - 2.50	1.0000	1.0000
L37	29	MP3-08.5 (1.25")	0.00 - 2.50	1.0000	1.0000
L37	30	MP3-08.5 (1.25")	0.00 - 2.50	1.0000	1.0000

Effective Width of Flat Linear Attachments / Feed Lines

Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L7	25	MP3-05 (1.25in)	78.67 - 81.17	Auto	0.4302
L7	26	MP3-05 (1.25in)	78.67 - 81.17	Auto	0.4302
L7	27	MP3-05 (1.25in)	78.67 - 81.17	Auto	0.4302
L8	25	MP3-05 (1.25in)	78.42 - 78.67	Auto	0.5410
L8	26	MP3-05 (1.25in)	78.42 - 78.67	Auto	0.5410
L8	27	MP3-05 (1.25in)	78.42 - 78.67	Auto	0.5410
L9	25	MP3-05 (1.25in)	73.42 - 78.42	Auto	0.5158
L9	26	MP3-05 (1.25in)	73.42 - 78.42	Auto	0.5158
L9	27	MP3-05 (1.25in)	73.42 - 78.42	Auto	0.5158
L10	25	MP3-05 (1.25in)	68.42 - 73.42	Auto	0.4753
L10	26	MP3-05 (1.25in)	68.42 - 73.42	Auto	0.4753
L10	27	MP3-05 (1.25in)	68.42 - 73.42	Auto	0.4753
L11	25	MP3-05 (1.25in)	63.42 - 68.42	Auto	0.4389
L11	26	MP3-05 (1.25in)	63.42 - 68.42	Auto	0.4389
L11	27	MP3-05 (1.25in)	63.42 - 68.42	Auto	0.4389
L12	21	MP3-05 (1.25in)	58.67 - 61.17	Auto	0.3961
L12	22	MP3-05 (1.25in)	58.67 - 61.17	Auto	0.3961
L12	23	MP3-05 (1.25in)	58.67 - 61.17	Auto	0.3961
L12	25	MP3-05 (1.25in)	61.17 - 63.42	Auto	0.4114
L12	26	MP3-05 (1.25in)	61.17 - 63.42	Auto	0.4114
L12	27	MP3-05 (1.25in)	61.17 - 63.42	Auto	0.4114
L13	21	MP3-05 (1.25in)	58.42 - 58.67	Auto	0.3872
L13	22	MP3-05 (1.25in)	58.42 - 58.67	Auto	0.3872
L13	23	MP3-05 (1.25in)	58.42 - 58.67	Auto	0.3872
L14	21	MP3-05 (1.25in)	53.42 - 58.42	Auto	0.3641
L14	22	MP3-05 (1.25in)	53.42 - 58.42	Auto	0.3641
L14	23	MP3-05 (1.25in)	53.42 - 58.42	Auto	0.3641
L15	21	MP3-05 (1.25in)	47.12 - 53.42	Auto	0.3256
L15	22	MP3-05 (1.25in)	47.12 - 53.42	Auto	0.3256
L15	23	MP3-05 (1.25in)	47.12 - 53.42	Auto	0.3256
L16	21	MP3-05 (1.25in)	45.87 - 47.12	Auto	0.3346
L16	22	MP3-05 (1.25in)	45.87 - 47.12	Auto	0.3346
L16	23	MP3-05 (1.25in)	45.87 - 47.12	Auto	0.3346
L17	21	MP3-05 (1.25in)	40.87 - 45.87	Auto	0.3105
L17	22	MP3-05 (1.25in)	40.87 - 45.87	Auto	0.3105
L17	23	MP3-05 (1.25in)	40.87 - 45.87	Auto	0.3105
L18	21	MP3-05 (1.25in)	35.87 - 40.87	Auto	0.2745
L18	22	MP3-05 (1.25in)	35.87 - 40.87	Auto	0.2745
L18	23	MP3-05 (1.25in)	35.87 - 40.87	Auto	0.2745
L19	18	MP3-05 (1.25in)	30.87 - 31.17	Auto	0.2236
L19	19	MP3-05 (1.25in)	30.87 - 31.17	Auto	0.2236
L19	21	MP3-05 (1.25in)	31.17 - 35.87	Auto	0.2395
L19	22	MP3-05 (1.25in)	31.17 - 35.87	Auto	0.2395
L19	23	MP3-05 (1.25in)	31.17 - 35.87	Auto	0.2395
L19	32	MP3-05 (1.25in)	30.87 - 31.17	Auto	0.2236
L20	18	MP3-05 (1.25in)	28.67 - 30.87	Auto	0.2156
L20	19	MP3-05 (1.25in)	28.67 - 30.87	Auto	0.2156
L20	32	MP3-05 (1.25in)	28.67 - 30.87	Auto	0.2156
L21	18	MP3-05 (1.25in)	28.42 - 28.67	Auto	0.2078
L21	19	MP3-05 (1.25in)	28.42 - 28.67	Auto	0.2078
L21	32	MP3-05 (1.25in)	28.42 - 28.67	Auto	0.2078
L22	18	MP3-05 (1.25in)	23.42 - 28.42	Auto	0.1869
L22	19	MP3-05 (1.25in)	23.42 - 28.42	Auto	0.1869
L22	32	MP3-05 (1.25in)	23.42 - 28.42	Auto	0.1869
L23	18	MP3-05 (1.25in)	18.42 - 23.42	Auto	0.1530
L23	19	MP3-05 (1.25in)	18.42 - 23.42	Auto	0.1530
L23	32	MP3-05 (1.25in)	18.42 - 23.42	Auto	0.1530
L24	18	MP3-05 (1.25in)	14.17 - 18.42	Auto	0.1215
L24	19	MP3-05 (1.25in)	14.17 - 18.42	Auto	0.1215
L24	29	MP3-08.5 (1.25")	14.17 - 16.17	Auto	0.0000
L24	30	MP3-08.5 (1.25")	14.17 - 16.17	Auto	0.0000

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L24	32	MP3-05 (1.25in)	14.17 - 18.42	Auto	0.1215
L25	18	MP3-05 (1.25in)	13.92 - 14.17	Auto	0.1402
L25	19	MP3-05 (1.25in)	13.92 - 14.17	Auto	0.1402
L25	29	MP3-08.5 (1.25")	13.92 - 14.17	Auto	0.0000
L25	30	MP3-08.5 (1.25")	13.92 - 14.17	Auto	0.0000
L25	32	MP3-05 (1.25in)	13.92 - 14.17	Auto	0.1402
L26	18	MP3-05 (1.25in)	13.67 - 13.92	Auto	0.1386
L26	19	MP3-05 (1.25in)	13.67 - 13.92	Auto	0.1386
L26	29	MP3-08.5 (1.25")	13.67 - 13.92	Auto	0.0000
L26	30	MP3-08.5 (1.25")	13.67 - 13.92	Auto	0.0000
L26	32	MP3-05 (1.25in)	13.67 - 13.92	Auto	0.1386
L27	18	MP3-05 (1.25in)	13.42 - 13.67	Auto	0.1101
L27	19	MP3-05 (1.25in)	13.42 - 13.67	Auto	0.1101
L27	29	MP3-08.5 (1.25")	13.42 - 13.67	Auto	0.0000
L27	30	MP3-08.5 (1.25")	13.42 - 13.67	Auto	0.0000
L27	32	MP3-05 (1.25in)	13.42 - 13.67	Auto	0.1101
L28	18	MP3-05 (1.25in)	8.42 - 13.42	Auto	0.0914
L28	19	MP3-05 (1.25in)	8.42 - 13.42	Auto	0.0914
L28	29	MP3-08.5 (1.25")	8.42 - 13.42	Auto	0.0000
L28	30	MP3-08.5 (1.25")	8.42 - 13.42	Auto	0.0000
L28	32	MP3-05 (1.25in)	11.17 - 13.42	Auto	0.1001
L29	16	MP3-05 (1.25in)	5.75 - 8.25	Auto	0.0664
L29	18	MP3-05 (1.25in)	5.75 - 8.42	Auto	0.0669
L29	19	MP3-05 (1.25in)	5.75 - 8.42	Auto	0.0669
L29	29	MP3-08.5 (1.25")	5.75 - 8.42	Auto	0.0000
L29	30	MP3-08.5 (1.25")	5.75 - 8.42	Auto	0.0000
L30	16	MP3-05 (1.25in)	5.50 - 5.75	Auto	0.0782
L30	18	MP3-05 (1.25in)	5.50 - 5.75	Auto	0.0782
L30	19	MP3-05 (1.25in)	5.50 - 5.75	Auto	0.0782
L30	29	MP3-08.5 (1.25")	5.50 - 5.75	Auto	0.0000
L30	30	MP3-08.5 (1.25")	5.50 - 5.75	Auto	0.0000
L31	16	MP3-05 (1.25in)	3.57 - 5.50	Auto	0.0919
L31	18	MP3-05 (1.25in)	3.57 - 5.50	Auto	0.0919
L31	19	MP3-05 (1.25in)	3.57 - 5.50	Auto	0.0919
L31	29	MP3-08.5 (1.25")	3.57 - 5.50	Auto	0.0000
L31	30	MP3-08.5 (1.25")	3.57 - 5.50	Auto	0.0000
L32	16	MP3-05 (1.25in)	3.32 - 3.57	Auto	0.0850
L32	18	MP3-05 (1.25in)	3.32 - 3.57	Auto	0.0850
L32	19	MP3-05 (1.25in)	3.32 - 3.57	Auto	0.0850
L32	29	MP3-08.5 (1.25")	3.32 - 3.57	Auto	0.0000
L32	30	MP3-08.5 (1.25")	3.32 - 3.57	Auto	0.0000
L33	16	MP3-05 (1.25in)	3.17 - 3.32	Auto	0.0837
L33	18	MP3-05 (1.25in)	3.17 - 3.32	Auto	0.0837
L33	19	MP3-05 (1.25in)	3.17 - 3.32	Auto	0.0837
L33	29	MP3-08.5 (1.25")	3.17 - 3.32	Auto	0.0000
L33	30	MP3-08.5 (1.25")	3.17 - 3.32	Auto	0.0000
L34	16	MP3-05 (1.25in)	2.92 - 3.17	Auto	0.0536
L34	18	MP3-05 (1.25in)	2.92 - 3.17	Auto	0.0536
L34	19	MP3-05 (1.25in)	2.92 - 3.17	Auto	0.0536
L34	29	MP3-08.5 (1.25")	2.92 - 3.17	Auto	0.0000
L34	30	MP3-08.5 (1.25")	2.92 - 3.17	Auto	0.0000
L35	16	MP3-05 (1.25in)	2.75 - 2.92	Auto	0.0522
L35	18	MP3-05 (1.25in)	2.75 - 2.92	Auto	0.0522
L35	19	MP3-05 (1.25in)	2.75 - 2.92	Auto	0.0522
L35	29	MP3-08.5 (1.25")	2.75 - 2.92	Auto	0.0000
L35	30	MP3-08.5 (1.25")	2.75 - 2.92	Auto	0.0000
L36	16	MP3-05 (1.25in)	2.50 - 2.75	Auto	0.0467
L36	18	MP3-05 (1.25in)	2.50 - 2.75	Auto	0.0467
L36	19	MP3-05 (1.25in)	2.50 - 2.75	Auto	0.0467
L36	29	MP3-08.5 (1.25")	2.50 - 2.75	Auto	0.0000
L36	30	MP3-08.5 (1.25")	2.50 - 2.75	Auto	0.0000

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Tower Section	Attachment Record No.	Description	Attachment Segment Elev.	Ratio Calculation Method	Effective Width Ratio
L37	16	MP3-05 (1.25in)	0.00 - 2.50	Auto	0.0380
L37	18	MP3-05 (1.25in)	0.00 - 2.50	Auto	0.0380
L37	19	MP3-05 (1.25in)	0.00 - 2.50	Auto	0.0380
L37	29	MP3-08.5 (1.25")	0.00 - 2.50	Auto	0.0000
L37	30	MP3-08.5 (1.25")	0.00 - 2.50	Auto	0.0000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _{AA} Front ft ²	C _{AA} Side ft ²	Weight K	
108									
BXA-80080/4CF w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice 5.04 1/2" Ice 5.42 1" Ice 5.81 2" Ice 6.62	4.03 4.65 5.28 6.56	0.03 0.08 0.13 0.25	
BXA-80080/4CF w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice 5.04 1/2" Ice 5.42 1" Ice 5.81 2" Ice 6.62	4.03 4.65 5.28 6.56	0.03 0.08 0.13 0.25	
BXA-80063/4CFx5 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice 4.95 1/2" Ice 5.32 1" Ice 5.71 2" Ice 6.51	3.62 4.22 4.83 6.11	0.03 0.07 0.12 0.23	
Sub6 Antenna - VZS01 w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice 4.92 1/2" Ice 5.26 1" Ice 5.62 2" Ice 6.37	2.69 3.15 3.63 4.64	0.10 0.14 0.19 0.29	
Sub6 Antenna - VZS01 w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice 4.92 1/2" Ice 5.26 1" Ice 5.62 2" Ice 6.37	2.69 3.15 3.63 4.64	0.10 0.14 0.19 0.29	
Sub6 Antenna - VZS01 w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice 4.92 1/2" Ice 5.26 1" Ice 5.62 2" Ice 6.37	2.69 3.15 3.63 4.64	0.10 0.14 0.19 0.29	
(2) JAHH-65B-R3B w/ Mount Pipe	A	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice 5.50 1/2" Ice 5.97 1" Ice 6.45 2" Ice 7.44	4.38 4.84 5.30 6.26	0.10 0.17 0.25 0.46	
(2) JAHH-65B-R3B w/ Mount Pipe	B	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice 5.50 1/2" Ice 5.97 1" Ice 6.45 2" Ice 7.44	4.38 4.84 5.30 6.26	0.10 0.17 0.25 0.46	
(2) JAHH-65B-R3B w/ Mount Pipe	C	From Leg	4.00 0.00 0.00	0.00	108.00	No Ice 5.50 1/2" Ice 5.97 1" Ice 6.45 2" Ice 7.44	4.38 4.84 5.30 6.26	0.10 0.17 0.25 0.46	
DB-C1-12C-24AB-0Z	A	From Leg	4.00 0.00	0.00	108.00	No Ice 4.06 1/2" Ice 4.32	3.10 3.34	0.03 0.07	

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	Project		TEP No. 25640.543262				Date		09:09:27 05/18/21	
	Client		Crown Castle				Designed by		tware	

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight
			Horz	Vert					
			ft	ft	°	ft	ft ²	ft ²	K
			0.00				1" Ice 4.58	3.58	0.11
							2" Ice 5.14	4.09	0.20
RFV01U-D1A	A	From Leg	4.00		0.00	108.00	No Ice 1.88	1.25	0.08
			0.00				1/2" Ice 2.05	1.39	0.10
			0.00				1" Ice 2.22	1.54	0.12
RFV01U-D1A	B	From Leg	4.00		0.00	108.00	2" Ice 2.60	1.86	0.18
			0.00				No Ice 1.88	1.25	0.08
			0.00				1/2" Ice 2.05	1.39	0.10
			0.00				1" Ice 2.22	1.54	0.12
RFV01U-D1A	C	From Leg	4.00		0.00	108.00	2" Ice 2.60	1.86	0.18
			0.00				No Ice 1.88	1.25	0.08
			0.00				1/2" Ice 2.05	1.39	0.10
			0.00				1" Ice 2.22	1.54	0.12
RFV01U-D2A	A	From Leg	4.00		0.00	108.00	2" Ice 2.60	1.86	0.18
			0.00				No Ice 1.88	1.01	0.07
			0.00				1/2" Ice 2.05	1.14	0.09
			0.00				1" Ice 2.22	1.28	0.11
RFV01U-D2A	B	From Leg	4.00		0.00	108.00	2" Ice 2.60	1.59	0.15
			0.00				No Ice 1.88	1.01	0.07
			0.00				1/2" Ice 2.05	1.14	0.09
			0.00				1" Ice 2.22	1.28	0.11
RFV01U-D2A	C	From Leg	4.00		0.00	108.00	2" Ice 2.60	1.59	0.15
			0.00				No Ice 1.88	1.01	0.07
			0.00				1/2" Ice 2.05	1.14	0.09
			0.00				1" Ice 2.22	1.28	0.11
CBC78T-DS-43-2X	A	From Leg	4.00		0.00	108.00	2" Ice 2.60	1.59	0.15
			0.00				No Ice 0.37	0.51	0.02
			0.00				1/2" Ice 0.45	0.60	0.03
			0.00				1" Ice 0.53	0.70	0.04
CBC78T-DS-43-2X	B	From Leg	4.00		0.00	108.00	2" Ice 0.72	0.93	0.06
			0.00				No Ice 0.37	0.51	0.02
			0.00				1/2" Ice 0.45	0.60	0.03
			0.00				1" Ice 0.53	0.70	0.04
CBC78T-DS-43-2X	C	From Leg	4.00		0.00	108.00	2" Ice 0.72	0.93	0.06
			0.00				No Ice 0.37	0.51	0.02
			0.00				1/2" Ice 0.45	0.60	0.03
			0.00				1" Ice 0.53	0.70	0.04
(1) Dual Mount Bracket	A	From Leg	4.00		0.00	108.00	2" Ice 0.72	0.93	0.06
			0.00				No Ice 0.13	0.21	0.01
			0.00				1/2" Ice 0.17	0.27	0.01
			0.00				1" Ice 0.23	0.33	0.01
(1) Dual Mount Bracket	B	From Leg	4.00		0.00	108.00	2" Ice 0.36	0.49	0.02
			0.00				No Ice 0.13	0.21	0.01
			0.00				1/2" Ice 0.17	0.27	0.01
			0.00				1" Ice 0.23	0.33	0.01
(1) Dual Mount Bracket	C	From Leg	4.00		0.00	108.00	2" Ice 0.36	0.49	0.02
			0.00				No Ice 0.13	0.21	0.01
			0.00				1/2" Ice 0.17	0.27	0.01
			0.00				1" Ice 0.23	0.33	0.01
T-Arm Mount [TA 602-3]	C	None			0.00	108.00	2" Ice 0.36	0.49	0.02
							No Ice 13.40	13.40	0.77
							1/2" Ice 16.44	16.44	1.00
							1" Ice 19.70	19.70	1.29
							2" Ice 25.86	25.86	2.05
102									
APX16DWV-16DWV-S-E-A	A	From Centroid-Le	4.00		0.00	102.00	No Ice 6.29	2.76	0.06
20 w/ Mount Pipe			0.00				1/2" Ice 6.86	3.27	0.11

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	Client	Crown Castle	Designed by	tware

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft ²	ft ²	K	
			g	0.00			1" Ice	7.45	3.79	0.16
							2" Ice	8.68	4.90	0.29
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	B	From	4.00	0.00	0.00	102.00	No Ice	6.29	2.76	0.06
		Centroid-Le	0.00				1/2" Ice	6.86	3.27	0.11
		g	0.00				1" Ice	7.45	3.79	0.16
							2" Ice	8.68	4.90	0.29
APX16DWV-16DWV-S-E-A 20 w/ Mount Pipe	C	From	4.00	0.00	0.00	102.00	No Ice	6.29	2.76	0.06
		Centroid-Le	0.00				1/2" Ice	6.86	3.27	0.11
		g	0.00				1" Ice	7.45	3.79	0.16
							2" Ice	8.68	4.90	0.29
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	A	From	4.00	0.00	0.00	102.00	No Ice	14.69	6.87	0.18
		Centroid-Le	0.00				1/2" Ice	15.46	7.55	0.31
		g	0.00				1" Ice	16.23	8.25	0.45
							2" Ice	17.82	9.67	0.78
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	B	From	4.00	0.00	0.00	102.00	No Ice	14.69	6.87	0.18
		Centroid-Le	0.00				1/2" Ice	15.46	7.55	0.31
		g	0.00				1" Ice	16.23	8.25	0.45
							2" Ice	17.82	9.67	0.78
APXVAALL24_43-U-NA20 _TMO w/ Mount Pipe	C	From	4.00	0.00	0.00	102.00	No Ice	14.69	6.87	0.18
		Centroid-Le	0.00				1/2" Ice	15.46	7.55	0.31
		g	0.00				1" Ice	16.23	8.25	0.45
							2" Ice	17.82	9.67	0.78
AIR6449 B41_T-MOBILE w/ Mount Pipe	A	From	4.00	0.00	0.00	102.00	No Ice	5.87	3.27	0.13
		Centroid-Le	0.00				1/2" Ice	6.23	3.73	0.18
		g	0.00				1" Ice	6.61	4.20	0.23
							2" Ice	7.38	5.20	0.36
AIR6449 B41_T-MOBILE w/ Mount Pipe	B	From	4.00	0.00	0.00	102.00	No Ice	5.87	3.27	0.13
		Centroid-Le	0.00				1/2" Ice	6.23	3.73	0.18
		g	0.00				1" Ice	6.61	4.20	0.23
							2" Ice	7.38	5.20	0.36
AIR6449 B41_T-MOBILE w/ Mount Pipe	C	From	4.00	0.00	0.00	102.00	No Ice	5.87	3.27	0.13
		Centroid-Le	0.00				1/2" Ice	6.23	3.73	0.18
		g	0.00				1" Ice	6.61	4.20	0.23
							2" Ice	7.38	5.20	0.36
RADIO 4415 B66A_CCIV3	A	From	4.00	0.00	0.00	102.00	No Ice	1.64	0.68	0.05
		Centroid-Le	0.00				1/2" Ice	1.80	0.79	0.06
		g	0.00				1" Ice	1.97	0.91	0.07
							2" Ice	2.32	1.18	0.11
RADIO 4415 B66A_CCIV3	B	From	4.00	0.00	0.00	102.00	No Ice	1.64	0.68	0.05
		Centroid-Le	0.00				1/2" Ice	1.80	0.79	0.06
		g	0.00				1" Ice	1.97	0.91	0.07
							2" Ice	2.32	1.18	0.11
RADIO 4415 B66A_CCIV3	C	From	4.00	0.00	0.00	102.00	No Ice	1.64	0.68	0.05
		Centroid-Le	0.00				1/2" Ice	1.80	0.79	0.06
		g	0.00				1" Ice	1.97	0.91	0.07
							2" Ice	2.32	1.18	0.11
RADIO 4424 B25_TMO	A	From	4.00	0.00	0.00	102.00	No Ice	2.05	1.61	0.09
		Centroid-Le	0.00				1/2" Ice	2.23	1.77	0.11
		g	0.00				1" Ice	2.42	1.94	0.13
							2" Ice	2.81	2.30	0.19
RADIO 4424 B25_TMO	B	From	4.00	0.00	0.00	102.00	No Ice	2.05	1.61	0.09
		Centroid-Le	0.00				1/2" Ice	2.23	1.77	0.11
		g	0.00				1" Ice	2.42	1.94	0.13
							2" Ice	2.81	2.30	0.19
RADIO 4424 B25_TMO	C	From	4.00	0.00	0.00	102.00	No Ice	2.05	1.61	0.09
		Centroid-Le	0.00				1/2" Ice	2.23	1.77	0.11
		g	0.00				1" Ice	2.42	1.94	0.13

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	Client	Crown Castle	Designed by	tware

