

KENNETH C. BALDWIN

280 Trumbull Street
Hartford, CT 06103-3597
Main (860) 275-8200
Fax (860) 275-8299
kbaldwin@rc.com
Direct (860) 275-8345

Also admitted in Massachusetts
and New York

July 12, 2021

Via Electronic Mail

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

Re: **Notice of Exempt Modification – Facility Modification
7 Surdan Mountain Road, Sharon, Connecticut**

Dear Attorney Bachman:

Cellco Partnership d/b/a Verizon Wireless (“Cellco”) currently maintains an existing wireless telecommunications facility at the above-referenced property address (the “Property”). The facility consists of antennas and remote radio heads attached to a tower and related equipment on the ground, near the base of the tower. The tower was approved by the Town of Sharon (“Town”) in January 1998. Cellco’s shared use of the tower was approved by the Council in May 2009 (EM-VER-125-090402). A copy of the Town’s approval and Cellco’s shared use approval are included in Attachment 1. Please note, Cellco refers to this site as its Cornwall 2 cell site.

Cellco now intends to modify its facility by replacing nine (9) existing antennas with three (3) new Samsung MT6407-77A antennas, six (6) MX06FIT665-02 antennas and replacing six (6) remote radio heads (“RRHs”) with six (6) new RRHs all on its existing antenna mounting system. A set of project plans showing Cellco’s proposed facility modifications and new antennas and RRHs specifications are included in Attachment 2.

Please accept this letter as notification pursuant to R.C.S.A. § 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 Sharon’s Chief Elected Official and Land Use Officer.

Melanie A. Bachman, Esq.
July 12, 2021
Page 2

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 tower. Cellco's replacement antennas will be installed on Cellco's existing antenna platform.
2. The proposed modifications will not involve any change to ground-mounted equipment and, therefore, 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 installation of Cellco's new antennas will not increase radio frequency (RF) emissions at the facility to a level at or above the Federal Communications Commission (FCC) safety standard. A cumulative power density table for Cellco's modified facility are included in Attachment 3. The modified facility will be capable of providing Cellco's 5G wireless service.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. According to the attached Structural Analysis ("SA") and Mount Analysis ("MA"), the existing tower, tower foundation and antenna mounting system, with certain modifications, can support Cellco's proposed modifications. Copies of the SA and MA are included in Attachment 4.

A copy of the parcel map and Property owner information is included in Attachment 5. A Certificate of Mailing verifying that this filing was sent to municipal officials and the property owner is included in Attachment 6.

For the foregoing reasons, Cellco respectfully submits that the proposed modifications to the above-referenced telecommunications facility constitutes an exempt modification under R.C.S.A. § 16-50j-72(b)(2).

Melanie A. Bachman, Esq.
July 12, 2021
Page 3

Sincerely,

A handwritten signature in black ink, appearing to read "Kenneth C. Baldwin". The signature is fluid and cursive, with a long horizontal stroke at the end.

Kenneth C. Baldwin

Enclosures

Copy to:

Brent Colly, First Selectman for the Town of Sharon
Jamie Casey, Sharon Land Use Administrator
Ann Adele Prindle, Property Owner
Karla Hanna

ATTACHMENT 1

TOWN OF SHARON, CONN.

ZONING PERMIT

№ 2640

Date 1/21 19 98

Permission is hereby given to Litchfield County Dispatch

of P.O. Box 1349 Litchfield, CT 06759

to erect a 195' telecomm tower (28' high) & a 22' x 58' building

located on 7 Sunden Mt Road, Map # 15 Lot # 2nd

Owner of property Warren Prindle

in accordance with application dated 1/13 19 98

Signed Elizabeth M. Sherr

Sharon Planning and Zoning Commission

ZBA decision 2/22/94

TOWN OF SHARON

ZONING PERMIT APPLICATION

NO. _____

PERMIT FEE: \$15.00 plus \$10.00 (CT Fee) = \$25.00

APPLICATION IS HEREBY MADE TO THE PLANNING & ZONING COMMISSION FOR A PERMIT TO:

() Construct (X) Enlarge () Alter () Move () Other _____

The building(s) described below: *Existing tower & existing building* Assessor Tax Map # 15 Lot # 2

Location of Property 7 Sudden Mt Road.

Subdivision/development: _____ Lot No. _____

✓ Name of Owner: Darien R Prindle Address: 7 Sudden Mt Rd

✗ Name of Applicant: Litchfield County Dispatch Inc. Address: P.O. Box 1349 Litchfield CT 06759

Phone: 860-567-3877

ZONE: RR

Width of Lot _____ Depth of Lot _____ Area of Lot 4A. *(dimensions of easement: 75' x 145')*

Use of building(s): () Dwelling for _____ families; () Accessory; () Commercial;

() Industrial; (X) Other telecommunication tower -
current bldg. is 8x12' to be removed

Size of Building(s) or addition(s): 22' x 58'; height 195' tower
size of tower - leg of triangle 28'

Additional Information: 28' height 195'

ZBA approval for hgt. of tower 2/22/94

Complete a PLOT PLAN on reverse side. Show boundaries, location of existing building(s) if any, proposed construction / or work.

OWNER Signature Darien R Prindle

✗ Date: 1-13-98 Applicant's Signature Alan J. Gornel MANAGER.

Approved by Planning and Zoning Commission.

Date: 1/21/98

Permit No. 2640

Rejected

Date: _____

Reason: _____

Signature: Elizabeth M. Hall for Planning & Zoning Commission

This permit is granted with the express condition that the applicant shall conform in all respects to the zoning regulations of the Town of Sharon. This permit may be revoked at any time upon violation of any provisions of said regulations. Any deviation from the approved application must be authorized by approval of the revised plans subject to the same procedures established for the examination of the original plans. Zoning permit expires 12 months from date of issue unless it has been renewed by ZEO or a valid building permit is in effect.

**TOWN OF SHARON
ZONING BOARD OF APPEALS
LEGAL NOTICE**

At a regular quarterly meeting of the Sharon Zoning Board of Appeals held on February 22, 1994, the Board voted unanimously to approve Appeal #102 of Litchfield County Dispatch. A copy of this decision will be on file with the Town Clerk, Sharon, CT.

Dated at Sharon, Connecticut this 23rd day of February 1994.

Robert Loucks, Chairman
Sharon Zoning Board of Appeals

To appear in Waterbury Republican: 2/24

**TOWN OF SHARON
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Robert Loucks, Chairman
Sharon Zoning Board
of Appeals

R-A FEBRUARY 24, 1994

TOWN OF SHARON
ZONING BOARD OF APPEALS
SHARON, CONNECTICUT 06069

LEGAL NOTICE

To Whom It May Concern, notice is hereby given that on Tuesday, February 22, 1994 at 7:30PM at the Sharon Town Hall, Assessors' Office, 63 Main Street, Sharon, CT, the Sharon Zoning Board of Appeals will hold a public hearing on the following application for a variance:

Appeal #102 of Litchfield County Dispatch to modify an existing building (height of existing antenna tower) to have a maximum height of 195 feet where the Regulations require 35 feet. The property is owned by Darien and Ann Adele Prindle and located at 7 Surdan Mountain Road, Sharon, CT, in the Rural Residence Zone.

At this hearing interested persons may be heard and written communication received. The application is on file at the Selectmen's Office, 63 Main Street, Sharon, CT.

Dated at Sharon, Connecticut this 8th day of February 1994.

Robert Loucks, Chairman
Sharon Zoning Board of Appeals

To Appear in Waterbury Republican: 2/9 & 2/17

Sent to:
Certified - Litchfield County Dispatch

Regular mail to:
Darien & Ann Prindle
Leo Nickerk
Fred & Jill + Judith Cavanaugh
Alfred Andrews

SHARON LEGAL NOTICE

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Dated at Sharon, Connecticut this 8th Day of February, 1994

Robert Loucks, Chairman
Sharon Zoning Board
of Appeals

R-A FEB 9 and 17, 1994



STATE OF CONNECTICUT

CONNECTICUT SITING COUNCIL

Ten Franklin Square, New Britain, CT 06051

Phone: (860) 827-2935 Fax: (860) 827-2950

E-Mail: siting.council@ct.gov

Internet: ct.gov/csc

Daniel F. Caruso
Chairman

May 5, 2009

Kenneth C. Baldwin, Esq.
Robinson & Cole LLP
280 Trumbull Street
Hartford, CT 06103-3597

RE: **EM-VER-125-090402** – Cellco Partnership d/b/a Verizon Wireless notice of intent to modify an existing telecommunications facility located at 7 Surdan Mountain Road, Sharon, Connecticut.

Dear Attorney Baldwin:

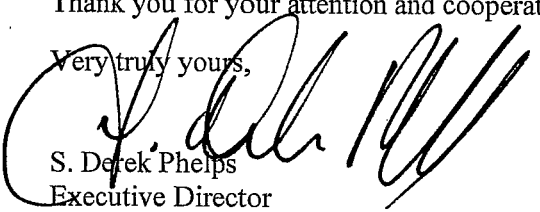
The Connecticut Siting Council (Council) hereby acknowledges your notice to modify this existing telecommunications facility, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified here and in your notice dated April 2, 2009, including the placement of all necessary equipment and shelters within the tower compound. The modifications are in compliance with the exception criteria in Section 16-50j-72 (b) of the Regulations of Connecticut State Agencies as changes to an existing facility site that would not increase tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary by six decibels, and increase the total radio frequencies electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to General Statutes § 22a-162. This facility has also been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequencies now used on this tower.

This decision is under the exclusive jurisdiction of the Council. Please be advised that the validity of this action shall expire one year from the date of this letter. Any additional change to this facility will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

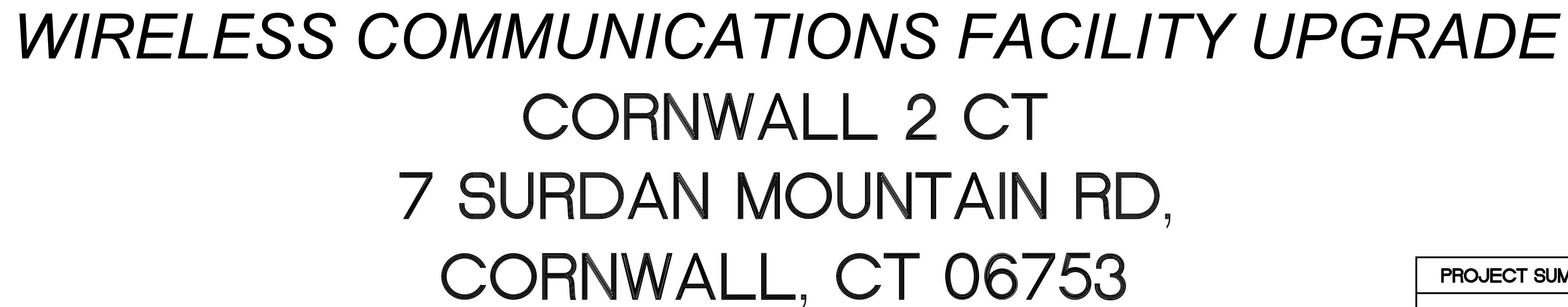
Very truly yours,


S. Derek Phelps
Executive Director

SDP/MP/laf

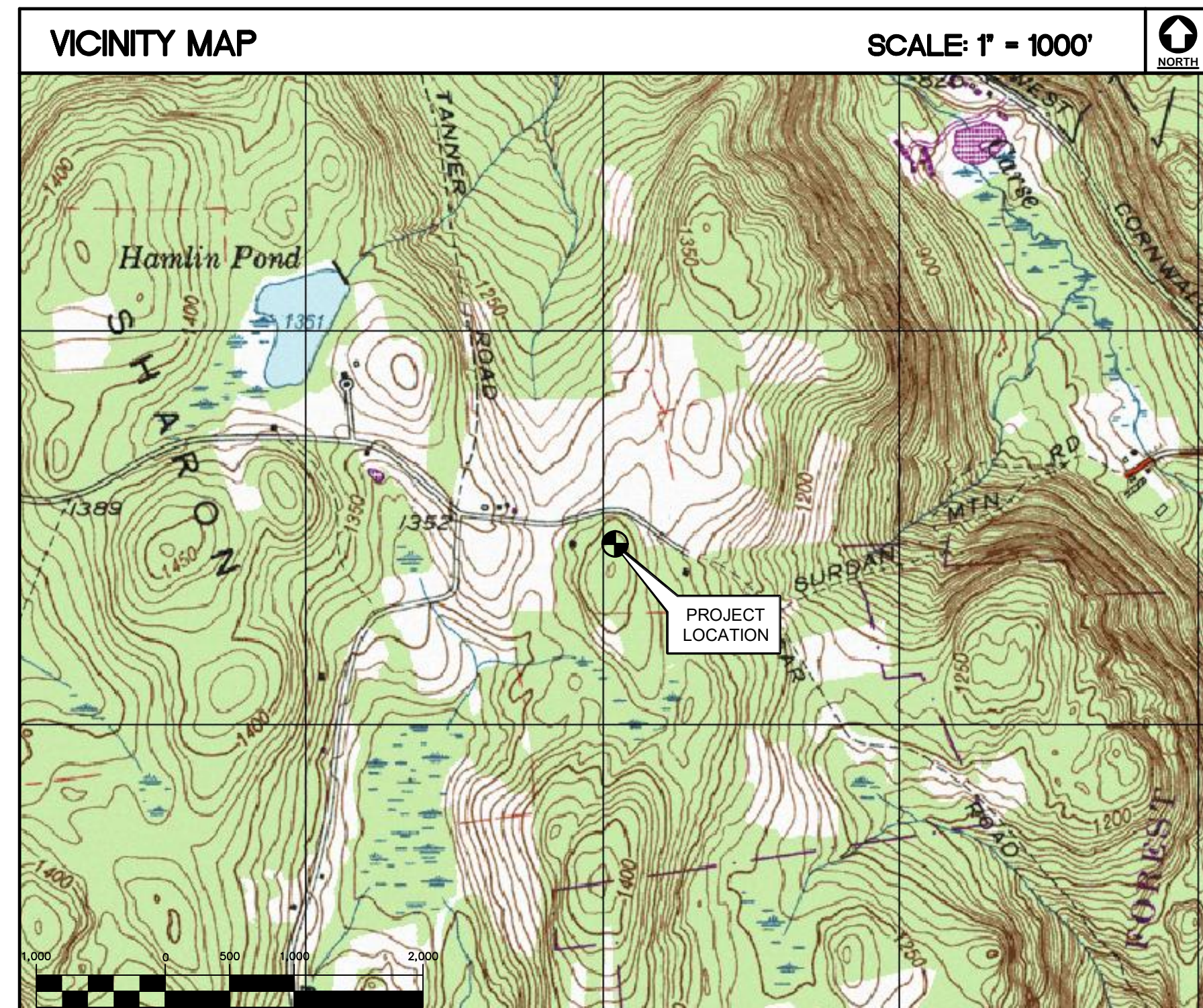
c: The Honorable Malcom M. Brown, First Selectman, Town of Sharon
Elizabeth H. Casey, Zoning Enforcement Officer, Town of Sharon
Litchfield County Dispatch

ATTACHMENT 2



1. ALL WORK SHALL BE IN ACCORDANCE WITH THE 2015 INTERNATIONAL BUILDING CODE AS MODIFIED BY THE 2018 CONNECTICUT SUPPLEMENT, INCLUDING THE TIA/EIA-222 REVISION "G" STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWERS AND SUPPORTING STRUCTURES, 2017 CONNECTICUT FIRE SAFETY CODE, NATIONAL ELECTRICAL CODE, AND LOCAL CODES.
2. SHOULD ANY FIELD CONDITIONS PRECLUDE COMPLIANCE WITH THE DRAWINGS, THE CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ENGINEER AND SHALL NOT PROCEED WITH ANY AFFECTED WORK.
3. CONTRACTOR SHALL REVIEW ALL DRAWINGS AND SPECIFICATIONS IN THE CONTRACT DOCUMENT SET. CONTRACTOR SHALL COORDINATE ALL WORK SHOWN IN THE SET OF DRAWINGS. THE CONTRACTOR SHALL PROVIDE A COMPLETE SET OF DRAWINGS TO ALL SUBCONTRACTORS AND ALL RELATED PARTIES. THE SUBCONTRACTORS SHALL EXAMINE ALL THE DRAWINGS AND SPECIFICATIONS FOR THE INFORMATION THAT AFFECTS THEIR WORK.
4. CONTRACTOR SHALL PROVIDE A COMPLETE BUILD-OUT WITH ALL FINISHES, STRUCTURAL, MECHANICAL, AND ELECTRICAL COMPONENTS AND PROVIDE ALL ITEMS AS SHOWN OR INDICATED ON THE DRAWINGS OR IN THE WRITTEN SPECIFICATIONS.
5. CONTRACTOR SHALL FURNISH ALL MATERIAL, LABOR AND EQUIPMENT TO COMPLETE THE WORK AND FURNISH A COMPLETED JOB ALL IN ACCORDANCE WITH LOCAL AND STATE GOVERNING AUTHORITIES AND OTHER AUTHORITIES HAVING LAWFUL JURISDICTION OVER THE WORK.
6. CONTRACTOR SHALL SECURE AND PAY FOR ALL PERMITS AND ALL INSPECTIONS REQUIRED AND SHALL ALSO PAY FEES REQUIRED FOR THE GENERAL CONSTRUCTION, AND ALL TRADES AS APPLICABLE PERMITS SHALL BE PAID FOR BY THE RESPECTIVE SUBCONTRACTORS.
7. CONTRACTOR SHALL MAINTAIN A CURRENT SET OF DRAWINGS AND SPECIFICATIONS ON SITE AT ALL TIMES AND INSURE DISTRIBUTION OF NEW DRAWINGS TO SUBCONTRACTORS AND OTHER RELEVANT PARTIES AS SOON AS THEY ARE MADE AVAILABLE. ALL OLD DRAWINGS SHALL BE MARKED VOID AND REMOVED FROM THE CONTRACT AREA. THE CONTRACTOR SHALL FURNISH AN "AS-BUILT" SET OF DRAWINGS TO OWNER UPON COMPLETION OF PROJECT.
8. LOCATION OF EQUIPMENT, AND WORK SUPPLIED BY OTHERS THAT IS DIAGRAMMATICALLY INDICATED ON THE DRAWINGS SHALL BE DETERMINED BY THE CONTRACTOR. THE CONTRACTOR SHALL DETERMINE LOCATIONS AND DIMENSIONS SUBJECT TO STRUCTURAL CONDITIONS AND WORK OF THE SUBCONTRACTORS.
9. THE CONTRACTOR IS SOLELY RESPONSIBLE TO DETERMINE CONSTRUCTION PROCEDURE AND SEQUENCE, AND TO ENSURE THE SAFETY OF THE EXISTING STRUCTURES AND ITS COMPONENT PARTS DURING CONSTRUCTION. THIS INCLUDES THE ADDITION OF WHATEVER SHORING, BRACING, UNDERPINNING, ETC. THAT MAY BE NECESSARY. MAINTAIN EXISTING BUILDING'S/PROPERTY'S OPERATIONS, COORDINATE WORK WITH BUILDING/PROPERTY OWNER.
10. DRAWINGS INDICATE THE MINIMUM STANDARDS. BUT IF ANY WORK SHOULD BE INDICATED TO BE SUBSTANDARD TO ANY ORDINANCES, LAWS, CODES, RULES, OR REGULATIONS BEARING ON THE WORK, THE CONTRACTOR SHALL INCLUDE IN HIS WORK AND SHALL EXECUTE THE WORK CORRECTLY IN ACCORDANCE WITH SUCH ORDINANCES, LAWS, CODES, RULES OR REGULATIONS WITH NO INCREASE IN COSTS.
11. ALL UTILITY WORK SHALL BE IN ACCORDANCE WITH LOCAL UTILITY COMPANY REQUIREMENTS AND SPECIFICATIONS.
12. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUBCONTRACTORS FOR ANY CONDITION PER MFR.'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
13. ANY AND ALL ERRORS, DISCREPANCIES, AND "MISSED" ITEMS ARE TO BE BROUGHT TO THE ATTENTION OF THE VERIZON WIRELESS CONSTRUCTION MANAGER DURING THE BIDDING PROCESS BY THE CONTRACTOR. ALL THESE ITEMS ARE TO BE INCLUDED IN THE BID. NO 'EXTRA' WILL BE ALLOWED FOR MISSED ITEMS.
14. CONTRACTOR SHALL BE RESPONSIBLE FOR ALL ON-SITE SAFETY FROM THE TIME THE JOB IS AWARDED UNTIL ALL WORK IS COMPLETE AND ACCEPTED BY THE OWNER.
15. CONTRACTOR TO REVIEW ALL SHOP DRAWINGS AND SUBMIT COPY TO ENGINEER FOR APPROVAL. DRAWINGS MUST BEAR THE CHECKER'S INITIALS BEFORE SUBMITTING TO THE CONSTRUCTION MANAGER FOR REVIEW.
16. THE CONTRACTOR SHALL FIELD VERIFY ALL DIMENSIONS, ELEVATIONS, ANGLES, AND EXISTING CONDITIONS AT THE SITE, PRIOR TO FABRICATION AND/OR INSTALLATION OF ANY WORK IN THE CONTRACT AREA.
17. COORDINATION, LAYOUT, FURNISHING AND INSTALLATION OF CONDUIT AND ALL APPURTENANCES REQUIRED FOR PROPER INSTALLATION OF ELECTRICAL AND TELECOMMUNICATION SERVICE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
18. ALL EQUIPMENT AND PRODUCTS PURCHASED ARE TO BE REVIEWED BY CONTRACTOR AND ALL APPLICABLE SUB- CONTRACTORS FOR ANY CONDITION PER THE MANUFACTURER'S RECOMMENDATIONS. CONTRACTOR TO SUPPLY THESE ITEMS AT NO COST TO OWNER OR CONSTRUCTION MANAGER.
19. ALL DAMAGE CAUSED TO ANY EXISTING STRUCTURE SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR. THE CONTRACTOR WILL BE HELD LIABLE FOR ALL REPAIRS REQUIRED FOR EXISTING STRUCTURES IF DAMAGED DURING CONSTRUCTION ACTIVITIES.
20. THE CONTRACTOR SHALL CONTACT "CALL BEFORE YOU DIG" AT LEAST 48 HOURS PRIOR TO ANY EXCAVATIONS AT 1-800-922-4455. ALL UTILITIES SHALL BE IDENTIFIED AND CLEARLY MARKED PRIOR TO ANY EXCAVATION WORK. CONTRACTOR SHALL MAINTAIN AND PROTECT MARKED UTILITIES THROUGHOUT PROJECT COMPLETION.