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Lateral						Vert
			ft	ft			ft ²	ft ²	K	
RADIO 4449 B71 B85A_T-MOBILE	A	From Centroid-Le g	4.00	0.00	0.00	102.00	2" Ice	2.81	2.30	0.19
			0.00	0.00			No Ice	1.97	1.59	0.07
			0.00	0.00			1/2" Ice	2.15	1.75	0.09
			0.00	0.00			1" Ice	2.33	1.92	0.12
			0.00	0.00			2" Ice	2.72	2.28	0.17
RADIO 4449 B71 B85A_T-MOBILE	B	From Centroid-Le g	4.00	0.00	0.00	102.00	No Ice	1.97	1.59	0.07
			0.00	0.00			1/2" Ice	2.15	1.75	0.09
			0.00	0.00			1" Ice	2.33	1.92	0.12
			0.00	0.00			2" Ice	2.72	2.28	0.17
			0.00	0.00			No Ice	1.97	1.59	0.07
RADIO 4449 B71 B85A_T-MOBILE	C	From Centroid-Le g	4.00	0.00	0.00	102.00	1/2" Ice	2.15	1.75	0.09
			0.00	0.00			1" Ice	2.33	1.92	0.12
			0.00	0.00			2" Ice	2.72	2.28	0.17
			0.00	0.00			No Ice	1.97	1.59	0.07
			0.00	0.00			1/2" Ice	2.15	1.75	0.09
2.4" x 8' Pipe	A	From Centroid-Le g	4.00	0.00	0.00	102.00	1" Ice	2.33	1.92	0.12
			0.00	0.00			2" Ice	2.72	2.28	0.17
			0.00	0.00			No Ice	1.90	1.90	0.03
			0.00	0.00			1/2" Ice	2.73	2.73	0.05
			0.00	0.00			1" Ice	3.42	3.42	0.07
2.4" x 8' Pipe	B	From Centroid-Le g	4.00	0.00	0.00	102.00	2" Ice	4.46	4.46	0.13
			0.00	0.00			No Ice	1.90	1.90	0.03
			0.00	0.00			1/2" Ice	2.73	2.73	0.05
			0.00	0.00			1" Ice	3.42	3.42	0.07
			0.00	0.00			2" Ice	4.46	4.46	0.13
2.4" x 8' Pipe	C	From Centroid-Le g	4.00	0.00	0.00	102.00	No Ice	1.90	1.90	0.03
			0.00	0.00			1/2" Ice	2.73	2.73	0.05
			0.00	0.00			1" Ice	3.42	3.42	0.07
			0.00	0.00			2" Ice	4.46	4.46	0.13
			0.00	0.00			No Ice	23.14	21.40	1.95
SitePro1 RMQP-4096-HK	C	None		0.00	102.00	1/2" Ice	28.17	26.44	2.34	
						1" Ice	33.23	31.60	2.85	
						2" Ice	43.26	41.56	3.50	
97										
1900MHz RRH (65MHz)	A	From Leg	2.00	0.00	0.00	97.00	No Ice	2.31	2.38	0.06
			0.00	0.00			1/2" Ice	2.52	2.58	0.08
			0.00	0.00			1" Ice	2.73	2.79	0.11
			0.00	0.00			2" Ice	3.17	3.24	0.18
			0.00	0.00			No Ice	2.31	2.38	0.06
1900MHz RRH (65MHz)	B	From Leg	2.00	0.00	0.00	97.00	1/2" Ice	2.52	2.58	0.08
			0.00	0.00			1" Ice	2.73	2.79	0.11
			0.00	0.00			2" Ice	3.17	3.24	0.18
			0.00	0.00			No Ice	2.31	2.38	0.06
			0.00	0.00			1/2" Ice	2.52	2.58	0.08
1900MHz RRH (65MHz)	C	From Leg	2.00	0.00	0.00	97.00	1" Ice	2.73	2.79	0.11
			0.00	0.00			2" Ice	3.17	3.24	0.18
			0.00	0.00			No Ice	2.31	2.38	0.06
			0.00	0.00			1/2" Ice	2.52	2.58	0.08
			0.00	0.00			1" Ice	2.73	2.79	0.11
800MHZ RRH	A	From Leg	2.00	0.00	0.00	97.00	2" Ice	3.17	3.24	0.18
			0.00	0.00			No Ice	2.13	1.77	0.05
			0.00	0.00			1/2" Ice	2.32	1.95	0.07
			0.00	0.00			1" Ice	2.51	2.13	0.10
			0.00	0.00			2" Ice	2.92	2.51	0.16
800MHZ RRH	B	From Leg	2.00	0.00	0.00	97.00	No Ice	2.13	1.77	0.05
			0.00	0.00			1/2" Ice	2.32	1.95	0.07
			0.00	0.00			1" Ice	2.51	2.13	0.10
			0.00	0.00			2" Ice	2.92	2.51	0.16
			0.00	0.00			No Ice	2.13	1.77	0.05
800MHZ RRH	C	From Leg	2.00	0.00	0.00	97.00	1/2" Ice	2.32	1.95	0.07
			0.00	0.00			1" Ice	2.51	2.13	0.10
			0.00	0.00			2" Ice	2.92	2.51	0.16
			0.00	0.00			No Ice	2.13	1.77	0.05
			0.00	0.00			1/2" Ice	2.32	1.95	0.07
2.4" Dia. x 4-ft	A	From Leg	2.00	0.00	0.00	97.00	1" Ice	2.51	2.13	0.10
			0.00	0.00			2" Ice	2.92	2.51	0.16
			0.00	0.00			No Ice	0.87	0.87	0.01
						1/2" Ice	1.12	1.12	0.02	
						1" Ice	1.37	1.37	0.03	

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	Client	Crown Castle	Designed by	tware

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Vert						
			ft	ft	°	ft	ft ²	ft ²	K	
2.4" Dia. x 4-ft	A	From Leg	2.00	0.00	0.00	97.00	2" Ice	1.91	1.91	0.06
			0.00	0.00			No Ice	0.87	0.87	0.01
			0.00	0.00			1/2" Ice	1.12	1.12	0.02
			0.00	0.00			1" Ice	1.37	1.37	0.03
2.4" Dia. x 4-ft	A	From Leg	2.00	0.00	0.00	97.00	2" Ice	1.91	1.91	0.06
			0.00	0.00			No Ice	0.87	0.87	0.01
			0.00	0.00			1/2" Ice	1.12	1.12	0.02
			0.00	0.00			1" Ice	1.37	1.37	0.03
Side Arm Mount [SO 701-3]	C	None			0.00	97.00	2" Ice	1.91	1.91	0.06
							No Ice	3.02	3.02	0.20
							1/2" Ice	4.18	4.18	0.24
							1" Ice	5.33	5.33	0.28
80 7770.00 w/ Mount Pipe	A	From Leg	4.00	0.00	0.00	80.00	2" Ice	7.63	7.63	0.36
			0.00	0.00			No Ice	5.75	4.25	0.06
			0.00	0.00			1/2" Ice	6.18	5.01	0.10
			0.00	0.00			1" Ice	6.61	5.71	0.16
7770.00 w/ Mount Pipe	B	From Leg	4.00	0.00	0.00	80.00	2" Ice	7.49	7.16	0.29
			0.00	0.00			No Ice	5.75	4.25	0.06
			0.00	0.00			1/2" Ice	6.18	5.01	0.10
			0.00	0.00			1" Ice	6.61	5.71	0.16
7770.00 w/ Mount Pipe	C	From Leg	4.00	0.00	0.00	80.00	2" Ice	7.49	7.16	0.29
			0.00	0.00			No Ice	5.75	4.25	0.06
			0.00	0.00			1/2" Ice	6.18	5.01	0.10
			0.00	0.00			1" Ice	6.61	5.71	0.16
(2) DMP65R-BU6D w/ Mount Pipe	A	From Leg	4.00	0.00	0.00	80.00	2" Ice	7.49	7.16	0.29
			0.00	0.00			No Ice	11.96	5.97	0.11
			0.00	0.00			1/2" Ice	12.70	6.63	0.20
			0.00	0.00			1" Ice	13.46	7.30	0.30
(2) DMP65R-BU6D w/ Mount Pipe	C	From Leg	4.00	0.00	0.00	80.00	2" Ice	15.02	8.69	0.53
			0.00	0.00			No Ice	11.96	5.97	0.11
			0.00	0.00			1/2" Ice	12.70	6.63	0.20
			0.00	0.00			1" Ice	13.46	7.30	0.30
(2) DMP65R-BU4D w/ Mount Pipe	B	From Leg	4.00	0.00	0.00	80.00	2" Ice	15.02	8.69	0.53
			0.00	0.00			No Ice	7.53	3.79	0.09
			0.00	0.00			1/2" Ice	8.04	4.23	0.16
			0.00	0.00			1" Ice	8.57	4.68	0.22
(2) LGP21401	A	From Leg	4.00	0.00	0.00	80.00	2" Ice	9.68	5.63	0.39
			0.00	0.00			No Ice	1.10	0.21	0.01
			0.00	0.00			1/2" Ice	1.24	0.27	0.02
			0.00	0.00			1" Ice	1.38	0.35	0.03
(2) LGP21401	B	From Leg	4.00	0.00	0.00	80.00	2" Ice	1.69	0.52	0.05
			0.00	0.00			No Ice	1.10	0.21	0.01
			0.00	0.00			1/2" Ice	1.24	0.27	0.02
			0.00	0.00			1" Ice	1.38	0.35	0.03
(2) LGP21401	C	From Leg	4.00	0.00	0.00	80.00	2" Ice	1.69	0.52	0.05
			0.00	0.00			No Ice	1.10	0.21	0.01
			0.00	0.00			1/2" Ice	1.24	0.27	0.02
			0.00	0.00			1" Ice	1.38	0.35	0.03
RRUS 8843 B2/B66A	A	From Leg	4.00	0.00	0.00	80.00	2" Ice	1.69	0.52	0.05
			0.00	0.00			No Ice	1.64	1.35	0.07
			0.00	0.00			1/2" Ice	1.80	1.50	0.09
			0.00	0.00			1" Ice	1.97	1.65	0.11
RRUS 8843 B2/B66A	B	From Leg	4.00	0.00	0.00	80.00	2" Ice	2.32	1.99	0.16
			0.00	0.00			No Ice	1.64	1.35	0.07
			0.00	0.00			1/2" Ice	1.80	1.50	0.09
			0.00	0.00			1" Ice	1.97	1.65	0.11

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	Client	Crown Castle	Designed by	tware

Description	Face or Leg	Offset Type	Offsets:		Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			Horz	Vert						ft
					°	ft	ft ²	ft ²	K	
RRUS 8843 B2/B66A	C	From Leg	4.00	0.00	0.00	80.00	2" Ice	2.32	1.99	0.16
			0.00	0.00			No Ice	1.64	1.35	0.07
			0.00	0.00			1/2" Ice	1.80	1.50	0.09
			0.00	0.00			1" Ice	1.97	1.65	0.11
RRUS 4478 B14	A	From Leg	4.00	0.00	0.00	80.00	2" Ice	2.32	1.99	0.16
			0.00	0.00			No Ice	1.84	1.06	0.06
			0.00	0.00			1/2" Ice	2.01	1.20	0.08
			0.00	0.00			1" Ice	2.19	1.34	0.09
RRUS 4478 B14	B	From Leg	4.00	0.00	0.00	80.00	2" Ice	2.57	1.66	0.14
			0.00	0.00			No Ice	1.84	1.06	0.06
			0.00	0.00			1/2" Ice	2.01	1.20	0.08
			0.00	0.00			1" Ice	2.19	1.34	0.09
RRUS 4478 B14	C	From Leg	4.00	0.00	0.00	80.00	2" Ice	2.57	1.66	0.14
			0.00	0.00			No Ice	1.84	1.06	0.06
			0.00	0.00			1/2" Ice	2.01	1.20	0.08
			0.00	0.00			1" Ice	2.19	1.34	0.09
DC6-48-60-0-8C-EV	A	From Leg	4.00	0.00	0.00	80.00	2" Ice	2.57	1.66	0.14
			0.00	0.00			No Ice	1.14	1.14	0.03
			0.00	0.00			1/2" Ice	1.79	1.79	0.05
			0.00	0.00			1" Ice	2.00	2.00	0.07
DC6-48-60-18-8F	B	From Leg	4.00	0.00	0.00	80.00	2" Ice	2.45	2.45	0.13
			0.00	0.00			No Ice	1.21	1.21	0.03
			0.00	0.00			1/2" Ice	1.89	1.89	0.05
			0.00	0.00			1" Ice	2.11	2.11	0.08
T-Arm Mount [TA 602-3]	C	None			0.00	80.00	2" Ice	2.57	2.57	0.14
							No Ice	13.40	13.40	0.77
							1/2" Ice	16.44	16.44	1.00
							1" Ice	19.70	19.70	1.29
75 RRUS 4449 B5/B12	A	From Leg	2.00	0.00	0.00	75.00	2" Ice	2.57	2.57	0.14
			0.00	0.00			No Ice	1.97	1.41	0.07
			0.00	0.00			1/2" Ice	2.14	1.56	0.09
			0.00	0.00			1" Ice	2.33	1.73	0.11
RRUS 4449 B5/B12	B	From Leg	2.00	0.00	0.00	75.00	2" Ice	2.72	2.07	0.16
			0.00	0.00			No Ice	1.97	1.41	0.07
			0.00	0.00			1/2" Ice	2.14	1.56	0.09
			0.00	0.00			1" Ice	2.33	1.73	0.11
RRUS 4449 B5/B12	C	From Leg	2.00	0.00	0.00	75.00	2" Ice	2.72	2.07	0.16
			0.00	0.00			No Ice	1.97	1.41	0.07
			0.00	0.00			1/2" Ice	2.14	1.56	0.09
			0.00	0.00			1" Ice	2.33	1.73	0.11
2.4" Dia. x 4-ft	A	From Leg	2.00	0.00	0.00	75.00	2" Ice	2.72	2.07	0.16
			0.00	0.00			No Ice	0.87	0.87	0.01
			0.00	0.00			1/2" Ice	1.12	1.12	0.02
			0.00	0.00			1" Ice	1.37	1.37	0.03
2.4" Dia. x 4-ft	B	From Leg	2.00	0.00	0.00	75.00	2" Ice	1.91	1.91	0.06
			0.00	0.00			No Ice	0.87	0.87	0.01
			0.00	0.00			1/2" Ice	1.12	1.12	0.02
			0.00	0.00			1" Ice	1.37	1.37	0.03
2.4" Dia. x 4-ft	C	From Leg	2.00	0.00	0.00	75.00	2" Ice	1.91	1.91	0.06
			0.00	0.00			No Ice	0.87	0.87	0.01
			0.00	0.00			1/2" Ice	1.12	1.12	0.02
			0.00	0.00			1" Ice	1.37	1.37	0.03
Side Arm Mount [SO 901-3]	C	None			0.00	75.00	2" Ice	1.91	1.91	0.06
							No Ice	1.14	1.14	0.32
							1/2" Ice	1.49	1.49	0.34
							1" Ice	1.91	1.91	0.37

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert	Azimuth Adjustment	Placement	C _{AA} Front	C _{AA} Side	Weight	
			ft ft ft	°	ft	ft ²	ft ²	K	
						2" Ice	2.93	2.93	0.46
50 KS24019-L112A	B	From Leg	3.00 0.00 1.00	0.00	50.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.08 0.13 0.19 0.35	0.08 0.13 0.19 0.35	0.01 0.01 0.01 0.02
Side Arm Mount [SO 701-1]	B	From Leg	1.50 0.00 0.00	0.00	50.00	No Ice 1/2" Ice 1" Ice 2" Ice	0.85 1.14 1.43 2.01	1.67 2.34 3.01 4.35	0.07 0.08 0.09 0.12
**									

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

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Comb. No.	Description
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	110 - 105	Pole	Max Tension	45	0.00	0.00	0.00
			Max. Compression	26	-6.82	-0.05	0.75
			Max. Mx	8	-2.47	-11.49	0.11
			Max. My	2	-2.46	0.00	11.75
			Max. Vy	8	3.87	-11.49	0.11
			Max. Vx	14	3.90	0.03	-11.43
			Max. Torque	8			0.62
L2	105 - 100	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-15.81	-0.05	0.78
			Max. Mx	8	-6.71	-40.38	0.15
			Max. My	2	-6.70	-0.02	40.82
			Max. Vy	8	8.60	-40.38	0.15
			Max. Vx	14	8.64	0.05	-40.52
			Max. Torque	8			0.61
L3	100 - 98.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-15.94	-0.04	0.80
			Max. Mx	8	-6.79	-53.32	0.16
			Max. My	2	-6.78	-0.03	53.81
			Max. Vy	8	8.66	-53.32	0.16
			Max. Vx	14	8.70	0.06	-53.52
			Max. Torque	20			-0.61
L4	98.5 - 93.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-17.73	-0.04	1.22
			Max. Mx	8	-7.70	-99.83	0.28
			Max. My	2	-7.69	-0.06	100.61
			Max. Vy	8	9.64	-99.83	0.28
			Max. Vx	14	9.69	0.09	-100.17
			Max. Torque	20			-0.86
L5	93.5 - 88.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-18.20	-0.04	1.26
			Max. Mx	8	-8.06	-148.52	0.33
			Max. My	2	-8.05	-0.09	149.49
			Max. Vy	8	9.84	-148.52	0.33
			Max. Vx	14	9.89	0.12	-149.09
			Max. Torque	20			-0.86
L6	88.5 - 83.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-18.69	-0.04	1.29
			Max. Mx	8	-8.45	-198.19	0.37

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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	83.5 - 78.67	Pole	Max. My	2	-8.44	-0.12	199.35
			Max. Vy	8	10.04	-198.19	0.37
			Max. Vx	14	10.08	0.16	-198.98
			Max. Torque	20			-0.86
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.21	0.37	2.02
			Max. Mx	20	-11.11	251.69	0.15
			Max. My	2	-11.10	-0.23	253.29
			Max. Vy	8	13.67	-251.60	0.66
			Max. Vx	14	13.79	0.29	-252.57
L8	78.67 - 78.42	Pole	Max. Torque	8			1.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-25.26	0.37	2.03
			Max. Mx	20	-11.17	255.11	0.13
			Max. My	2	-11.15	-0.25	256.73
			Max. Vy	8	13.67	-255.01	0.68
			Max. Vx	14	13.80	0.31	-256.02
			Max. Torque	8			1.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-27.40	0.37	2.06
L9	78.42 - 73.42	Pole	Max. Mx	20	-12.60	324.69	-0.23
			Max. My	2	-12.58	-0.62	326.89
			Max. Vy	8	14.31	-324.60	1.07
			Max. Vx	14	14.62	0.68	-326.71
			Max. Torque	8			1.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-28.52	0.38	2.09
			Max. Mx	20	-13.42	396.87	-0.60
			Max. My	14	-13.36	1.06	-400.88
			Max. Vy	8	14.58	-396.78	1.46
L10	73.42 - 68.42	Pole	Max. Vx	14	15.06	1.06	-400.88
			Max. Torque	8			1.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-29.66	0.38	2.11
			Max. Mx	20	-14.26	470.36	-0.96
			Max. My	14	-14.20	1.44	-476.79
			Max. Vy	8	14.84	-470.27	1.85
			Max. Vx	14	15.32	1.44	-476.79
			Max. Torque	8			1.31
			Max Tension	1	0.00	0.00	0.00
L11	68.42 - 63.42	Pole	Max. Compression	26	-30.75	0.38	2.14
			Max. Mx	20	-15.07	541.37	-1.31
			Max. My	14	-15.02	1.79	-550.11
			Max. Vy	8	15.08	-541.28	2.21
			Max. Vx	14	15.57	1.79	-550.11
			Max. Torque	8			1.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-30.81	0.38	2.14
			Max. Mx	20	-15.13	545.14	-1.33
			Max. My	14	-15.07	1.81	-554.00
L12	63.42 - 58.67	Pole	Max. Vy	8	15.09	-545.05	2.23
			Max. Vx	14	15.57	1.81	-554.00
			Max. Torque	8			1.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.98	0.38	2.16
			Max. Mx	20	-16.00	621.18	-1.70
			Max. My	14	-15.95	2.19	-632.47
			Max. Vy	8	15.34	-621.09	2.61
			Max. Vx	14	15.83	2.19	-632.47
			Max. Torque	8			1.31
L13	58.67 - 58.42	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.98	0.38	2.16
L14	58.42 - 53.42	Pole	Max. Mx	20	-16.00	621.18	-1.70
			Max. My	14	-15.95	2.19	-632.47
			Max. Vy	8	15.34	-621.09	2.61
			Max. Vx	14	15.83	2.19	-632.47
			Max. Torque	8			1.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-31.98	0.38	2.16
			Max. Mx	20	-16.00	621.18	-1.70
			Max. My	14	-15.95	2.19	-632.47
			Max. Vy	8	15.34	-621.09	2.61
L15	53.42 - 47.12	Pole	Max. Vx	14	15.83	2.19	-632.47
			Max. Torque	8			1.31

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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
L16	47.12 - 45.87	Pole	Max. Compression	26	-32.59	0.38	2.17
			Max. Mx	20	-16.45	660.43	-1.89
			Max. My	14	-16.40	2.38	-672.96
			Max. Vy	8	15.47	-660.34	2.81
			Max. Vx	14	15.95	2.38	-672.96
			Max. Torque	8			1.31
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-34.67	0.07	2.02
			Max. Mx	8	-17.98	-738.86	3.14
			Max. My	14	-17.94	2.63	-753.88
L17	45.87 - 40.87	Pole	Max. Vy	8	15.83	-738.86	3.14
			Max. Vx	14	16.34	2.63	-753.88
			Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-35.99	0.06	2.04
			Max. Mx	8	-19.00	-818.57	3.59
			Max. My	14	-18.96	3.07	-836.10
			Max. Vy	8	16.07	-818.57	3.59
			Max. Vx	14	16.57	3.07	-836.10
			Max. Torque	20			-1.22
L18	40.87 - 35.87	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-37.33	0.04	2.04
			Max. Mx	8	-20.03	-899.46	4.04
			Max. My	14	-19.99	3.51	-919.49
			Max. Vy	8	16.31	-899.46	4.04
			Max. Vx	14	16.81	3.51	-919.49
			Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-38.68	0.03	2.05
			Max. Mx	8	-21.08	-981.50	4.48
L19	35.87 - 30.87	Pole	Max. My	14	-21.05	3.95	-1004.02
			Max. Vy	8	16.53	-981.50	4.48
			Max. Vx	14	17.03	3.95	-1004.02
			Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.29	0.02	2.06
			Max. Mx	8	-21.55	-1017.94	4.68
			Max. My	14	-21.52	4.15	-1041.55
			Max. Vy	8	16.63	-1017.94	4.68
			Max. Vx	14	17.12	4.15	-1041.55
L20	30.87 - 28.67	Pole	Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-39.36	0.02	2.06
			Max. Mx	8	-21.61	-1022.09	4.70
			Max. My	14	-21.58	4.17	-1045.83
			Max. Vy	8	16.63	-1022.09	4.70
			Max. Vx	14	17.12	4.17	-1045.83
			Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-40.74	0.00	2.07
L21	28.67 - 28.42	Pole	Max. Mx	8	-22.69	-1105.72	5.14
			Max. My	14	-22.66	4.60	-1131.93
			Max. Vy	8	16.84	-1105.72	5.14
			Max. Vx	14	17.34	4.60	-1131.93
			Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.13	-0.01	2.08
			Max. Mx	8	-23.78	-1190.33	5.58
			Max. My	14	-23.77	5.04	-1219.01
			Max. Vy	8	17.03	-1190.33	5.58
L22	28.42 - 23.42	Pole	Max. Vx	14	17.52	5.04	-1219.01
			Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-42.13	-0.01	2.08
			Max. Mx	8	-23.78	-1190.33	5.58
L23	23.42 - 18.42	Pole	Max. My	14	-23.77	5.04	-1219.01
			Max. Vy	8	17.03	-1190.33	5.58
			Max. Vx	14	17.52	5.04	-1219.01
			Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00

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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
L24	18.42 - 14.17	Pole	Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.36	0.01	2.11
			Max. Mx	8	-24.73	-1262.97	5.95
			Max. My	14	-24.72	5.41	-1293.74
			Max. Vy	8	17.18	-1262.97	5.95
			Max. Vx	14	17.67	5.41	-1293.74
L25	14.17 - 13.92	Pole	Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.44	0.02	2.11
			Max. Mx	8	-24.81	-1267.27	5.97
			Max. My	14	-24.79	5.43	-1298.15
			Max. Vy	8	17.18	-1267.27	5.97
			Max. Vx	14	17.67	5.43	-1298.15
L26	13.92 - 13.67	Pole	Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.53	0.02	2.12
			Max. Mx	8	-24.87	-1271.56	5.99
			Max. My	14	-24.86	5.45	-1302.57
			Max. Vy	8	17.19	-1271.56	5.99
			Max. Vx	14	17.68	5.45	-1302.57
L27	13.67 - 13.42	Pole	Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.61	0.03	2.12
			Max. Mx	8	-24.93	-1275.86	6.01
			Max. My	14	-24.92	5.47	-1306.99
			Max. Vy	8	17.20	-1275.86	6.01
			Max. Vx	14	17.69	5.47	-1306.99
L28	13.42 - 8.42	Pole	Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-45.16	0.08	2.17
			Max. Mx	8	-26.14	-1362.31	6.44
			Max. My	14	-26.13	5.90	-1395.83
			Max. Vy	8	17.40	-1362.31	6.44
			Max. Vx	14	17.87	5.90	-1395.83
L29	8.42 - 5.75	Pole	Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.00	0.12	2.20
			Max. Mx	8	-26.79	-1408.85	6.67
			Max. My	14	-26.79	6.13	-1443.62
			Max. Vy	8	17.50	-1408.85	6.67
			Max. Vx	14	17.96	6.13	-1443.62
L30	5.75 - 5.5	Pole	Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.08	0.12	2.20
			Max. Mx	8	-26.87	-1413.22	6.69
			Max. My	14	-26.87	6.15	-1448.10
			Max. Vy	8	17.49	-1413.22	6.69
			Max. Vx	14	17.96	6.15	-1448.10
L31	5.5 - 3.57	Pole	Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.80	0.15	2.23
			Max. Mx	8	-27.45	-1447.06	6.86
			Max. My	14	-27.44	6.32	-1482.83
			Max. Vy	8	17.60	-1447.06	6.86
			Max. Vx	14	18.06	6.32	-1482.83
L32	3.57 - 3.32	Pole	Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.90	0.16	2.23
			Max. Mx	8	-27.54	-1451.46	6.88
			Max. My	14	-27.53	6.34	-1487.34

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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
L33	3.32 - 3.17	Pole	Max. Vy	8	17.59	-1451.46	6.88
			Max. Vx	14	18.05	6.34	-1487.34
			Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-46.95	0.16	2.23
			Max. Mx	8	-27.58	-1454.10	6.89
			Max. My	14	-27.58	6.35	-1490.05
			Max. Vy	8	17.59	-1454.10	6.89
L34	3.17 - 2.92	Pole	Max. Vx	14	18.05	6.35	-1490.05
			Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.04	0.16	2.23
			Max. Mx	8	-27.65	-1458.50	6.91
			Max. My	14	-27.65	6.37	-1494.56
			Max. Vy	8	17.61	-1458.50	6.91
			Max. Vx	14	18.06	6.37	-1494.56
L35	2.92 - 2.75	Pole	Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.09	0.17	2.24
			Max. Mx	8	-27.70	-1461.49	6.93
			Max. My	14	-27.69	6.39	-1497.63
			Max. Vy	8	17.61	-1461.49	6.93
			Max. Vx	14	18.07	6.39	-1497.63
			Max. Torque	20			-1.22
L36	2.75 - 2.5	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-47.17	0.17	2.24
			Max. Mx	8	-27.76	-1465.89	6.95
			Max. My	14	-27.75	6.41	-1502.15
			Max. Vy	8	17.62	-1465.89	6.95
			Max. Vx	14	18.08	6.41	-1502.15
			Max. Torque	20			-1.22
			Max Tension	1	0.00	0.00	0.00
L37	2.5 - 0	Pole	Max. Compression	26	-47.92	0.20	2.27
			Max. Mx	8	-28.36	-1510.06	7.16
			Max. My	14	-28.36	6.62	-1547.44
			Max. Vy	8	17.73	-1510.06	7.16
			Max. Vx	14	18.18	6.62	-1547.44
			Max. Torque	20			-1.22

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	27	47.92	-0.02	4.76
	Max. H _x	21	21.28	17.71	-0.08
	Max. H _z	2	28.38	-0.08	17.80
	Max. M _x	2	1520.81	-0.08	17.80
	Max. M _z	8	1510.06	-17.71	0.08
	Max. Torsion	8	1.22	-17.71	0.08
	Min. Vert	11	21.28	-15.27	-8.83
	Min. H _x	9	21.28	-17.71	0.08
	Min. H _z	14	28.38	0.08	-18.16
	Min. M _x	14	-1547.44	0.08	-18.16
	Min. M _z	20	-1509.73	17.71	-0.08
	Min. Torsion	20	-1.22	17.71	-0.08

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Tower Mast Reaction Summary

Load Combination	Vertical	Shear _x	Shear _z	Overturning Moment, M _x	Overturning Moment, M _z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
Dead Only	23.65	0.00	0.00	-0.30	-0.13	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	28.38	0.08	-17.80	-1520.81	-6.95	-0.17
0.9 Dead+1.0 Wind 0 deg - No Ice	21.28	0.08	-17.80	-1498.23	-6.82	-0.16
1.2 Dead+1.0 Wind 30 deg - No Ice	28.38	8.91	-15.46	-1320.71	-760.84	-0.75
0.9 Dead+1.0 Wind 30 deg - No Ice	21.28	8.91	-15.46	-1301.11	-749.57	-0.75
1.2 Dead+1.0 Wind 60 deg - No Ice	28.38	15.66	-9.15	-780.18	-1334.45	-1.13
0.9 Dead+1.0 Wind 60 deg - No Ice	21.28	15.66	-9.15	-768.61	-1314.76	-1.13
1.2 Dead+1.0 Wind 90 deg - No Ice	28.38	17.71	-0.08	-7.16	-1510.06	-1.22
0.9 Dead+1.0 Wind 90 deg - No Ice	21.28	17.71	-0.08	-6.97	-1487.70	-1.21
1.2 Dead+1.0 Wind 120 deg - No Ice	28.38	15.27	8.83	753.97	-1303.94	-0.97
0.9 Dead+1.0 Wind 120 deg - No Ice	21.28	15.27	8.83	742.92	-1284.61	-0.97
1.2 Dead+1.0 Wind 150 deg - No Ice	28.38	8.81	15.46	1314.00	-749.57	-0.46
0.9 Dead+1.0 Wind 150 deg - No Ice	21.28	8.81	15.46	1294.69	-738.45	-0.46
1.2 Dead+1.0 Wind 180 deg - No Ice	28.38	-0.08	18.16	1547.44	6.62	0.16
0.9 Dead+1.0 Wind 180 deg - No Ice	21.28	-0.08	18.16	1524.76	6.58	0.16
1.2 Dead+1.0 Wind 210 deg - No Ice	28.38	-8.91	15.46	1319.93	760.50	0.75
0.9 Dead+1.0 Wind 210 deg - No Ice	21.28	-8.91	15.46	1300.54	749.31	0.75
1.2 Dead+1.0 Wind 240 deg - No Ice	28.38	-15.35	8.98	765.71	1310.36	1.13
0.9 Dead+1.0 Wind 240 deg - No Ice	21.28	-15.35	8.98	754.50	1291.04	1.13
1.2 Dead+1.0 Wind 270 deg - No Ice	28.38	-17.71	0.08	6.41	1509.73	1.22
0.9 Dead+1.0 Wind 270 deg - No Ice	21.28	-17.71	0.08	6.42	1487.46	1.21
1.2 Dead+1.0 Wind 300 deg - No Ice	28.38	-15.58	-9.01	-768.45	1327.38	0.97
0.9 Dead+1.0 Wind 300 deg - No Ice	21.28	-15.58	-9.01	-757.03	1307.86	0.97
1.2 Dead+1.0 Wind 330 deg - No Ice	28.38	-8.81	-15.46	-1314.79	749.26	0.46
0.9 Dead+1.0 Wind 330 deg - No Ice	21.28	-8.81	-15.46	-1295.26	738.22	0.46
1.2 Dead+1.0 Ice+1.0 Temp	47.92	-0.00	-0.00	-2.27	0.20	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	47.92	0.02	-4.76	-420.35	-1.24	0.00
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	47.92	2.38	-4.13	-365.07	-208.93	-0.16
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	47.92	4.11	-2.40	-212.64	-360.64	-0.27

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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
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 90 deg+1.0	47.92	4.73	-0.02	-3.79	-415.56	-0.31
Ice+1.0 Temp						
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	47.92	4.09	2.36	205.40	-359.13	-0.27
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	47.92	2.35	4.11	358.93	-206.42	-0.16
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	47.92	-0.02	4.76	415.73	1.65	-0.00
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	47.92	-2.38	4.13	360.38	209.34	0.16
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	47.92	-4.11	2.40	207.91	360.99	0.27
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	47.92	-4.73	0.02	-0.90	415.97	0.31
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	47.92	-4.09	-2.36	-210.13	359.61	0.27
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	47.92	-2.35	-4.11	-363.62	206.84	0.16
Dead+Wind 0 deg - Service	23.65	0.02	-4.20	-355.84	-1.72	-0.03
Dead+Wind 30 deg - Service	23.65	2.10	-3.64	-309.06	-178.00	-0.18
Dead+Wind 60 deg - Service	23.65	3.69	-2.16	-182.68	-312.14	-0.27
Dead+Wind 90 deg - Service	23.65	4.17	-0.02	-1.91	-353.18	-0.29
Dead+Wind 120 deg - Service	23.65	3.60	2.08	176.06	-304.99	-0.24
Dead+Wind 150 deg - Service	23.65	2.08	3.64	307.01	-175.37	-0.12
Dead+Wind 180 deg - Service	23.65	-0.02	4.28	361.62	1.45	0.03
Dead+Wind 210 deg - Service	23.65	-2.10	3.64	308.40	177.73	0.18
Dead+Wind 240 deg - Service	23.65	-3.62	2.12	178.80	306.31	0.27
Dead+Wind 270 deg - Service	23.65	-4.17	0.02	1.26	352.92	0.29
Dead+Wind 300 deg - Service	23.65	-3.67	-2.12	-179.93	310.29	0.24
Dead+Wind 330 deg - Service	23.65	-2.08	-3.64	-307.67	175.10	0.12

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	0.00	-23.65	0.00	0.00	23.65	0.00	0.000%
2	0.08	-28.38	-17.80	-0.08	28.38	17.80	0.000%
3	0.08	-21.28	-17.80	-0.08	21.28	17.80	0.000%
4	8.91	-28.38	-15.46	-8.91	28.38	15.46	0.000%
5	8.91	-21.28	-15.46	-8.91	21.28	15.46	0.000%
6	15.66	-28.38	-9.15	-15.66	28.38	9.15	0.000%
7	15.66	-21.28	-9.15	-15.66	21.28	9.15	0.000%
8	17.71	-28.38	-0.08	-17.71	28.38	0.08	0.000%
9	17.71	-21.28	-0.08	-17.71	21.28	0.08	0.000%
10	15.27	-28.38	8.83	-15.27	28.38	-8.83	0.000%
11	15.27	-21.28	8.83	-15.27	21.28	-8.83	0.000%
12	8.81	-28.38	15.46	-8.81	28.38	-15.46	0.000%
13	8.81	-21.28	15.46	-8.81	21.28	-15.46	0.000%
14	-0.08	-28.38	18.16	0.08	28.38	-18.16	0.000%
15	-0.08	-21.28	18.16	0.08	21.28	-18.16	0.000%
16	-8.91	-28.38	15.46	8.91	28.38	-15.46	0.000%
17	-8.91	-21.28	15.46	8.91	21.28	-15.46	0.000%
18	-15.35	-28.38	8.98	15.35	28.38	-8.98	0.000%
19	-15.35	-21.28	8.98	15.35	21.28	-8.98	0.000%
20	-17.71	-28.38	0.08	17.71	28.38	-0.08	0.000%
21	-17.71	-21.28	0.08	17.71	21.28	-0.08	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	
22	-15.58	-28.38	-9.01	15.58	28.38	9.01	0.000%
23	-15.58	-21.28	-9.01	15.58	21.28	9.01	0.000%
24	-8.81	-28.38	-15.46	8.81	28.38	15.46	0.000%
25	-8.81	-21.28	-15.46	8.81	21.28	15.46	0.000%
26	0.00	-47.92	0.00	0.00	47.92	0.00	0.000%
27	0.02	-47.92	-4.76	-0.02	47.92	4.76	0.000%
28	2.38	-47.92	-4.13	-2.38	47.92	4.13	0.000%
29	4.11	-47.92	-2.40	-4.11	47.92	2.40	0.000%
30	4.73	-47.92	-0.02	-4.73	47.92	0.02	0.000%
31	4.09	-47.92	2.36	-4.09	47.92	-2.36	0.000%
32	2.35	-47.92	4.11	-2.35	47.92	-4.11	0.000%
33	-0.02	-47.92	4.76	0.02	47.92	-4.76	0.000%
34	-2.38	-47.92	4.13	2.38	47.92	-4.13	0.000%
35	-4.11	-47.92	2.40	4.11	47.92	-2.40	0.000%
36	-4.73	-47.92	0.02	4.73	47.92	-0.02	0.000%
37	-4.09	-47.92	-2.36	4.09	47.92	2.36	0.000%
38	-2.35	-47.92	-4.11	2.35	47.92	4.11	0.000%
39	0.02	-23.65	-4.20	-0.02	23.65	4.20	0.000%
40	2.10	-23.65	-3.64	-2.10	23.65	3.64	0.000%
41	3.69	-23.65	-2.16	-3.69	23.65	2.16	0.000%
42	4.17	-23.65	-0.02	-4.17	23.65	0.02	0.000%
43	3.60	-23.65	2.08	-3.60	23.65	-2.08	0.000%
44	2.08	-23.65	3.64	-2.08	23.65	-3.64	0.000%
45	-0.02	-23.65	4.28	0.02	23.65	-4.28	0.000%
46	-2.10	-23.65	3.64	2.10	23.65	-3.64	0.000%
47	-3.62	-23.65	2.12	3.62	23.65	-2.12	0.000%
48	-4.17	-23.65	0.02	4.17	23.65	-0.02	0.000%
49	-3.67	-23.65	-2.12	3.67	23.65	2.12	0.000%
50	-2.08	-23.65	-3.64	2.08	23.65	3.64	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	5	0.00000001	0.00022394
3	Yes	5	0.00000001	0.00008415
4	Yes	7	0.00000001	0.00011392
5	Yes	6	0.00000001	0.00053492
6	Yes	7	0.00000001	0.00012476
7	Yes	6	0.00000001	0.00058633
8	Yes	6	0.00000001	0.00014101
9	Yes	5	0.00000001	0.00093799
10	Yes	7	0.00000001	0.00011155
11	Yes	6	0.00000001	0.00052482
12	Yes	7	0.00000001	0.00011713
13	Yes	6	0.00000001	0.00055178
14	Yes	5	0.00000001	0.00061374
15	Yes	5	0.00000001	0.00027939
16	Yes	7	0.00000001	0.00012040
17	Yes	6	0.00000001	0.00056699
18	Yes	7	0.00000001	0.00011236
19	Yes	6	0.00000001	0.00052787
20	Yes	6	0.00000001	0.00010483
21	Yes	5	0.00000001	0.00070217
22	Yes	7	0.00000001	0.00012217

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23	Yes	6	0.00000001	0.00057467
24	Yes	7	0.00000001	0.00011374
25	Yes	6	0.00000001	0.00053499
26	Yes	4	0.00000001	0.00061336
27	Yes	7	0.00000001	0.00017852
28	Yes	7	0.00000001	0.00023438
29	Yes	7	0.00000001	0.00023826
30	Yes	7	0.00000001	0.00017646
31	Yes	7	0.00000001	0.00022585
32	Yes	7	0.00000001	0.00022922
33	Yes	7	0.00000001	0.00017436
34	Yes	7	0.00000001	0.00023201
35	Yes	7	0.00000001	0.00022805
36	Yes	7	0.00000001	0.00017657
37	Yes	7	0.00000001	0.00023641
38	Yes	7	0.00000001	0.00023311
39	Yes	4	0.00000001	0.00072428
40	Yes	5	0.00000001	0.00036559
41	Yes	5	0.00000001	0.00045748
42	Yes	5	0.00000001	0.00011348
43	Yes	5	0.00000001	0.00034868
44	Yes	5	0.00000001	0.00039752
45	Yes	4	0.00000001	0.00076657
46	Yes	5	0.00000001	0.00042132
47	Yes	5	0.00000001	0.00035282
48	Yes	5	0.00000001	0.00010715
49	Yes	5	0.00000001	0.00043840
50	Yes	5	0.00000001	0.00036669

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
L1	110 - 105 (1)	TP13.6932x12.7x0.1875	5.00	0.00	0.0	8.0376	-2.46	470.20	0.005
L2	105 - 100 (2)	TP14.6863x13.6932x0.1875	5.00	0.00	0.0	8.6286	-6.70	504.77	0.013
L3	100 - 98.5 (3)	TP14.9843x14.6863x0.1875	1.50	0.00	0.0	8.8060	-6.78	515.15	0.013
L4	98.5 - 93.5 (4)	TP16.477x15.5x0.1875	5.00	0.00	0.0	9.6943	-7.69	567.12	0.014
L5	93.5 - 88.5 (5)	TP17.4541x16.477x0.1875	5.00	0.00	0.0	10.2758	-8.05	601.13	0.013
L6	88.5 - 83.5 (6)	TP18.4311x17.4541x0.1875	5.00	0.00	0.0	10.8572	-8.44	635.15	0.013
L7	83.5 - 78.67 (7)	TP19.3749x18.4311x0.1875	4.83	0.00	0.0	11.4189	-11.10	668.01	0.017
L8	78.67 - 78.42 (8)	TP19.4238x19.3749x0.55	0.25	0.00	0.0	32.9479	-11.15	1927.45	0.006
L9	78.42 - 73.42 (9)	TP20.4008x19.4238x0.525	5.00	0.00	0.0	33.1200	-12.58	1937.52	0.006
L10	73.42 - 68.42 (10)	TP21.3778x20.4008x0.5	5.00	0.00	0.0	33.1331	-13.36	1938.29	0.007
L11	68.42 - 63.42 (11)	TP22.3549x21.3778x0.4875	5.00	0.00	0.0	33.8359	-14.20	1979.40	0.007
L12	63.42 - 58.67 (12)	TP23.2831x22.3549x0.475	4.75	0.00	0.0	34.3866	-15.02	2011.61	0.007
L13	58.67 - 58.42 (13)	TP23.3319x23.2831x0.475	0.25	0.00	0.0	34.4602	-15.07	2015.92	0.007
L14	58.42 - 53.42 (14)	TP24.3089x23.3319x0.4563	5.00	0.00	0.0	34.5420	-15.95	2020.71	0.008

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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 $\frac{P_u}{\phi P_n}$
L15	53.42 - 47.12 (15)	TP25.54x24.3089x0.45	6.30	0.00	0.0	34.7894	-16.40	2035.18	0.008
L16	47.12 - 45.87 (16)	TP25.3972x24.4322x0.5125	5.00	0.00	0.0	40.4793	-17.94	2368.04	0.008
L17	45.87 - 40.87 (17)	TP26.3622x25.3972x0.5	5.00	0.00	0.0	41.0433	-18.96	2401.03	0.008
L18	40.87 - 35.87 (18)	TP27.3272x26.3622x0.4875	5.00	0.00	0.0	41.5297	-19.99	2429.49	0.008
L19	35.87 - 30.87 (19)	TP28.2922x27.3272x0.475	5.00	0.00	0.0	41.9386	-21.05	2453.41	0.009
L20	30.87 - 28.67 (20)	TP28.7168x28.2922x0.475	2.20	0.00	0.0	42.5787	-21.52	2490.85	0.009
L21	28.67 - 28.42 (21)	TP28.765x28.7168x0.475	0.25	0.00	0.0	42.6514	-21.58	2495.11	0.009
L22	28.42 - 23.42 (22)	TP29.73x28.765x0.4625	5.00	0.00	0.0	42.9640	-22.66	2513.39	0.009
L23	23.42 - 18.42 (23)	TP30.695x29.73x0.4563	5.00	0.00	0.0	43.7899	-23.77	2561.71	0.009
L24	18.42 - 14.17 (24)	TP31.5152x30.695x0.45	4.25	0.00	0.0	44.3705	-24.72	2595.67	0.010
L25	14.17 - 13.92 (25)	TP31.5635x31.5152x0.55	0.25	0.00	0.0	54.1402	-24.79	3167.20	0.008
L26	13.92 - 13.67 (26)	TP31.6117x31.5635x0.55	0.25	0.00	0.0	54.2245	-24.86	3172.13	0.008
L27	13.67 - 13.42 (27)	TP31.66x31.6117x0.4688	0.25	0.00	0.0	46.4067	-24.92	2714.79	0.009
L28	13.42 - 8.42 (28)	TP32.625x31.66x0.4625	5.00	0.00	0.0	47.2137	-26.13	2762.00	0.009
L29	8.42 - 5.75 (29)	TP33.1403x32.625x0.4625	2.67	0.00	0.0	47.9701	-26.79	2806.25	0.010
L30	5.75 - 5.5 (30)	TP33.1885x33.1403x0.525	0.25	0.00	0.0	54.4288	-26.87	3184.09	0.008
L31	5.5 - 3.57 (31)	TP33.561x33.1885x0.5875	1.93	0.00	0.0	61.4865	-27.44	3596.96	0.008
L32	3.57 - 3.32 (32)	TP33.6092x33.561x0.5875	0.25	0.00	0.0	61.5765	-27.53	3602.22	0.008
L33	3.32 - 3.17 (33)	TP33.6382x33.6092x0.5875	0.15	0.00	0.0	61.6305	-27.58	3605.38	0.008
L34	3.17 - 2.92 (34)	TP33.6864x33.6382x0.5	0.25	0.00	0.0	52.6669	-27.65	3081.01	0.009
L35	2.92 - 2.75 (35)	TP33.7193x33.6864x0.5	0.17	0.00	0.0	52.7190	-27.69	3084.06	0.009
L36	2.75 - 2.5 (36)	TP33.7675x33.7193x0.4875	0.25	0.00	0.0	51.4950	-27.75	3012.46	0.009
L37	2.5 - 0 (37)	TP34.25x33.7675x0.4875	2.50	0.00	0.0	52.2416	-28.36	3056.13	0.009

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	110 - 105 (1)	TP13.6932x12.7x0.1875	11.75	164.86	0.071	0.00	164.86	0.000
L2	105 - 100 (2)	TP14.6863x13.6932x0.1875	40.82	190.17	0.215	0.00	190.17	0.000
L3	100 - 98.5 (3)	TP14.9843x14.6863x0.1875	53.81	198.12	0.272	0.00	198.12	0.000
L4	98.5 - 93.5 (4)	TP16.477x15.5x0.1875	100.61	240.38	0.419	0.00	240.38	0.000
L5	93.5 - 88.5 (5)	TP17.4541x16.477x0.1875	149.49	270.26	0.553	0.00	270.26	0.000
L6	88.5 - 83.5 (6)	TP18.4311x17.4541x0.1875	199.35	300.19	0.664	0.00	300.19	0.000
L7	83.5 - 78.67 (7)	TP19.3749x18.4311x0.1875	253.29	328.00	0.772	0.00	328.00	0.000
L8	78.67 - 78.42 (8)	TP19.4238x19.3749x0.55	256.74	930.39	0.276	0.00	930.39	0.000
L9	78.42 - 73.42 (9)	TP20.4008x19.4238x0.525	326.93	987.52	0.331	0.00	987.52	0.000
L10	73.42 - 68.42 (10)	TP21.3778x20.4008x0.5	400.88	1040.21	0.385	0.00	1040.21	0.000