FROM:	20 ALEXANDER DRIVE WALLINGFORD, CONNECTICUT	TO:	7 SURDAN MOUNTAIN RD, CORNWALL, CT 06753
1.	START OUT GOING NORTH ON ALEXANDER DR TOWARD BARNES INDUSTRIAL RD.	0.18 MI	
2.	TURN RIGHT ONTO BARNES INDUSTRIAL RD.	0.11 MI	
3.	TAKE THE 1ST LEFT ONTO CT-68.	0.35 MI	
4.	TURN RIGHT ONTO RAMP.	0.17 MI	
5.	TURN RIGHT ONTO N COLONY RD/US-5 N.	0.30 MI	
6.	MERGE ONTO CT-15 N TOWARD HARTFORD.	3.89 MI	
7.	MERGE ONTO I-691 W VIA EXIT 68W TOWARD MERIDEN/WATERBURY.	7.79 MI	
8.	MERGE ONTO I-84 W VIA EXIT 1 ON THE LEFT TOWARD DANBURY/WATERBURY.	8.70 MI	
9.	MERGE ONTO CT-8 N VIA EXIT 20 TOWARD TORRINGTON.	7.75 MI	
10.	TAKE THE CT-254 EXIT, EXIT 38, TOWARD THOMASTON/US-6 W/CT-109.	0.18 MI	
11.	KEEP LEFT TO TAKE THE WATERBURY RD RAMP TOWARD THOMASTON/DOT DIST ADMIN OFFICE.	0.03 MI	
12.	TURN LEFT ONTO WATERBURY RD/CT-254. CONTINUE TO FOLLOW CT-254.	1.07 MI	
13.	TURN LEFT ONTO NORTHFIELD RD/CT-254.	7.34 MI	
14.	TURN LEFT ONTO EAST ST/CT-118.	1.00 MI	
15.	TURN LEFT ONTO EAST ST/US-202 W.	0.11 MI	
16.	TURN RIGHT ONTO NORTH ST/CT-63. CONTINUE TO FOLLOW CT-63.	6.19 MI	
17.	ENTER NEXT ROUNDABOUT AND TAKE THE 3RD EXIT ONTO CT-4.	5.31 MI	
18.	TURN LEFT ONTO CEMETERY HILL RD/CT-4. CONTINUE TO FOLLOW CT-4.	4.63 MI	
19.	CT-4 BECOMES ROUTE 7/US-7 N.	1.04 MI	
20.	TURN LEFT ONTO CORNWALL BRIDGE RD/CT-4.	1.36 MI	
21.	TURN RIGHT ONTO EAST ST.	3.09 MI	
22.	TURN RIGHT ONTO SURDAN MOUNTAIN RD.	0.14 MI	
23.	7 SURDAN MOUNTAIN RD, SHARON, CT 06069-2429, 7 SURDAN MOUNTAIN RD IS ON THE RIGHT.		



1. THE PROPOSED UPGRADE SCOPE OF WORK AT THE EXISTING UNMANNED TELECOMMUNICATIONS FACILITY GENERALLY INCLUDES THE FOLLOWING:

A. AT THE EXISTING MONOPOLF MOUNTED ANTENNA SECTORS:

- INSTALL ANTENNA MOUNT MODIFICATIONS AS DESIGNED BY OTHERS AND REFERENCED HEREIN.
- REMOVE A TOTAL OF (6) ANTEL BXA-70063-6CF PANEL ANTENNAS;
- RETAIN A TOTAL OF (6) LPA-80080/4CF PANEL ANTENNAS.
- INSTALL (6) NEW MX06FTT665-02 ANTENNAS ON (9) NEW JMA 2" EDGE-TO-EDGE MOUNTING BRACKETS.
- INSTALL (3) NEW SAMSUNG B2/B66A RRH-BR049 & (3) NEW SAMSUNG B5/B13 RRH-BR04C.
- INSTALL (1) NEW 12 CIRCUIT OVP BOX ON DUAL SWIVEL MOUNTS.
- INSTALL (1) NEW 12x24 HYBRID CABLE.

SITE NAME: CORNWALL 2 CT

SITE ADDRESS: 7 SURDAN MOUNTAIN RD,
CORNWALL, CT 06753

LESSEE/TENANT: CELCO PARTNERSHIP
d.b.a. VERIZON WIRELESS
20 ALEXANDER DRIVE
WALLINGFORD, CT 06492

CONTACT PERSON: WALTER CHARCZNSKI (CONSTRUCTION MANAGER)
VERIZON WIRELESS
(860) 306-1806

ENGINEER: CENTEK ENGINEERING, INC.
63-2 NORTH BRANFORD RD.
BRANFORD, CT. 06405
(203) 488-0580

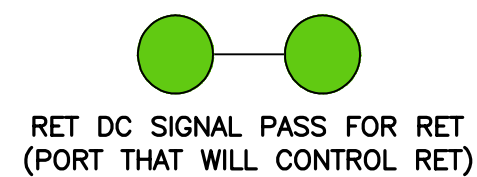
PROJECT COORDINATES: LATITUDE: 41°-51'N-43.3404"N
LONGITUDE: 73°-23'-58.65"W
GROUND ELEVATION: 1369± AMSL

SITE COORDINATES REFERENCED FROM VERIZON
WIRELESS RFDS DATED 11/20/2020. GROUND
ELEVATION REFERENCED FROM GOOGLE EARTH PRO
ON-LINE SOFTWARE PROGRAM.

SHT. NO.	DESCRIPTION	REV.
T-1	TITLE SHEET	0
N-1	NOTES AND SPECIFICATIONS	0
B-1	RF BILL OF MATERIALS	0
C-1	COMPOUND PLAN AND ELEVATION	0
C-2	ANTENNA SECTOR CONFIGURATION DETAILS	0
C-3	RF DETAILS	0
E-1	ELECTRICAL DETAILS AND SPECIFICATIONS	0

[illegible]

1. PORTS 1 & 2 ARE FOR LOW BAND (698-896 MHz).
2. PORTS 3, 4, 5 & 6 ARE FOR HIGH BAND (1695-2360 MHz).
3. SMART BIAS TEE (SBT) IS THROUGH ANTENNA PORTS 1 & 3 (1 FOR LOW BAND AND 3 FOR HIGH BAND).
4. AISG CABLE IS ONLY NEEDED WHEN DRAWN IN THE DIAGRAMS ABOVE. IF IT IS NOT DRAWN THEN SBT IS ENOUGH TO CONTROL ALL RET MOTORS.
5. NOT ALL SBT PORTS ARE NEEDED TO CONTROL RET. ONLY GREEN PORT CONNECTION TO GREEN PORT WILL CONTROL RET.

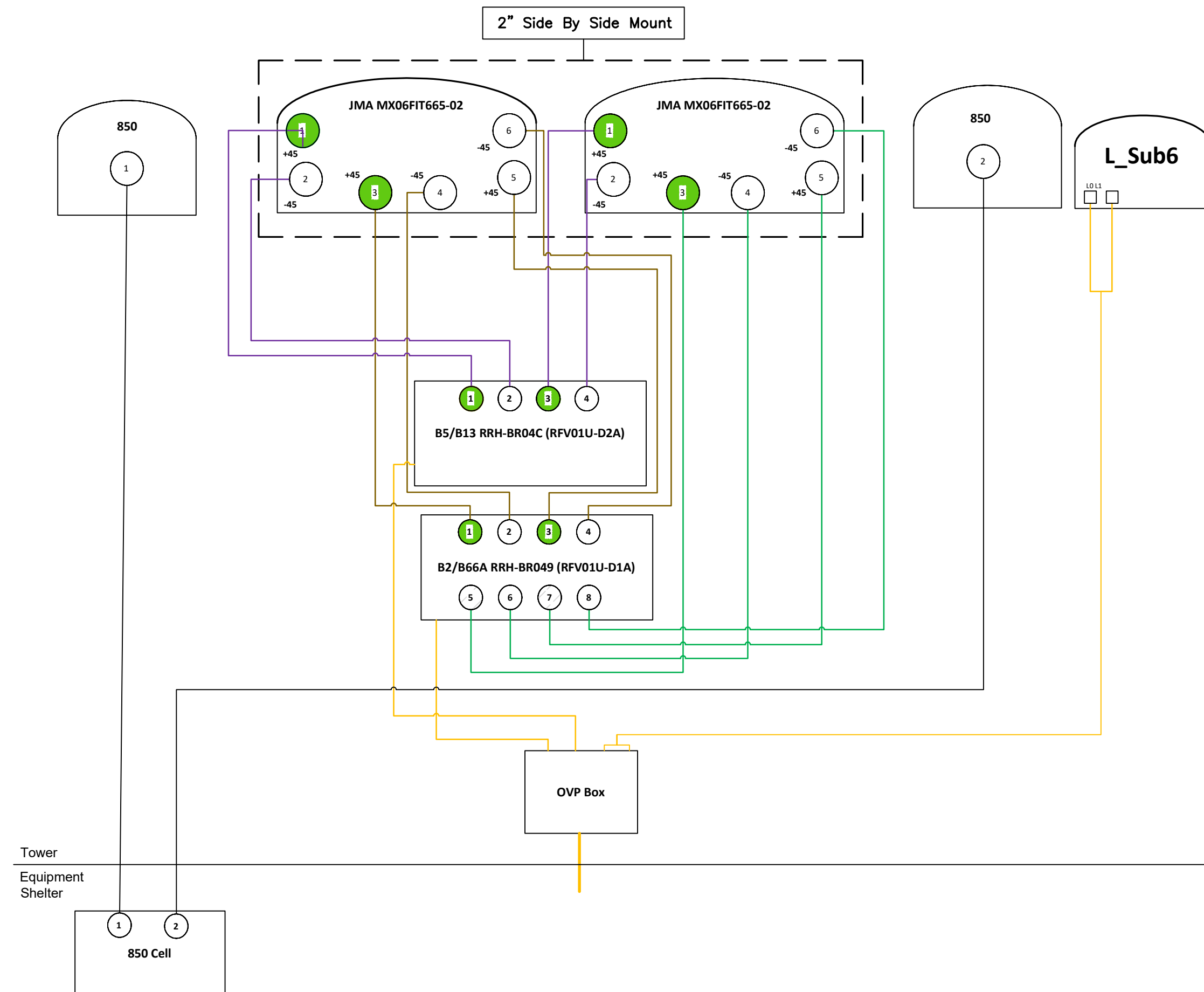
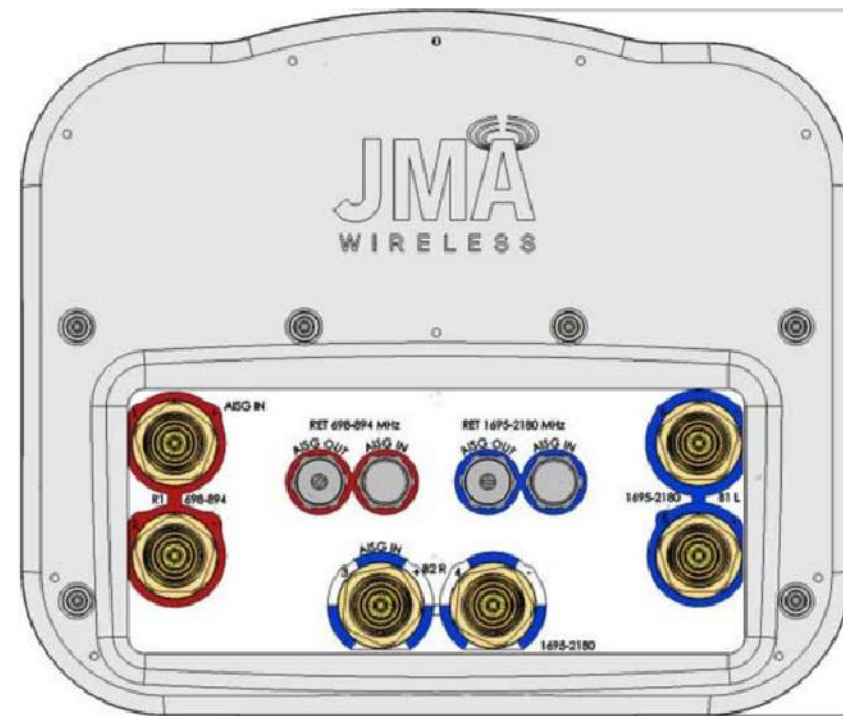
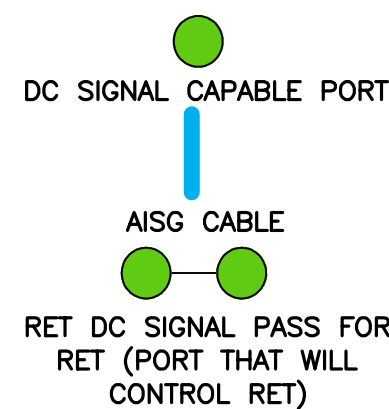


A. DIAGRAMS SHOW ANTENNA PORT CONFIGURATIONS AS VIEWED FROM BELOW ANTENNAS.

B. ANTENNA POSITIONS ARE INDICATED AS VIEWED FROM IN FRONT OF ANTENNAS.

C. CAP AND WEATHERPROOF UNUSED ANTENNA PORTS.

D. ALL PLUMBING DIAGRAM COLORS ARE IRRELEVANT EXCEPT FOR AISG AND HYBRIFLEX CABLE. (FOR THE COAX COLORS, FOLLOW COAX COLORS GUIDE ABOVE)



1. INFORMATION SHOWN HEREIN IS FOR USE BY VERIZON WIRELESS EQUIPMENT OPERATIONS.

2. THIS B.O.M. DRAWING IS BASED OFF FACILITY UPGRADE DESIGN DRAWINGS PREPARED BY CENTEK ENGINEERING (REV.B DATED: 07.01.21), & VERIZON WIRELESS RF ANTENNA EQUIPMENT RECOMMENDATION (DATED 11.20.20).

BILL OF MATERIALS		
TECHNOLOGY	QUANTITY	ANTENNA
LTE 700	6	JMA ANTENNA MODEL: MX06FIT665-02
LTE 850		
LTE PCS 1900		
LTE AWS 2100		
5G	3	SAMSUNG ANTENNA MODEL: MT6407-77A

CABLES	QUANTITY	LENGTH (EA.)	COMMENTS
HYBRID CABLE	1	235'	12x24 HYBRID

RADIOS	QUANTITY	COMMENTS
LTE 700	3	SAMSUNG MODEL: B5/B13 RRH-BR04C
LTE 850		
LTE PCS 1900	3	SAMSUNG MODEL: B2/B66A RRH-BR049
LTE AWS 2100		
5G	3	INTEGRATED INTO MT6407-77A ANTENNA

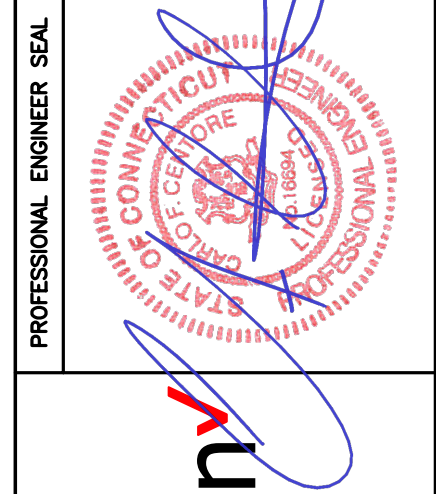
DIPLEXERS	QUANTITY	COMMENTS
-	0	-

OVP BOXES	QUANTITY	COMMENTS
OVP	1	RAYCAP MODEL: DB-C1-12C-24AB-0Z

ANTENNA MOUNT	QUANTITY	COMMENTS
SIDE-BY-SIDE MOUNTING KIT	3	JMA MODEL: 919003314-02

REV.	DATE	DRAWN BY	CHK'D BY	DESCRIPTION
0	07/01/21	DMD	TUL	CONSTRUCTION DRAWINGS – ISSUED FOR CONSTRUCTION
1	06/16/21	DMD	TUL	CONSTRUCTION DRAWINGS – REVISED PER COMMENTS
2	06/14/21	DMD	TUL	CONSTRUCTION DRAWINGS – ISSUED FOR CLIENT REVIEW

PROFESSIONAL ENGINEER SEAL



CENTEK engineering
Centered on SolutionsSM

(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
www.CentekEng.com

Cellco Partnership d/b/a Verizon Wireless

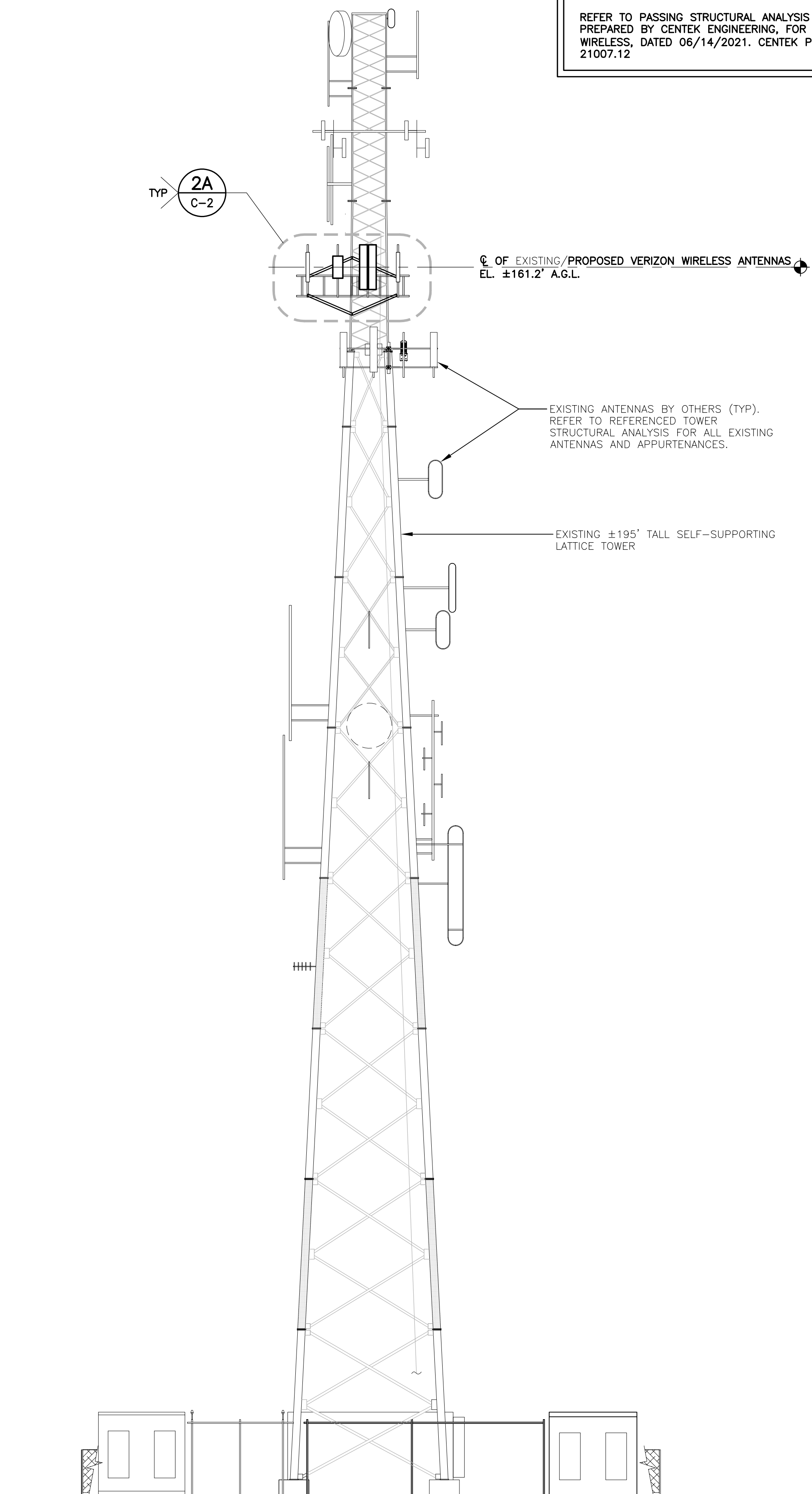
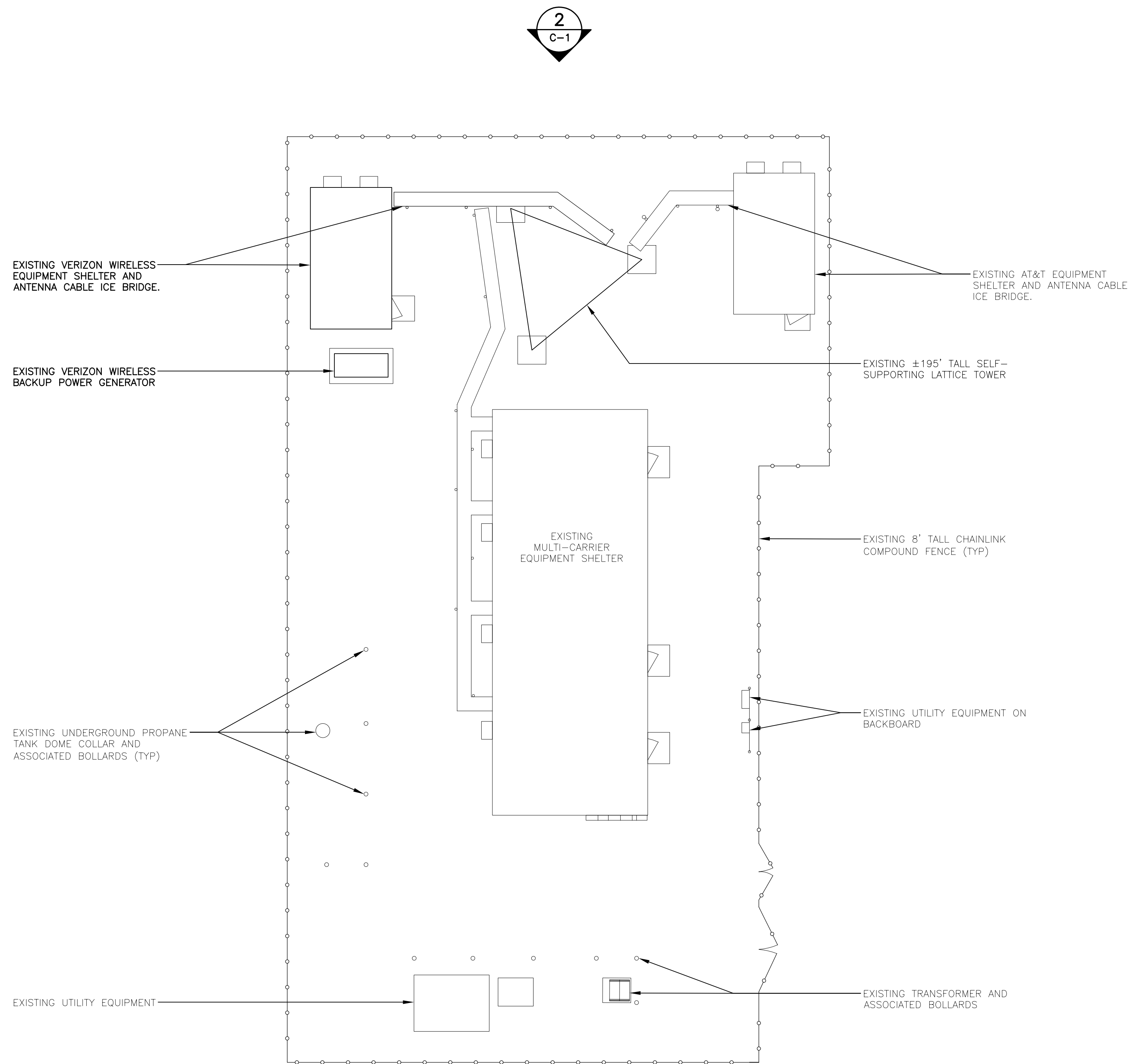
CORNWALL 2 CT
7 SURDAN MOUNTAIN RD,
CORNWALL, CT 06753