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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 $\frac{M_{uy}}{\phi M_{ry}}$
L11	68.42 - 63.42 (11)	TP22.3549x21.3778x0.4875	476.80	1114.43	0.428	0.00	1114.43	0.000
L12	63.42 - 58.67 (12)	TP23.2831x22.3549x0.475	550.11	1182.98	0.465	0.00	1182.98	0.000
L13	58.67 - 58.42 (13)	TP23.3319x23.2831x0.475	554.00	1188.11	0.466	0.00	1188.11	0.000
L14	58.42 - 53.42 (14)	TP24.3089x23.3319x0.4563	632.47	1244.83	0.508	0.00	1244.83	0.000
L15	53.42 - 47.12 (15)	TP25.54x24.3089x0.45	672.96	1281.08	0.525	0.00	1281.08	0.000
L16	47.12 - 45.87 (16)	TP25.3972x24.4322x0.5125	753.89	1519.72	0.496	0.00	1519.72	0.000
L17	45.87 - 40.87 (17)	TP26.3622x25.3972x0.5	836.11	1603.41	0.521	0.00	1603.41	0.000
L18	40.87 - 35.87 (18)	TP27.3272x26.3622x0.4875	919.50	1685.67	0.545	0.00	1685.67	0.000
L19	35.87 - 30.87 (19)	TP28.2922x27.3272x0.475	1004.03	1766.14	0.568	0.00	1766.14	0.000
L20	30.87 - 28.67 (20)	TP28.7168x28.2922x0.475	1041.56	1820.93	0.572	0.00	1820.93	0.000
L21	28.67 - 28.42 (21)	TP28.765x28.7168x0.475	1045.84	1827.21	0.572	0.00	1827.21	0.000
L22	28.42 - 23.42 (22)	TP29.73x28.765x0.4625	1131.94	1906.04	0.594	0.00	1906.04	0.000
L23	23.42 - 18.42 (23)	TP30.695x29.73x0.4563	1219.03	2008.57	0.607	0.00	2008.57	0.000
L24	18.42 - 14.17 (24)	TP31.5152x30.695x0.45	1293.75	2092.07	0.618	0.00	2092.07	0.000
L25	14.17 - 13.92 (25)	TP31.5635x31.5152x0.55	1298.17	2540.32	0.511	0.00	2540.32	0.000
L26	13.92 - 13.67 (26)	TP31.6117x31.5635x0.55	1302.58	2548.30	0.511	0.00	2548.30	0.000
L27	13.67 - 13.42 (27)	TP31.66x31.6117x0.4688	1307.00	2195.78	0.595	0.00	2195.78	0.000
L28	13.42 - 8.42 (28)	TP32.625x31.66x0.4625	1395.84	2304.99	0.606	0.00	2304.99	0.000
L29	8.42 - 5.75 (29)	TP33.1403x32.625x0.4625	1443.63	2379.97	0.607	0.00	2379.97	0.000
L30	5.75 - 5.5 (30)	TP33.1885x33.1403x0.525	1448.12	2694.13	0.538	0.00	2694.13	0.000
L31	5.5 - 3.57 (31)	TP33.561x33.1885x0.5875	1482.84	3067.09	0.483	0.00	3067.09	0.000
L32	3.57 - 3.32 (32)	TP33.6092x33.561x0.5875	1487.35	3076.16	0.484	0.00	3076.16	0.000
L33	3.32 - 3.17 (33)	TP33.6382x33.6092x0.5875	1490.06	3081.60	0.484	0.00	3081.60	0.000
L34	3.17 - 2.92 (34)	TP33.6864x33.6382x0.5	1494.58	2651.28	0.564	0.00	2651.28	0.000
L35	2.92 - 2.75 (35)	TP33.7193x33.6864x0.5	1497.64	2656.57	0.564	0.00	2656.57	0.000
L36	2.75 - 2.5 (36)	TP33.7675x33.7193x0.4875	1502.16	2600.67	0.578	0.00	2600.67	0.000
L37	2.5 - 0 (37)	TP34.25x33.7675x0.4875	1547.45	2677.18	0.578	0.00	2677.18	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	110 - 105 (1)	TP13.6932x12.7x0.1875	3.90	141.06	0.028	0.13	166.84	0.001
L2	105 - 100 (2)	TP14.6863x13.6932x0.1875	8.63	151.43	0.057	0.13	192.28	0.001
L3	100 - 98.5 (3)	TP14.9843x14.6863x0.1875	8.70	154.54	0.056	0.13	200.26	0.001
L4	98.5 - 93.5 (4)	TP16.477x15.5x0.1875	9.68	170.13	0.057	0.13	242.71	0.001
L5	93.5 - 88.5 (5)	TP17.4541x16.477x0.1875	9.88	180.34	0.055	0.13	272.69	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 $\frac{T_u}{\phi T_n}$
L6	88.5 - 83.5 (6)	TP18.4311x17.4541x0.1875	10.08	190.54	0.053	0.13	304.43	0.000
L7	83.5 - 78.67 (7)	TP19.3749x18.4311x0.1875	13.78	200.40	0.069	0.32	336.74	0.001
L8	78.67 - 78.42 (8)	TP19.4238x19.3749x0.55	13.78	578.24	0.024	0.32	955.75	0.000
L9	78.42 - 73.42 (9)	TP20.4008x19.4238x0.525	14.46	581.26	0.025	0.93	1011.75	0.001
L10	73.42 - 68.42 (10)	TP21.3778x20.4008x0.5	15.06	581.49	0.026	0.32	1063.18	0.000
L11	68.42 - 63.42 (11)	TP22.3549x21.3778x0.4875	15.32	593.82	0.026	0.32	1137.18	0.000
L12	63.42 - 58.67 (12)	TP23.2831x22.3549x0.475	15.57	603.48	0.026	0.32	1205.41	0.000
L13	58.67 - 58.42 (13)	TP23.3319x23.2831x0.475	15.57	604.78	0.026	0.32	1210.58	0.000
L14	58.42 - 53.42 (14)	TP24.3089x23.3319x0.4563	15.83	606.21	0.026	0.32	1266.32	0.000
L15	53.42 - 47.12 (15)	TP25.54x24.3089x0.45	15.95	610.55	0.026	0.32	1302.37	0.000
L16	47.12 - 45.87 (16)	TP25.3972x24.4322x0.5125	16.34	710.41	0.023	0.17	1548.18	0.000
L17	45.87 - 40.87 (17)	TP26.3622x25.3972x0.5	16.58	720.31	0.023	0.17	1631.42	0.000
L18	40.87 - 35.87 (18)	TP27.3272x26.3622x0.4875	16.81	728.85	0.023	0.17	1713.14	0.000
L19	35.87 - 30.87 (19)	TP28.2922x27.3272x0.475	17.03	736.02	0.023	0.17	1793.02	0.000
L20	30.87 - 28.67 (20)	TP28.7168x28.2922x0.475	17.12	747.26	0.023	0.17	1848.17	0.000
L21	28.67 - 28.42 (21)	TP28.765x28.7168x0.475	17.13	748.53	0.023	0.17	1854.49	0.000
L22	28.42 - 23.42 (22)	TP29.73x28.765x0.4625	17.34	754.02	0.023	0.17	1932.63	0.000
L23	23.42 - 18.42 (23)	TP30.695x29.73x0.4563	17.52	768.51	0.023	0.16	2035.14	0.000
L24	18.42 - 14.17 (24)	TP31.5152x30.695x0.45	17.67	778.70	0.023	0.16	2118.48	0.000
L25	14.17 - 13.92 (25)	TP31.5635x31.5152x0.55	17.67	950.16	0.019	0.16	2580.64	0.000
L26	13.92 - 13.67 (26)	TP31.6117x31.5635x0.55	17.68	951.64	0.019	0.16	2588.68	0.000
L27	13.67 - 13.42 (27)	TP31.66x31.6117x0.4688	17.69	814.44	0.022	0.16	2224.69	0.000
L28	13.42 - 8.42 (28)	TP32.625x31.66x0.4625	17.87	828.60	0.022	0.16	2333.86	0.000
L29	8.42 - 5.75 (29)	TP33.1403x32.625x0.4625	17.96	841.88	0.021	0.16	2409.24	0.000
L30	5.75 - 5.5 (30)	TP33.1885x33.1403x0.525	17.96	955.23	0.019	0.16	2732.43	0.000
L31	5.5 - 3.57 (31)	TP33.561x33.1885x0.5875	18.06	1079.09	0.017	0.16	3116.03	0.000
L32	3.57 - 3.32 (32)	TP33.6092x33.561x0.5875	18.05	1080.67	0.017	0.16	3125.16	0.000
L33	3.32 - 3.17 (33)	TP33.6382x33.6092x0.5875	18.05	1081.61	0.017	0.16	3130.64	0.000
L34	3.17 - 2.92 (34)	TP33.6864x33.6382x0.5	18.06	924.30	0.020	0.16	2686.31	0.000
L35	2.92 - 2.75 (35)	TP33.7193x33.6864x0.5	18.07	925.22	0.020	0.16	2691.63	0.000
L36	2.75 - 2.5 (36)	TP33.7675x33.7193x0.4875	18.08	903.74	0.020	0.16	2633.94	0.000
L37	2.5 - 0 (37)	TP34.25x33.7675x0.4875	18.18	916.84	0.020	0.16	2710.87	0.000

Pole Interaction Design Data

<p>tnxTower</p> <p>Tower Engineering Professionals Inc. 326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</p>	Job	Woodbury North (BU 876405)	Page	36 of 37
	Project	TEP No. 25640.543262	Date	09:09:27 05/18/21
	Client	Crown Castle	Designed by	tware

Section No.	Elevation ft	Ratio	Ratio	Ratio	Ratio	Ratio	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
		P_u	M_{ux}	M_{uy}	V_u	T_u			
L1	110 - 105 (1)	0.005	0.071	0.000	0.028	0.001	0.077	1.050	4.8.2
L2	105 - 100 (2)	0.013	0.215	0.000	0.057	0.001	0.231	1.050	4.8.2
L3	100 - 98.5 (3)	0.013	0.272	0.000	0.056	0.001	0.288	1.050	4.8.2
L4	98.5 - 93.5 (4)	0.014	0.419	0.000	0.057	0.001	0.435	1.050	4.8.2
L5	93.5 - 88.5 (5)	0.013	0.553	0.000	0.055	0.000	0.570	1.050	4.8.2
L6	88.5 - 83.5 (6)	0.013	0.664	0.000	0.053	0.000	0.680	1.050	4.8.2
L7	83.5 - 78.67 (7)	0.017	0.772	0.000	0.069	0.001	0.794	1.050	4.8.2
L8	78.67 - 78.42 (8)	0.006	0.276	0.000	0.024	0.000	0.282	1.050	4.8.2
L9	78.42 - 73.42 (9)	0.006	0.331	0.000	0.025	0.001	0.338	1.050	4.8.2
L10	73.42 - 68.42 (10)	0.007	0.385	0.000	0.026	0.000	0.393	1.050	4.8.2
L11	68.42 - 63.42 (11)	0.007	0.428	0.000	0.026	0.000	0.436	1.050	4.8.2
L12	63.42 - 58.67 (12)	0.007	0.465	0.000	0.026	0.000	0.473	1.050	4.8.2
L13	58.67 - 58.42 (13)	0.007	0.466	0.000	0.026	0.000	0.474	1.050	4.8.2
L14	58.42 - 53.42 (14)	0.008	0.508	0.000	0.026	0.000	0.517	1.050	4.8.2
L15	53.42 - 47.12 (15)	0.008	0.525	0.000	0.026	0.000	0.534	1.050	4.8.2
L16	47.12 - 45.87 (16)	0.008	0.496	0.000	0.023	0.000	0.504	1.050	4.8.2
L17	45.87 - 40.87 (17)	0.008	0.521	0.000	0.023	0.000	0.530	1.050	4.8.2
L18	40.87 - 35.87 (18)	0.008	0.545	0.000	0.023	0.000	0.554	1.050	4.8.2
L19	35.87 - 30.87 (19)	0.009	0.568	0.000	0.023	0.000	0.578	1.050	4.8.2
L20	30.87 - 28.67 (20)	0.009	0.572	0.000	0.023	0.000	0.581	1.050	4.8.2
L21	28.67 - 28.42 (21)	0.009	0.572	0.000	0.023	0.000	0.582	1.050	4.8.2
L22	28.42 - 23.42 (22)	0.009	0.594	0.000	0.023	0.000	0.603	1.050	4.8.2
L23	23.42 - 18.42 (23)	0.009	0.607	0.000	0.023	0.000	0.617	1.050	4.8.2
L24	18.42 - 14.17 (24)	0.010	0.618	0.000	0.023	0.000	0.628	1.050	4.8.2
L25	14.17 - 13.92 (25)	0.008	0.511	0.000	0.019	0.000	0.519	1.050	4.8.2
L26	13.92 - 13.67 (26)	0.008	0.511	0.000	0.019	0.000	0.519	1.050	4.8.2
L27	13.67 - 13.42 (27)	0.009	0.595	0.000	0.022	0.000	0.605	1.050	4.8.2
L28	13.42 - 8.42 (28)	0.009	0.606	0.000	0.022	0.000	0.616	1.050	4.8.2
L29	8.42 - 5.75 (29)	0.010	0.607	0.000	0.021	0.000	0.617	1.050	4.8.2
L30	5.75 - 5.5 (30)	0.008	0.538	0.000	0.019	0.000	0.546	1.050	4.8.2
L31	5.5 - 3.57 (31)	0.008	0.483	0.000	0.017	0.000	0.491	1.050	4.8.2
L32	3.57 - 3.32 (32)	0.008	0.484	0.000	0.017	0.000	0.491	1.050	4.8.2
L33	3.32 - 3.17 (33)	0.008	0.484	0.000	0.017	0.000	0.491	1.050	4.8.2
L34	3.17 - 2.92 (34)	0.009	0.564	0.000	0.020	0.000	0.573	1.050	4.8.2
L35	2.92 - 2.75 (35)	0.009	0.564	0.000	0.020	0.000	0.573	1.050	4.8.2
L36	2.75 - 2.5 (36)	0.009	0.578	0.000	0.020	0.000	0.587	1.050	4.8.2
L37	2.5 - 0 (37)	0.009	0.578	0.000	0.020	0.000	0.588	1.050	4.8.2

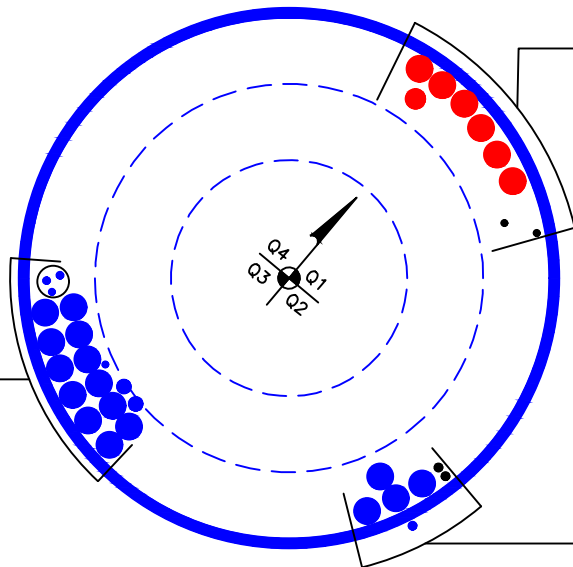
<i>tnxTower</i> <i>Tower Engineering Professionals Inc.</i> <i>326 Tryon Road Raleigh, NC 27603 Phone: (919) 661-6351 FAX: (919) 661-6350</i>	Job Woodbury North (BU 876405)	Page 37 of 37
	Project TEP No. 25640.543262	Date 09:09:27 05/18/21
	Client Crown Castle	Designed by tware

Program Version 8.0.9.0 - 4/12/2021 File:C:/Users/tware/Desktop/P-271743_L-543262_876405_WOODBURY NORTH_Structural
Analysis/tnxTower/876405_1961966_LC7 Final.eri

APPENDIX B
BASE LEVEL DRAWING



(OTHER CONSIDERED EQUIPMENT—IN CONDUIT)
(1) 3/8" TO 80 FT LEVEL
(2) 7/16" TO 80 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(1) 3/8" TO 80 FT LEVEL
(2) 7/8" TO 80 FT LEVEL
(12) 1-5/8" TO 80 FT LEVEL



(PROPOSED EQUIPMENT CONFIGURATION)
(1) 1-1/4" TO 108 FT LEVEL
(6) 1-5/8" TO 108 FT LEVEL
(OTHER CONSIDERED EQUIPMENT)
(2) 3/8" TO GROUND

(OTHER CONSIDERED EQUIPMENT)
(2) 1/2" TO GROUND
(4) 1-5/8" TO 102 FT LEVEL
(1) 1/2" TO 50 FT LEVEL

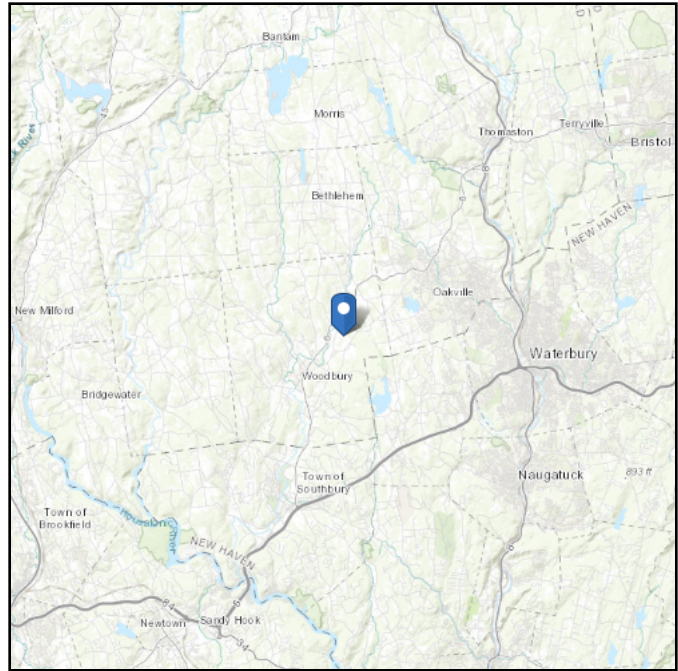
APPENDIX C
ADDITIONAL CALCULATIONS

ASCE 7 Hazards Report

Address:
No Address at This Location

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

Elevation: 460.09 ft (NAVD 88)
Latitude: 41.567997
Longitude: -73.179681



Wind

Results:

Wind Speed:	118 Vmph	Jurisdiction requires 120 Vmph
10-year MRI	76 Vmph	
25-year MRI	85 Vmph	
50-year MRI	90 Vmph	
100-year MRI	97 Vmph	

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

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

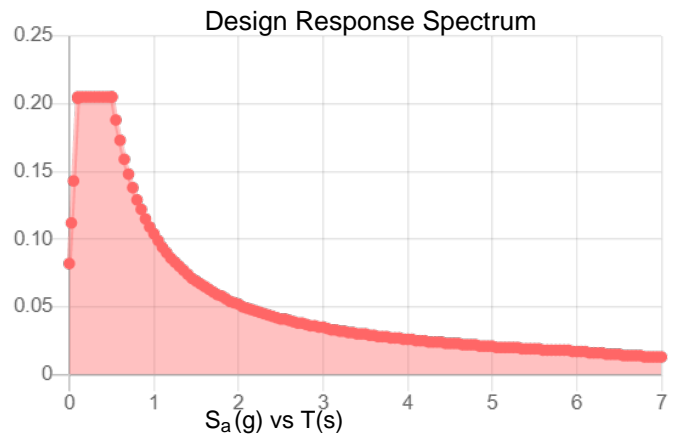
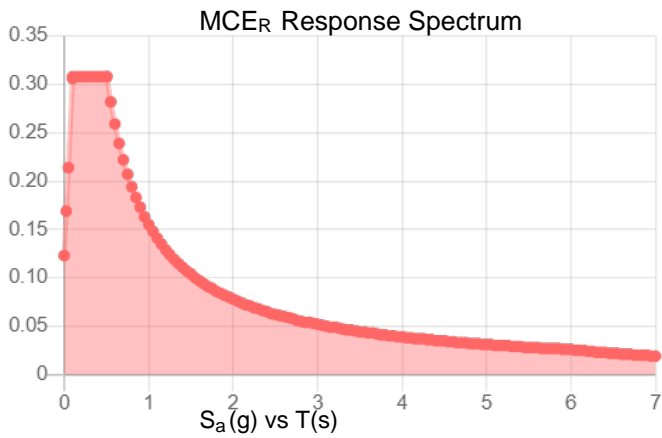
Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Stiff Soil

Results:

S_S :	0.192	S_{DS} :	0.205
S_1 :	0.065	S_{D1} :	0.104
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.1
S_{MS} :	0.308	PGA _M :	0.16
S_{M1} :	0.155	F _{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Wed May 12 2021

Date Source:

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

Ice

Results:

Ice Thickness: 0.75 in.
Concurrent Temperature: 15 F
Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-10, Figs. 10-2 through 10-8

Date Accessed: Wed May 12 2021

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

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

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.

ASCE does not intend, nor should anyone interpret, the results provided by this Tool to replace the sound judgment of a competent professional, having knowledge and experience in the appropriate field(s) of practice, nor to substitute for the standard of care required of such professionals in interpreting and applying the contents of this Tool or the ASCE 7 standard.

In using this Tool, you expressly assume all risks associated with your use. Under no circumstances shall ASCE or its officers, directors, employees, members, affiliates, or agents be liable to you or any other person for any direct, indirect, special, incidental, or consequential damages arising from or related to your use of, or reliance on, the Tool or any information obtained therein. To the fullest extent permitted by law, you agree to release and hold harmless ASCE from any and all liability of any nature arising out of or resulting from any use of data provided by the ASCE 7 Hazard Tool.

Site BU: 876405
Work Order: 1961966



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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	110	11.5	0	18	12.7	14.9843	0.1875	Auto	A572-65
2	98.5	51.38	3.75	18	15.50	25.54	0.1875	Auto	A572-65
3	50.87	50.87	0	18	24.43	34.25	0.25	Auto	A572-65

Reinforcement Configuration

	Bottom Effective Elevation (ft)	Top Effective Elevation (ft)	Type	Model	Number	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18
1	0	3.58	plate	1.25x6.00 (65 ksi) (M)	6		-2.5				2.5		x				1		-1				-1
2	2.75	5.75	channel	MP3-05 (1.25in)	1													x					
3	3.67	28.67	channel	MP3-05 (1.25in)	2	x						x											
4	28.67	58.67	channel	MP3-05 (1.25in)	3	x						x						x					
5	58.67	78.67	channel	MP3-05 (1.25in)	3	x						x						x					
6	3.17	14.17	channel	MP3-08.5 (1.25")	2											x					x		
7	13.67	28.67	channel	MP3-05 (1.25in)	1													x					
8																							
9																							
10																							

Reinforcement Details

	B (in)	H (in)	Gross Area (in ²)	Pole Face to Centroid (in)	Bottom Termination Type	Bottom Termination Length (in)	Top Termination Type	Top Termination Length (in)	Lu (in)	Net Area (in ²)	Bolt Hole Size (in)	Reinforcement Material
1	1.25	2.75	3.4375	2.125	Welded	n/a	Welded	n/a	0.750	3.438	0.0000	A572-65
2	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	4.994	1.2500	A572-65
3	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	4.994	1.2500	A572-65
4	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	4.994	1.2500	A572-65
5	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	4.994	1.2500	A572-65
6	3.84	2.8	4.96	0.48	Capacity Input	n/a	PC 8.8 - M20 (100)	23.000	18.000	3.986	1.2190	A572-65
7	5.33	2.09	5.65	0.79	PC 8.8 - M20 (100)	29	PC 8.8 - M20 (100)	29.000	18.000	4.994	1.2500	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)
MP3-08.5 (1.25")	Top	8	N	3	2	-	-	-	-	-	-	-	-	-
	Bottom	-	-	-	-	0	0	0	0	0	0	-	-	1000
(TS) 1.25x6.00 (65 ksi) (MOD)	Top	-	-	-	-	70	None	-	-	-	-	36	0.250	-
	Bottom	-	-	-	-	70	PJP Groove	11.5	0.5	45	0.5	-	-	-

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	110 - 105	5		18	12.700	13.693	0.1875	A572-65	1.000
2	105 - 100	5		18	13.693	14.686	0.1875	A572-65	1.000
3	100 - 98.5	1.5	0	18	14.686	14.984	0.1875	A572-65	1.000
4	98.5 - 93.5	5		18	15.500	16.477	0.1875	A572-65	1.000
5	93.5 - 88.5	5		18	16.477	17.454	0.1875	A572-65	1.000
6	88.5 - 83.5	5		18	17.454	18.431	0.1875	A572-65	1.000
7	83.5 - 78.67	4.83		18	18.431	19.375	0.1875	A572-65	1.000
8	78.67 - 78.42	0.25		18	19.375	19.424	0.55	A572-65	0.862
9	78.42 - 73.42	5		18	19.424	20.401	0.525	A572-65	0.875
10	73.42 - 68.42	5		18	20.401	21.378	0.5	A572-65	0.892
11	68.42 - 63.42	5		18	21.378	22.355	0.4875	A572-65	0.891
12	63.42 - 58.67	4.75		18	22.355	23.283	0.475	A572-65	0.893
13	58.67 - 58.42	0.25		18	23.283	23.332	0.475	A572-65	0.892
14	58.42 - 53.42	5		18	23.332	24.309	0.45625	A572-65	0.906
15	53.42 - 50.87	6.3	3.75	18	24.309	25.540	0.45	A572-65	0.908
16	50.87 - 45.87	5		18	24.432	25.397	0.5125	A572-65	0.912
17	45.87 - 40.87	5		18	25.397	26.362	0.5	A572-65	0.918
18	40.87 - 35.87	5		18	26.362	27.327	0.4875	A572-65	0.926
19	35.87 - 30.87	5		18	27.327	28.292	0.475	A572-65	0.935
20	30.87 - 28.67	2.2		18	28.292	28.717	0.475	A572-65	0.929
21	28.67 - 28.42	0.25		18	28.717	28.765	0.475	A572-65	0.928
22	28.42 - 23.42	5		18	28.765	29.730	0.4625	A572-65	0.939
23	23.42 - 18.42	5		18	29.730	30.695	0.45625	A572-65	0.939
24	18.42 - 14.17	4.25		18	30.695	31.515	0.45	A572-65	0.941
25	14.17 - 13.92	0.25		18	31.515	31.563	0.55	A572-65	0.955
26	13.92 - 13.67	0.25		18	31.563	31.612	0.55	A572-65	0.954
27	13.67 - 13.42	0.25		18	31.612	31.660	0.46875	A572-65	0.994
28	13.42 - 8.42	5		18	31.660	32.625	0.4625	A572-65	0.994
29	8.42 - 5.75	2.67		18	32.625	33.140	0.4625	A572-65	0.986
30	5.75 - 5.5	0.25		18	33.140	33.189	0.525	A572-65	0.974
31	5.5 - 3.57	1.93		18	33.189	33.561	0.5875	A572-65	1.019
32	3.57 - 3.32	0.25		18	33.561	33.609	0.5875	A572-65	1.018
33	3.32 - 3.17	0.15		18	33.609	33.638	0.5875	A572-65	1.017
34	3.17 - 2.92	0.25		18	33.638	33.686	0.5	A572-65	1.003
35	2.92 - 2.75	0.17		18	33.686	33.719	0.5	A572-65	1.002
36	2.75 - 2.5	0.25		18	33.719	33.768	0.4875	A572-65	0.917
37	2.5 - 0	2.5		18	33.768	34.250	0.4875	A572-65	0.911

TNX Section Forces

Increment (ft):		TNX Output			
	5	Section Height (ft)	P _u (K)	M _{ux} (kip-ft)	V _u (K)
1	110 - 105		2.46	11.75	3.90
2	105 - 100		6.70	40.82	8.63
3	100 - 98.5		6.78	53.81	8.70
4	98.5 - 93.5		7.69	100.61	9.68
5	93.5 - 88.5		8.05	149.49	9.88
6	88.5 - 83.5		8.44	199.35	10.08
7	83.5 - 78.67		11.10	253.29	13.78
8	78.67 - 78.42		11.15	256.74	13.78
9	78.42 - 73.42		12.58	326.93	14.46
10	73.42 - 68.42		13.36	400.88	15.06
11	68.42 - 63.42		14.20	476.80	15.32
12	63.42 - 58.67		15.02	550.11	15.57
13	58.67 - 58.42		15.07	554.00	15.57
14	58.42 - 53.42		15.95	632.47	15.83
15	53.42 - 50.87		16.40	672.96	15.95
16	50.87 - 45.87		17.94	753.89	16.34
17	45.87 - 40.87		18.96	836.11	16.58
18	40.87 - 35.87		19.99	919.50	16.81
19	35.87 - 30.87		21.05	1004.02	17.03
20	30.87 - 28.67		21.52	1041.56	17.12
21	28.67 - 28.42		21.58	1045.84	17.13
22	28.42 - 23.42		22.66	1131.94	17.34
23	23.42 - 18.42		23.77	1219.02	17.52
24	18.42 - 14.17		24.72	1293.75	17.67
25	14.17 - 13.92		24.79	1298.16	17.67
26	13.92 - 13.67		24.86	1302.58	17.68
27	13.67 - 13.42		24.92	1307.00	17.69
28	13.42 - 8.42		26.13	1395.84	17.87
29	8.42 - 5.75		26.79	1443.63	17.96
30	5.75 - 5.5		26.87	1448.12	17.96
31	5.5 - 3.57		27.44	1482.84	18.06
32	3.57 - 3.32		27.53	1487.35	18.05
33	3.32 - 3.17		27.58	1490.06	18.05
34	3.17 - 2.92		27.65	1494.57	18.06
35	2.92 - 2.75		27.69	1497.64	18.07
36	2.75 - 2.5		27.75	1502.16	18.08
37	2.5 - 0		28.36	1547.45	18.18

Analysis Results

Elevation (ft)	Component Type	Size	Critical Element	% Capacity	Pass / Fail
110 - 105	Pole	TP13.693x12.7x0.1875	Pole	7.4%	Pass
105 - 100	Pole	TP14.686x13.693x0.1875	Pole	22.0%	Pass
100 - 98.5	Pole	TP14.984x14.686x0.1875	Pole	27.4%	Pass
98.5 - 93.5	Pole	TP16.477x15.5x0.1875	Pole	41.4%	Pass
93.5 - 88.5	Pole	TP17.454x16.477x0.1875	Pole	54.2%	Pass
88.5 - 83.5	Pole	TP18.431x17.454x0.1875	Pole	64.8%	Pass
83.5 - 78.67	Pole	TP19.375x18.431x0.1875	Pole	75.6%	Pass
78.67 - 78.42	Pole + Reinf.	TP19.424x19.375x0.55	Reinf. 5 Bolt-Shaft Bearing	41.5%	Pass
78.42 - 73.42	Pole + Reinf.	TP20.401x19.424x0.525	Reinf. 5 Tension Rupture	49.0%	Pass
73.42 - 68.42	Pole + Reinf.	TP21.378x20.401x0.5	Reinf. 5 Tension Rupture	56.3%	Pass
68.42 - 63.42	Pole + Reinf.	TP22.355x21.378x0.4875	Reinf. 5 Tension Rupture	62.8%	Pass
63.42 - 58.67	Pole + Reinf.	TP23.283x22.355x0.475	Reinf. 5 Bolt-Shaft Bearing	69.0%	Pass
58.67 - 58.42	Pole + Reinf.	TP23.332x23.283x0.475	Reinf. 4 Bolt-Shaft Bearing	69.3%	Pass
58.42 - 53.42	Pole + Reinf.	TP24.309x23.332x0.4563	Reinf. 4 Tension Rupture	74.0%	Pass
53.42 - 50.87	Pole + Reinf.	TP25.54x24.309x0.45	Reinf. 4 Tension Rupture	76.5%	Pass
50.87 - 45.87	Pole + Reinf.	TP25.397x24.432x0.5125	Reinf. 4 Tension Rupture	72.6%	Pass
45.87 - 40.87	Pole + Reinf.	TP26.362x25.397x0.5	Reinf. 4 Tension Rupture	76.1%	Pass
40.87 - 35.87	Pole + Reinf.	TP27.327x26.362x0.4875	Reinf. 4 Tension Rupture	79.2%	Pass
35.87 - 30.87	Pole + Reinf.	TP28.292x27.327x0.475	Reinf. 4 Tension Rupture	81.9%	Pass
30.87 - 28.67	Pole + Reinf.	TP28.717x28.292x0.475	Reinf. 4 Tension Rupture	83.0%	Pass
28.67 - 28.42	Pole + Reinf.	TP28.765x28.717x0.475	Reinf. 7 Tension Rupture	83.2%	Pass
28.42 - 23.42	Pole + Reinf.	TP29.73x28.765x0.4625	Reinf. 7 Tension Rupture	85.5%	Pass
23.42 - 18.42	Pole + Reinf.	TP30.695x29.73x0.4563	Reinf. 7 Tension Rupture	87.6%	Pass
18.42 - 14.17	Pole + Reinf.	TP31.515x30.695x0.45	Reinf. 7 Tension Rupture	89.1%	Pass
14.17 - 13.92	Pole + Reinf.	TP31.563x31.515x0.55	Reinf. 3 Tension Rupture	79.3%	Pass
13.92 - 13.67	Pole + Reinf.	TP31.612x31.563x0.55	Reinf. 3 Tension Rupture	79.4%	Pass
13.67 - 13.42	Pole + Reinf.	TP31.66x31.612x0.4688	Reinf. 6 Tension Rupture	88.5%	Pass
13.42 - 8.42	Pole + Reinf.	TP32.625x31.66x0.4625	Reinf. 6 Tension Rupture	90.2%	Pass
8.42 - 5.75	Pole + Reinf.	TP33.14x32.625x0.4625	Reinf. 6 Tension Rupture	91.1%	Pass
5.75 - 5.5	Pole + Reinf.	TP33.189x33.14x0.525	Reinf. 3 Tension Rupture	82.0%	Pass
5.5 - 3.57	Pole + Reinf.	TP33.561x33.189x0.5875	Reinf. 1 Compression	67.8%	Pass
3.57 - 3.32	Pole + Reinf.	TP33.609x33.561x0.5875	Reinf. 1 Compression	67.9%	Pass
3.32 - 3.17	Pole + Reinf.	TP33.638x33.609x0.5875	Reinf. 1 Compression	67.9%	Pass
3.17 - 2.92	Pole + Reinf.	TP33.686x33.638x0.5	Reinf. 1 Compression	78.0%	Pass
2.92 - 2.75	Pole + Reinf.	TP33.719x33.686x0.5	Reinf. 1 Compression	78.0%	Pass
2.75 - 2.5	Pole + Reinf.	TP33.768x33.719x0.4875	Reinf. 1 Compression	77.4%	Pass
2.5 - 0	Pole + Reinf.	TP34.25x33.768x0.4875	Reinf. 1 Compression	78.0%	Pass
				Summary	
			Pole	75.6%	Pass
			Reinforcement	91.1%	Pass
			Overall	91.1%	Pass

Additional Calculations

Section Elevation (ft)	Moment of Inertia (in ⁴)			Area (in ²)			% Capacity*							
	Pole	Reinf.	Total	Pole	Reinf.	Total	Pole	R1	R2	R3	R4	R5	R6	R7
110 - 105	185	n/a	185	8.04	n/a	8.04	7.4%							
105 - 100	229	n/a	229	8.63	n/a	8.63	22.0%							
100 - 98.5	244	n/a	244	8.81	n/a	8.81	27.4%							
98.5 - 93.5	325	n/a	325	9.69	n/a	9.69	41.4%							
93.5 - 88.5	387	n/a	387	10.28	n/a	10.28	54.2%							
88.5 - 83.5	456	n/a	456	10.86	n/a	10.86	64.8%							
83.5 - 78.67	531	n/a	531	11.42	n/a	11.42	75.6%							
78.67 - 78.42	535	945	1481	11.45	16.95	28.40	27.1%					41.5%		
78.42 - 73.42	621	1034	1655	12.03	16.95	28.98	32.8%					49.0%		
73.42 - 68.42	715	1128	1843	12.61	16.95	29.56	38.3%					56.3%		
68.42 - 63.42	819	1225	2043	13.19	16.95	30.14	43.5%					62.8%		
63.42 - 58.67	926	1321	2246	13.74	16.95	30.69	48.1%					69.0%		
58.67 - 58.42	932	1326	2258	13.77	16.95	30.72	48.3%				69.3%			
58.42 - 53.42	1055	1431	2486	14.35	16.95	31.30	52.9%				74.0%			
53.42 - 50.87	1122	1486	2608	14.65	16.95	31.60	55.1%				76.5%			
50.87 - 45.87	1594	1553	3146	19.95	16.95	36.90	48.3%				72.6%			
45.87 - 40.87	1784	1665	3449	20.72	16.95	37.67	51.2%				76.1%			
40.87 - 35.87	1989	1781	3771	21.48	16.95	38.43	54.0%				79.2%			
35.87 - 30.87	2210	1901	4111	22.25	16.95	39.20	56.5%				81.9%			
30.87 - 28.67	2312	1956	4267	22.59	16.95	39.54	57.6%				83.0%			
28.67 - 28.42	2324	1962	4285	22.63	16.95	39.58	57.7%			83.2%				83.2%
28.42 - 23.42	2568	2088	4655	23.39	16.95	40.34	60.0%			85.5%				85.5%
23.42 - 18.42	2828	2218	5046	24.16	16.95	41.11	62.2%			87.6%				87.6%
18.42 - 14.17	3063	2331	5394	24.81	16.95	41.76	63.9%			89.1%				89.1%
14.17 - 13.92	3124	3440	6564	24.85	26.87	51.72	57.9%			79.3%			71.4%	62.1%
13.92 - 13.67	3138	3450	6588	24.88	26.87	51.75	58.0%			79.4%			71.5%	62.2%
13.67 - 13.42	3113	2601	5714	24.92	21.22	46.14	64.4%			80.9%			88.5%	
13.42 - 8.42	3409	2755	6164	25.69	21.22	46.91	66.3%			82.5%			90.2%	
8.42 - 5.75	3574	2839	6413	26.10	21.22	47.32	67.3%			83.3%			91.1%	
5.75 - 5.5	3633	3788	7421	26.14	26.87	53.01	61.0%		64.5%	82.0%			74.2%	
5.5 - 3.57	3724	4793	8518	26.43	36.20	62.63	53.6%	67.8%	45.4%				60.7%	
3.57 - 3.32	3741	4806	8547	26.47	36.20	62.66	53.7%	67.9%	45.4%				60.8%	
3.32 - 3.17	3750	4814	8564	26.49	36.20	62.69	53.8%	67.9%	45.5%				60.8%	
3.17 - 2.92	3748	3538	7286	26.53	26.28	52.81	60.7%	78.0%	57.7%					
2.92 - 2.75	3759	3544	7303	26.56	26.28	52.83	60.8%	78.0%	57.8%					
2.75 - 2.5	3774	3500	7273	26.60	20.63	47.22	60.7%	77.4%						
2.5 - 0	3939	3591	7530	26.98	20.63	47.60	61.6%	78.0%						

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

Rating per TIA-222-H Section 15.5.

Monopole Flange Plate Connection

Elevation = 98.5 ft.

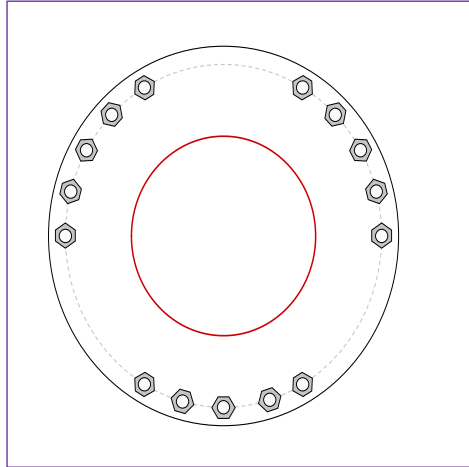


BU #	876405
Site Name	Woodbury North
Order #	554035 Rev. 1
TIA-222 Revision	H

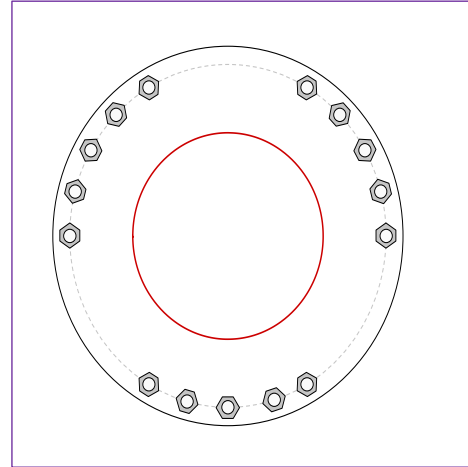
Applied Loads	
Moment (kip-ft)	53.81
Axial Force (kips)	6.78
Shear Force (kips)	8.70

*TIA-222-H Section 15.5 Applied

Top Plate - External



Bottom Plate - External



Connection Properties

Bolt Data

(15) 1" ϕ bolts (A325 N; Fy=92 ksi, Fu=120 ksi) on 25.75" BC

Top Plate Data

28.5" OD x 1" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Top Stiffener Data

N/A

Top Pole Data

14.9843" x 0.1875" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Bottom Plate Data

28.5" OD x 1" Plate (A572-60; Fy=60 ksi, Fu=75 ksi)

Bottom Stiffener Data

N/A

Bottom Pole Data

15.5" x 0.1875" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Bolt Capacity

Max Load (kips)	7.14
Allowable (kips)	54.53
Stress Rating:	12.5% Pass

Top Plate Capacity

Max Stress (ksi):	29.10	(Flexural)
Allowable Stress (ksi):	54.00	
Stress Rating:	51.3%	Pass
Tension Side Stress Rating:	73.4%	Pass

Bottom Plate Capacity

Max Stress (ksi):	27.96	(Flexural)
Allowable Stress (ksi):	54.00	
Stress Rating:	49.3%	Pass
Tension Side Stress Rating:	66.2%	Pass

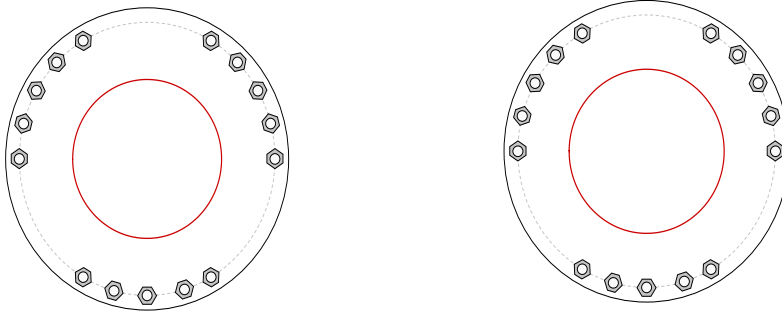
CClplate

Elevation (ft)	98.5	(Flange)
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Bolt Group	Resist Axial	Resist Shear	Induce Plate Bending
1	Yes	Yes	Yes

Custom Bolt Connection										
Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η :	I_{xx} (in):	Thread Type	Area Override, in ²	Tension Only
1	1	0	1	A325	25.75	0.5	0	N-Included		No
2	1	15	1	A325	25.75	0.5	0	N-Included		No
3	1	30	1	A325	25.75	0.5	0	N-Included		No
4	1	45	1	A325	25.75	0.5	0	N-Included		No
5	1	60	1	A325	25.75	0.5	0	N-Included		No
6	1	120	1	A325	25.75	0.5	0	N-Included		No
7	1	135	1	A325	25.75	0.5	0	N-Included		No
8	1	150	1	A325	25.75	0.5	0	N-Included		No
9	1	165	1	A325	25.75	0.5	0	N-Included		No
10	1	180	1	A325	25.75	0.5	0	N-Included		No
11	1	240	1	A325	25.75	0.5	0	N-Included		No
12	1	255	1	A325	25.75	0.5	0	N-Included		No
13	1	270	1	A325	25.75	0.5	0	N-Included		No
14	1	287	1	A325	25.75	0.5	0	N-Included		No
15	1	300	1	A325	25.75	0.5	0	N-Included		No

Plot Graphic



Monopole Base Plate Connection

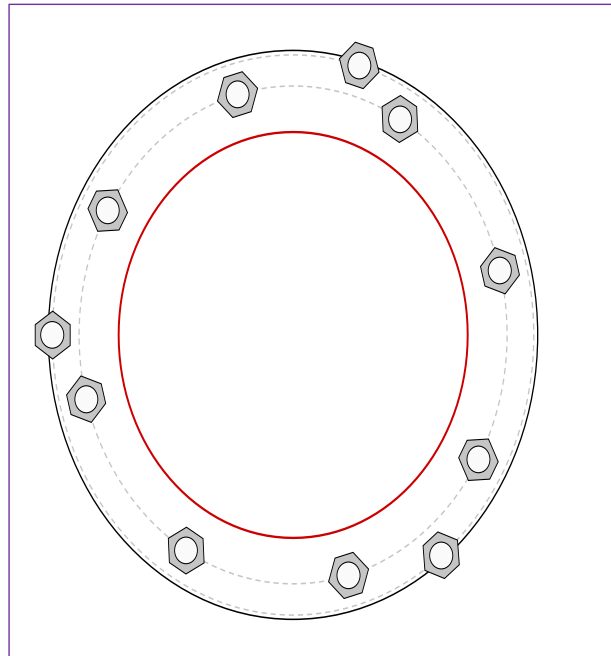


Site Info	
BU #	876405
Site Name	Woodbury North
Order #	554035 Rev. 1

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

Applied Loads	
Moment (kip-ft)	1547.45
Axial Force (kips)	28.36
Shear Force (kips)	18.18

*TIA-222-H Section 15.5 Applied



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

Anchor Rod Data
GROUP 1: (8) 2-1/4" ϕ bolts (A615-75 N; $F_y=75$ ksi, $F_u=100$ ksi) on 42" BC
GROUP 2: (3) 2-1/4" ϕ bolts (A193 Gr. B7 Derated N; $F_y=99.19$ ksi, $F_u=125$ ksi) on 47.25" pos. (deg): 74, 180, 308
Base Plate Data
48" OD x 1.5" Plate (A572-60; $F_y=60$ ksi, $F_u=75$ ksi)
Stiffener Data
N/A
Pole Data
34.25" x 0.25" 18-sided pole (A572-65; $F_y=65$ ksi, $F_u=80$ ksi)

Anchor Rod Summary	(units of kips, kip-in)		
GROUP 1:	$Pu_t = 153.35$	$\phi Pn_t = 243.75$	Stress Rating
	$Vu = 2.27$	$\phi Vn = 149.1$	59.9%
	$Mu = n/a$	$\phi Mn = n/a$	Pass
GROUP 2:	$Pu_t = 170.09$	$\phi Pn_t = 304.69$	Stress Rating
	$Vu = 0$	$\phi Vn = 186.38$	53.2%
	$Mu = n/a$	$\phi Mn = n/a$	Pass
Base Plate Summary			
Max Stress (ksi):	49.41	(Flexural)	
Allowable Stress (ksi):	54		
Stress Rating:	87.1%		Pass

CCIplate

Elevation (ft) 0 (Base)

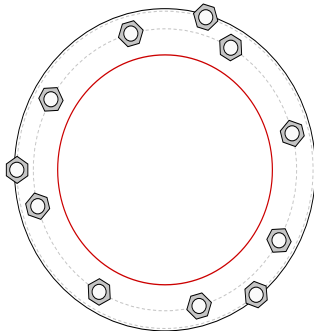
note: Bending interaction not considered when Grout Considered = "Yes"

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

Custom Bolt Connection

Bolt	Bolt Group ID	Location (deg.)	Diameter (in)	Material	Bolt Circle (in)	Eta Factor, η :	l_{br} (in):	Thread Type	Area Override, in ²	Tension Only
1	1	15	2.25	A615-75	42	0.5	0.75	N-Included		No
2	1	60	2.25	A615-75	42	0.5	0.75	N-Included		No
3	1	105	2.25	A615-75	42	0.5	0.75	N-Included		No
4	1	150	2.25	A615-75	42	0.5	0.75	N-Included		No
5	1	195	2.25	A615-75	42	0.5	0.75	N-Included		No
6	1	240	2.25	A615-75	42	0.5	0.75	N-Included		No
7	1	285	2.25	A615-75	42	0.5	0.75	N-Included		No
8	1	330	2.25	A615-75	42	0.5	0.75	N-Included		No
9	2	74	2.25	193 Gr. B7 Derate	47.25	0.5	1	N-Included		No
10	2	180	2.25	193 Gr. B7 Derate	47.25	0.5	1	N-Included		No
11	2	308	2.25	193 Gr. B7 Derate	47.25	0.5	1	N-Included		No

Plot Graphic



Pier and Pad Foundation



BU #: 876405
 Site Name: Woodbury North
 App. Number: 554035 Rev. 1

TIA-222 Revision: H
 Tower Type: Monopole

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

Superstructure Analysis Reactions		
Compression, P_{comp} :	28.36	kips
Base Shear, V_{u_comp} :	18.18	kips
Moment, M_u :	1547.45	ft-kips
Tower Height, H :	110	ft
BP Dist. Above Fdn, bp_{dist} :	3	in

Foundation Analysis Checks				
	Capacity	Demand	Rating*	Check
<i>Lateral (Sliding) (kips)</i>	158.87	18.18	10.9%	Pass
<i>Bearing Pressure (ksf)</i>	9.00	4.18	46.4%	Pass
<i>Overturning (kip*ft)</i>	2041.01	1688.35	82.7%	Pass
<i>Pier Flexure (Comp.) (kip*ft)</i>	2960.38	1629.26	52.4%	Pass
<i>Pier Compression (kip)</i>	19253.52	52.86	0.3%	Pass
<i>Pad Flexure (kip*ft)</i>	1867.53	814.72	41.5%	Pass
<i>Pad Shear - 1-way (kips)</i>	591.69	185.59	29.9%	Pass
<i>Pad Shear - 2-way (Comp) (ksi)</i>	0.190	0.000	0.0%	Pass
<i>Flexural 2-way (Comp) (kip*ft)</i>	3203.98	977.56	29.1%	Pass

Pier Properties		
Pier Shape:	Square	
Pier Diameter, $dpier$:	5.5	ft
Ext. Above Grade, E :	1	ft
Pier Rebar Size, S_c :	8	
Pier Rebar Quantity, mc :	30	
Pier Tie/Spiral Size, St :	4	
Pier Tie/Spiral Quantity, mt :	5	
Pier Reinforcement Type:	Tie	
Pier Clear Cover, cc_{pier} :	3	in

*Rating per TIA-222-H Section 15.5

Soil Rating*:	82.7%
Structural Rating*:	52.4%

Pad Properties		
Depth, D :	6.5	ft
Pad Width, W_1 :	16.5	ft
Pad Thickness, T :	3	ft
Pad Rebar Size (Bottom dir. 2), Sp_2 :	8	
Pad Rebar Quantity (Bottom dir. 2), mp_2 :	17	
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} :	12.000	ksf
Cohesion, C_u :	0.000	ksf
Friction Angle, ϕ :	34	degrees
SPT Blow Count, N_{blows} :	60	
Base Friction, μ :		
Neglected Depth, N :	3.50	ft
Foundation Bearing on Rock?	No	
Groundwater Depth, gw :	N/A	ft

--Toggle between Gross and Net

Exhibit E

Mount Analysis



Paul J. Ford and Company
 250 East Broad Street Suite 600
 Columbus, OH 43215
 (614) 221-6679
 PJFmount@pauljford.com

Antenna Mount Analysis Report and PMI Requirements

Mount Analysis

SMART Tool Project #: 10046621

Paul J Ford Project #: 22721-0135.002.7190

Maser Project #: 21777329

October 14, 2021

Site Information

Site ID: 468304-VZW / WOODBURY CT
 Site Name: WOODBURY CT
 Carrier Name: Verizon Wireless
 Address: 186 MINORTOWN RD
 WOODBURY, Connecticut 06798, Litchfield
 County
 Latitude: 41.567996°
 Longitude: -73.179681°

Structure Information

Tower Type: 201-Ft Monopole
 Mount Type: 12.50-Ft T-arm

FUZE ID # 16272068

Analysis Results

12.50-Ft T-arm: 75.4% Pass

*****Contractor PMI Requirements:**

Included at the end of this MA report

Available & Submitted via portal at <https://pmi.vzwsmart.com>

Contractor - Please Review Specific Site PMI Requirements Upon Award

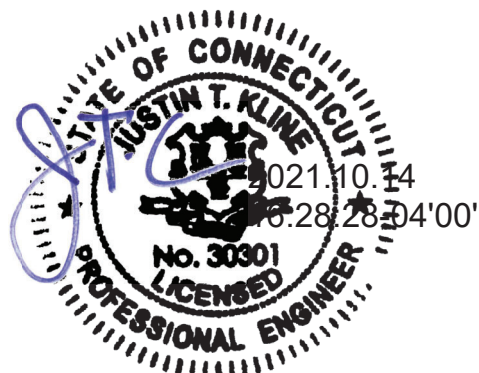
Requirements may also be Noted on A & E drawings

For additional questions and support, please reach out to:

pmisupport@pauljford.com

Report Prepared By: Nils Hay, E.I.