DATE:	06/11/21
SCALE:	AS NOTED
JOB NO.	21007.12

RF BILL OF MATERIALS

B-1

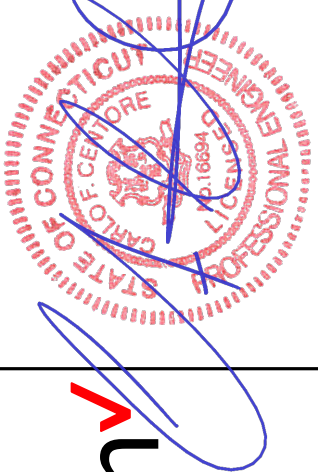
Sheet No. 3 of 7



TOWER STRUCTURAL REFERENCE NOTE:

REFER TO PASSING STRUCTURAL ANALYSIS REPORT
PREPARED BY CENTEK ENGINEERING, FOR VERIZON
WIRELESS, DATED 06/14/2021. CENTEK PROJECT NO.
21007.12

PROFESSIONAL ENGINEER SEAL



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Centered on Solutions™

(203) 488-0580
(203) 488-8587 Fax
63-2 North Branford Road
Branford, CT 06405
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Cellco Partnership d/b/a Verizon Wireless

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7 SURDAN MOUNTAIN RD,
CORNWALL, CT 06753

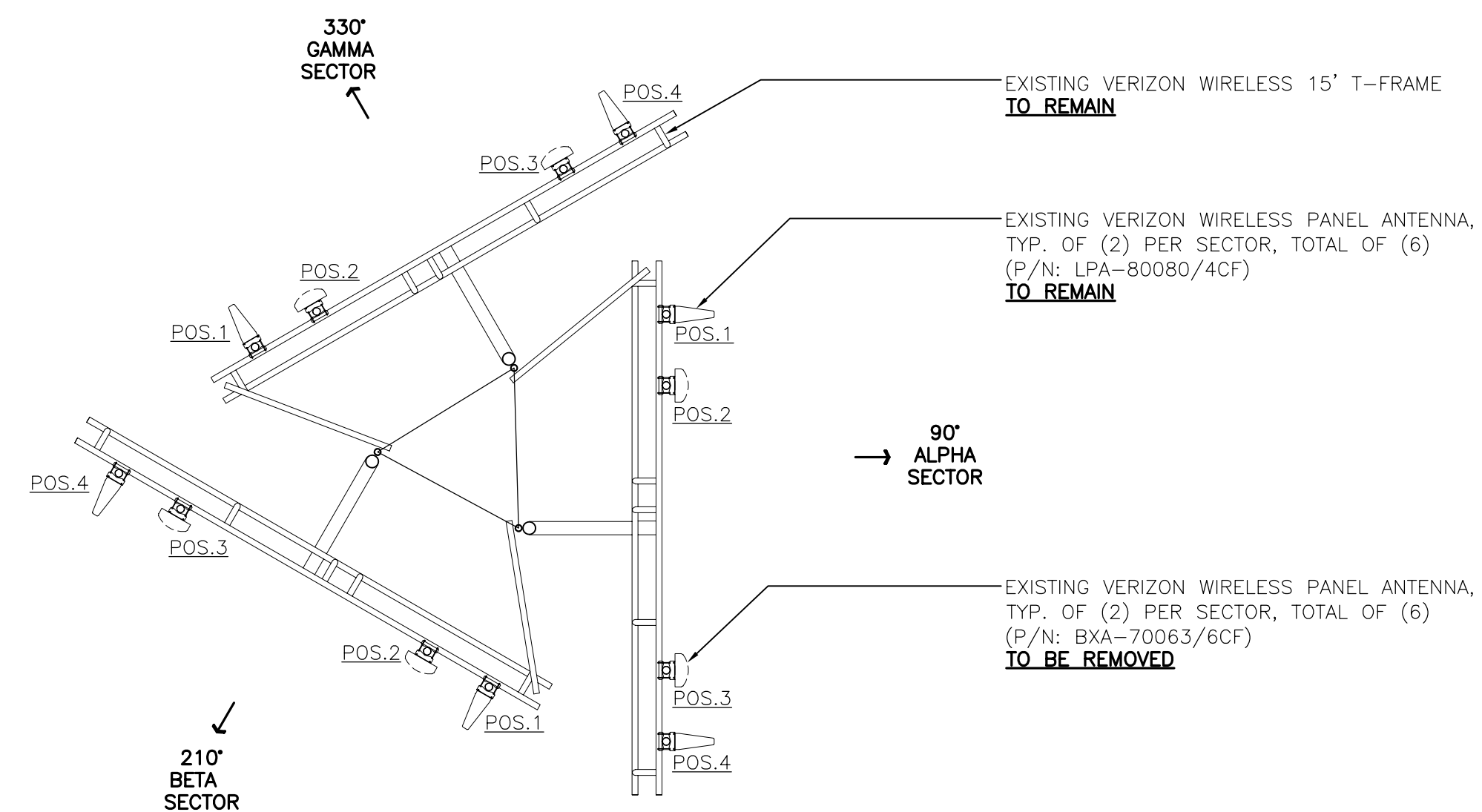
DATE:	06/11/21
SCALE:	AS NOTED
JOB NO.	21007.12

COMPOUND
PLAN AND
ELEVATION

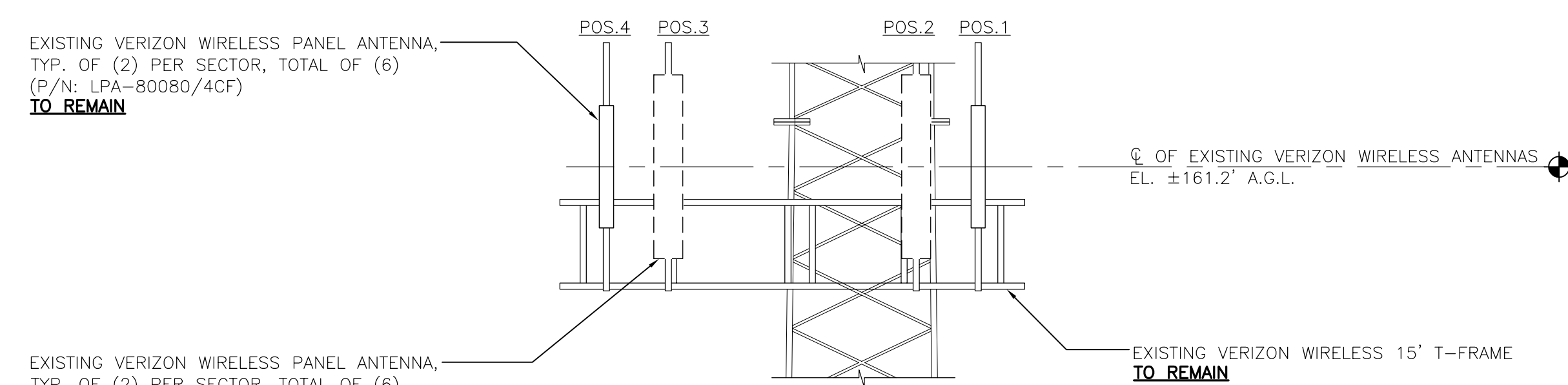
C-1

Sheet No. 4 of 7

EXISTING ANTENNA CONFIGURATIONS

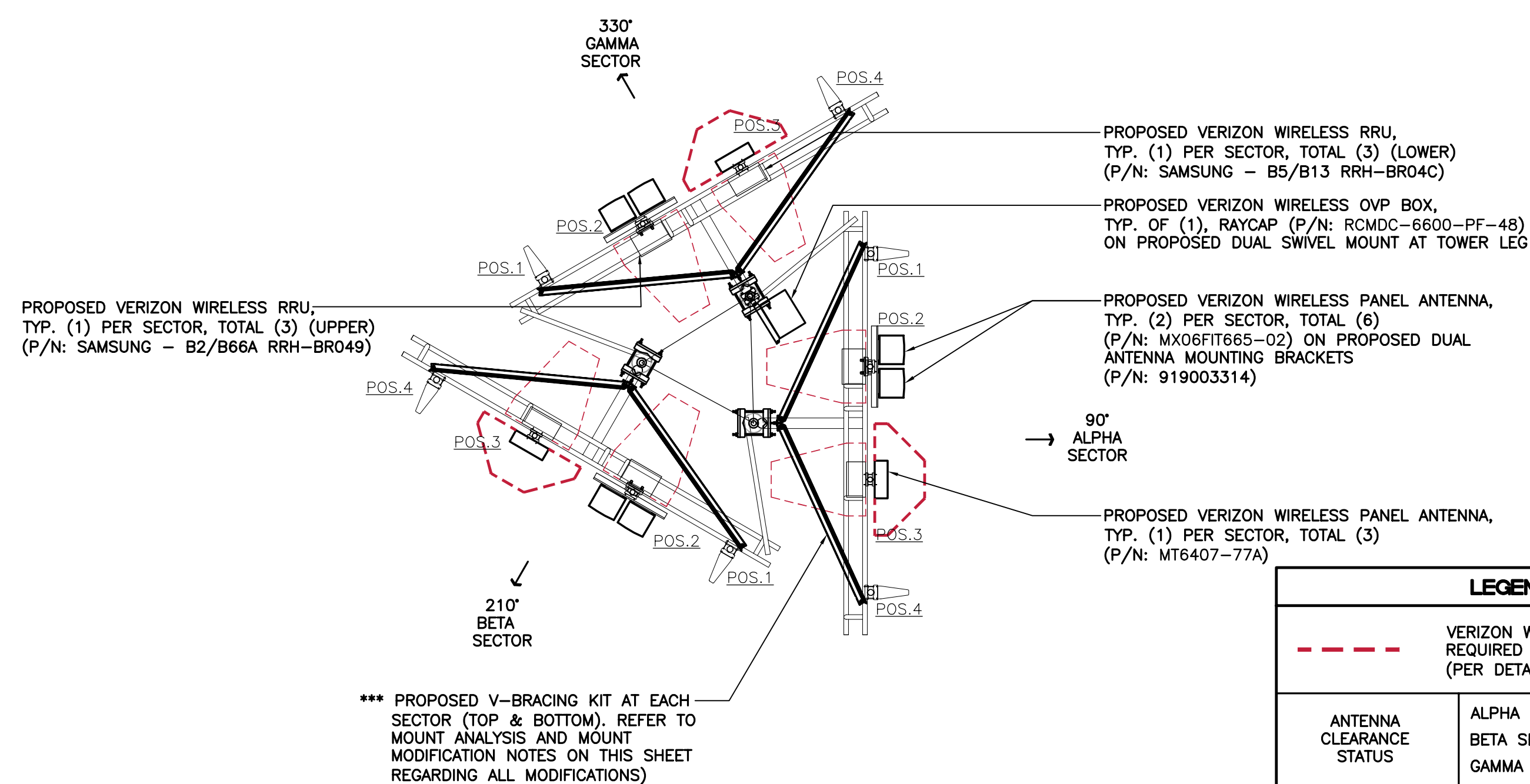


1 EXISTING SECTOR CONFIGURATION PLAN
C-2 SCALE: 1/4" = 1'-0"



2 EXISTING SECTOR CONFIGURATION ELEVATION
 C-2 SCALE: 1/4" = 1'-0"

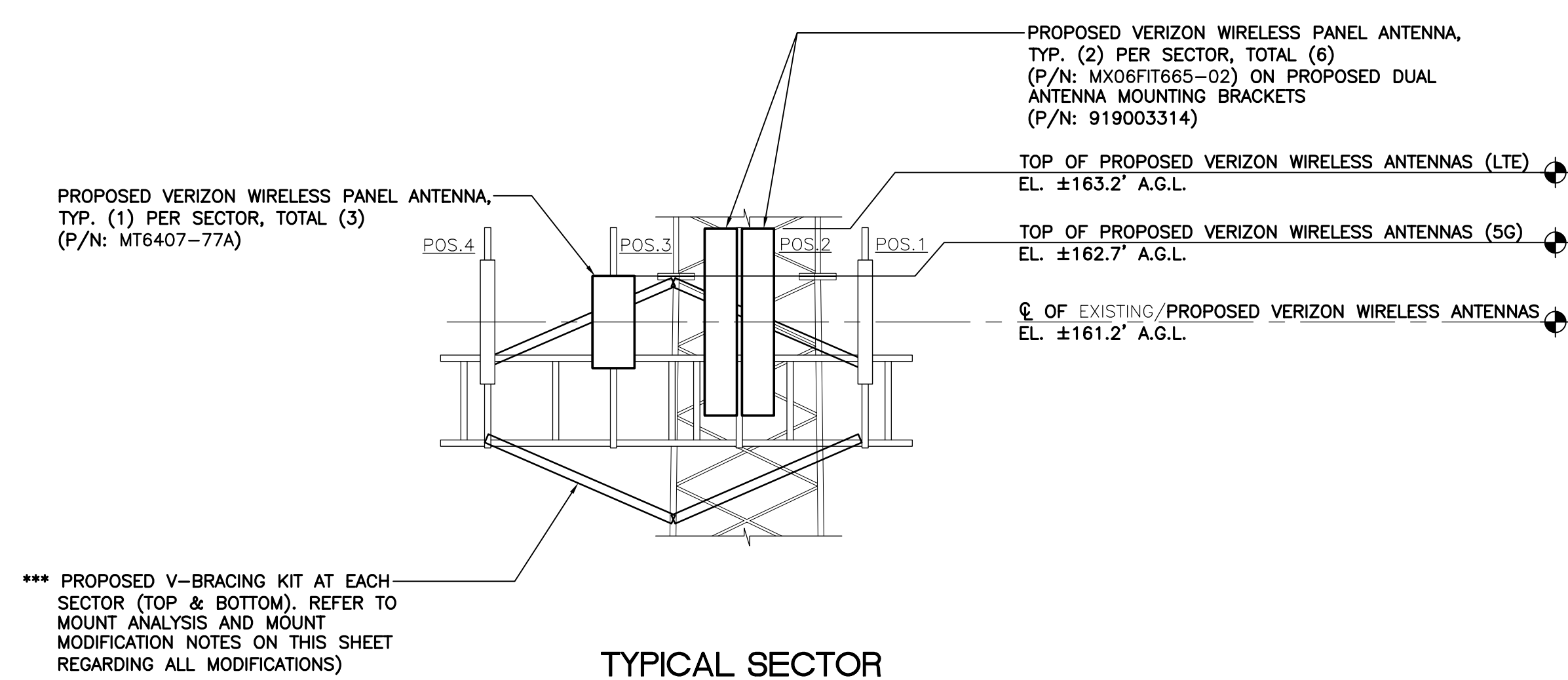
PROPOSED ANTENNA CONFIGURATIONS



1A PROPOSED SECTOR CONFIGURATION PLAN
 C-2 SCALE: 1/4" = 1'-0"



LEGEND	
-----	VERIZON WIRELESS MT6407-77A REQUIRED ANTENNA CLEARANCE LIMIT (PER DETAILS ON SHEET C-3)
ANTENNA CLEARANCE STATUS	ALPHA SECTOR: <u>COMPLIANT</u> BETA SECTOR: <u>COMPLIANT</u> GAMMA SECTOR: <u>COMPLIANT</u>
-----	VERIZON WIRELESS RRU REQUIRED CLEARANCE LIMITS (PER DETAILS ON SHEET C-3)
RRU CLEARANCE STATUS	ALPHA SECTOR: <u>COMPLIANT</u> BETA SECTOR: <u>COMPLIANT</u> GAMMA SECTOR: <u>COMPLIANT</u>

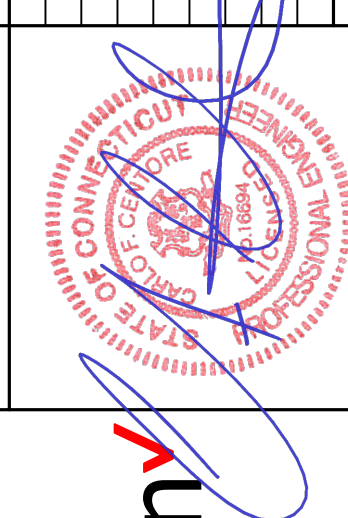


2A **PROPOSED SECTOR CONFIGURATION ELEVATION**
C-2 SCALE: 1/4" = 1'-0"

ANTENNA MOUNT ANALYSIS AND MOD. NOTES:

1. REFER TO PASSING VERIZON WIRELESS MOUNT ANALYSIS REPORT PREPARED BY MASER CONSULTING CONNECTICUT DATED 06/09/2021 FOR ADDITIONAL INFORMATION.
2. REFER TO FINAL VERIZON WIRELESS MOUNT MODIFICATION DESIGN PREPARED BY MASER CONSULTING CONNECTICUT DATED 06/09/2021 FOR ANTENNA MOUNT MODIFICATIONS.

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63-2 North Branford Road
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DATE: 06/11/21

SCALE:	AS NOTED
--------	----------

JOB NO.	21007.12
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ANTENNA SECTOR CONFIGURATION DETAILS

C-2

Sheet No. 5 of 7



1
C-4

SECTOR ANTENNA DETAIL

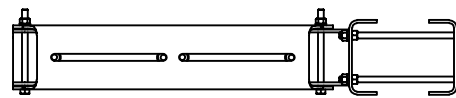
NOT TO SCALE



4
C-3

PROPOSED OVER-VOLTAGE PROTECTION BOX

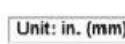
NOT TO SCALE



4A DUAL SWIVEL MOUNT DETAIL
C-3 NOT TO SCALE



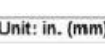
2 DUAL ANTENNA MOUNT DETAIL
C-3 NOT TO SCALE



5 DUAL-BAND AWS/PCS RADIO UNIT DETAIL
C-3 NOT TO SCALE



3 C-3 PROPOSED ANTENNA DETAIL --- NOT TO SCALE



6 DUAL-BAND 700/850 MHZ RADIO UNIT DETAIL
C-3 NOT TO SCALE



CORNWALL 2 CT

7 SURDAN MOUNTAIN RD,
CORNWALL, CT 06753

RF DETAILS

Sheet No. 6 of 7

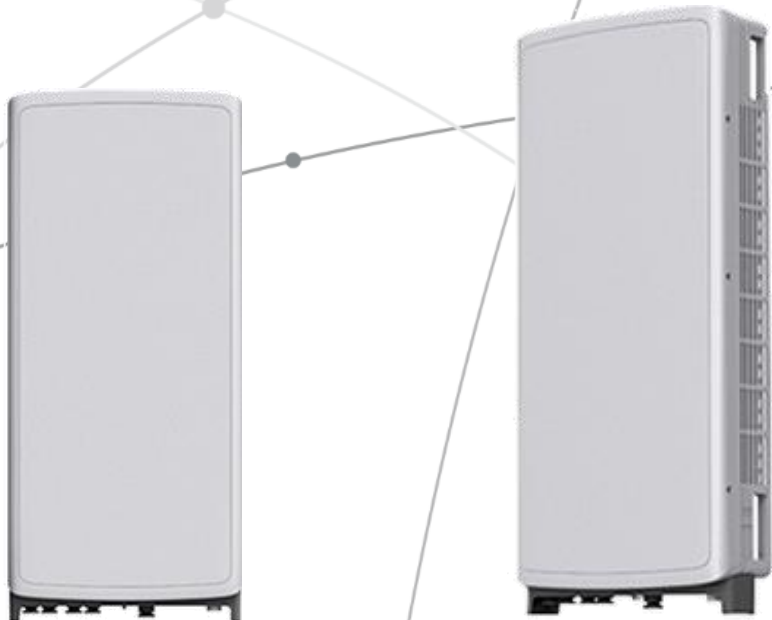
SAMSUNG

SAMSUNG C-Band 64T64R Massive MIMO Radio

for High Capacity and Wide Coverage

Samsung C-Band 64T64R Massive MIMO Radio enables mobile operators to increase coverage range, boost data speeds and ultimately offer enriched 5G experiences to users in the U.S..

Model Code : MT6407-77A



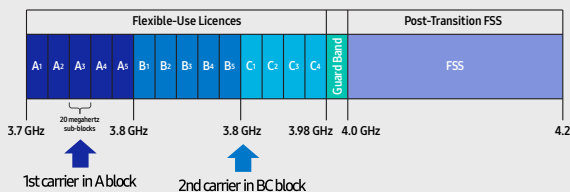
Points of Differentiation

Wide Bandwidth

With capability to support up to 2 CC carrier configuration, Samsung C-Band massive MIMO Radio supports 200 MHz bandwidth in the C-Band spectrum.

Samsung C-Band massive MIMO Radio covers the entire C-Band 280 MHz spectrum, so it can meet the operator's needs in current A block and future B/C blocks

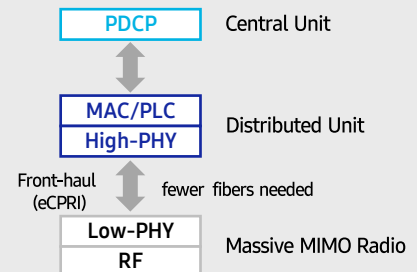
C-Band spectrum supported by Massive MIMO Radio



Future Proof Product

Samsung C-Band 64T64R Massive MIMO radio supports not only CPRI but also eCPRI as front-haul interface.

It enables operators can cut down on OPEX/CAPEX by reducing front-haul bandwidth through low layer split and using ethernet based higher efficient line.



Enhanced Performance

C-Band massive MIMO Radio creates sharp beams and extends networks' coverage on the critical mid-band spectrum using a large number of antenna elements and high output power to boost data speeds.

This helps operators reduce their CAPEX as they now need less products to cover the same area than before.

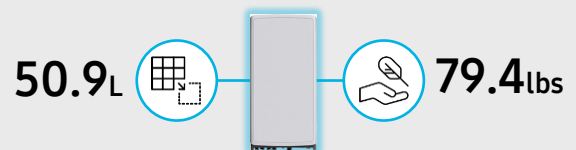
Furthermore, as C-Band massive MIMO Radio supports MU-MIMO (Multi-user MIMO), it enables to increase user throughput by minimizing interference.