ADP



Executive Summary:

The objective of this report is to determine the capacity of the antenna support mount at the subject facility for the final wireless telecommunications configuration, per the applicable codes and standards. Any modification listed under Sources of Information was assumed completed and was included in this analysis.

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
<i>Radio Frequency Data Sheet (RFDS)</i>	<i>Verizon RFDS, 16272068, dated February 10, 2021</i>
<i>Mount Mapping Report</i>	<i>Colliers, Project #468304, dated October 1, 2021</i>

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust), V_{ULT} : 116 mph Ice Wind Speed (3-sec. Gust): 50 mph Design Ice Thickness: 1.00 in Risk Category: II Exposure Category: C Topographic Category: 1 Topographic Feature Considered: N/A Topographic Method: N/A Ground Elevation Factor, K_e : 0.983
Seismic Parameters:	S_s : 0.192 S_1 : 0.054
Maintenance Parameters:	Wind Speed (3-sec. Gust): 30 mph Maintenance Live Load, L_v : 250 lbs. Maintenance Live Load, L_m : 250 lbs.
Analysis Software:	RISA-3D (V17.0.3)

Final Loading Configuration:

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

Mount Elevation (ft)	Equipment Elevation (ft)	Quantity	Manufacturer	Model	Status
108.50	107.00	6	Commscope	JAHH-65B-R3B	Added
		3	Samsung	64T64R	
		3	Commscope	CBC78T-DS-43-2x	
		3	Commscope	2" Edge-to-Edge bracket	
		1	RFS	DB-C1-12C-24AB-0Z	
		3	Samsung	B2/B66A RRH-BR049 (RFV01U-D1A)	
		3	Samsung	B5/B13 RRH-BR04C (RFV01U-D2A)	
		1	Amphenol	BXA-80063/4CF 5	Retained
		2	Amphenol Antel	BXA-80080/4CF FP	

Any proposed antennas not currently installed should be mounted such that the centerline of the antennas does not exceed 6 inches vertically from the center of the antenna mount(s).

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 Paul J. Ford and Company 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 Paul J. Ford and Company 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. Paul J. Ford and Company 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:
 - Channel, Solid Round, Angle, Plate ASTM A36 (Gr. 36)
 - HSS (Rectangular) ASTM 500 (Gr. B-46)
 - Pipe ASTM A53 (Gr. B-35)
 - Threaded Rod F1554 (Gr. 36)
 - Bolts ASTM A325

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Paul J. Ford and Company.

Analysis Results:

Component	Utilization %	Pass/Fail
Face Horizontals	74.3%	Pass
Standoff Members	65.5%	Pass
Mount Pipes	54.0%	Pass
Mount to Tower Connection	75.4%	Pass

Structure Rating – (Controlling Utilization of all Components)	75.4%*
---	---------------

*Critical mount connections have been considered fixed in the current model for stability to obtain steel utilization

Recommendation:

The existing mounts are **SUFFICIENT** for the final loading configuration and do not require modifications.

The mount has been found structurally adequate for all steel and external connection capacities. Serviceability in accordance with TIA-222-H Section 4.9.11.3 has not been considered.

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. Mount Photos
2. Mount Mapping Report (for reference only)
3. Analysis Calculations
4. **Contractor Required Post Installation Inspection (PMI) Report Deliverables**
5. Antenna Placement Diagrams

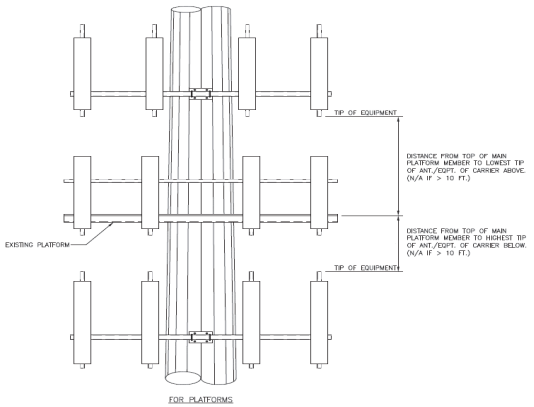


Mount Azimuth (Degree) for Each Sector			Tower Leg Azimuth (Degree) for Each Sector			Sector B								
Sector A:	0.00	Deg	Leg A:		Deg	Ant _{1a}								
Sector B:	120.00	Deg	Leg B:		Deg	Ant _{1b}	BXA-171063-8BF-EDIN-2			109.5	31.00	8.00	0.00	108
Sector C:	240.00	Deg	Leg C:		Deg	Ant _{1c}								
Sector D:		Deg	Leg D:		Deg	Ant _{2a}								
						Ant _{2b}	BXA-70063-6CF-EDIN-2			109.167	35.00	9.50	0.00	111

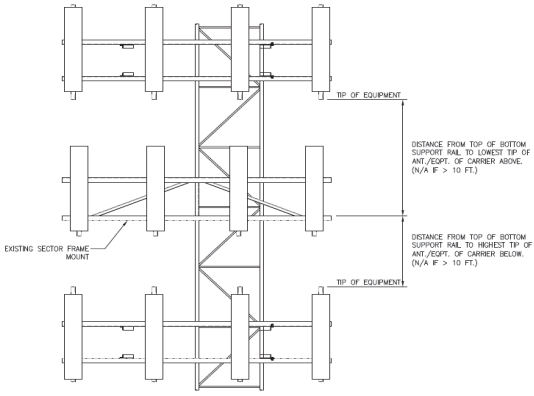
Climbing Facility Information		
Location:	200.00	Other
Climbing Facility	Corrosion Type:	N/A
	Access:	N/A
	Condition:	N/A

Ant _{2c}														
Ant _{3a}														
Ant _{3b}	BXA-80063-4CF-EDIN-5					109.167	35.00	11.00	0.00					122
Ant _{3c}														
Ant _{4a}														
Ant _{4b}														
Ant _{4c}														
Ant _{5a}														
Ant _{5b}														
Ant _{5c}														
Ant on Standoff	UNKNOWN	5.00	0.75	6.50				0.00	0.00					128
Ant on Standoff	UNKNOWN	5.00	0.75	6.50				0.00	0.00					128
Ant on Tower														
Ant on Tower														

Please insert a photo of the mount centerline measurement here.

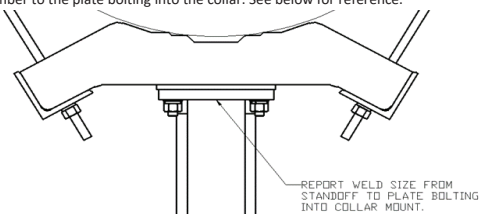


Sector C														
Ant _{1a}														
Ant _{1b}	BXA-171063-8BF-EDIN-2					109.5	31.00	8.00	0.00					108
Ant _{1c}														
Ant _{2a}														
Ant _{2b}	BXA-70063-6CF-EDIN-2					109.167	35.00	9.50	0.00					111
Ant _{2c}														
Ant _{3a}														
Ant _{3b}	BXA-80063-4CF-EDIN-5					109.167	35.00	11.00	0.00					122
Ant _{3c}														
Ant _{4a}														
Ant _{4b}														
Ant _{4c}														
Ant _{5a}														
Ant _{5b}														
Ant _{5c}														
Ant on Standoff	UNKNOWN	5.00	0.75	6.50				0.00	0.00					128
Ant on Standoff	UNKNOWN	5.00	0.75	6.50				0.00	0.00					128
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														

For T-Arms/Platforms on monopoles, record the weld size from the main standoff member to the plate bolting into the collar. See below for reference.



Observed Safety and Structural Issues During the Mount Mapping

Issue #	Description of Issue	Photo #
1		
2		
3		
4		
5		
6		
7		
8		

Observed Obstructions to Tower Lighting System

If the tower lighting system is being obstructed by the carrier's equipment (for example: a light nested by the antennas), please provide photos and fill in the information below.		Photo #
Description of Obstruction:		
Type of Light:	Photo #	Additional Comments:
Lighting Technology:	Photo #	
Elevation (AGL) at base of light (FT.):	Photo #	
Is a service loop available?	Photo #	
Is beacon installed on an extension?	Photo #	

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.



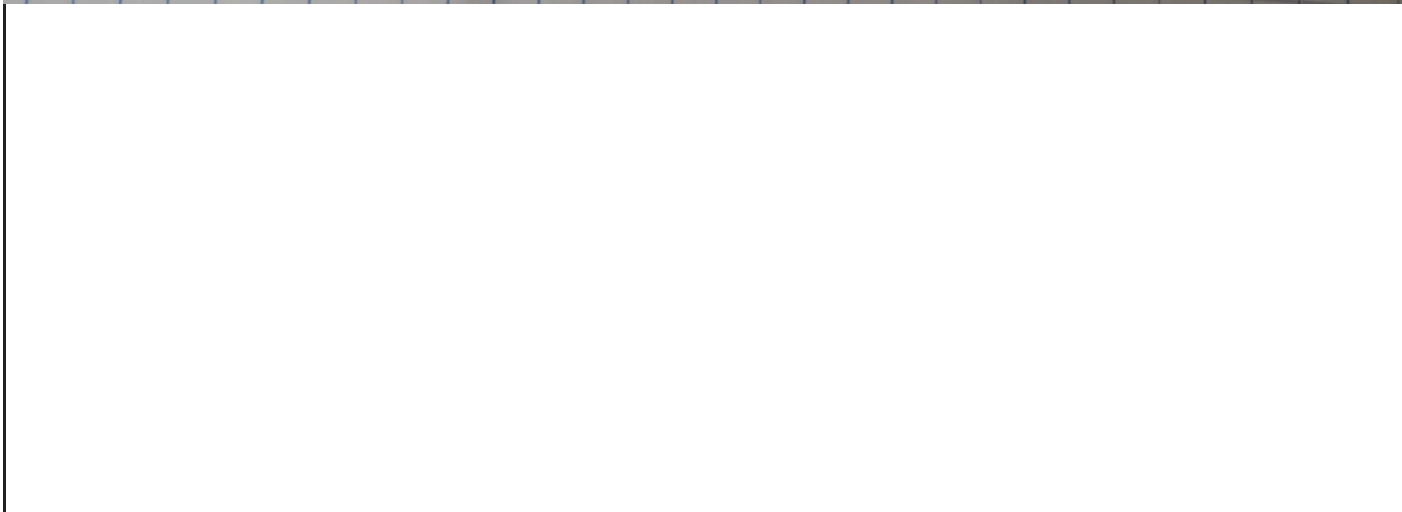
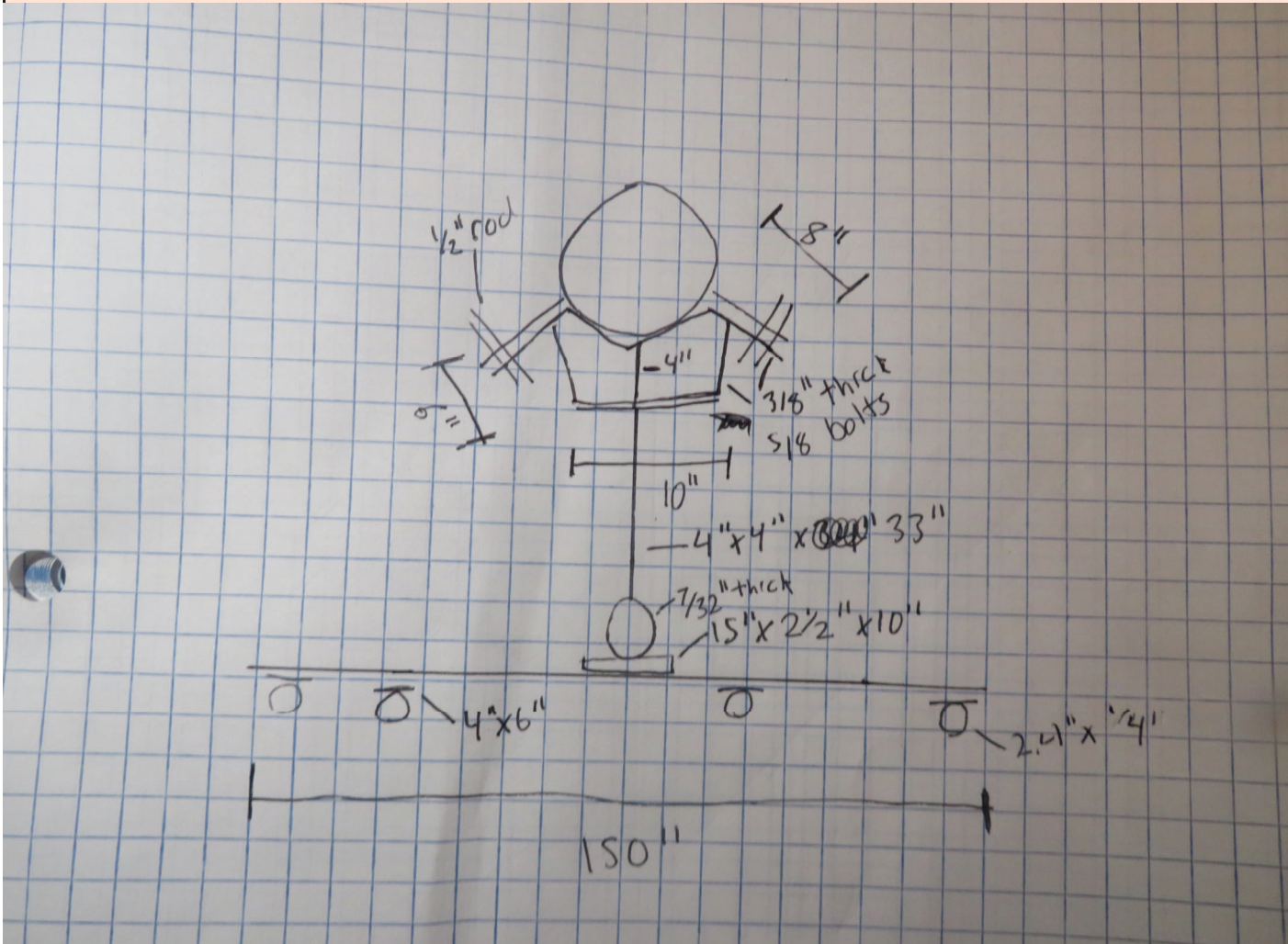
Antenna Mount Mapping Form (PATENT PENDING)

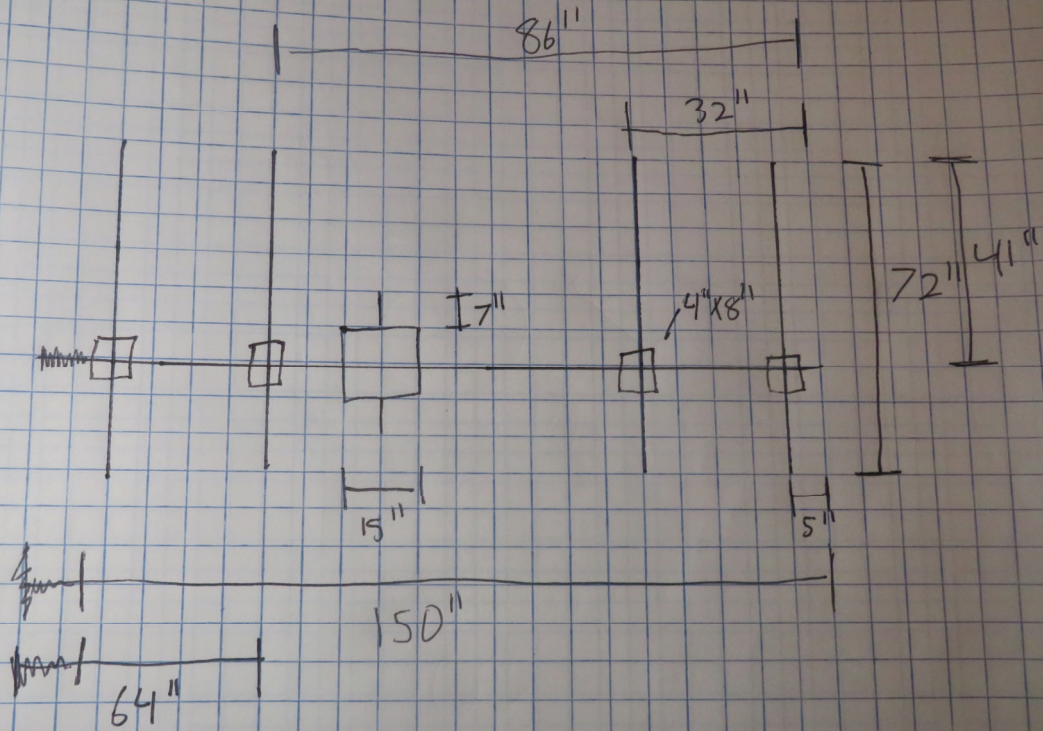
FCC #

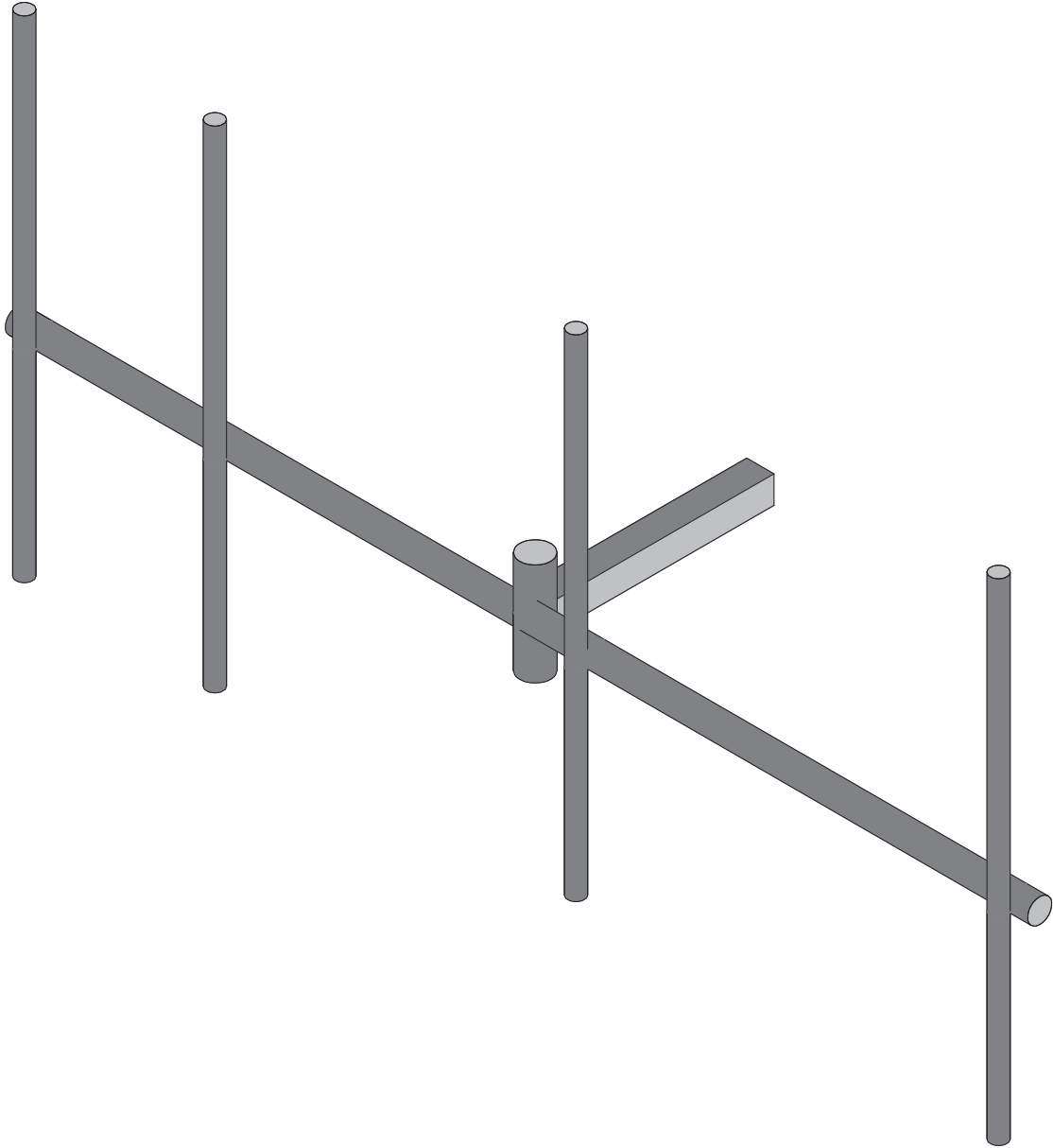
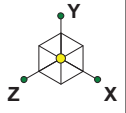
Tower Owner:	CROWN CASTLE	Mapping Date:	10/1/2021
Site Name:	Woodbury, CT	Tower Type:	Monopole
Site Number or ID:	468304	Tower Height (Ft.):	201
Mapping Contractor:	COLLIERS	Mount Elevation (Ft.):	108.5

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Please Insert Sketches of the Antenna Mount