Well Matched Design

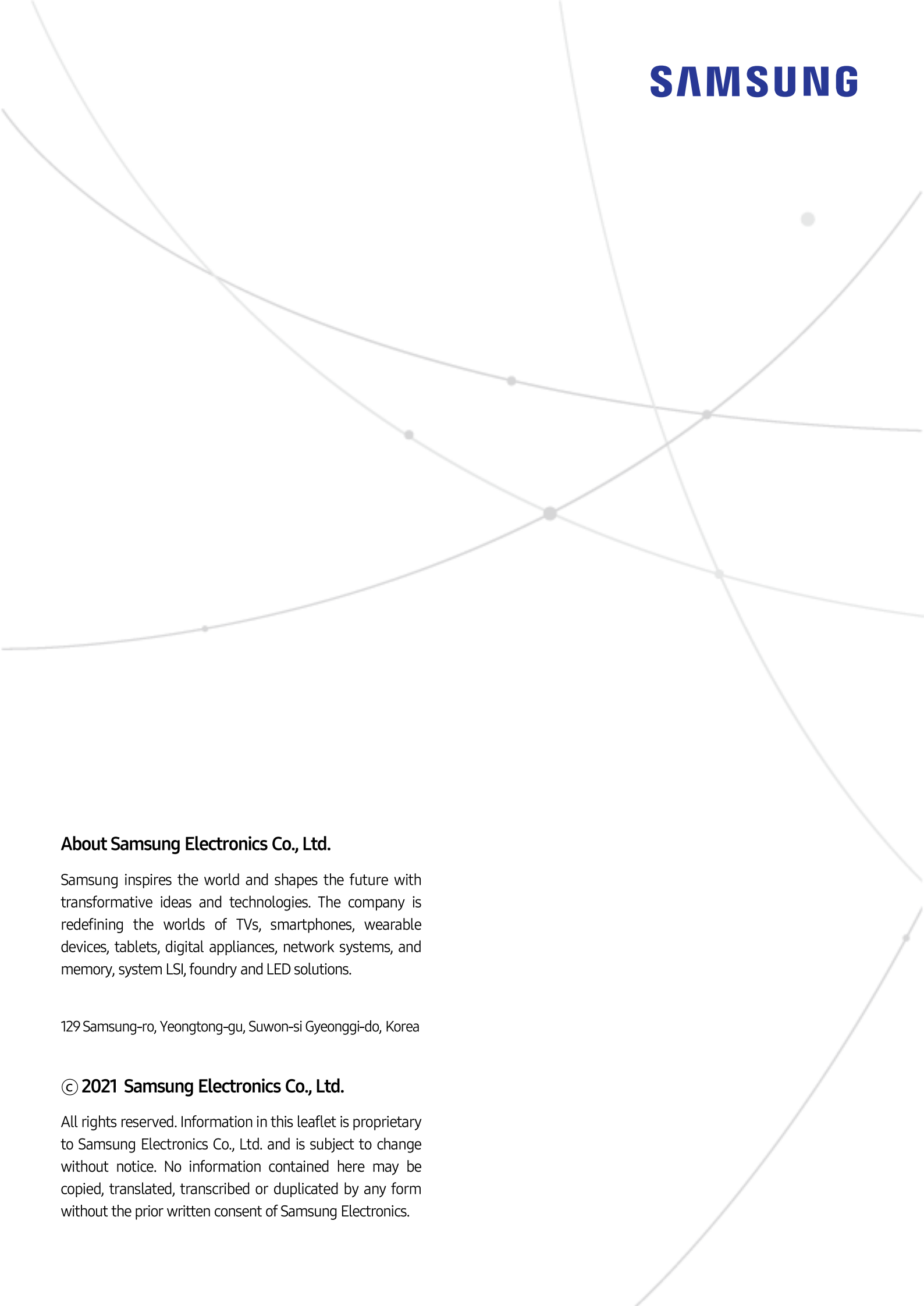
Samsung C-Band Massive MIMO radio utilizes 64 antennas, supports up to 280MHz bandwidth, and delivers a 200W output power. Despite the above advanced performance, the Radio has a compact size of 50.9L and 79.4lbs. This makes it easy to install the Radio.

It is designed to look solid and compact, with a low profile appearance so that, when installed, harmonizes well with the surrounding environment.



Technical Specifications

Item	Specification
Tech	NR
Band	n77
Frequency Band	3700 - 3980 MHz
EIRP	78.5dBm (53.0 dBm+25.5 dBi)
IBW/OBW	280 MHz / 200 MHz
Installation	Pole/Wall
Size/ Weight	16.06 x 35.06 x 5.51 inch (50.86L)/ 79.4 lbs



SAMSUNG

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Samsung inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, digital appliances, network systems, and memory, system LSI, foundry and LED solutions.

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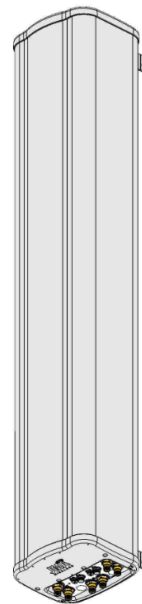
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MX06FIT665-02

NWA^W™ X-Pol Antenna | Hex-Port | 6 ft | 65°

X-Pol, Hex-Port 6 ft 65° Form In Tighter with Smart Bias T *(2) 698–894 MHz & (4) 1695–2180 MHz*

- Excellent Passive Intermodulation (PIM) performance reduces harmful interference
- Fully integrated (iRETs) with *independent* RET control for low and high bands for ease of network optimization
- SON-Ready array spacing supports beamforming capabilities
- Suitable for LTE/CDMA/PCS/UMTS/GSM Air interface technologies
- Integrated Smart BIAS-Ts reduces leasing costs
- Optimized width for reduced wind loading


nWA^W
technology

Electrical Specification (Minimum/ Maximum)	Ports 1,2		Ports 3,4,5,6		
Frequency bands, MHz	698–798	824–894	1695–1880	1850–1990	1920–2180
Polarization	± 45 ⁰		± 45 ⁰		
Average gain over all tilts, dBi	14.4	14.8	17.8	18.1	18.2
Horizontal beamwidth (HBW), degrees ¹	66.0	57.0	63.0	63.0	58.0
Front-to-back ratio, co-polar power @180 ⁰ ± 30 ⁰ , dB	>22	>22.0	>25.0	>25.0	>25.0
X-Pol discrimination (CPR) at boresight, dB	>17.0	>15.6	>23	>18	>18
Sector power ratio, percent ¹	<5.0	<3.0	<4.6	<3.8	<5.0
Vertical beamwidth, (VBW), degrees ¹	13.5	12.0	6.0	5.5	5.4
Electrical downtilt (EDT) range, degrees	2-14	2-14	0-9		
First upper side lobe (USLS) suppression, dB ¹	≤ -17.0	≤ -16.0	≤ -17.0	≤ -16.0	≤ -16.0
Minimum cross-polar isolation, port-to-port, dB	25	25	25	25	25
Maximum VSWR/ return loss, dB	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0	1.5/ -14.0
Maximum passive Intermodulation (PIM), 2x 20W carrier, dBc	-153	-153	-153		
Maximum input power per any port, watts	300		250		
Total composite power all ports, watts	1500				

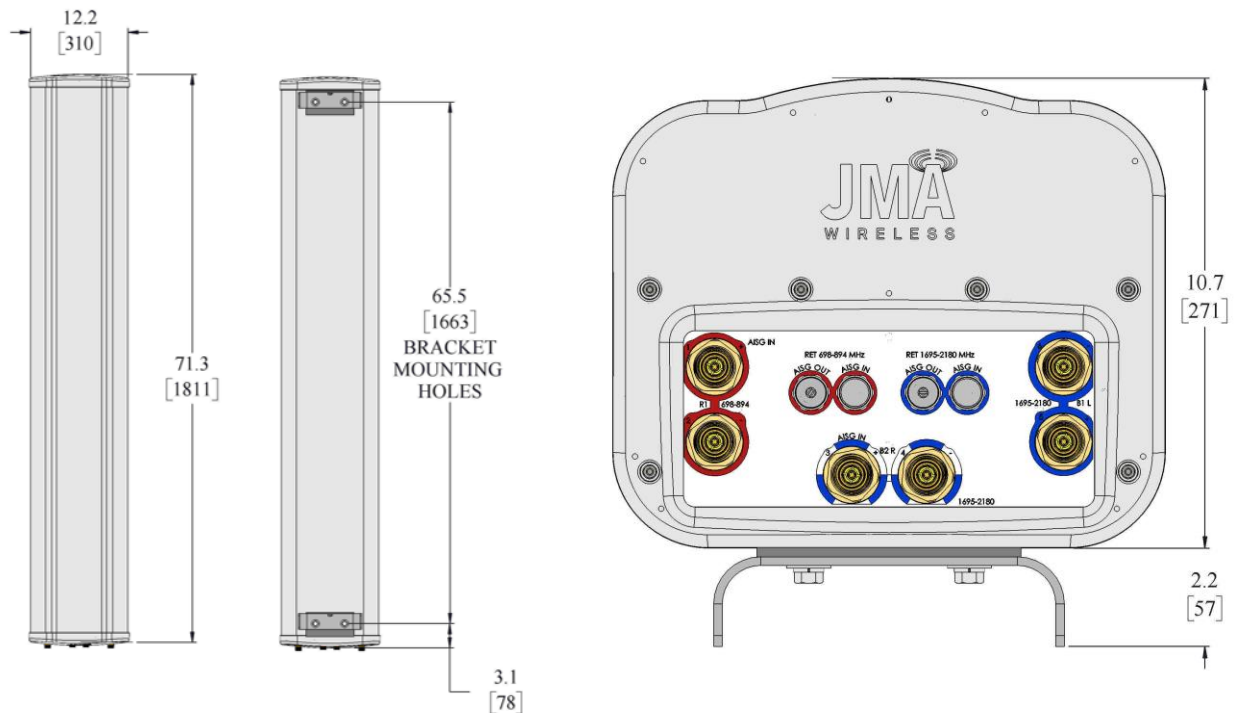
¹ Typical value over frequency and tilt

MX06FIT665-02

NWATM X-Pol Antenna | Hex-Port | 6 ft | 65°

Mechanical Specifications

Dimensions height/ width/ depth, inches (mm)	71.3/ 12.2/ 10.7 (1811/ 310/ 271)
Shipping dimensions length/ width/ height, inches (mm)	82/ 20/ 15 (2083/ 508/ 381)
No. of RF input ports, connector type & location	6 x 4.3-10 female, bottom
RF connector torque	96 in- lb (10.85 N-M or 8 ft-lbs)
Net antenna weight, lb (kg)	51 (23.18)
Shipping weight, lb (kg)	91 (41.36)
Antenna mounting and downtilt kit included with antenna	91900318
Net weight of the mounting and downtilt kit, lb (kg)	18 (8.18)
Range of mechanical up/ down tilt	-2° to 12°
Rated wind survival speed, mph (km/h)	150 (241)
Frontal, lateral & rear wind loading @ 150 km/h, lbf (N)	87 (386), 68 (301), 109 (485)
Equivalent flat plate @100 mph and Cd=2, sq. ft.	1.42



Ordering Information

Antenna Model	Description
MX06FIT665-02	6F X- Pol HEX FIT 65° 2-14°/ 0-9° RET, 4.3-10 & SBT
Optional Accessories	
992100-CA030-SC	Optional AISG jumper cable, M/F, 3.0 meters
PCU-1000	Primary control unit, USB

MX06FIT665-02

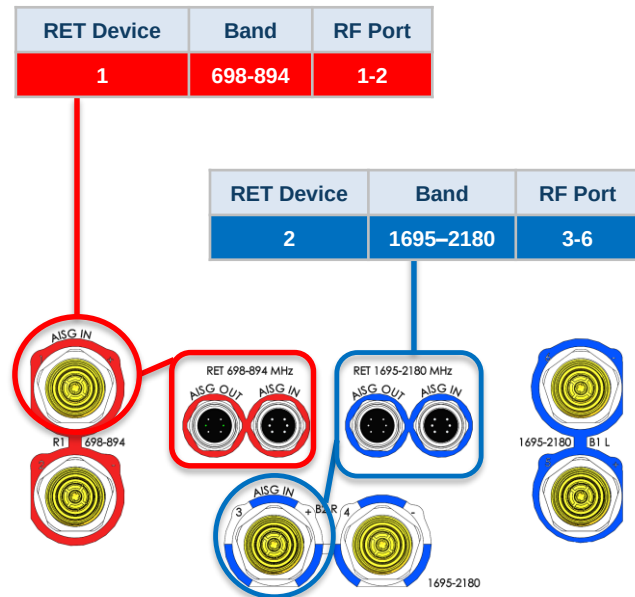
NWATM X-Pol Antenna | Hex-Port | 6 ft | 65°

Remote Electrical Tilt (RET 1000) Information

RET location	Integrated into antenna
RET interface connector type	8 Pin AISG connector per IEC 60130-9
RET interface connector quantity	2 pairs of AISG male/ female connectors
RET interface connector location	Bottom of the antenna
Total No. of internal RETs low bands	1
Total No. of internal RETs high bands	1
RET input operating voltage, vdc	10-30
RET max. power consumption, idle state, W	≤ 2.0
RET max. power consumption, normal operating conditions, W	≤ 13.0
RET communication protocol	AISG 2.0/ 3GPP

RET & RF Connector Topology

Each RET device can be controlled either via the designated external AISG connector or RF port as shown below



Array Topology

3 sets of radiating arrays

R1 – 698–894MHz
B1 – 1695–2180MHz
B2 – 1695–2180MHz

Band	RF Port
1695–2180	3-4
698–894	1-2
1695–2180	5-6



SAMSUNG

Dual-Band Radio Unit AWS/PCS (B66/B2)

RFV01U-D1A

Samsung's RFV01U-D1A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.



The RFV01U-D1A RU targets dual-band support across Band 66 (AWS) and Band 2 (PCS), making it an ideal product for broad coverage footprints across multiple common mid-range frequencies.

The RU handles all Radio Frequency (RF) processing in a single, compact unit, and is designed to interface via CPRI with Samsung's CDU baseband offerings, in both distributed- and central-RAN configurations.

In addition to its minimal footprint and ease of installation, the RU is also designed to reduce cost of ownership through its integrated spectrum analyzer, which allows for remote RF monitoring, greatly reducing the need for on-site maintenance visits.

Features and Benefits

- Dual-band support for broad frequency coverage
- Minimal footprint reduces site costs
- Rapid, easy installation
- Flexibly deployable in any location
- Remote RF monitoring capability
- Convection cooled, silent operation
- Built-in Broadcast Auxiliary Services (BAS) filter ensures compliant AWS operation without impacting footprint

Key Technical Specifications

Duplex Type: FDD

Operating Frequencies:

B66: DL(2,110-2,180MHz)/UL(1,710-1,780MHz)

B2: DL(1,930-1,990MHz)/UL(1,850-1,910MHz)

Instantaneous Bandwidth:

70MHz(B66) + 60MHz(B2)

RF Chain: 4T4R/2T4R/2T2R

Output Power: Total 320W

DU-RU Interface: CPRI (10Gbps)

Dimensions: 380 x 380 x 255mm (36.8L)

Weight: 38.3kg

Input Power: -48V DC

Operating Temp.: -40 - 55°(w/o solar load)

Cooling: Natural convection

SAMSUNG

Dual-Band Radio Unit 700/850MHz (B13/B5) RFV01U-D2A

Samsung's RFV01U-D2A is a compact remote Radio Unit (RU) designed for deployments that require flexibility in installation and rapid onlining, without compromising on coverage, capacity or operational expenses.



The RFV01U-D2A RU targets dual-band support across Band 13 (700MHz) and Band 5 (850MHz), making it an ideal product for broad coverage footprints across multiple common low-end, long-range frequencies.

The RU handles all Radio Frequency (RF) processing in a single, compact unit, and is designed to interface via CPRI with Samsung's CDU baseband offerings, in both distributed- and central-RAN configurations.

In addition to its minimal footprint and ease of installation, the RU is also designed to reduce cost of ownership through its integrated spectrum analyzer, which allows for remote RF monitoring, greatly reducing the need for on-site maintenance visits.

Features and Benefits

- Dual-band support for broad frequency coverage
- Minimal footprint reduces site costs
- Rapid, easy installation
- Flexibly deployable in any location
- Remote RF monitoring capability
- Convection cooled, silent operation

Key Technical Specifications

Duplex Type: FDD
Operating Frequencies:
 B13: DL(746-756MHz)/UL(777-787MHz)
 B5: DL(869-894MHz)/UL(824-849MHz)
Instantaneous Bandwidth: 10MHz(B13) + 25MHz(B5)
RF Chain: 4T4R/2T4R/2T2R
Output Power: Total 320W
DU-RU Interface: CPRI (10Gbps)
Dimensions: 380 x 380 x 207mm (29.9L)
Weight: 31.9kg
Input Power: -48V DC
Operating Temp.: -40 - 55°(w/o solar load)
Cooling: Natural convection

ATTACHMENT 3

	General	Power	Density					
Site Name: Cornwall 2								
Tower Height: Verizon @ 161.2ft								
CARRIER	# OF CHAN.	WATTS ERP	HEIGHT	CALC. POWER DENS	FREQ.	MAX. PERMISS. EXP.	FRACTION MPE	Total
*CT State Police	Receive only		201.5	866			0.00%	
*CT State Police	Receive only		201.5	866			0.00%	
*LCD	1	500	199	457	0.0048	0.3047	0.16%	
*LCD	1	300	195	33.5	0.0030	0.2000	0.15%	
*CT State Police	5	1000	188.5	866	0.0540	0.5773	0.94%	
*CT State Police	5	1000	188.5	866	0.0540	0.5773	0.94%	
*CL&P	1	1000	185	138	0.0112	0.2000	0.56%	
*LCD	1	419	185	138	0.0047	0.2000	0.24%	
*LCD	1	250	176	138	0.0031	0.2000	0.16%	
*Pagenet	2	630	174	929	0.0161	0.6193	0.26%	
*LCD	1	419	165	138	0.0060	0.2000	0.30%	
*CL&P	1	100	120	40	0.0028	0.2000	0.14%	
*CL&P	1	100	110	40	0.0033	0.2000	0.17%	
*Ham	1	250	88	144	0.0134	0.2000	0.67%	
*Town of Sharon	1	100	80	45.76	0.0066	0.2000	0.33%	
*Ham	1	100	70	442.2	0.0088	0.2948	0.30%	
*AT&T	1	321	150.25	850	0.0055	0.5667	0.10%	
*AT&T	1	2951	150.25	700	0.0510	0.4667	1.09%	
*AT&T	1	2951	150.25	700	0.0510	0.4667	1.09%	
*AT&T	1	3837	150.25	2100	0.0663	1.0000	0.66%	
*AT&T	1	1475	150.25	700	0.0255	0.4667	0.55%	
*AT&T	1	1000	150.25	850	0.0173	0.5667	0.30%	
*AT&T	1	3664	150.25	1900	0.0633	1.0000	0.63%	
*AT&T	1	1000	150.25	850	0.0173	0.5667	0.30%	
*EVERSOURCE	4	124	123	217	0.0130	0.2000	0.65%	
*CL&P-SD210	4	20	113	217	0.0025	0.2000	0.13%	
*CL&P-SD210	4	20	133	217	0.0018	0.2000	0.09%	
*CL&P-DB586	1	300	113	900	0.0094	0.6000	0.16%	
*CL&P-DB586	1	300	93	900	0.0143	0.6000	0.24%	
*CL&P-SD110	1	100	79	48	0.0067	0.2000	0.34%	
*CL&P-SD110	1	100	79	48	0.0067	0.2000	0.34%	
*CL&P-SD110	1	100	79	48	0.0067	0.2000	0.34%	
*T-MobileLTE	1	1706	140	1900	0.0342	1.0000	0.34%	
*T-MobileLTE	2	2560	140	2100	0.1025	1.0000	1.03%	
*T-Mobile UMTS	2	395	140	600	0.0158	0.4000	0.40%	
*T-Mobile LTE	2	865	140	700	0.0346	0.4667	0.74%	
VZW 700	4	470	161.2	0.0026	751	0.5007	0.52%	
VZW Cellular	4	366	161.2	0.0010	878.49	0.5827	0.17%	
VZW CDMA	2	565	161.2	0.0031	874	0.5857	0.54%	
VZW PCS	4	966	161.2	0.0053	1975	1.0000	0.53%	
VZW AWS	4	989	161.2	0.0055	2120	1.0000	0.55%	
VZW CBAND	4	6531	161.2	0.0362	3730.08	1.0000	3.62%	
								20.73%
* Source: Siting Council								

ATTACHMENT 4

Structural Analysis Report

195-ft Existing Valmont Lattice Tower

*Proposed Verizon Wireless
Antenna Upgrade*

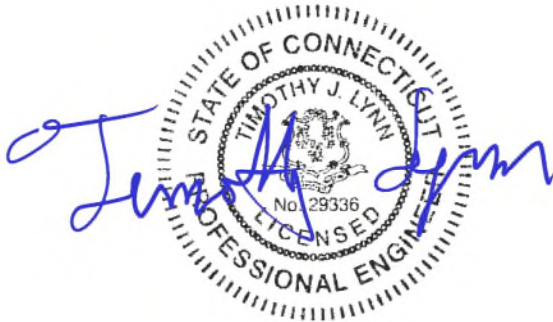
Verizon Site Ref: Cornwall 2

*7 Surdan Mountain Road
Sharon, CT*

CENTEK Project No. 21007.12

Date: June 14, 2021

Max Stress Ratio = 92%



Prepared for:
Verizon Wireless
20 Alexander Drive
Wallingford, CT 06492

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- INTRODUCTION
- ANTENNA AND APPURTENANCE SUMMARY
- PRIMARY ASSUMPTIONS USED IN THE ANALYSIS
- ANALYSIS
- TOWER LOADING
- TOWER CAPACITY
- FOUNDATION AND ANCHORS
- CONCLUSION

SECTION 2 – CONDITIONS & SOFTWARE

- STANDARD ENGINEERING CONDITIONS
- GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

SECTION 3 – CALCULATIONS

- tnxTower INPUT/OUTPUT SUMMARY
- tnxTower FEED LINE PLAN
- tnxTower FEED LINE DISTRIBUTION
- tnxTower DETAILED OUTPUT
- FOUNDATION ANALYSIS

SECTION 4 – REFERENCE MATERIALS

- RF DATA SHEET

I n t r o d u c t i o n

The purpose of this report is to summarize the results of the non-linear, P- Δ structural analysis of the antenna modification proposed by the Verizon on the existing lattice tower located in Sharon, Connecticut.

The host tower is a 195-ft, three legged, steel lattice tower originally designed and manufactured by PiROD Inc., Job No. A-115074, signed and sealed 10/14/1998. The tower geometry and structure member sizes were taken from a combination of the original design documents and a previous structural analysis prepared by Centek project no. 19027.16 dated April 29, 2019.

Antenna and appurtenance information were obtained from a previous structural analysis prepared by Infinigy project no. 10050790 dated February 4, 2020, a previous structural analysis prepared by Black & Veatch project no. 405025 dated December 15, 2020 and a Verizon RF sheet.

The tower consists of eleven (11) vertical sections consisting of solid round/truss legs conforming to ASTM A572 Gr. 50. Horizontal and diagonal lateral support bracing consists of steel angle and solid round construction conforming to ASTM A572-50 and ASTM A36. The vertical tower sections are connected by bolted flange plates while the legs and bracing are connected by bolted and welded gusset connections. The tower face width is 4.50-ft at the top and 20.00-ft at the bottom.

A n t e n n a a n d A p p u r t e n a n c e S u m m a r y

The existing, proposed and future loads considered in this analysis consist of the following:

- Unknown (Existing):
Antennas: One (1) single dipole antenna leg mounted with a RAD center elevation of ± 196.26 -ft above grade level.
Coax Cable: One (1) 7/8" $\varnothing$ coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Equipment: One (1) vacant 6-ft PiROD Rigid Side arm face mounted to the existing tower with a RAD center elevation of ± 196 -ft above grade level.
- CSP (Existing):
Antennas: One (1) RFS PA6-65AC Microwave dish and one (1) 6ft x 4in. pipe mount leg mounted with a RAD center elevation of ± 194.25 -ft above grade level.
Coax Cable: One (1) WE-65 elliptical coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antennas: One (1) 9-ft Omni-directional whip antenna mounted on one (1) existing 4-ft side arm with a RAD center elevation of 192.75-ft above grade level.
Coax Cables: One (1) 1-5/8" $\varnothing$ coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.

- Unknown (Existing):
Antennas: (1) Kathrein OGT9-840N-ft Omni-directional whip antenna mounted on a low profile rotatable platform with a RAD center elevation of 190.25-ft above grade level.
Coax Cables: One (1) 1-5/8" Ø coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antennas: One (1) DB222-A 2-Bay Dipole antenna mounted on an existing low profile rotatable platform with a RAD center elevation of 188.25-ft above grade level.
Coax Cables: One (1) 7/8" Ø coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antennas: One (1) RFS PD220 Omni-directional whip antenna mounted on an existing 6-ft side arm with a RAD center elevation of ±182.25-ft above grade level.
Coax Cable: One (1) 7/8" Ø coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- CSP (Existing):
Antennas: Two (2) Sinclair SC479-HF1LDF antennas (inverted), one (1) Sinclair SE414-SWBP4LDF antenna and one (1) Bird 432E-83I-01T TTA mounted to an existing low profile rotatable platform with an elevation of 182-ft above grade level.
Coax Cables: Two (2) 1-5/8" Ø and one (1) 1/2" Ø coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antennas: One (1) BCD87077 Omni-directional whip antenna mounted on an existing 4-ft side arm with a RAD center elevation of ±181.50-ft above grade level.
Coax Cable: One (1) 7/8" Ø coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antennas: One (1) DB222-A 2-Bay Dipole antenna (inverted) mounted to an existing 4-ft side arm (same as Omni @180.25-ft) with a RAD center elevation of ±180.25-ft above grade level.
Coax Cables: One (1) 7/8" Ø coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antennas: One (1) 12-ft Omni-directional whip antenna (inverted) and one (1) 10-ft Omni-directional whip antenna (inverted) mounted on an existing low profile rotatable platform with respective RAD center elevations of 175.25-ft and 174.25-ft above grade level.
Coax Cables: Two (2) 1-5/8" Ø coax cables running on the leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antennas: One (1) 12-ft Omni-directional whip antenna mounted on an existing 3-ft side arm with a RAD center elevation of 175.25-ft above grade level.
Coax Cables: One (1) 7/8" Ø coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.

- **Unknown (Existing):**
Antennas: One (1) Telewave ANT150D6-9, 4 bay dipole antenna (inverted) mounted on an existing low profile rotatable platform with a RAD center elevation of 173.75-ft above grade level.
Coax Cables: One (1) 7/8" Ø coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- **AT&T (Existing to Remain):**
Antenna: Three (3) Powerwave 7770 panel antennas, four (4) CCI DMP65R-BU6D panel antennas, two (2) CCI DMP65R-BU4D panel antenna, six (6) Powerwave LGP21401 TMAs, six (6) Powerwave LGP13519 Diplexers, three (3) Ericsson 8843 B2/B66A remote radio heads, three (3) 4478 B14 remote radio heads, three (3) 4449 B5/B12 remote radio heads and three (3) Raycap DC6-48-60-18-8F surge arrestors mounted on three (3) existing 12-ft T-Frames with a RAD center elevation of ±150-ft above grade level.
Coax Cable: Twelve (12) 1-5/8" Ø coax cables, three (3) fiber cable and six (6) dc control cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- **T-MOBILE (EXISTING):**
Antennas: Three (3) RFS APXVAARR24_43 panel antennas, three (3) RFS APX16DWV-16DWVS panel antennas, six (6) Ericsson RRUS-11 remote radio heads and three (3) Ericsson 4449 B71 B12 remote radio heads mounted on (3) 10-ft T-Frames with a RAD center elevation of 140-ft above grade level.
Coax Cables: Three (3) 6x12 fiber lines running on a leg of the existing tower.
- **Eversource (Existing):**
Antennas: One (1) Sinclair SD210 single dipole antenna mounted to an existing PiROD 6-ft Rigid side arm with an elevation of ±135ft above grade level.
Coax Cable: One (1) 7/8" Ø coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- **Eversource (Existing):**
Antennas: Two (2) Andrew DB586-Y Omni-directional whip antennas (one upright, one inverted) and one (1) TTA mounted to an existing PiROD 6-ft Rigid side arm with respective RAD center elevations of ±130ft and ±125ft above grade level.
Coax Cable: Two (2) 7/8" Ø coax cables running on the leg/face of the existing tower as specified in Section 3 of this report.
- **Unknown (Existing):**
Equipment: One (1) vacant 6-ft PiROD Rigid Side arm face mounted to the existing tower with a RAD center elevation of ±120.5-ft above grade level.
- **Unknown (Existing):**
Antennas: One (1) DB212 Single Dipole antenna mounted to an existing PiROD 6-ft Rigid side arm with an elevation of ±120.67ft above grade level.
Coax Cables: One (1) 7/8" Ø coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.

- Eversource (Existing):
Antennas: One (1) dBspectra DS2C03F36D-D antenna mounted to a 4-ft side arm with an elevation of ± 117.5 ft above grade level.
Coax Cables: Two (2) 7/8" $\varnothing$ coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antennas: One (1) DB205-L Omni-directional whip antenna mounted to an existing PiROD 6-ft Rigid side arm with an elevation of ± 109.25 ft above grade level.
Coax Cables: One (1) 7/8" $\varnothing$ coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- CSP (Existing):
Antennas: One (1) RFS PA6-65AC Microwave dish and one (1) 6ft x 4in. pipe mount leg mounted with a RAD center elevation of ± 102.25 -ft above grade level.
Coax Cable: One (1) WE-65 elliptical coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antennas: One (1) DB224-A 4 Bay Dipole antenna mounted to an existing 2-ft side arm with a RAD center elevation of ± 94 -ft above grade level.
Coax Cables: One (1) 1/2" $\varnothing$ coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antennas: One (1) RFS PD220-2 Omni-directional whip antenna mounted to an existing PiROD 6-ft Rigid side arm with a RAD center elevation of ± 90.41 ft above grade level.
Coax Cables: One (1) 1/2" $\varnothing$ coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antennas: One (1) 12-ftx3in. $\varnothing$ Omni-directional whip antenna (inverted) mounted to an existing PiROD 6-ft Rigid side arm with a RAD center elevation of ± 79.5 ft above grade level.
Coax Cables: One (1) 1/2" $\varnothing$ coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antennas: One (1) Andrew DB432-A Yagi antenna leg mounted with a RAD center elevation of ± 70.25 ft above grade level.
Coax Cables: One (1) 1/2" $\varnothing$ coax cable running on the leg/face of the existing tower as specified in Section 3 of this report.
- Unknown (Existing):
Antennas: One (1) Channel Master 1.2M Dish antenna mounted on a side arm with a RAD center elevation of ± 17 -ft above grade level.
Coax Cables: Two (2) 1/4" $\varnothing$ coax cables running on the leg/face of the existing tower as specified in Section 3 of this report.

- Verizon (Existing to Remain):
Antennas: Six (6) Antel LPA80080-4CF mounted on three (3) existing 15-ft T-Frames with a RAD center elevation of ± 161.2 -ft above grade level.
Coax Cable: Twelve (12) 1-5/8" $\varnothing$ coax cables running on a leg/face of the existing tower as specified in Section 3 of this report.
- Verizon (Existing to Remove):
Antennas: Six (6) Antel BXA-70063-6CF panel antennas and three (3) B13 RRH 4x30 mounted on three (3) existing 15-ft T-Frames with a RAD center elevation of ± 161.2 -ft above grade level.
- **VERIZON (PROPOSED):**
Antennas: Six (6) JMA MX06FIT665-02 panel antennas, three (3) Samsung MT6407-77A panel antennas, three (3) Samsung B2/B66A remote radio heads, three (3) Samsung B5/B13 remote radio heads and one (1) main distribution box mounted on three (3) existing 15-ft T-Frames with a RAD center elevation of ± 161.2 -ft above grade level.
Mount Modification: Install mount modifications per Mount Modification Drawings prepared by Maser dated June 9, 2021.

Primary Assumptions Used in the Analysis

- The tower structure's theoretical capacity not including any assessment of the condition of the tower.
- The tower carries the horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All member protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.

A n a l y s i s

The existing tower was analyzed using a comprehensive computer program entitled tnxTower. The program analyzes the tower, considering the worst case loading condition. The tower is considered as loaded by concentric forces along the tower, and the model assumes that the tower members are subjected to bending, axial, and shear forces.

The existing tower was analyzed for the controlling basic wind speed (3-second gust) with no ice and the applicable wind and ice combination to determine stresses in members as per guidelines of TIA-222-G-2005 entitled “Structural Standard for Antenna Support Structures and Antennas”, the American Institute of Steel Construction (AISC) and the Manual of Steel Construction; Load and Resistance Factor Design (LRFD).

The controlling wind speed is determined by evaluating the local available wind speed data as provided in Appendix N of the CSBC¹ and the wind speed data available in the TIA-222-G-2005 Standard.

T o w e r L o a d i n g

Tower loading was determined by the basic wind speed as applied to projected surface areas with modification factors per TIA-222-G-2005, gravity loads of the tower structure and its components, and the application of 1.00” radial ice on the tower structure and its components.

Basic Wind Speed:	Sharon; $V_{asd} = 93$ mph (Risk Category III)	[Appendix N of the 2018 CT Building Code]
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Load Cases:	<u>Load Case 1</u> ; 93 mph wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation.	[Appendix N of the 2018 CT Building Code]
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	<u>Load Case 2</u> ; = 40 mph wind speed w/ 1.00” radial ice plus gravity load – used in calculation of tower stresses.	[Annex B of TIA-222-G-2005]
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¹ The 2015 International Building Code as amended by the 2018 Connecticut State Building Code (CSBC).

T o w e r C a p a c i t y

- Calculated stresses were found to be within allowable limits.

Tower Section	Elevation	Stress Ratio (percentage of capacity)	Result
Leg (T3)	152'-0" - 172'-0"	89.5%	PASS
Diagonal (T11)	2'-0" - 22'-0"	91.8%	PASS

F o u n d a t i o n a n d A n c h o r s

The existing foundation consists of three (3) rock anchored reinforced concrete pad and piers bearing directly on existing sub grade. The sub-grade conditions used in the analysis of the existing foundation were obtained from a combination of the aforementioned manufacturers original design documents; PiROD Job No. A-115075 (foundation alternate #2) and a geo-technical soils study report prepared by Clarence Welti & Associates, Inc., dated March 03, 1998. The tower legs are connected to the foundation by means of six (6) 1.25"Ø, ASTM 687 Grade 105 anchor bolts per leg, embedded ±6-ft into the concrete foundation structure.

- The tower reactions developed from the governing Load Case of the were used in the verification of the foundation and anchor bolts:

Leg Reactions	Vector	Proposed Tower Reactions
Leg	Shear	47 kips
	Compression	463 kips
	Uplift	410 kips
Base	Shear	73 kips
	Compression	70 kips
	Moment	7609 kip-ft

- The anchor bolts were found to be within allowable limits.

Tower Section	Component	Stress Ratio (percentage of capacity)	Result
Anchor Bolts	Tension	68.9%	PASS

- The foundation was found to be within allowable limits.

Foundation Type	Design Limit	Allowable Limit/FS	Proposed Loading	Result
Rock Anchored Pad and Pier (x3)	Ultimate Bearing Pressure	20.00 ksf	6.8 ksf	PASS
	Rock Mass Uplift Resistance	1.00 ⁽¹⁾	1.41	PASS

Note 1: Minimum required Factor of Safety (FS) of 1.0 required per TIA-222-G section 9.4

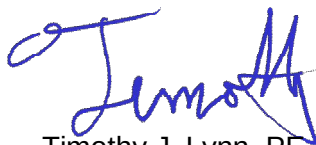
Conclusion

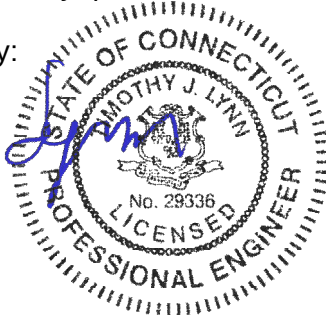
This analysis shows that the subject tower **is adequate** to support the proposed antenna configuration.

The analysis is based, in part, on the information provided to this office by Verizon. If the existing conditions are different than the information in this report, Centek Engineering, Inc. must be contacted for resolution of any potential issues.

Please feel free to call with any questions or comments.

Respectfully Submitted by:


 Timothy J. Lynn, PE
 Structural Engineer



*Standard Conditions for Furnishing of
Professional Engineering Services on
Existing Structures*

All engineering services are performed on the basis that the information used is current and correct. This information may consist of, but is not necessarily limited to:

- Information supplied by the client regarding the structure itself, its foundations, the soil conditions, the antenna and feed line loading on the structure and its components, or other relevant information.
- Information from the field and/or drawings in the possession of Centek Engineering, Inc. or generated by field inspections or measurements of the structure.
- It is the responsibility of the client to ensure that the information provided to Centek Engineering, Inc. and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and are in an un-corroded condition and have not deteriorated. It is therefore assumed that its capacity has not significantly changed from the “as new” condition.
- All services will be performed to the codes specified by the client, and we do not imply to meet any other codes or requirements unless explicitly agreed in writing. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement. In the absence of information to the contrary, all work will be performed in accordance with the latest revision of ANSI/ASCE10 & ANSI/EIA-222
- All services performed, results obtained, and recommendations made are in accordance with generally accepted engineering principles and practices. Centek Engineering, Inc. is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

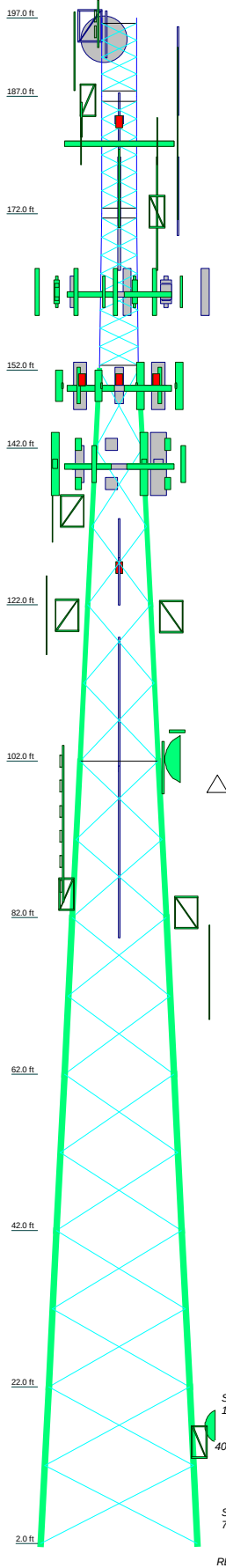
GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM

tnxTower, is an integrated structural analysis and design software package for Designed specifically for the telecommunications industry, tnxTower, formerly RISA Tower, automates much of the tower analysis and design required by the TIA/EIA 222 Standard.

tnxTower Features:

- tnxTower can analyze and design 3- and 4-sided guyed towers, 3- and 4-sided self-supporting towers and either round or tapered ground mounted poles with or without guys.
- The program analyzes towers using the TIA-222-G (2005) standard or any of the previous TIA/EIA standards back to RS-222 (1959). Steel design is checked using the AISC ASD 9th Edition or the AISC LRFD specifications.
- Linear and non-linear (P-delta) analyses can be used in determining displacements and forces in the structure. Wind pressures and forces are automatically calculated.
- Extensive graphics plots include material take-off, shear-moment, leg compression, displacement, twist, feed line, guy anchor and stress plots.
- tnxTower contains unique features such as True Cable behavior, hog rod take-up, foundation stiffness and much more.

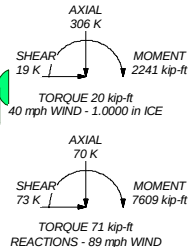
Section	11	12	13	14	15	16	17	18	19	20	21
Legs							Prod 105218 reinf. w/1" dia. S.R.				
Leg Grade							A572-50				
Diagonals							L3x3x1/4				
Diagonal Grade							A572-50				
Top Chords							N.A.				
Bottom Chords							N.A.				
Face Width (ft)	20						15 @ 10				
# Panels @ (ft)											
Weight (K)	38.2										



ALL REACTIONS
ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 463 K
SHEAR: 47 K

UPLIFT: -410 K
SHEAR: 42 K



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
Single Dipole (Unknown)	196.26	4449 BS/B12 (ATJ)	150
PIROD 6'-8" Rigid Side Arm (Vacant)	196	4449 BS/B12 (ATJ)	150
6"x4" Pipe Mount (CSP)	194.92	4449 BS/B12 (ATJ)	150
PA6-65AC (CSP)	194.25	DC6-48-60-18-8F Surge Arrestor (ATJ)	150
9' x 3' Dia Omni (Unknown)	192.75	DC6-48-60-18-8F Surge Arrestor (ATJ)	150
CG19-840 (Unknown)	190.25	DC6-48-60-18-8F Surge Arrestor (ATJ)	150
Prod 4' Side Mount Standoff (1) (Unknown)	186.5	Prod 12' T-Frame Sector Mount (3) (ATJ)	150
DB222-A (Unknown)	185.25	Prod 12' T-Frame Sector Mount (3) (ATJ)	150
SC479-HF1LDF (CSP (Inverted))	184	Prod 12' T-Frame Sector Mount (3) (ATJ)	150
SC479-HF1LDF (CSP (Inverted))	184	7770.00 (ATJ)	150
SE414-SWB4LDF (D00) (CSP)	184	7770.00 (ATJ)	150
TXRXR 432E-83-01 T (CSP)	184	7770.00 (ATJ)	150
Filter Box (CSP)	183	(2) DMP65R-BU6D (ATJ)	150
PD220 (Unknown)	182.25	(2) DMP65R-BU6D (ATJ)	150
BCD-87077 (Pagenet)	181.5	APX16DWW-16DWS-E-A20 (T-Mobile Existing)	140
(4) 6"x2" Pipe Mount (Unknown)	181.25	APX16DWW-16DWS-E-A20 (T-Mobile Existing)	140
(4) 6"x2" Pipe Mount (Unknown)	181.25	APX16DWW-16DWS-E-A20 (T-Mobile Existing)	140
PIROD 15' Rotatable Platform (Lattice) (Unknown)	181.25	APXVAARR24-43 (T-Mobile Existing)	140
(4) 6"x2" Pipe Mount (Unknown)	181.25	APXVAARR24-43 (T-Mobile Existing)	140
DB222-A (Unknown (Inverted))	180.25	APXVAARR24-43 (T-Mobile Existing)	140
12' x 3' Dia Omni (Unknown)	175.25	RRUS-11 (T-Mobile Existing)	140
12' x 3' Dia Omni (Unknown (Inverted))	175.25	RRUS-11 (T-Mobile Existing)	140
Prod 4' Side Mount Standoff (1) (Unknown)	174.25	RRUS-11 (T-Mobile Existing)	140
10' x 3' Dia Omni (Unknown (Inverted))	174.25	RRUS-11 (T-Mobile Existing)	140
ANT150D6-9 (Unknown (Inverted))	173.75	RRUS-11 (T-Mobile Existing)	140
Prod 6' Side Mount Standoff (1) (Unknown)	172.25	RRUS-11 (T-Mobile Existing)	140
3' Sidearm (Unknown)	170.2	Radio 4449 B71 B12 (T-Mobile Existing)	140
(2) MX06FIT665-02 (Verizon)	162	Radio 4449 B71 B12 (T-Mobile Existing)	140
MT6407-77A (Verizon)	162	Radio 4449 B71 B12 (T-Mobile Existing)	140
LPA-80080-4CF (Verizon)	162	10-ft T-Frame (T-Mobile Existing)	140
LPA-80080-4CF (Verizon)	162	10-ft T-Frame (T-Mobile Existing)	140
(2) MX06FIT665-02 (Verizon)	162	10-ft T-Frame (T-Mobile Existing)	140
MT6407-77A (Verizon)	162	SRL110A (Eversource)	135
LPA-80080-4CF (Verizon)	162	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe (Eversource)	134
B2/B66A RRH (Verizon)	162	DB586-Y (Eversource)	130
B2/B66A RRH (Verizon)	162	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe (Eversource)	126
B2/B66A RRH (Verizon)	162	Tower Top Amplifier (Eversource)	126
BS/B13 RRH (Verizon)	162	DB586-Y (Eversource)	125
RC2DC-3315-PF-48 (Verizon)	162	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe (Unknown)	120.67
PIROD 15' T-Frame (Verizon)	162	DB212-L (Unknown)	120.67
PIROD 15' T-Frame (Verizon)	162	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe (Vacant)	120.5
MT6407-77A (Verizon)	162	DS2C03F36D-D (Eversource)	117.5
LPA-80080-4CF (Verizon)	162	Prod 4' Side Mount Standoff (1) (Eversource)	117.5
LPA-80080-4CF (Verizon)	162	DB205-L (Unknown)	109.25
(2) MX06FIT665-02 (Verizon)	162	Ice Canopy	106
DMP65R-BU4D (ATJ)	150	PA6-65AC (CSP)	102.25
(2) LGP21401 TMA (ATJ)	150	68"x4" Pipe Mount (CSP)	101.2
(2) LGP21401 TMA (ATJ)	150	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe (Unknown)	100.83
(2) LGP13519 Diplexer (ATJ)	150	DB224 (Unknown)	94
(2) LGP13519 Diplexer (ATJ)	150	PD220 (Unknown)	90.41
(2) 7020 Dual Band RET (ATJ)	150	2-ft Stand Off (Unknown)	85
(2) 7020 Dual Band RET (ATJ)	150	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe (Unknown)	82.67
(2) 7020 Dual Band RET (ATJ)	150	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe (Unknown)	79.5
8843 B2/B66A (ATJ)	150	12' x 3' Dia Omni (Unknown)	75
8843 B2/B66A (ATJ)	150	DB432-A (Unknown)	70.25
8843 B2/B66A (ATJ)	150	1.2M (Verizon)	17
4478 B14 (ATJ)	150	2-ft Stand Off (Unknown)	15
4478 B14 (ATJ)	150		
4478 B14 (ATJ)	150		