Envelope Only Solution

Paul J. Ford

NEH

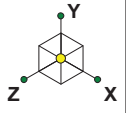
Project No. 10046621

468304-VZW_MT_LOT_SectorA_H

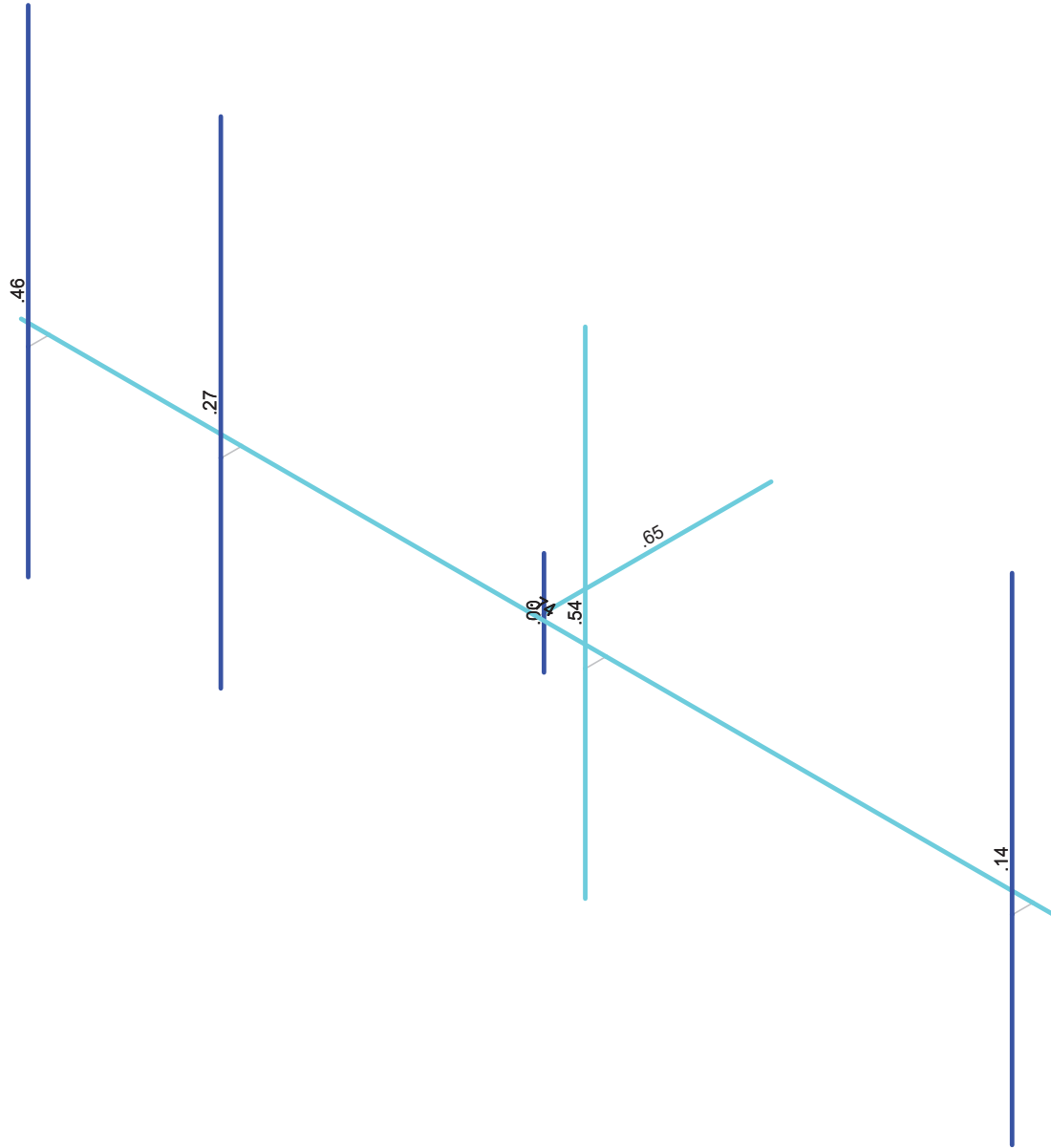
SK - 1

Oct 14, 2021 at 3:44 PM

468304-VZW_MT_LOT_A_H.r3d

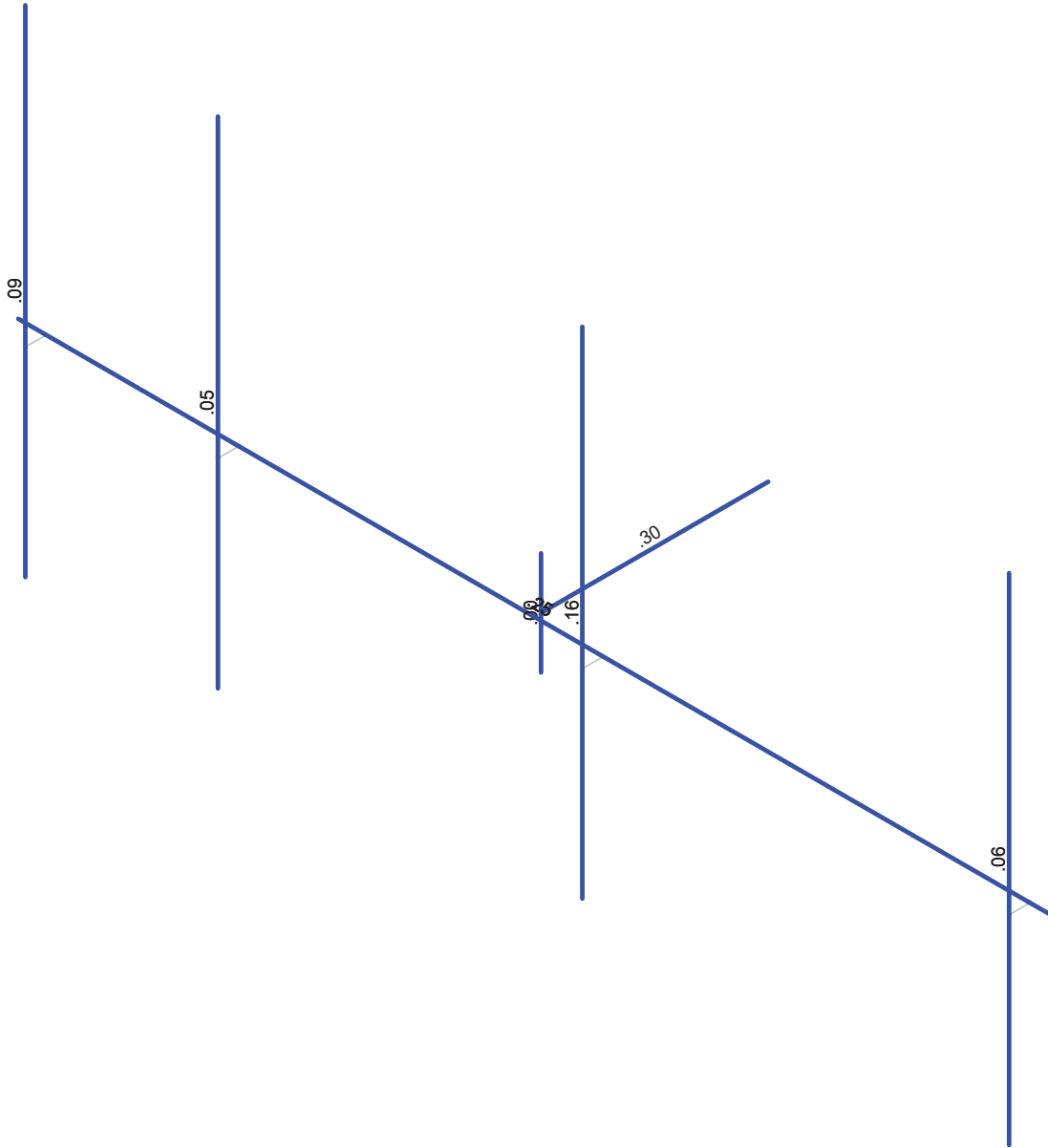
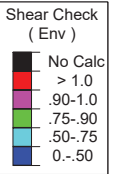
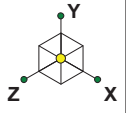


Code Check (Env)	
Black	No Calc
Red	> 1.0
Purple	.90-1.0
Green	.75-.90
Cyan	.50-.75
Blue	0.-.50



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Paul J. Ford	468304-VZW_MT_LOT_SectorA_H	SK - 2
NEH		Oct 14, 2021 at 3:56 PM
Project No. 10046621		468304-VZW_MT_LOT_A_H.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

Paul J. Ford	468304-VZW_MT_LOT_SectorA_H	SK - 3
NEH		Oct 14, 2021 at 3:56 PM
Project No. 10046621		468304-VZW_MT_LOT_A_H.r3d

(Global) Model Settings

Display Sections for Member Calcs	5
Max Internal Sections for Member Calcs	97
Include Shear Deformation?	Yes
Increase Nailing Capacity for Wind?	Yes
Include Warping?	Yes
Trans Load Btwn Intersecting Wood Wall?	Yes
Area Load Mesh (in^2)	144
Merge Tolerance (in)	.12
P-Delta Analysis Tolerance	0.50%
Include P-Delta for Walls?	Yes
Automatically Iterate Stiffness for Walls?	No
Max Iterations for Wall Stiffness	3
Gravity Acceleration (ft/sec^2)	32.2
Wall Mesh Size (in)	12
Eigensolution Convergence Tol. (1.E-)	4
Vertical Axis	Y
Global Member Orientation Plane	XZ
Static Solver	Sparse Accelerated
Dynamic Solver	Accelerated Solver

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

Number of Shear Regions	4
Region Spacing Increment (in)	4
Biaxial Column Method	Exact Integration
Parame Beta Factor (PCA)	.65
Concrete Stress Block	Rectangular
Use Cracked Sections?	No
Use Cracked Sections Slab?	Yes
Bad Framing Warnings?	No
Unused Force Warnings?	No
Min 1 Bar Diam. Spacing?	No
Concrete Rebar Set	REBAR SET ASTMA615
Min % Steel for Column	1
Max % Steel for Column	0

(Global) Model Settings, Continued

Seismic Code	None
Seismic Base Elevation (ft)	Not Entered
Add Base Weight?	No
Ct X	0
Ct Z	0
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	1
R Z	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/1...Density[k/...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65 .49	36	1.5	58	1.2
2	A500 Gr.46	29000	11154	.3	.65 .49	46	1.4	58	1.3
3	A53 Gr. B (35 ksi)	29000	11154	.3	.65 .49	35	1.5	60	1.2

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate...	Section/S...	Type	Design List	Material	Design ...
1	MP1A	N3	N1			PIPE_2.0	None	None	A53 Gr. B (35 ksi)	Typical
2	CBC1	N4	N5			PIPE_3.0	None	None	A53 Gr. B (35 ksi)	Typical
3	6	N6	N7			HSS4X4X3	None	None	A500 Gr.46	Typical
4	M4	N8	N9			PIPE_4.0	None	None	A53 Gr. B (35 ksi)	Typical
5	M5	N10	N2			RIGID	None	None	RIGID	Typical
6	MP3A	N13	N11			PIPE_2.0	None	None	A53 Gr. B (35 ksi)	Typical
7	M7	N14	N12			RIGID	None	None	RIGID	Typical
8	MP4A	N17	N15			PIPE_2.0	None	None	A53 Gr. B (35 ksi)	Typical
9	M9	N18	N16			RIGID	None	None	RIGID	Typical
10	M12	N23	N7			RIGID	None	None	RIGID	Typical
11	MP2A	N26	N24			PIPE_2.0	None	None	A53 Gr. B (35 ksi)	Typical
12	M14	N27	N25			RIGID	None	None	RIGID	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	MP1A						Yes	** NA **			None
2	CBC1						Yes	** NA **			None
3	6						Yes	** NA **			None
4	M4						Yes	** NA **			None
5	M5						Yes	** NA **			None
6	MP3A						Yes	** NA **			None
7	M7						Yes	** NA **			None
8	MP4A						Yes	** NA **			None
9	M9						Yes	** NA **			None
10	M12						Yes	** NA **			None
11	MP2A						Yes	** NA **			None
12	M14						Yes	** NA **			None

Hot Rolled Steel Design Parameters

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
1	MP1A	PIPE_2.0	6			Lbyy						Lateral
2	CBC1	PIPE_3.0	12.5			Lbyy						Lateral
3	6	HSS4X4X3	2.75			Lbyy						Lateral
4	M4	PIPE_4.0	1.25									Lateral



Company : Paul J. Ford
 Designer : NEH
 Job Number : Project No. 10046621
 Model Name : 468304-VZW_MT_LOT_SectorA_H

Oct 14, 2021
 3:49 PM
 Checked By: _____

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[ft]	Lbyy[ft]	Lbzz[ft]	Lcomp top[ft]	Lcomp bot[ft]	L-torqu...	Kyy	Kzz	Cb	Function
5	MP3A	PIPE 2.0	6			Lbyy						Lateral
6	MP4A	PIPE 2.0	6			Lbyy						Lateral
7	MP2A	PIPE 2.0	6			Lbyy						Lateral

Basic Load Cases

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



Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
50	Structure Wo (270 D...	None						14	
51	Structure Wo (300 D...	None						14	
52	Structure Wo (330 D...	None						14	
53	Structure Wi (0 Deg)	None						14	
54	Structure Wi (30 Deg)	None						14	
55	Structure Wi (60 Deg)	None						14	
56	Structure Wi (90 Deg)	None						14	
57	Structure Wi (120 De..	None						14	
58	Structure Wi (150 De..	None						14	
59	Structure Wi (180 De..	None						14	
60	Structure Wi (210 De..	None						14	
61	Structure Wi (240 De..	None						14	
62	Structure Wi (270 De..	None						14	
63	Structure Wi (300 De..	None						14	
64	Structure Wi (330 De..	None						14	
65	Structure Wm (0 Deg)	None						14	
66	Structure Wm (30 De..	None						14	
67	Structure Wm (60 De..	None						14	
68	Structure Wm (90 De..	None						14	
69	Structure Wm (120 D..	None						14	
70	Structure Wm (150 D..	None						14	
71	Structure Wm (180 D..	None						14	
72	Structure Wm (210 D..	None						14	
73	Structure Wm (240 D..	None						14	
74	Structure Wm (270 D..	None						14	
75	Structure Wm (300 D..	None						14	
76	Structure Wm (330 D..	None						14	
77	Lm1	None					1		
78	Lm2	None					1		
79	Lv1	None					1		
80	Lv2	None					1		
81	Antenna Ev	None					33		
82	Antenna Eh (0 Deg)	None					22		
83	Antenna Eh (90 Deg)	None					22		
84	Structure Ev	ELY							
85	Structure Eh (0 Deg)	ELZ	-03						
86	Structure Eh (90 Deg)	ELX			.03				

Load Combinations

	Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
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 Deg)	Yes	Y		1	1.2	39	1.2	7	1	45	1								
6	1.2D+1.0Wo (150 Deg)	Yes	Y		1	1.2	39	1.2	8	1	46	1								
7	1.2D+1.0Wo (180 Deg)	Yes	Y		1	1.2	39	1.2	9	1	47	1								
8	1.2D+1.0Wo (210 Deg)	Yes	Y		1	1.2	39	1.2	10	1	48	1								
9	1.2D+1.0Wo (240 Deg)	Yes	Y		1	1.2	39	1.2	11	1	49	1								
10	1.2D+1.0Wo (270 Deg)	Yes	Y		1	1.2	39	1.2	12	1	50	1								
11	1.2D+1.0Wo (300 Deg)	Yes	Y		1	1.2	39	1.2	13	1	51	1								
12	1.2D+1.0Wo (330 Deg)	Yes	Y		1	1.2	39	1.2	14	1	52	1								
13	1.2D + 1.0Di + 1.0Wi (0 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1				
14	1.2D + 1.0Di + 1.0Wi (30 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1				
15	1.2D + 1.0Di + 1.0Wi (60 Deg)	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1				



Load Combinations (Continued)

Description	S...	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...		
73 0.9D - 1.0Ev + 1.0Eh (270 Deg)		Y		1	.9	39	.9	81	-1	E...	-1	82		83	-1	E...		E...		-1			
74 0.9D - 1.0Ev + 1.0Eh (300 Deg)		Y		1	.9	39	.9	81	-1	E...	-1	82	.5	83	-.8...	E...		E...		.5		E...	-.8...
75 0.9D - 1.0Ev + 1.0Eh (330 Deg)		Y		1	.9	39	.9	81	-1	E...	-1	82	.866	83	-.5	E...		E...		.866		E...	-.5

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 N6	max	1231.716	10	1635.313	23	1849.212	1	-.939	1	5.165	11	.641	4
2	min	-1231.716	4	770.254	5	-1849.212	7	-5.72	19	-5.212	5	-2.764	49
3 Totals:	max	1231.716	10	1635.313	23	1849.212	1						
4	min	-1231.716	4	770.254	5	-1849.212	7						

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

Member	Shape	Code Check	Loc...	L...	Shea...	Loc.....	L...	phi*Pn...	phi*Pn...	phi*M...	phi*M...	Eqn
1 CBC1	PIPE_3.0	.743	6.25	1	.246	6.25	1	28250...	65205	5.749	5.749	1..H1-1b
2 6	HSS4X4...	.655	0	6	.300	0	y 49	10361...	106812	12.662	12.662	1..H1-1b
3 MP2A	PIPE_2.0	.540	3.5...	7	.161	3.5...	5	20866...	32130	1.872	1.872	1..H1-1b
4 MP4A	PIPE_2.0	.456	3.5...	1	.089	3.6...	10	20866...	32130	1.872	1.872	1..H1-1b
5 MP3A	PIPE_2.0	.267	3.5...	1	.048	3.5...	9	20866...	32130	1.872	1.872	1..H1-1b
6 MP1A	PIPE_2.0	.143	3.5...	7	.063	3.5...	6	20866...	32130	1.872	1.872	1..H1-1b
7 M4	PIPE_4.0	.000	.625	8	.000	.625	8	92775...	93240	10.631	10.631	1..H1-1b

Mount to Tower Connection Checks (Version v5.3 - Effective Date 02/9/2021)

Risa File Path: G:\TOWER\227_Main\2021\22721-0135-468304_WOODBURY CT\22721-0135-002-7199_MA_5627206R\Risa\468304-VW_MF_LOT_A_H.r3d Total Populated Members: 12
Total Populated Nodes: 23

Settings Apply Capacity Normalization Per Section 15.5

Code: TIA-222-H
 Main Check(s) Performed: Bolts & Welds
 Consider Epoxy Capacity: No

Risa-3D Member Reactions Input Forces Manually

Consider Tie-Backs: No
 Consider Kickers: No
 Consider Horizontal Members Only: Yes
 Controlling Load Case: 6
 Controlling Members: 6
 Member Orientation: Horizontal (in global risa coordinate system)
 Member Local Rotation: 0 (about its longitudinal axis)

	Shear (kip)	Moment (kip-ft)
Local Z Axis (Global Horizontal):	0.840	3.612
Local Y Axis (Global Vertical):	0.764	4.588
	Axial (kip)	Torque (kip-ft)
Local X Axis (Global Horizontal):	1.469	0.275

Note: Forces are relative to member local axis

Bolt Information

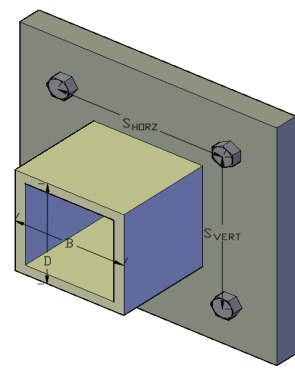
Type: A325-N
 Diameter: 0.5 in
 Quantity: 4
 Vertical Spacing (S_{vert}): 7.00 in
 Horizontal Spacing (S_{horz}): 7.00 in

Standoff Member Information

Type: Rectangular
 Width (B): 4 in
 Depth (D): 4 in
 Thickness: 0.1875 in
 Weld Size: 0.1875 in
 Weld Size Assumed: Yes

Stiffener Information

Present: No



Connection Type: Collar

Analysis Results 75.4% Pass

Bolt Capacity			
Tension:	Applied Load: 7.40 kip	Capacity: 13.25 kip	55.8%
Shear:	Applied Load: 0.45 kip	Capacity: 7.95 kip	5.7%
Tension-Shear Interaction:	Applied Load: -	Capacity: -	OK
Weld Capacity			
	Applied Resultant Load: 3.15 kip/in	Capacity: 4.18 kip/in	75.4%

Notes:

1. Connection is considered fixed.
2. Allowable capacity limit is 105%.
3. Calculations are in accordance with TIA-222-H and AISC 15th Ed.
4. Bolt tension reduction not required as tension and/or shear capacity is below 30%.

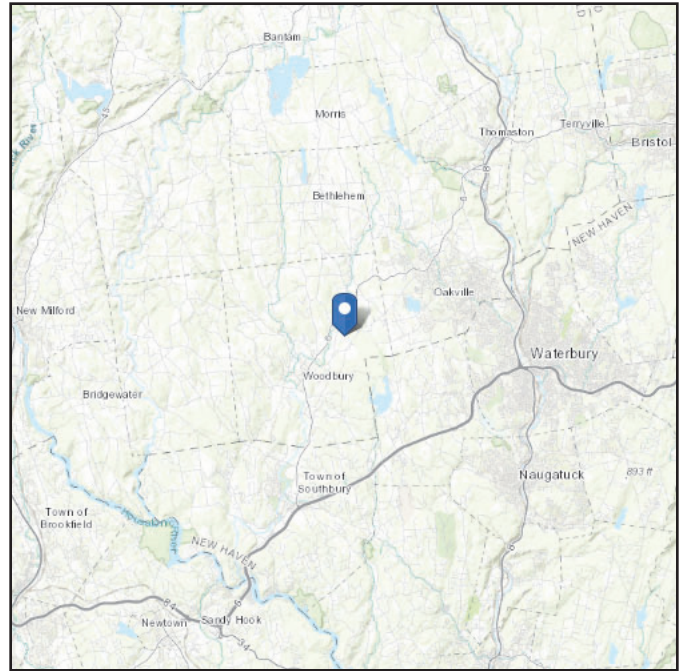
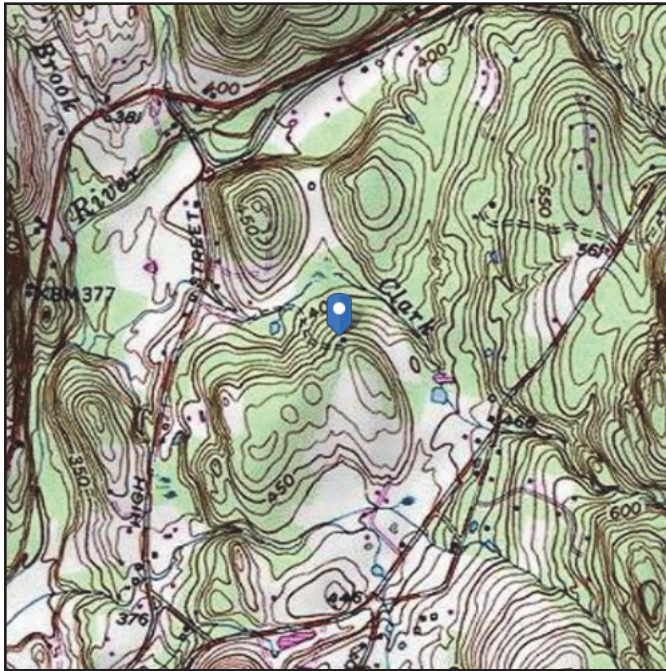
(Welds Controls)

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: 460.09 ft (NAVD 88)
Latitude: 41.567996
Longitude: -73.179681



Wind

Results:

Wind Speed:	116 Vmph
10-year MRI	75 Vmph
25-year MRI	84 Vmph
50-year MRI	89 Vmph
100-year MRI	96 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 Oct 14 2021

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

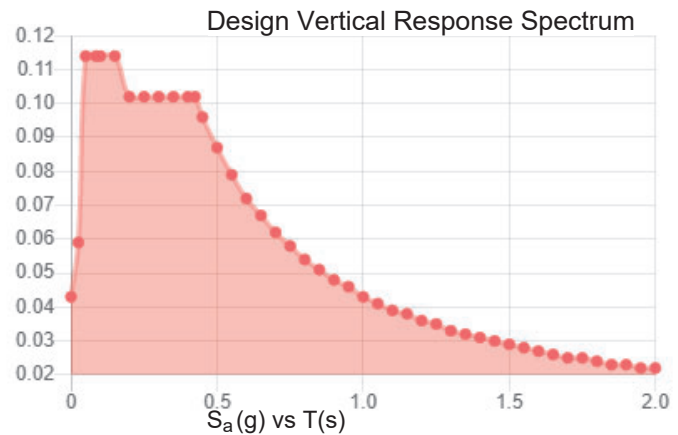
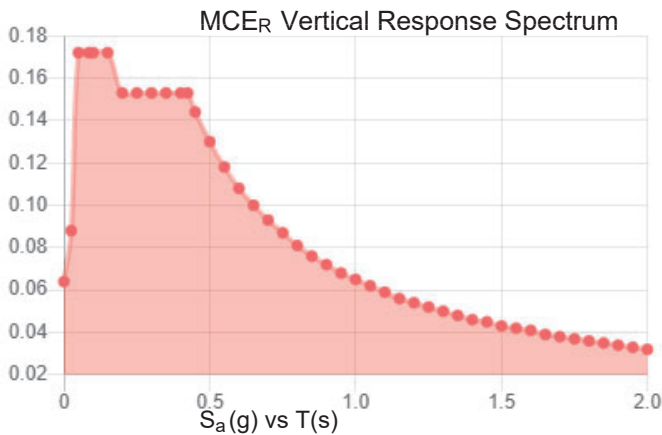
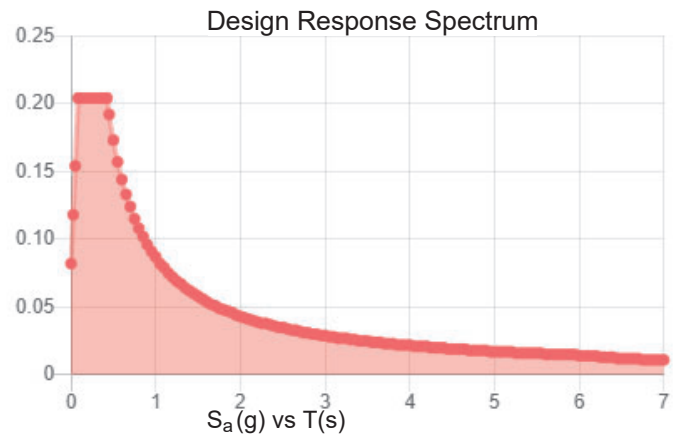
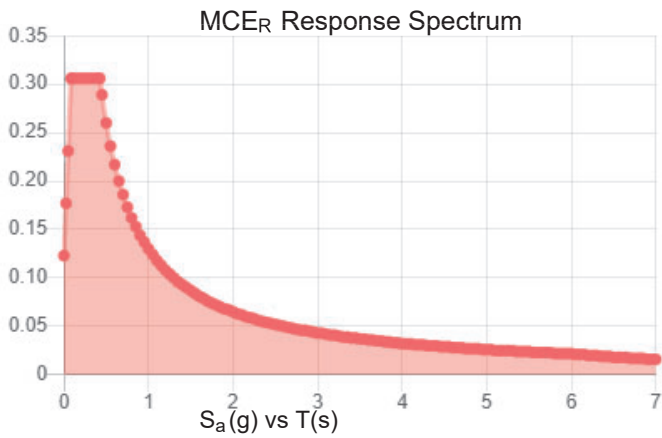
Site is in a hurricane-prone region as defined in ASCE/SEI 7-16 Section 26.2. Glazed openings need not be protected against wind-borne debris.