MATERIAL STRENGTH

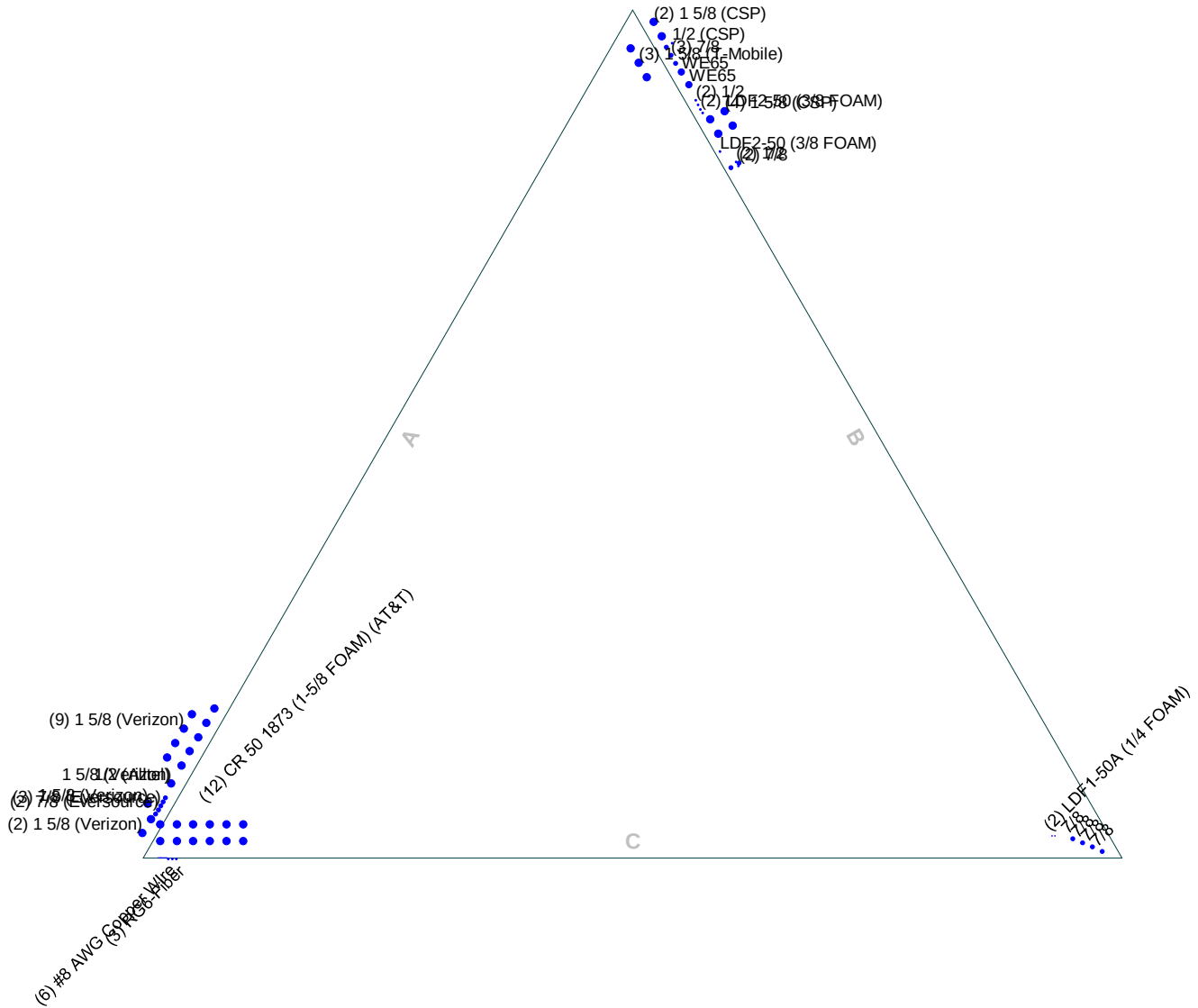
GRADE	Fy	Fu	GRADE	Fy	Fu
A572-50	50 ksi	65 ksi	A36	36 ksi	58 ksi

TOWER DESIGN NOTES

1. Tower designed for Exposure C to the TIA-222-G Standard.
2. Tower designed for a 89 mph basic wind in accordance with the TIA-222-G Standard.
3. Tower is also designed for a 40 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
4. Deflections are based upon a 60 mph wind.
5. Tower Structure Class III.
6. Topographic Category 1 with Crest Height of 0.00 ft
7. TOWER RATING: 91.8%

Feed Line Plan

Round Flat App In Face App Out Face Truss-Leg



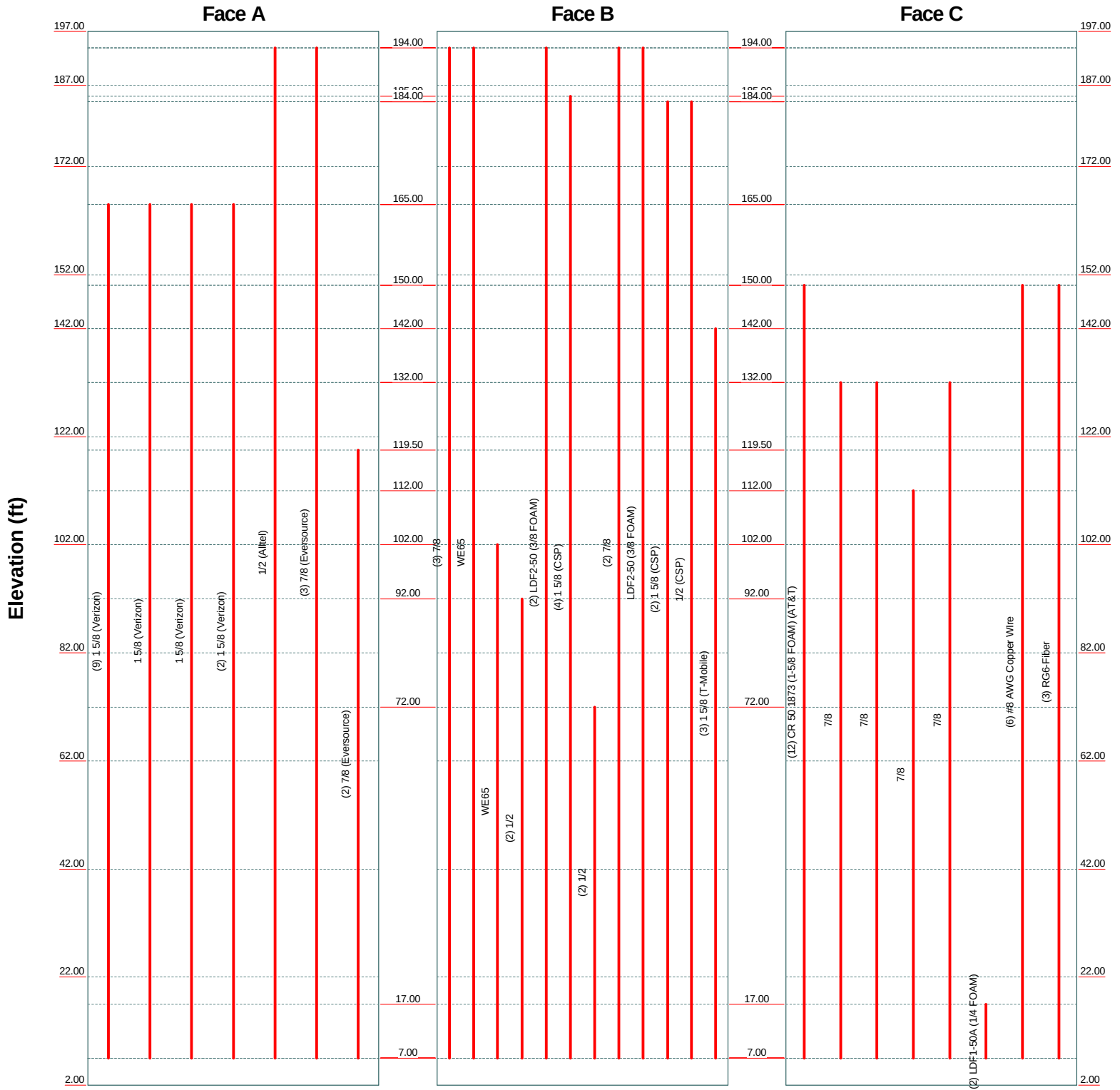
Centek Engineering Inc.
 63-2 North Branford Rd.
 Branford, CT 06405
 Phone: (203) 488-0580
 FAX: (203) 488-8587

Job: 21007.12 - Cornwall 2		
Project: 7 Surdan Mountain Road, Sharon, CT		
Client: Verizon Wireless	Drawn by: T.JL	App'd:
Code: TIA-222-G	Date: 06/14/21	Scale: NTS
Path:	Dwg No. E-7	

Feed Line Distribution Chart

2' - 197'

Round Flat App In Face App Out Face Truss Leg



Centek Engineering Inc.		
63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587		
Job: 21007.12 - Cornwall 2		
Project: 7 Surdan Mountain Road, Sharon, CT		
Client: Verizon Wireless	Drawn by: T.JL	App'd:
Code: TIA-222-G	Date: 06/14/21	Scale: NTS
Path:	Dwg No. E-7	

tnxTower Centek Engineering Inc. 63-2 North Branford Rd. Branford, CT 06405 Phone: (203) 488-0580 FAX: (203) 488-8587	Job 21007.12 - Cornwall 2	Page 1 of 55
	Project 7 Surdan Mountain Road, Sharon, CT	Date 14:20:21 06/14/21
	Client Verizon Wireless	Designed by T.JL

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 197.00 ft above the ground line.

The base of the tower is set at an elevation of 2.00 ft above the ground line.

The face width of the tower is 4.50 ft at the top and 20.00 ft at the base.

This tower is designed using the TIA-222-G standard.

The following design criteria apply:

Basic wind speed of 89 mph.

Structure Class III.

Exposure Category C.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

A wind speed of 40 mph is used in combination with ice.

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

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

Pressures are calculated at each section.

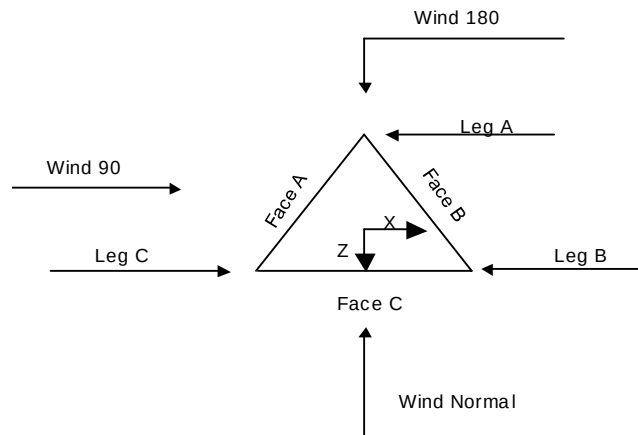
Stress ratio used in tower member design is 1.

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-G Bracing Resist. Exemption Use TIA-222-G Tension Splice Exemption |
|--|---|--|
- 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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Triangular Tower

Tower Section Geometry

Tower Section	Tower Elevation	Assembly Database	Description	Section Width	Number of Sections	Section Length
	ft			ft		ft
T1	197.00-187.00		V4.5 111574	4.50	1	10.00
T2	187.00-172.00		V4.5 111574	4.50	1	15.00
T3	172.00-152.00		H5.0 116640	4.50	1	20.00
T4	152.00-142.00		U6.0 105245	5.00	1	10.00
T5	142.00-122.00		U8.0 105217	6.00	1	20.00
T6	122.00-102.00		U10.0 105217 L3x3/16	8.00	1	20.00
T7	102.00-82.00		U12.0 105218	10.00	1	20.00
T8	82.00-62.00		U14.0 105218	12.00	1	20.00
T9	62.00-42.00		U16.0 105219	14.00	1	20.00
T10	42.00-22.00		U18.0 105219	16.00	1	20.00
T11	22.00-2.00		U20.0 105219 L3.5x5/16	18.00	1	20.00

Tower Section Geometry (cont'd)

Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T1	197.00-187.00	2.17	X Brace	No	Steps	8.0160	8.0160
T2	187.00-172.00	2.28	X Brace	No	Steps	8.0160	8.0160
T3	172.00-152.00	2.34	X Brace	No	Steps	7.4880	7.4880
T4	152.00-142.00	10.00	X Brace	No	No	0.0000	0.0000

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Tower Section	Tower Elevation	Diagonal Spacing	Bracing Type	Has K Brace End Panels	Has Horizontals	Top Girt Offset	Bottom Girt Offset
	ft	ft				in	in
T5	142.00-122.00	10.00	X Brace	No	No	0.0000	0.0000
T6	122.00-102.00	10.00	X Brace	No	No	0.0000	0.0000
T7	102.00-82.00	10.00	X Brace	No	Yes	0.0000	0.0000
T8	82.00-62.00	10.00	X Brace	No	No	0.0000	0.0000
T9	62.00-42.00	10.00	X Brace	No	Yes	0.0000	0.0000
T10	42.00-22.00	10.00	X Brace	No	No	0.0000	0.0000
T11	22.00-2.00	10.00	X Brace	No	Yes	0.0000	0.0000

Tower Section Geometry (cont'd)

Tower Elevation ft	Leg Type	Leg Size	Leg Grade	Diagonal Type	Diagonal Size	Diagonal Grade
T1 197.00-187.00	Solid Round	1 3/4	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 187.00-172.00	Solid Round	2	A572-50 (50 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T3 172.00-152.00	Solid Round	2 1/4	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T4 152.00-142.00	Truss Leg	Pirol 105245	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T5 142.00-122.00	Truss Leg	Pirol 105217	A572-50 (50 ksi)	Single Angle	L3x3x3/16	A572-50 (50 ksi)
T6 122.00-102.00	Truss Leg	Pirol 105218	A572-50 (50 ksi)	Single Angle	L3x3x1/4	A572-50 (50 ksi)
T7 102.00-82.00	Truss Leg	Pirol 105218 reinf. w/1" dia. S.R.	A572-50 (50 ksi)	Single Angle	L3x3x1/4	A572-50 (50 ksi)
T8 82.00-62.00	Truss Leg	Pirol 105219 reinf. w/1" dia. S.R.	A572-50 (50 ksi)	Single Angle	L3x3x5/16	A36 (36 ksi)
T9 62.00-42.00	Truss Leg	Pirol 105219 reinf. w/1" dia. S.R.	A572-50 (50 ksi)	Single Angle	L3 1/2x3 1/2x1/4	A572-50 (50 ksi)
T10 42.00-22.00	Truss Leg	Pirol 105220 reinf. w/1" dia. S.R.	A572-50 (50 ksi)	Single Angle	L3 1/2x3 1/2x5/16	A36 (36 ksi)
T11 22.00-2.00	Truss Leg	Pirol 105220 reinf. w/1" dia. S.R.	A572-50 (50 ksi)	Single Angle	L4x4x1/4	A572-50 (50 ksi)

Tower Section Geometry (cont'd)

Tower Elevation ft	Top Girt Type	Top Girt Size	Top Girt Grade	Bottom Girt Type	Bottom Girt Size	Bottom Girt Grade
T1 197.00-187.00	Single Angle	L3x3x5/16	A36 (36 ksi)	Solid Round	7/8	A572-50 (50 ksi)
T2 187.00-172.00	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T3 172.00-152.00	Solid Round	1	A572-50 (50 ksi)	Solid Round	1	A572-50 (50 ksi)
T7 102.00-82.00	Single Angle	L3x3x3/16	A36 (36 ksi)	Single Angle		A36 (36 ksi)

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Tower Section Geometry (cont'd)

Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
T1 197.00-187.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	36.0000	36.0000	36.0000
T2 187.00-172.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	36.0000	36.0000	36.0000
T3 172.00-152.00	0.00	0.0000	A36 (36 ksi)	1	1	1.02	36.0000	36.0000	36.0000
T4 152.00-142.00	1.78	0.5000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T5 142.00-122.00	3.22	0.5000	A36 (36 ksi)	1	1.02	1.05	36.0000	36.0000	36.0000
T6 122.00-102.00	3.22	0.5000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T7 102.00-82.00	3.22	0.5000	A36 (36 ksi)	1	1.02	1.05	36.0000	36.0000	36.0000
T8 82.00-62.00	3.22	0.5000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T9 62.00-42.00	3.22	0.5000	A36 (36 ksi)	1	1.02	1.05	36.0000	36.0000	36.0000
T10 42.00-22.00	3.22	0.5000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T11 22.00-2.00	3.22	0.5000	A36 (36 ksi)	1	1.02	1.05	36.0000	36.0000	36.0000

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	K Factors ¹							
			Legs	X Brace Diags	K Brace Diags	Single Diags	Girts	Horiz.	Sec. Horiz.	Inner Brace
				X Y	X Y	X Y	X Y	X Y	X Y	X Y
T1 197.00-187.00	No	Yes	1	1	1	1	1	1	1	1
T2 187.00-172.00	No	Yes	1	1	1	1	0.5	1	1	1
T3 172.00-152.00	No	Yes	1	1	1	1	0.5	1	1	1
T4 152.00-142.00	Yes	No	1	1	1	1	1	1	1	1
T5 142.00-122.00	Yes	No	1	1	1	1	1	1	1	1
T6 122.00-102.00	Yes	No	1	1	1	1	1	1	1	1
T7 102.00-82.00	Yes	No	1	1	1	1	1	1	1	1
T8 82.00-62.00	Yes	No	1	1	1	1	1	1	1	1
T9 62.00-42.00	Yes	No	1	1	1	1	1	1	1	1
T10 42.00-22.00	Yes	No	1	1	1	1	1	1	1	1

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Tower Elevation ft	Leg Connection Type	Leg		Diagonal		Top Girt		Bottom Girt		Mid Girt		Long Horizontal		Short Horizontal	
		Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.	Bolt Size in	No.
T4 152.00-142.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T5 142.00-122.00	Flange	1.0000 A325N	6	1.0000 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T6 122.00-102.00	Flange	1.0000 A325N	6	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T7 102.00-82.00	Flange	1.0000 A325N	6	1.0000 A325X	1	1.0000 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T8 82.00-62.00	Flange	1.2500 A325N	6	1.2500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325X	0	0.6250 A325N	0	0.6250 A325X	0
T9 62.00-42.00	Flange	1.2500 A325N	6	1.2500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325X	0	0.6250 A325N	0	0.6250 A325X	0
T10 42.00-22.00	Flange	1.2500 A325N	6	1.2500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325X	0	0.6250 A325N	0	0.6250 A325X	0
T11 22.00-2.00	Flange	1.2500 A687	6	1.2500 A325X	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325X	0	0.6250 A325N	0	0.6250 A325X	0

Feed Line/Linear Appurtenances - Entered As Round Or Flat

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
1 5/8 (Verizon)	A	No	No	Ar (CaAa)	165.00 - 7.00	2.0000	-0.365	9	5	1.9800	1.9800		1.04
1 5/8 (Verizon)	A	No	No	Ar (CaAa)	165.00 - 7.00	2.0000	-0.42	1	1	1.9800	1.9800		1.04
1 5/8 (Verizon)	A	No	No	Ar (CaAa)	165.00 - 7.00	4.5000	-0.45	1	1	1.9800	1.9800		1.04
1 5/8 (Verizon)	A	No	No	Ar (CaAa)	165.00 - 7.00	2.0000	-0.47	2	2	1.9800	1.9800		1.04
1/2 (Alltel)	A	No	No	Ar (CaAa)	194.00 - 7.00	3.0000	-0.42	1	1	0.5800	0.5800		0.25
7/8 (Eversource)	A	No	No	Ar (CaAa)	194.00 - 7.00	2.0000	-0.445	3	3	1.1100	1.1100		0.54
CR 50 1873 (1-5/8 FOAM) (AT&T)	C	No	No	Ar (CaAa)	150.00 - 7.00	-7.0000	0.44	12	6	1.9800	1.9800		0.83
7/8	C	No	No	Ar (CaAa)	132.00 - 7.00	-1.0000	-0.48	1	1	1.1100	1.1100		0.54
7/8	C	No	No	Ar (CaAa)	132.00 - 7.00	-2.0000	-0.47	1	1	1.1100	1.1100		0.54
7/8	C	No	No	Ar (CaAa)	112.00 - 7.00	-3.0000	-0.46	1	1	1.1100	1.1100		0.54
7/8	C	No	No	Ar (CaAa)	132.00 - 7.00	-4.0000	-0.45	1	1	1.1100	1.1100		0.54
7/8	B	No	No	Ar (CaAa)	194.00 - 7.00	2.0000	-0.44	3	3	1.1100	1.1100		0.54
WE65	B	No	No	Ar (CaAa)	194.00 - 7.00	2.0000	-0.42	1	1	1.5836	1.5836		0.53
WE65	B	No	No	Ar (CaAa)	102.00 - 7.00	2.0000	-0.405	1	1	1.5836	1.5836		0.53
1/2	B	No	No	Ar (CaAa)	92.00 - 7.00	2.0000	-0.385	2	2	0.5800	0.5800		0.25
LDF2-50 (3/8	B	No	No	Ar (CaAa)	194.00 -	2.0000	-0.375	2	2	0.4400	0.4400		0.08

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Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Face Offset in	Lateral Offset (Frac FW)	#	# Per Row	Clear Spacing in	Width or Diameter in	Perimeter in	Weight plf
FOAM)					7.00								
1 5/8 (CSP)	B	No	No	Ar (CaAa)	185.00 - 7.00	2.0000	-0.355	4	2	1.9800	1.9800		1.04
1/2	B	No	No	Ar (CaAa)	72.00 - 7.00	3.0000	-0.31	2	2	0.5800	0.5800		0.25
7/8	B	No	No	Ar (CaAa)	194.00 - 7.00	1.0000	-0.31	2	1	1.1100	1.1100		0.54
LDF1-50A (1/4 FOAM)	C	No	No	Ar (CaAa)	17.00 - 7.00	-5.0000	-0.43	2	2	0.3500	0.3500		0.06
#8 AWG Copper WIRE	C	No	No	Ar (CaAa)	150.00 - 7.00	0.0000	0.48	6	6	0.2500	0.1285		0.05
RG6-Fiber	C	No	No	Ar (CaAa)	150.00 - 7.00	0.0000	0.47	3	3	0.5000	0.5000		1.00
LDF2-50 (3/8 FOAM)	B	No	No	Ar (CaAa)	194.00 - 7.00	1.0000	-0.33	1	1	0.4400	0.4400		0.08
1 5/8 (CSP)	B	No	No	Ar (CaAa)	184.00 - 7.00	2.0000	-0.47	2	2	1.9800	1.9800		1.04
1/2 (CSP)	B	No	No	Ar (CaAa)	184.00 - 7.00	4.0000	-0.45	1	1	0.5800	0.5800		0.25
1 5/8 (T-Mobile)	B	No	No	Ar (CaAa)	142.00 - 7.00	-4.0000	-0.45	3	3	1.9800	1.9800		1.04
7/8 (Eversource)	A	No	No	Ar (CaAa)	119.50 - 7.00	2.0000	-0.445	2	2	1.1100	1.1100		0.54

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
T1	197.00-187.00	A	0.000	0.000	2.737	0.000	0.01
		B	0.000	0.000	5.918	0.000	0.02
		C	0.000	0.000	0.000	0.000	0.00
T2	187.00-172.00	A	0.000	0.000	5.865	0.000	0.03
		B	0.000	0.000	28.424	0.000	0.13
		C	0.000	0.000	0.000	0.000	0.00
T3	172.00-152.00	A	0.000	0.000	41.282	0.000	0.21
		B	0.000	0.000	41.827	0.000	0.20
		C	0.000	0.000	0.000	0.000	0.00
T4	152.00-142.00	A	0.000	0.000	29.650	0.000	0.15
		B	0.000	0.000	20.914	0.000	0.10
		C	0.000	0.000	20.825	0.000	0.11
T5	142.00-122.00	A	0.000	0.000	59.300	0.000	0.31
		B	0.000	0.000	53.707	0.000	0.26
		C	0.000	0.000	55.392	0.000	0.28
T6	122.00-102.00	A	0.000	0.000	63.185	0.000	0.33
		B	0.000	0.000	53.707	0.000	0.26
		C	0.000	0.000	59.832	0.000	0.30
T7	102.00-82.00	A	0.000	0.000	63.740	0.000	0.33
		B	0.000	0.000	58.034	0.000	0.28
		C	0.000	0.000	60.942	0.000	0.31
T8	82.00-62.00	A	0.000	0.000	63.740	0.000	0.33
		B	0.000	0.000	60.354	0.000	0.29
		C	0.000	0.000	60.942	0.000	0.31
T9	62.00-42.00	A	0.000	0.000	63.740	0.000	0.33
		B	0.000	0.000	61.514	0.000	0.29
		C	0.000	0.000	60.942	0.000	0.31
T10	42.00-22.00	A	0.000	0.000	63.740	0.000	0.33

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Tower Section	Tower Elevation ft	Face	A _R ft ²	A _F ft ²	C _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
T11	22.00-2.00	B	0.000	0.000	61.514	0.000	0.29
		C	0.000	0.000	60.942	0.000	0.31
		A	0.000	0.000	47.805	0.000	0.25
		B	0.000	0.000	46.136	0.000	0.22
		C	0.000	0.000	46.407	0.000	0.23

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 _A A _A In Face ft ²	C _A A _A Out Face ft ²	Weight K
T1	197.00-187.00	A	2.981	0.000	0.000	16.403	0.000	0.29
		B		0.000	0.000	40.291	0.000	0.72
		C		0.000	0.000	0.000	0.000	0.00
T2	187.00-172.00	A	2.961	0.000	0.000	34.986	0.000	0.61
		B		0.000	0.000	142.349	0.000	2.70
		C		0.000	0.000	0.000	0.000	0.00
T3	172.00-152.00	A	2.931	0.000	0.000	132.734	0.000	2.92
		B		0.000	0.000	203.700	0.000	3.85
		C		0.000	0.000	0.000	0.000	0.00
T4	152.00-142.00	A	2.903	0.000	0.000	89.172	0.000	2.01
		B		0.000	0.000	101.185	0.000	1.90
		C		0.000	0.000	50.232	0.000	1.21
T5	142.00-122.00	A	2.872	0.000	0.000	177.333	0.000	3.97
		B		0.000	0.000	244.527	0.000	4.57
		C		0.000	0.000	145.502	0.000	3.44
T6	122.00-102.00	A	2.825	0.000	0.000	200.400	0.000	4.25
		B		0.000	0.000	242.018	0.000	4.47
		C		0.000	0.000	171.298	0.000	3.95
T7	102.00-82.00	A	2.770	0.000	0.000	201.740	0.000	4.21
		B		0.000	0.000	265.204	0.000	4.81
		C		0.000	0.000	176.047	0.000	4.01
T8	82.00-62.00	A	2.703	0.000	0.000	199.093	0.000	4.09
		B		0.000	0.000	284.409	0.000	4.94
		C		0.000	0.000	173.596	0.000	3.90
T9	62.00-42.00	A	2.616	0.000	0.000	195.679	0.000	3.95
		B		0.000	0.000	289.861	0.000	4.86
		C		0.000	0.000	170.435	0.000	3.77
T10	42.00-22.00	A	2.492	0.000	0.000	190.793	0.000	3.76
		B		0.000	0.000	280.984	0.000	4.56
		C		0.000	0.000	165.908	0.000	3.59
T11	22.00-2.00	A	2.259	0.000	0.000	136.222	0.000	2.55
		B		0.000	0.000	198.247	0.000	3.02
		C		0.000	0.000	127.309	0.000	2.53

Feed Line Center of Pressure

Section	Elevation ft	CP _X in	CP _Z in	CP _X Ice in	CP _Z Ice in
T1	197.00-187.00	-1.5379	-4.5250	-0.6553	-2.4507
T2	187.00-172.00	0.1190	-11.9565	-0.3320	-6.7768
T3	172.00-152.00	-7.9139	-6.8037	-3.6493	-5.9495
T4	152.00-142.00	-11.9438	-0.7341	-4.8153	-1.8768

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Section	Elevation	CP _x	CP _z	CP _x	CP _z
	ft	in	in	Ice in	Ice in
T5	142.00-122.00	-13.7490	-1.2701	-8.8777	-3.9691
T6	122.00-102.00	-16.2828	-0.3555	-12.6829	-4.0039
T7	102.00-82.00	-17.7878	-0.7918	-14.3422	-5.8077
T8	82.00-62.00	-20.3843	-1.1313	-17.3733	-8.5961
T9	62.00-42.00	-21.8814	-1.2507	-19.3445	-10.2649
T10	42.00-22.00	-23.9293	-1.1934	-21.8411	-11.2513
T11	22.00-2.00	-20.6053	-0.8178	-19.4983	-9.5076

Shielding Factor Ka

Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T1	5	1/2	187.00 - 194.00	0.6000	0.2102
T1	6	7/8	187.00 - 194.00	0.6000	0.2102
T1	12	7/8	187.00 - 194.00	0.6000	0.2102
T1	13	WE65	187.00 - 194.00	0.6000	0.2102
T1	16	LDF2-50 (3/8 FOAM)	187.00 - 194.00	0.6000	0.2102
T1	19	7/8	187.00 - 194.00	0.6000	0.2102
T1	23	LDF2-50 (3/8 FOAM)	187.00 - 194.00	0.6000	0.2102
T2	5	1/2	172.00 - 187.00	0.6000	0.2530
T2	6	7/8	172.00 - 187.00	0.6000	0.2530
T2	12	7/8	172.00 - 187.00	0.6000	0.2530
T2	13	WE65	172.00 - 187.00	0.6000	0.2530
T2	16	LDF2-50 (3/8 FOAM)	172.00 - 187.00	0.6000	0.2530
T2	17	1 5/8	172.00 - 185.00	0.6000	0.2530
T2	19	7/8	172.00 - 187.00	0.6000	0.2530
T2	23	LDF2-50 (3/8 FOAM)	172.00 - 187.00	0.6000	0.2530
T2	24	1 5/8	172.00 - 184.00	0.6000	0.2530
T2	25	1/2	172.00 - 184.00	0.6000	0.2530
T3	1	1 5/8	152.00 - 165.00	0.6000	0.2737
T3	2	1 5/8	152.00 - 165.00	0.6000	0.2737
T3	3	1 5/8	152.00 - 165.00	0.6000	0.2737
T3	4	1 5/8	152.00 - 165.00	0.6000	0.2737
T3	5	1/2	152.00 -	0.6000	0.2737

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T3	6	7/8	172.00 152.00 -	0.6000	0.2737
T3	12	7/8	172.00 152.00 -	0.6000	0.2737
T3	13	WE65	172.00 152.00 -	0.6000	0.2737
T3	16	LDF2-50 (3/8 FOAM)	172.00 152.00 -	0.6000	0.2737
T3	17	1 5/8	172.00 152.00 -	0.6000	0.2737
T3	19	7/8	172.00 152.00 -	0.6000	0.2737
T3	23	LDF2-50 (3/8 FOAM)	172.00 152.00 -	0.6000	0.2737
T3	24	1 5/8	172.00 152.00 -	0.6000	0.2737
T3	25	1/2	172.00 152.00 -	0.6000	0.2737
T4	1	1 5/8	172.00 142.00 -	0.6000	0.1709
T4	2	1 5/8	152.00 142.00 -	0.6000	0.1709
T4	3	1 5/8	152.00 142.00 -	0.6000	0.1709
T4	4	1 5/8	152.00 142.00 -	0.6000	0.1709
T4	5	1/2	152.00 142.00 -	0.6000	0.1709
T4	6	7/8	152.00 142.00 -	0.6000	0.1709
T4	7	CR 50 1873 (1-5/8 FOAM)	152.00 142.00 -	0.6000	0.1709
T4	12	7/8	150.00 142.00 -	0.6000	0.1709
T4	13	WE65	152.00 142.00 -	0.6000	0.1709
T4	16	LDF2-50 (3/8 FOAM)	152.00 142.00 -	0.6000	0.1709
T4	17	1 5/8	152.00 142.00 -	0.6000	0.1709
T4	19	7/8	152.00 142.00 -	0.6000	0.1709
T4	21	#8 AWG Copper Wire	152.00 142.00 -	0.6000	0.1709
T4	22	RG6-Fiber	150.00 142.00 -	0.6000	0.1709
T4	23	LDF2-50 (3/8 FOAM)	150.00 142.00 -	0.6000	0.1709
T4	24	1 5/8	152.00 142.00 -	0.6000	0.1709
T4	25	1/2	152.00 142.00 -	0.6000	0.1709
T5	1	1 5/8	152.00 122.00 -	0.6000	0.3091
T5	2	1 5/8	142.00 122.00 -	0.6000	0.3091
T5	3	1 5/8	142.00 122.00 -	0.6000	0.3091
T5	4	1 5/8	142.00 122.00 -	0.6000	0.3091
T5	5	1/2	142.00 122.00 -	0.6000	0.3091

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K _a No Ice	K _a Ice
T5	6	7/8	142.00 122.00 - 142.00	0.6000	0.3091
T5	7	CR 50 1873 (1-5/8 FOAM)	122.00 - 142.00	0.6000	0.3091
T5	8	7/8	122.00 - 132.00	0.6000	0.3091
T5	9	7/8	122.00 - 132.00	0.6000	0.3091
T5	11	7/8	122.00 - 132.00	0.6000	0.3091
T5	12	7/8	122.00 - 142.00	0.6000	0.3091
T5	13	WE65	122.00 - 142.00	0.6000	0.3091
T5	16	LDF2-50 (3/8 FOAM)	122.00 - 142.00	0.6000	0.3091
T5	17	1 5/8	122.00 - 142.00	0.6000	0.3091
T5	19	7/8	122.00 - 142.00	0.6000	0.3091
T5	21	#8 AWG Copper Wire	122.00 - 142.00	0.6000	0.3091
T5	22	RG6-Fiber	122.00 - 142.00	0.6000	0.3091
T5	23	LDF2-50 (3/8 FOAM)	122.00 - 142.00	0.6000	0.3091
T5	24	1 5/8	122.00 - 142.00	0.6000	0.3091
T5	25	1/2	122.00 - 142.00	0.6000	0.3091
T5	26	1 5/8	122.00 - 142.00	0.6000	0.3091
T6	1	1 5/8	102.00 - 122.00	0.6000	0.4289
T6	2	1 5/8	102.00 - 122.00	0.6000	0.4289
T6	3	1 5/8	102.00 - 122.00	0.6000	0.4289
T6	4	1 5/8	102.00 - 122.00	0.6000	0.4289
T6	5	1/2	102.00 - 122.00	0.6000	0.4289
T6	6	7/8	102.00 - 122.00	0.6000	0.4289
T6	7	CR 50 1873 (1-5/8 FOAM)	102.00 - 122.00	0.6000	0.4289
T6	8	7/8	102.00 - 122.00	0.6000	0.4289
T6	9	7/8	102.00 - 122.00	0.6000	0.4289
T6	10	7/8	102.00 - 112.00	0.6000	0.4289
T6	11	7/8	102.00 - 122.00	0.6000	0.4289
T6	12	7/8	102.00 - 122.00	0.6000	0.4289
T6	13	WE65	102.00 - 122.00	0.6000	0.4289
T6	16	LDF2-50 (3/8 FOAM)	102.00 - 122.00	0.6000	0.4289
T6	17	1 5/8	102.00 -	0.6000	0.4289

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T6	19	7/8	122.00 102.00 - 122.00	0.6000	0.4289
T6	21	#8 AWG Copper Wire	102.00 - 122.00	0.6000	0.4289
T6	22	RG6-Fiber	102.00 - 122.00	0.6000	0.4289
T6	23	LDF2-50 (3/8 FOAM)	102.00 - 122.00	0.6000	0.4289
T6	24	1 5/8	102.00 - 122.00	0.6000	0.4289
T6	25	1/2	102.00 - 122.00	0.6000	0.4289
T6	26	1 5/8	102.00 - 122.00	0.6000	0.4289
T6	27	7/8	102.00 - 119.50	0.6000	0.4289
T7	1	1 5/8	82.00 - 102.00	0.6000	0.4670
T7	2	1 5/8	82.00 - 102.00	0.6000	0.4670
T7	3	1 5/8	82.00 - 102.00	0.6000	0.4670
T7	4	1 5/8	82.00 - 102.00	0.6000	0.4670
T7	5	1/2	82.00 - 102.00	0.6000	0.4670
T7	6	7/8	82.00 - 102.00	0.6000	0.4670
T7	7	CR 50 1873 (1-5/8 FOAM)	82.00 - 102.00	0.6000	0.4670
T7	8	7/8	82.00 - 102.00	0.6000	0.4670
T7	9	7/8	82.00 - 102.00	0.6000	0.4670
T7	10	7/8	82.00 - 102.00	0.6000	0.4670
T7	11	7/8	82.00 - 102.00	0.6000	0.4670
T7	12	7/8	82.00 - 102.00	0.6000	0.4670
T7	13	WE65	82.00 - 102.00	0.6000	0.4670
T7	14	WE65	82.00 - 102.00	0.6000	0.4670
T7	15	1/2	82.00 - 92.00	0.6000	0.4670
T7	16	LDF2-50 (3/8 FOAM)	82.00 - 102.00	0.6000	0.4670
T7	17	1 5/8	82.00 - 102.00	0.6000	0.4670
T7	19	7/8	82.00 - 102.00	0.6000	0.4670
T7	21	#8 AWG Copper Wire	82.00 - 102.00	0.6000	0.4670
T7	22	RG6-Fiber	82.00 - 102.00	0.6000	0.4670
T7	23	LDF2-50 (3/8 FOAM)	82.00 - 102.00	0.6000	0.4670
T7	24	1 5/8	82.00 - 102.00	0.6000	0.4670
T7	25	1/2	82.00 - 102.00	0.6000	0.4670
T7	26	1 5/8	82.00 - 102.00	0.6000	0.4670
T7	27	7/8	82.00 - 102.00	0.6000	0.4670
T8	1	1 5/8	62.00 - 82.00	0.6000	0.5556
T8	2	1 5/8	62.00 - 82.00	0.6000	0.5556
T8	3	1 5/8	62.00 - 82.00	0.6000	0.5556
T8	4	1 5/8	62.00 - 82.00	0.6000	0.5556
T8	5	1/2	62.00 - 82.00	0.6000	0.5556
T8	6	7/8	62.00 - 82.00	0.6000	0.5556
T8	7	CR 50 1873 (1-5/8 FOAM)	62.00 - 82.00	0.6000	0.5556
T8	8	7/8	62.00 - 82.00	0.6000	0.5556
T8	9	7/8	62.00 - 82.00	0.6000	0.5556
T8	10	7/8	62.00 - 82.00	0.6000	0.5556
T8	11	7/8	62.00 - 82.00	0.6000	0.5556
T8	12	7/8	62.00 - 82.00	0.6000	0.5556
T8	13	WE65	62.00 - 82.00	0.6000	0.5556
T8	14	WE65	62.00 - 82.00	0.6000	0.5556
T8	15	1/2	62.00 - 82.00	0.6000	0.5556
T8	16	LDF2-50 (3/8 FOAM)	62.00 - 82.00	0.6000	0.5556
T8	17	1 5/8	62.00 - 82.00	0.6000	0.5556
T8	18	1/2	62.00 - 72.00	0.6000	0.5556
T8	19	7/8	62.00 - 82.00	0.6000	0.5556
T8	21	#8 AWG Copper Wire	62.00 - 82.00	0.6000	0.5556

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<i>Tower Section</i>	<i>Feed Line Record No.</i>	<i>Description</i>	<i>Feed Line Segment Elev.</i>	<i>K_a No Ice</i>	<i>K_a Ice</i>
T8	22	RG6-Fiber	62.00 - 82.00	0.6000	0.5556
T8	23	LDF2-50 (3/8 FOAM)	62.00 - 82.00	0.6000	0.5556
T8	24	1 5/8	62.00 - 82.00	0.6000	0.5556
T8	25	1/2	62.00 - 82.00	0.6000	0.5556
T8	26	1 5/8	62.00 - 82.00	0.6000	0.5556
T8	27	7/8	62.00 - 82.00	0.6000	0.5556
T9	1	1 5/8	42.00 - 62.00	0.6000	0.5846
T9	2	1 5/8	42.00 - 62.00	0.6000	0.5846
T9	3	1 5/8	42.00 - 62.00	0.6000	0.5846
T9	4	1 5/8	42.00 - 62.00	0.6000	0.5846
T9	5	1/2	42.00 - 62.00	0.6000	0.5846
T9	6	7/8	42.00 - 62.00	0.6000	0.5846
T9	7	CR 50 1873 (1-5/8 FOAM)	42.00 - 62.00	0.6000	0.5846
T9	8	7/8	42.00 - 62.00	0.6000	0.5846
T9	9	7/8	42.00 - 62.00	0.6000	0.5846
T9	10	7/8	42.00 - 62.00	0.6000	0.5846
T9	11	7/8	42.00 - 62.00	0.6000	0.5846
T9	12	7/8	42.00 - 62.00	0.6000	0.5846
T9	13	WE65	42.00 - 62.00	0.6000	0.5846
T9	14	WE65	42.00 - 62.00	0.6000	0.5846
T9	15	1/2	42.00 - 62.00	0.6000	0.5846
T9	16	LDF2-50 (3/8 FOAM)	42.00 - 62.00	0.6000	0.5846
T9	17	1 5/8	42.00 - 62.00	0.6000	0.5846
T9	18	1/2	42.00 - 62.00	0.6000	0.5846
T9	19	7/8	42.00 - 62.00	0.6000	0.5846
T9	21	#8 AWG Copper Wire	42.00 - 62.00	0.6000	0.5846
T9	22	RG6-Fiber	42.00 - 62.00	0.6000	0.5846
T9	23	LDF2-50 (3/8 FOAM)	42.00 - 62.00	0.6000	0.5846
T9	24	1 5/8	42.00 - 62.00	0.6000	0.5846
T9	25	1/2	42.00 - 62.00	0.6000	0.5846
T9	26	1 5/8	42.00 - 62.00	0.6000	0.5846
T9	27	7/8	42.00 - 62.00	0.6000	0.5846
T10	1	1 5/8	22.00 - 42.00	0.6000	0.6000
T10	2	1 5/8	22.00 - 42.00	0.6000	0.6000
T10	3	1 5/8	22.00 - 42.00	0.6000	0.6000
T10	4	1 5/8	22.00 - 42.00	0.6000	0.6000
T10	5	1/2	22.00 - 42.00	0.6000	0.6000
T10	6	7/8	22.00 - 42.00	0.6000	0.6000
T10	7	CR 50 1873 (1-5/8 FOAM)	22.00 - 42.00	0.6000	0.6000
T10	8	7/8	22.00 - 42.00	0.6000	0.6000
T10	9	7/8	22.00 - 42.00	0.6000	0.6000
T10	10	7/8	22.00 - 42.00	0.6000	0.6000
T10	11	7/8	22.00 - 42.00	0.6000	0.6000
T10	12	7/8	22.00 - 42.00	0.6000	0.6000
T10	13	WE65	22.00 - 42.00	0.6000	0.6000
T10	14	WE65	22.00 - 42.00	0.6000	0.6000
T10	15	1/2	22.00 - 42.00	0.6000	0.6000
T10	16	LDF2-50 (3/8 FOAM)	22.00 - 42.00	0.6000	0.6000
T10	17	1 5/8	22.00 - 42.00	0.6000	0.6000
T10	18	1/2	22.00 - 42.00	0.6000	0.6000
T10	19	7/8	22.00 - 42.00	0.6000	0.6000
T10	21	#8 AWG Copper Wire	22.00 - 42.00	0.6000	0.6000
T10	22	RG6-Fiber	22.00 - 42.00	0.6000	0.6000
T10	23	LDF2-50 (3/8 FOAM)	22.00 - 42.00	0.6000	0.6000
T10	24	1 5/8	22.00 - 42.00	0.6000	0.6000
T10	25	1/2	22.00 - 42.00	0.6000	0.6000
T10	26	1 5/8	22.00 - 42.00	0.6000	0.6000
T10	27	7/8	22.00 - 42.00	0.6000	0.6000
T11	1	1 5/8	7.00 - 22.00	0.6000	0.6000
T11	2	1 5/8	7.00 - 22.00	0.6000	0.6000
T11	3	1 5/8	7.00 - 22.00	0.6000	0.6000
T11	4	1 5/8	7.00 - 22.00	0.6000	0.6000

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Tower Section	Feed Line Record No.	Description	Feed Line Segment Elev.	K ₀ No Ice	K ₀ Ice
T11	5	1/2	7.00 - 22.00	0.6000	0.6000
T11	6	7/8	7.00 - 22.00	0.6000	0.6000
T11	7	CR 50 1873 (1-5/8 FOAM)	7.00 - 22.00	0.6000	0.6000
T11	8	7/8	7.00 - 22.00	0.6000	0.6000
T11	9	7/8	7.00 - 22.00	0.6000	0.6000
T11	10	7/8	7.00 - 22.00	0.6000	0.6000
T11	11	7/8	7.00 - 22.00	0.6000	0.6000
T11	12	7/8	7.00 - 22.00	0.6000	0.6000
T11	13	WE65	7.00 - 22.00	0.6000	0.6000
T11	14	WE65	7.00 - 22.00	0.6000	0.6000
T11	15	1/2	7.00 - 22.00	0.6000	0.6000
T11	16	LDF2-50 (3/8 FOAM)	7.00 - 22.00	0.6000	0.6000
T11	17	1 5/8	7.00 - 22.00	0.6000	0.6000
T11	18	1/2	7.00 - 22.00	0.6000	0.6000
T11	19	7/8	7.00 - 22.00	0.6000	0.6000
T11	20	LDF1-50A (1/4 FOAM)	7.00 - 17.00	0.6000	0.6000
T11	21	#8 AWG Copper Wire	7.00 - 22.00	0.6000	0.6000
T11	22	RG6-Fiber	7.00 - 22.00	0.6000	0.6000
T11	23	LDF2-50 (3/8 FOAM)	7.00 - 22.00	0.6000	0.6000
T11	24	1 5/8	7.00 - 22.00	0.6000	0.6000
T11	25	1/2	7.00 - 22.00	0.6000	0.6000
T11	26	1 5/8	7.00 - 22.00	0.6000	0.6000
T11	27	7/8	7.00 - 22.00	0.6000	0.6000