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

Results:

S_s :	0.192	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.105
F_v :	2.4	PGA _M :	0.168
S_{MS} :	0.306	F_{PGA} :	1.589
S_{M1} :	0.13	I_e :	1
S_{DS} :	0.204	C_v :	0.7

Seismic Design Category B



Data Accessed: Thu Oct 14 2021
Date Source: USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness: 1.00 in.
Concurrent Temperature: 15 F
Gust Speed: 50 mph

Data Source: Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8

Date Accessed: Thu Oct 14 2021

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

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

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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Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – **Passing Mount Analysis**

Passing Mount Analysis requires a PMI due to a modification in loading.

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

For additional questions and support, please reach out to pmisupport@pauljford.com

Purpose – to provide SMART Tool structural vendor the proper documentation in order 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 installation was completed in accordance with this Passing Mount Analysis.
- Contractor shall relay any data that can impact the performance of the mount, this includes safety issues.

Base Requirements:

- If installation 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 mount drawings” showing contractor’s name, contact information, 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 passing mount analysis (MA) contact the SMART Tool vendor immediately.
- Each photo should be time and date stamped
- Photos should be high resolution.
- Contractor shall ensure that the safety climb wire rope is supported and 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.
 - Photos of the mount after installation; if the mounts are at different rad elevations, pictures must be provided for all elevations that equipment was installed.
- Photos taken at Mount Elevation
 - Photos showing the safety climb wire rope above and below the mount prior to installation.
 - Photos showing the climbing facility and safety climb if present.

- Photos showing each individual sector after installation. Each entire sector shall 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.

Antenna & equipment placement and Geometry Confirmation:

- The contractor shall certify that the antenna & equipment placement and geometry is in accordance with the sketch and table as included in the mount analysis and noted below.

Special Instructions / Validation as required from the MA or any other information the contractor deems necessary to share that was identified:

Issue:

Response:

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

Yes No

Contractor certifies no new damage/obstructions created during the current installation:

Yes No

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

Safety climb in good condition with no obstructions Safety Climb Damaged
 Safety Climb Obstructed

Comments:

- 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 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.

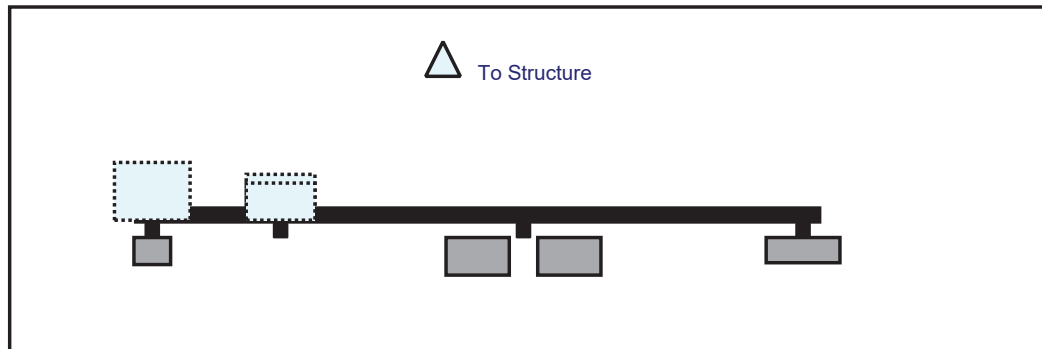
Special Instruction Confirmation:

The contractor has read and acknowledges the above special instructions.

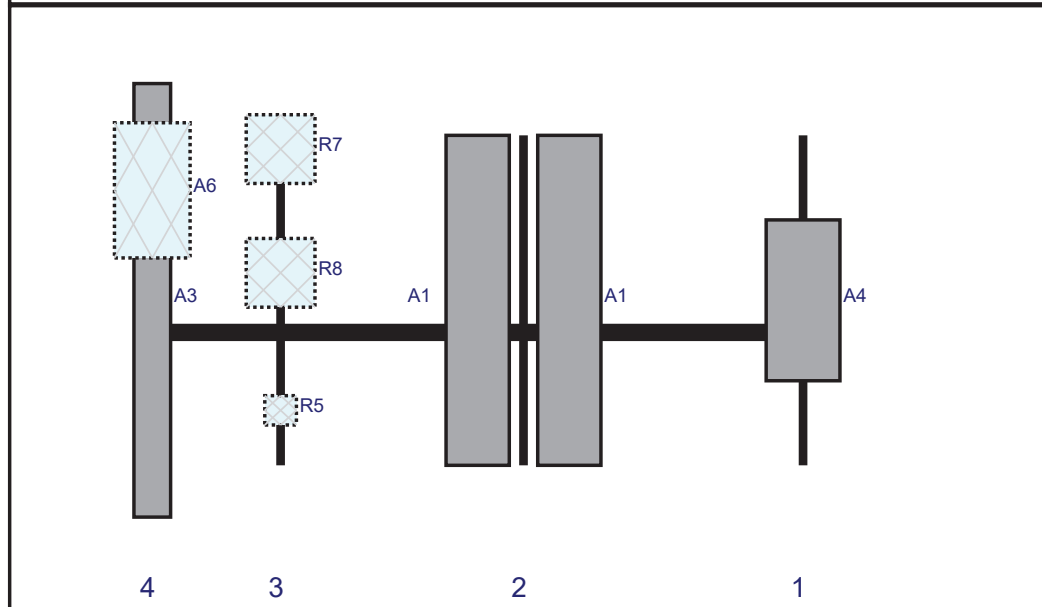
Certifying Individual:

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

Plan View

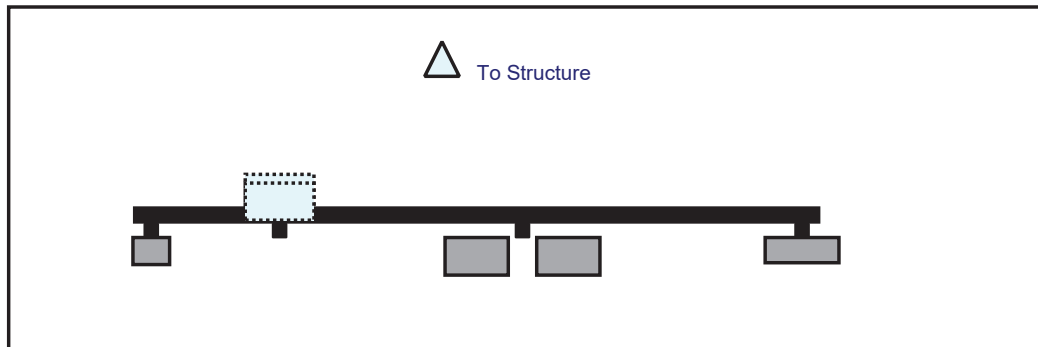


Front View
Looking at Structure

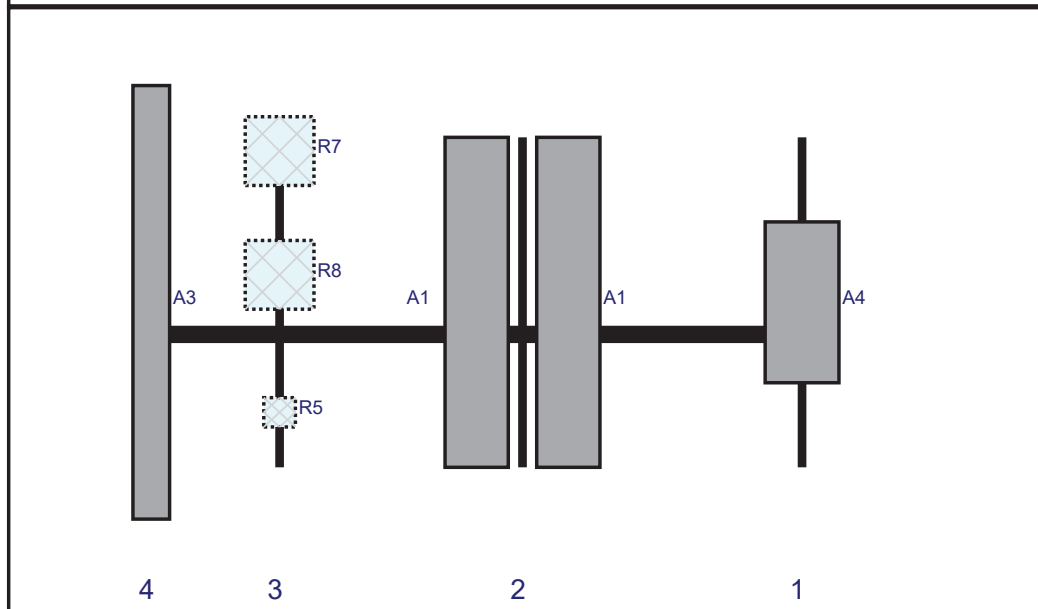


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A4	64T64R	35.1	16.1	146	1	a	Front	36	0	Added	
A1	JAHH-65B-R3B	72	13.8	85	2	a	Front	36	10	Added	
A1	JAHH-65B-R3B	72	13.8	85	2	b	Front	36	-10	Added	
R5	CBC78T-DS-43-2X	6.4	6.9	32	3	a	Behind	60	0	Added	
R7	B2/B66A RRH-BR049 (RFV01U-D1A)	15	15	32	3	a	Behind	3	0	Added	
R8	B5/B13 RRH-BR04C (RFV01U-D2A)	15	15	32	3	a	Behind	30	0	Added	
A3	BXA-80080/4CF FP	94.6	8	4	4	a	Front	36	0	Retained	10/14/2021
A6	DB-C1-12C-24AB-0Z	29.5	16.5	4	4	a	Behind	12	0	Added	

Plan View

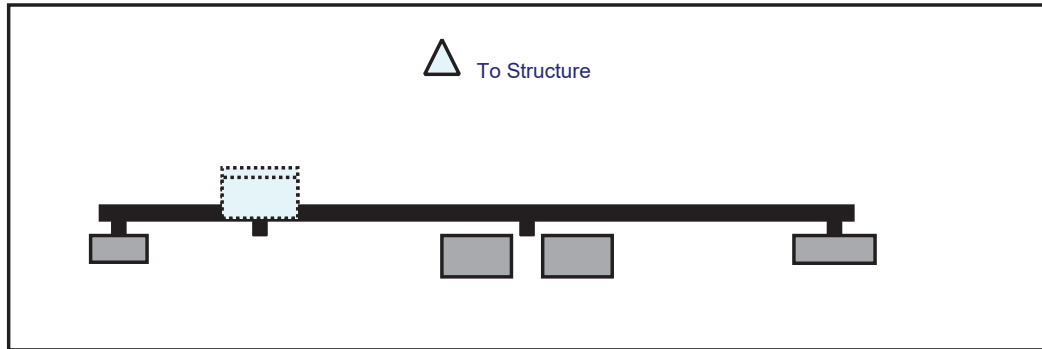


Front View
Looking at Structure

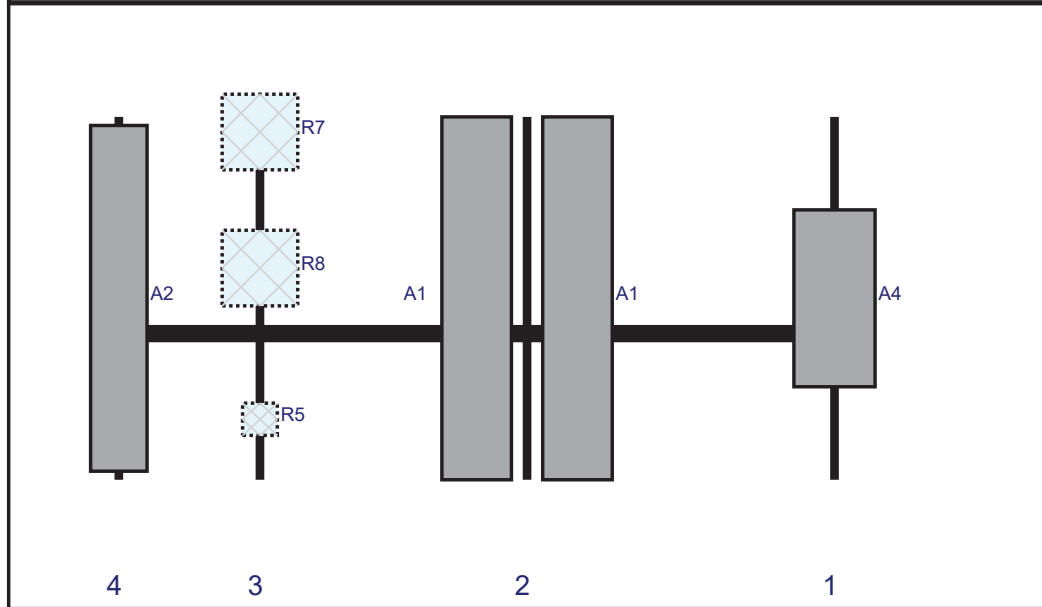


Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A4	64T64R	35.1	16.1	146	1	a	Front	36	0	Added	
A1	JAHH-65B-R3B	72	13.8	85	2	a	Front	36	10	Added	
A1	JAHH-65B-R3B	72	13.8	85	2	b	Front	36	-10	Added	
R5	CBC78T-DS-43-2X	6.4	6.9	32	3	a	Behind	60	0	Added	
R7	B2/B66A RRH-BR049 (RFV01U-D1A)	15	15	32	3	a	Behind	3	0	Added	
R8	B5/B13 RRH-BR04C (RFV01U-D2A)	15	15	32	3	a	Behind	30	0	Added	
A3	BXA-80080/4CF FP	94.6	8	4	4	a	Front	36	0	Retained	10/14/2021

Plan View



Front View
Looking at Structure



Ref#	Model	Height (in)	Width (in)	H Dist Frm L.	Pipe #	Pipe Pos V	Ant Pos	C. Ant Frm T.	Ant H Off	Status	Validation
A4	64T64R	35.1	16.1	146	1	a	Front	36	0	Added	
A1	JAHH-65B-R3B	72	13.8	85	2	a	Front	36	10	Added	
A1	JAHH-65B-R3B	72	13.8	85	2	b	Front	36	-10	Added	
R5	CBC78T-DS-43-2X	6.4	6.9	32	3	a	Behind	60	0	Added	
R7	B2/B66A RRH-BR049 (RFV01U-D1A)	15	15	32	3	a	Behind	3	0	Added	
R8	B5/B13 RRH-BR04C (RFV01U-D2A)	15	15	32	3	a	Behind	30	0	Added	
A2	BXA-80063/4CF 5	68.6	11.2	4	4	a	Front	36	0	Retained	10/14/2021

Exhibit F

Power Density/RF Emissions Report

Site Name: **WOODBURY N CT**
 Cumulative Power Density

Operator	Operating Frequency	Number of Trans.	ERP Per Trans.	Total ERP	Distance to Target	Calculated Power Density	Maximum Permissible Exposure*	Fraction of MPE
	(MHz)		(watts)	(watts)	(feet)	(mW/cm ²)	(mW/cm ²)	(%)
VZW 700	751	4	697	2788	150	0.0045	0.5007	0.89%
VZW CDMA	878.49	2	497	993	150	0.0016	0.5857	0.27%
VZW Cellular	874	4	826	3303	150	0.0053	0.5827	0.91%
VZW PCS	1980	4	986	3942	150	0.0063	1.0000	0.63%
VZW AWS	2120	4	2104	8416	150	0.0135	1.0000	1.35%
VZW CBAND	3730.08	4	6531	26125	150	0.0418	1.0000	4.18%

Total Percentage of Maximum Permissible Exposure 8.22%

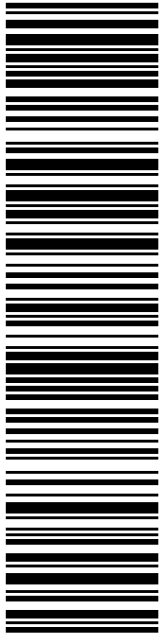
*Guidelines adopted by the FCC on August 1, 1996, 47 CFR Part 1 based on NCRP Report 86, 1986 and generally on ANSI/IEEE C95.1-1992
 **Calculation includes a -10 dB Off Beam Antenna Pattern Adjustment pursuant to Attachments B and C of the Siting Council's November 10, 2015 Memorandum for Exempt Modification filings

MHz = Megahertz
 mW/cm² = milliwatts per square centimeter
 ERP = Effective Radiated Power

Absolute worst case maximum values used.

Exhibit F

Recipient Mailings



USPS TRACKING #

9405 5036 9930 0071 0798 43

Electronic Rate Approved #038555749

P

11/23/2021

Mailed from 01566

U.S. POSTAGE PAID
click-n-ship®

USPS.com 9405 5036 9930 0071 0798 43 0087 0000 0010 6798
US POSTAGE
 Flat Rate Env

Click-N-Ship®

POSTAL SERVICE®

UNITED STATES

PRIORITY MAIL 2-DAY™

Expected Delivery Date: 11/27/21 Ref#: CR-876405
0006

R007

SHIP TO: BARBARA PERKINSON
 FIRST SELECTWOMAN- WOODBURY
 281 MAIN ST S
 WOODBURY CT 06798-3449

DEBORAH CHASE
 NORTHEAST SITE SOLUTIONS
 420 MAIN ST
 STE 1
 STURBRIDGE MA 01566-1359



Cut on dotted line.

Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0071 0798 43

Trans. #: 549074647	Priority Mail® Postage: \$8.70
Print Date: 11/23/2021	Total: \$8.70
Ship Date: 11/23/2021	
Expected Delivery Date: 11/27/2021	

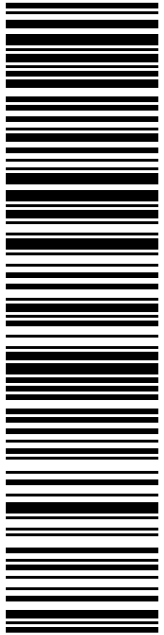
From: DEBORAH CHASE Ref#: CR-876405
 NORTHEAST SITE SOLUTIONS
 420 MAIN ST
 STE 1
 STURBRIDGE MA 01566-1359

To: BARBARA PERKINSON
 FIRST SELECTWOMAN- WOODBURY
 281 MAIN ST S
 WOODBURY CT 06798-3449

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



Thank you for shipping with the United States Postal Service!
 Check the status of your shipment on the USPS Tracking® page at usps.com





USPS TRACKING #

9405 5036 9930 0071 0798 74

Electronic Rate Approved #038555749

SHIP TO: SARAH SNELL
CROWN CASTLE
1800 W PARK DR
WESTBOROUGH MA 01581-3926

SHIP TO: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

P

usps.com 9405 5036 9930 0071 0798 74 0087 0000 0010 1581
US POSTAGE
 Flat Rate Env
 U.S. POSTAGE PAID
click-n-ship®

11/23/2021 Mailed from 01566

PRIORITY MAIL 1-DAY™

Expected Delivery Date: 11/24/21
 Ref#: CR-876405
C006
0006

✂ ————— Cut on dotted line. —————

Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

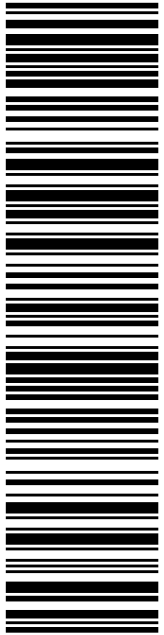
USPS TRACKING # :
9405 5036 9930 0071 0798 74

Trans. #: 549074647	Priority Mail® Postage: \$8.70
Print Date: 11/23/2021	Total: \$8.70
Ship Date: 11/23/2021	
Expected Delivery Date: 11/24/2021	

From: DEBORAH CHASE Ref#: CR-876405
 NORTHEAST SITE SOLUTIONS
 420 MAIN ST
 STE 1
 STURBRIDGE MA 01566-1359

To: SARAH SNELL
 CROWN CASTLE
 1800 W PARK DR
 WESTBOROUGH MA 01581-3926

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



USPS TRACKING #

9405 5036 9930 0071 0798 98

Electronic Rate Approved #038555749

SHIP

TO: WILLIAM AGRESTA
TOWN PLANNER
281 MAIN ST S
WOODBURY CT 06798-3449

P

11/23/2021

USPS.com 9405 5036 9930 0071 0798 98 0087 0000 0010 6798
US POSTAGE
Flat Rate Envoy

U.S. POSTAGE PAID
click-n-ship®


Mailed from 01566

PRIORITY MAIL 2-DAY™

DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359

Expected Delivery Date: 11/27/21
Ref#: CR-876405
0006

R007



Click-N-Ship®



Cut on dotted line.

Instructions

1. Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
2. Place your label so it does not wrap around the edge of the package.
3. Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
4. To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
5. Mail your package on the "Ship Date" you selected when creating this label.

Click-N-Ship® Label Record

USPS TRACKING # :
9405 5036 9930 0071 0798 98

Trans. #: 549074647	Priority Mail® Postage: \$8.70
Print Date: 11/23/2021	Total: \$8.70
Ship Date: 11/23/2021	
Expected Delivery Date: 11/27/2021	

From: DEBORAH CHASE
NORTHEAST SITE SOLUTIONS
420 MAIN ST
STE 1
STURBRIDGE MA 01566-1359




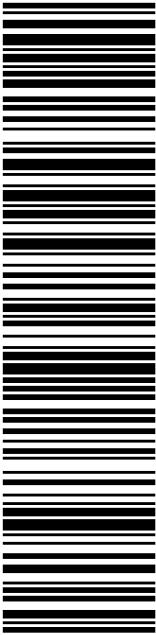
Ref#: CR-876405

To: WILLIAM AGRESTA
TOWN PLANNER
281 MAIN ST S
WOODBURY CT 06798-3449

* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



Thank you for shipping with the United States Postal Service!
Check the status of your shipment on the USPS Tracking® page at usps.com

 UNITED STATES POSTAL SERVICE®			
	usps.com US POSTAGE Flat Rate Enviv	9405 5036 9930 0071 0799 04 0087 0000 0010 6798	U.S. POSTAGE PAID <small>click-n-ship®</small>
	11/23/2021	Mailed from 01566	
PRIORITY MAIL 2-DAY™			
DEBORAH CHASE NORTHEAST SITE SOLUTIONS 420 MAIN ST STE 1 STURBRIDGE MA 01566-1359		Expected Delivery Date: 11/27/21 Ref#: CR-876405 0006	<div style="border: 1px solid black; padding: 5px; display: inline-block;"> R002 </div>
SHIP TO: RAYMOND HARDISTY 186 MINORTOWN RD WOODBURY CT 06798			
USPS TRACKING #			
			
9405 5036 9930 0071 0799 04			
Electronic Rate Approved #038555749			



Cut on dotted line.

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Click-N-Ship® Label Record

USPS TRACKING # : 9405 5036 9930 0071 0799 04	
Trans. #: 549074647 Print Date: 11/23/2021 Ship Date: 11/23/2021 Expected Delivery Date: 11/27/2021	Priority Mail® Postage: \$8.70 Total: \$8.70
From: DEBORAH CHASE NORTHEAST SITE SOLUTIONS 420 MAIN ST STE 1 STURBRIDGE MA 01566-1359	Ref#: CR-876405
To: RAYMOND HARDISTY 186 MINORTOWN RD WOODBURY CT 06798	
<small>* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.</small>	



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 Check the status of your shipment on the USPS Tracking® page at usps.com

876405



UNIONVILLE
24 MILL ST
UNIONVILLE, CT 06085-9998
(800)275-8777

11/23/2021

03:19 PM

Product	Qty	Unit Price	Price
Prepaid Mail	1		\$0.00
Westborough, MA 01581			
Weight: 0 lb 2.00 oz			
Acceptance Date:			
Tue 11/23/2021			
Tracking #:			
9405 5036 9930 0071 0798 74			
Prepaid Mail	1		\$0.00
Woodbury, CT 06798			
Weight: 0 lb 7.20 oz			
Acceptance Date:			
Tue 11/23/2021			
Tracking #:			
9405 5036 9930 0071 0798 43			
Prepaid Mail	1		\$0.00
Woodbury, CT 06798			
Weight: 0 lb 7.20 oz			
Acceptance Date:			
Tue 11/23/2021			
Tracking #:			
9405 5036 9930 0071 0798 98			
Prepaid Mail	1		\$0.00
Woodbury, CT 06798			
Weight: 0 lb 7.20 oz			
Acceptance Date:			
Tue 11/23/2021			
Tracking #:			
9405 5036 9930 0071 0799 04			
Grand Total:			\$0.00