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
Single Dipole (Unknown)	C	From Leg	0.50 0.00 0.00	0.0000	196.26	No Ice 1/2" Ice 1" Ice	0.90 1.40 1.90	0.90 1.40 1.90	0.01 0.02 0.02
PIROD 6'-8" Rigid Side Arm (Vacant)	A	From Face	3.00 0.00 0.00	0.0000	196.00	No Ice 1/2" Ice 1" Ice	8.00 9.60 11.20	8.00 9.60 11.20	0.19 0.22 0.26
6'x4" Pipe Mount (CSP)	A	From Face	0.67 0.00 0.00	0.0000	194.92	No Ice 1/2" Ice 1" Ice	1.80 2.46 2.83	1.80 2.46 2.83	0.05 0.07 0.09
OGT9-840 (Unknown)	A	From Leg	3.00 7.50 0.00	0.0000	190.25	No Ice 1/2" Ice 1" Ice	2.27 3.44 4.61	2.27 3.44 4.61	0.02 0.04 0.06
Filter Box (CSP)	C	From Face	0.00 0.00 0.00	0.0000	183.00	No Ice 1/2" Ice 1" Ice	3.00 3.21 3.44	1.20 1.35 1.50	0.04 0.06 0.09
10' x 3" Dia Omni (Unknown (Inverted))	A	From Leg	3.00 7.50 0.00	0.0000	174.25	No Ice 1/2" Ice 1" Ice	3.00 4.03 5.03	3.00 4.03 5.03	0.03 0.05 0.08
12' x 3" Dia Omni (Unknown (Inverted))	C	From Face	4.00 0.00 0.00	0.0000	175.25	No Ice 1/2" Ice 1" Ice	3.60 4.83 6.08	3.60 4.83 6.08	0.04 0.06 0.09
DB222-A	A	From Leg	3.00	0.0000	185.25	No Ice	1.60	1.60	0.02

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft	C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
(Unknown)			-7.50			1/2" Ice	2.88	0.02
			0.00			1" Ice	4.16	0.03
ANT150D6-9	A	From Leg	3.00	0.0000	173.75	No Ice	4.00	0.03
(Unknown (Inverted))			-7.50			1/2" Ice	4.60	0.03
			0.00			1" Ice	5.20	0.04
9' x 3" Dia Omni	C	From Leg	4.00	-60.0000	192.75	No Ice	2.70	0.03
(Unknown)			0.00			1/2" Ice	3.63	0.05
			0.00			1" Ice	4.33	0.08
Pirol 4' Side Mount Standoff	C	From Leg	2.00	-60.0000	186.50	No Ice	2.72	0.05
(1)			0.00			1/2" Ice	4.91	0.09
(Unknown)			0.00			1" Ice	7.10	0.13
DB222-A	C	From Leg	4.00	-60.0000	180.25	No Ice	1.60	0.02
(Unknown (Inverted))			0.00			1/2" Ice	2.88	0.02
			0.00			1" Ice	4.16	0.03
BCD-87077	A	From Leg	4.00	0.0000	181.50	No Ice	3.06	0.03
(Pagenet)			0.00			1/2" Ice	4.27	0.05
			0.00			1" Ice	5.49	0.08
PiROD 15' Rotatable	C	None		0.0000	181.25	No Ice	24.90	1.81
Platform (Lattice)						1/2" Ice	30.70	2.44
(Unknown)						1" Ice	36.50	3.06
(4) 6"x2" Pipe Mount	A	From Leg	3.00	0.0000	181.25	No Ice	1.20	0.02
(Unknown)			0.00			1/2" Ice	1.80	0.03
			0.00			1" Ice	2.17	0.04
(4) 6"x2" Pipe Mount	B	From Leg	3.00	0.0000	181.25	No Ice	1.20	0.02
(Unknown)			0.00			1/2" Ice	1.80	0.03
			0.00			1" Ice	2.17	0.04
(4) 6"x2" Pipe Mount	C	From Leg	3.00	0.0000	181.25	No Ice	1.20	0.02
(Unknown)			0.00			1/2" Ice	1.80	0.03
			0.00			1" Ice	2.17	0.04
Pirol 4' Side Mount Standoff	A	From Leg	2.00	0.0000	174.25	No Ice	2.72	0.05
(1)			0.00			1/2" Ice	4.91	0.09
(Unknown)			0.00			1" Ice	7.10	0.13
PD220	B	From Leg	6.00	0.0000	182.25	No Ice	3.08	0.02
(Unknown)			0.00			1/2" Ice	5.30	0.05
			0.00			1" Ice	7.54	0.09
Pirol 6' Side Mount Standoff	B	From Leg	3.00	0.0000	172.25	No Ice	4.97	0.07
(1)			0.00			1/2" Ice	6.12	0.13
(Unknown)			0.00			1" Ice	7.27	0.19
12' x 3" Dia Omni	A	From Leg	2.50	-10.0000	175.25	No Ice	3.60	0.04
(Unknown)			0.00			1/2" Ice	4.83	0.06
			0.00			1" Ice	6.08	0.09
3' Sidearm	A	From Leg	1.25	-10.0000	170.20	No Ice	5.90	0.13
(Unknown)			0.00			1/2" Ice	6.60	0.15
			0.00			1" Ice	7.30	0.16
LPA-80080-4CF	A	From Leg	3.00	0.0000	162.00	No Ice	2.62	0.01
(Verizon)			6.00			1/2" Ice	2.92	0.05
			0.00			1" Ice	3.23	0.08
(2) MX06FIT665-02	A	From Leg	3.00	0.0000	162.00	No Ice	8.15	0.06
(Verizon)			6.00			1/2" Ice	8.60	0.12
			0.00			1" Ice	9.06	0.18
MT6407-77A	A	From Leg	3.00	0.0000	162.00	No Ice	4.71	0.00
(Verizon)			6.00			1/2" Ice	5.00	0.03
			0.00			1" Ice	5.29	0.06
LPA-80080-4CF	A	From Leg	3.00	0.0000	162.00	No Ice	2.62	0.01
(Verizon)			-6.00			1/2" Ice	2.92	0.05
			0.00			1" Ice	3.23	0.08
LPA-80080-4CF	B	From Leg	3.00	0.0000	162.00	No Ice	2.62	0.01

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	Verizon Wireless		TJL

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
(Verizon)			6.00			1/2" Ice	2.92	5.73	0.05
			0.00			1" Ice	3.23	6.06	0.08
(2) MX06FIT665-02	B	From Leg	3.00	0.0000	162.00	No Ice	8.15	7.34	0.06
(Verizon)			6.00			1/2" Ice	8.60	7.78	0.12
			0.00			1" Ice	9.06	8.24	0.18
MT6407-77A	B	From Leg	3.00	0.0000	162.00	No Ice	4.71	1.84	0.00
(Verizon)			6.00			1/2" Ice	5.00	2.06	0.03
			0.00			1" Ice	5.29	2.29	0.06
LPA-80080-4CF	B	From Leg	3.00	0.0000	162.00	No Ice	2.62	5.40	0.01
(Verizon)			-6.00			1/2" Ice	2.92	5.73	0.05
			0.00			1" Ice	3.23	6.06	0.08
LPA-80080-4CF	C	From Leg	3.00	0.0000	162.00	No Ice	2.62	5.40	0.01
(Verizon)			6.00			1/2" Ice	2.92	5.73	0.05
			0.00			1" Ice	3.23	6.06	0.08
(2) MX06FIT665-02	C	From Leg	3.00	0.0000	162.00	No Ice	8.15	7.34	0.06
(Verizon)			6.00			1/2" Ice	8.60	7.78	0.12
			0.00			1" Ice	9.06	8.24	0.18
MT6407-77A	C	From Leg	3.00	0.0000	162.00	No Ice	4.71	1.84	0.00
(Verizon)			6.00			1/2" Ice	5.00	2.06	0.03
			0.00			1" Ice	5.29	2.29	0.06
LPA-80080-4CF	C	From Leg	3.00	0.0000	162.00	No Ice	2.62	5.40	0.01
(Verizon)			-6.00			1/2" Ice	2.92	5.73	0.05
			0.00			1" Ice	3.23	6.06	0.08
B2/B66A RRH	A	From Leg	3.00	0.0000	162.00	No Ice	2.54	1.61	0.06
(Verizon)			6.00			1/2" Ice	2.75	1.79	0.08
			0.00			1" Ice	2.97	1.98	0.10
B2/B66A RRH	B	From Leg	3.00	0.0000	162.00	No Ice	2.54	1.61	0.06
(Verizon)			6.00			1/2" Ice	2.75	1.79	0.08
			0.00			1" Ice	2.97	1.98	0.10
B2/B66A RRH	C	From Leg	3.00	0.0000	162.00	No Ice	2.54	1.61	0.06
(Verizon)			6.00			1/2" Ice	2.75	1.79	0.08
			0.00			1" Ice	2.97	1.98	0.10
B5/B13 RRH	A	From Leg	3.00	0.0000	162.00	No Ice	1.87	1.02	0.07
(Verizon)			6.00			1/2" Ice	2.03	1.15	0.09
			0.00			1" Ice	2.21	1.29	0.11
B5/B13 RRH	B	From Leg	3.00	0.0000	162.00	No Ice	1.87	1.02	0.07
(Verizon)			6.00			1/2" Ice	2.03	1.15	0.09
			0.00			1" Ice	2.21	1.29	0.11
B5/B13 RRH	C	From Leg	3.00	0.0000	162.00	No Ice	1.87	1.02	0.07
(Verizon)			6.00			1/2" Ice	2.03	1.15	0.09
			0.00			1" Ice	2.21	1.29	0.11
RC2DC-3315-PF-48	A	From Leg	3.00	0.0000	162.00	No Ice	3.01	1.96	0.03
(Verizon)			6.00			1/2" Ice	3.23	2.15	0.05
			0.00			1" Ice	3.46	2.35	0.08
PiROD 15' T-Frame	A	From Leg	1.50	0.0000	162.00	No Ice	15.00	15.00	0.50
(Verizon)			0.00			1/2" Ice	20.60	20.60	0.65
			0.00			1" Ice	26.20	26.20	0.80
PiROD 15' T-Frame	B	From Leg	1.50	0.0000	162.00	No Ice	15.00	15.00	0.50
(Verizon)			0.00			1/2" Ice	20.60	20.60	0.65
			0.00			1" Ice	26.20	26.20	0.80
PiROD 15' T-Frame	C	From Leg	1.50	0.0000	162.00	No Ice	15.00	15.00	0.50
(Verizon)			0.00			1/2" Ice	20.60	20.60	0.65
			0.00			1" Ice	26.20	26.20	0.80
7770.00	A	From Leg	3.00	0.0000	150.00	No Ice	5.51	2.93	0.04
(AT&T)			0.00			1/2" Ice	5.87	3.27	0.07
			0.00			1" Ice	6.23	3.63	0.11
7770.00	B	From Leg	3.00	0.0000	150.00	No Ice	5.51	2.93	0.04

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	Verizon Wireless	TJL

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
(AT&T)			0.00			1/2" Ice	5.87	3.27	0.07
			0.00			1" Ice	6.23	3.63	0.11
7770.00	C	From Leg	3.00	0.0000	150.00	No Ice	5.51	2.93	0.04
(AT&T)			0.00			1/2" Ice	5.87	3.27	0.07
			0.00			1" Ice	6.23	3.63	0.11
(2) DMP65R-BU6D	A	From Leg	3.00	0.0000	150.00	No Ice	12.71	5.62	0.10
(AT&T)			0.00			1/2" Ice	13.21	6.07	0.17
			0.00			1" Ice	13.71	6.53	0.25
(2) DMP65R-BU6D	B	From Leg	3.00	0.0000	150.00	No Ice	12.71	5.62	0.10
(AT&T)			0.00			1/2" Ice	13.21	6.07	0.17
			0.00			1" Ice	13.71	6.53	0.25
(2) DMP65R-BU4D	C	From Leg	3.00	0.0000	150.00	No Ice	8.00	3.51	0.07
(AT&T)			0.00			1/2" Ice	8.38	3.81	0.12
			0.00			1" Ice	8.77	4.12	0.17
(2) LGP21401 TMA	A	From Leg	2.50	0.0000	150.00	No Ice	0.00	0.37	0.02
(AT&T)			0.00			1/2" Ice	0.00	0.48	0.02
			0.00			1" Ice	0.00	0.60	0.03
(2) LGP21401 TMA	B	From Leg	2.50	0.0000	150.00	No Ice	0.00	0.37	0.02
(AT&T)			0.00			1/2" Ice	0.00	0.48	0.02
			0.00			1" Ice	0.00	0.60	0.03
(2) LGP21401 TMA	C	From Leg	2.50	0.0000	150.00	No Ice	0.00	0.37	0.02
(AT&T)			0.00			1/2" Ice	0.00	0.48	0.02
			0.00			1" Ice	0.00	0.60	0.03
(2) LGP13519 Diplexer	A	From Leg	2.50	0.0000	150.00	No Ice	0.23	0.16	0.01
(AT&T)			0.00			1/2" Ice	0.29	0.21	0.01
			0.00			1" Ice	0.36	0.28	0.01
(2) LGP13519 Diplexer	B	From Leg	2.50	0.0000	150.00	No Ice	0.23	0.16	0.01
(AT&T)			0.00			1/2" Ice	0.29	0.21	0.01
			0.00			1" Ice	0.36	0.28	0.01
(2) LGP13519 Diplexer	C	From Leg	2.50	0.0000	150.00	No Ice	0.23	0.16	0.01
(AT&T)			0.00			1/2" Ice	0.29	0.21	0.01
			0.00			1" Ice	0.36	0.28	0.01
(2) 7020 Dual Band RET	A	From Leg	2.50	0.0000	150.00	No Ice	0.34	0.18	0.00
(AT&T)			0.00			1/2" Ice	0.42	0.24	0.01
			0.00			1" Ice	0.51	0.31	0.01
(2) 7020 Dual Band RET	B	From Leg	2.50	0.0000	150.00	No Ice	0.34	0.18	0.00
(AT&T)			0.00			1/2" Ice	0.42	0.24	0.01
			0.00			1" Ice	0.51	0.31	0.01
(2) 7020 Dual Band RET	C	From Leg	2.50	0.0000	150.00	No Ice	0.34	0.18	0.00
(AT&T)			0.00			1/2" Ice	0.42	0.24	0.01
			0.00			1" Ice	0.51	0.31	0.01
8843 B2/B66A	A	From Leg	2.50	0.0000	150.00	No Ice	1.64	1.35	0.07
(AT&T)			0.00			1/2" Ice	1.80	1.50	0.09
			0.00			1" Ice	1.97	1.65	0.11
8843 B2/B66A	B	From Leg	2.50	0.0000	150.00	No Ice	1.64	1.35	0.07
(AT&T)			0.00			1/2" Ice	1.80	1.50	0.09
			0.00			1" Ice	1.97	1.65	0.11
8843 B2/B66A	C	From Leg	2.50	0.0000	150.00	No Ice	1.64	1.35	0.07
(AT&T)			0.00			1/2" Ice	1.80	1.50	0.09
			0.00			1" Ice	1.97	1.65	0.11
4478 B14	A	From Leg	2.50	0.0000	150.00	No Ice	1.84	1.06	0.06
(AT&T)			0.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
4478 B14	B	From Leg	2.50	0.0000	150.00	No Ice	1.84	1.06	0.06
(AT&T)			0.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
4478 B14	C	From Leg	2.50	0.0000	150.00	No Ice	1.84	1.06	0.06

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Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
(AT&T)			0.00			1/2" Ice	2.01	1.20	0.08
			0.00			1" Ice	2.19	1.34	0.09
4449 B5/B12	A	From Leg	2.50	0.0000	150.00	No Ice	1.97	1.41	0.07
(AT&T)			0.00			1/2" Ice	2.14	1.56	0.09
			0.00			1" Ice	2.33	1.73	0.11
4449 B5/B12	B	From Leg	2.50	0.0000	150.00	No Ice	1.97	1.41	0.07
(AT&T)			0.00			1/2" Ice	2.14	1.56	0.09
			0.00			1" Ice	2.33	1.73	0.11
4449 B5/B12	C	From Leg	2.50	0.0000	150.00	No Ice	1.97	1.41	0.07
(AT&T)			0.00			1/2" Ice	2.14	1.56	0.09
			0.00			1" Ice	2.33	1.73	0.11
DC6-48-60-18-8F Surge	A	From Leg	2.50	0.0000	150.00	No Ice	1.91	1.91	0.02
Arrestor			0.00			1/2" Ice	2.10	2.10	0.04
(AT&T)			0.00			1" Ice	2.29	2.29	0.06
DC6-48-60-18-8F Surge	B	From Leg	2.50	0.0000	150.00	No Ice	1.91	1.91	0.02
Arrestor			0.00			1/2" Ice	2.10	2.10	0.04
(AT&T)			0.00			1" Ice	2.29	2.29	0.06
DC6-48-60-18-8F Surge	C	From Leg	2.50	0.0000	150.00	No Ice	1.91	1.91	0.02
Arrestor			0.00			1/2" Ice	2.10	2.10	0.04
(AT&T)			0.00			1" Ice	2.29	2.29	0.06
Pirot 12' T-Frame Sector	A	From Leg	1.25	0.0000	150.00	No Ice	13.60	13.60	0.47
Mount (1)			0.00			1/2" Ice	18.40	18.40	0.60
(AT&T)			0.00			1" Ice	23.20	23.20	0.73
Pirot 12' T-Frame Sector	B	From Leg	1.25	0.0000	150.00	No Ice	13.60	13.60	0.47
Mount (1)			0.00			1/2" Ice	18.40	18.40	0.60
(AT&T)			0.00			1" Ice	23.20	23.20	0.73
Pirot 12' T-Frame Sector	C	From Leg	1.25	0.0000	150.00	No Ice	13.60	13.60	0.47
Mount (1)			0.00			1/2" Ice	18.40	18.40	0.60
(AT&T)			0.00			1" Ice	23.20	23.20	0.73
SRL110A	C	From Leg	6.00	0.0000	135.00	No Ice	9.00	9.00	0.03
(Eversource)			0.00			1/2" Ice	10.58	10.58	0.09
			0.00			1" Ice	12.16	12.16	0.14
PIROD 6' Rigid Side Arm w/	C	From Leg	3.00	0.0000	134.00	No Ice	2.60	3.41	0.20
3" STD mount pipe			0.00			1/2" Ice	4.21	7.18	0.30
(Eversource)			0.00			1" Ice	5.82	10.95	0.40
DB586-Y	A	From Leg	6.00	0.0000	130.00	No Ice	1.01	1.01	0.01
(Eversource)			0.00			1/2" Ice	1.28	1.28	0.02
			0.00			1" Ice	1.56	1.56	0.03
PIROD 6' Rigid Side Arm w/	A	From Leg	3.00	0.0000	126.00	No Ice	2.60	3.41	0.20
3" STD mount pipe			0.00			1/2" Ice	4.21	7.18	0.30
(Eversource)			0.00			1" Ice	5.82	10.95	0.40
Tower Top Amplifier	A	From Leg	3.00	0.0000	126.00	No Ice	2.10	2.10	0.04
(Eversource)			0.00			1/2" Ice	2.40	2.40	0.06
			0.00			1" Ice	2.70	2.70	0.08
DB586-Y	A	From Leg	6.00	0.0000	125.00	No Ice	1.01	1.01	0.01
(Eversource)			0.00			1/2" Ice	1.28	1.28	0.02
			0.00			1" Ice	1.56	1.56	0.03
PIROD 6' Rigid Side Arm w/	B	From Leg	3.00	0.0000	120.50	No Ice	2.60	3.41	0.20
3" STD mount pipe			0.00			1/2" Ice	4.21	7.18	0.30
(Vacant)			0.00			1" Ice	5.82	10.95	0.40
DB212-1	C	From Leg	6.00	0.0000	120.67	No Ice	4.40	4.40	0.03
(Unknown)			0.00			1/2" Ice	8.42	8.42	0.07
			0.00			1" Ice	12.45	12.45	0.13
PIROD 6' Rigid Side Arm w/	C	From Leg	3.00	0.0000	120.67	No Ice	2.60	3.41	0.20
3" STD mount pipe			0.00			1/2" Ice	4.21	7.18	0.30
(Unknown)			0.00			1" Ice	5.82	10.95	0.40
DB205-L	A	From Leg	5.20	0.0000	109.25	No Ice	1.72	1.72	0.04

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	Client		Verizon Wireless		Designed by		TJL	

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
(Unknown)			0.00			1/2" Ice	3.45	3.45	0.05
			0.00			1" Ice	5.20	5.20	0.08
PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	A	From Leg	3.00	0.0000	100.83	No Ice	2.60	3.41	0.20
(Unknown)			0.00			1/2" Ice	4.21	7.18	0.30
Ice Canopy	B	From Leg	3.00	-50.0000	106.00	No Ice	3.73	2.80	0.30
			0.00			1/2" Ice	4.39	3.30	0.55
			0.00			1" Ice	5.05	3.80	0.80
6'8"x4" Pipe Mount (CSP)	B	From Leg	0.67	0.0000	101.20	No Ice	2.16	2.16	0.07
			0.00			1/2" Ice	3.01	3.01	0.09
			0.00			1" Ice	3.42	3.42	0.12
DB224	C	From Leg	2.00	60.0000	94.00	No Ice	3.15	3.15	0.03
(Unknown)			0.00			1/2" Ice	5.67	5.67	0.04
			0.00			1" Ice	8.19	8.19	0.05
2-ft Stand Off	C	From Leg	1.00	60.0000	85.00	No Ice	1.07	1.07	0.02
(Unknown)			0.00			1/2" Ice	1.62	1.62	0.03
			0.00			1" Ice	2.17	2.17	0.04
PD220	A	From Leg	5.20	0.0000	90.41	No Ice	3.08	3.08	0.02
(Unknown)			0.00			1/2" Ice	5.30	5.30	0.05
			0.00			1" Ice	7.54	7.54	0.09
PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	A	From Leg	3.00	0.0000	79.50	No Ice	2.60	3.41	0.20
(Unknown)			0.00			1/2" Ice	4.21	7.18	0.30
			0.00			1" Ice	5.82	10.95	0.40
PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	B	From Leg	3.00	0.0000	82.67	No Ice	2.60	3.41	0.20
(Unknown)			0.00			1/2" Ice	4.21	7.18	0.30
			0.00			1" Ice	5.82	10.95	0.40
12' x 3" Dia Omni	B	From Leg	6.00	0.0000	75.00	No Ice	3.60	3.60	0.04
(Unknown)			0.00			1/2" Ice	4.83	4.83	0.06
			0.00			1" Ice	6.08	6.08	0.09
DB432-A	A	From Leg	1.50	0.0000	70.25	No Ice	0.30	0.30	0.01
(Unknown)			0.00			1/2" Ice	0.54	0.54	0.01
			0.00			1" Ice	0.78	0.78	0.01
2-ft Stand Off	B	From Leg	1.00	0.0000	15.00	No Ice	1.07	1.07	0.02
(Unknown)			0.00			1/2" Ice	1.62	1.62	0.03
			0.00			1" Ice	2.17	2.17	0.04
SC479-HF1LDF	A	From Leg	3.00	0.0000	184.00	No Ice	4.85	4.85	0.03
(CSP (Inverted))			0.00			1/2" Ice	6.54	6.54	0.07
			-12.00			1" Ice	8.04	8.04	0.11
SC479-HF1LDF	B	From Leg	3.00	0.0000	184.00	No Ice	4.85	4.85	0.03
(CSP (Inverted))			0.00			1/2" Ice	6.54	6.54	0.07
			-12.00			1" Ice	8.04	8.04	0.11
SE414-SWBP4LDF (D00)	C	From Leg	3.00	0.0000	184.00	No Ice	1.90	4.27	0.01
(CSP)			0.00			1/2" Ice	2.22	4.61	0.04
			0.00			1" Ice	2.55	4.95	0.06
TX/RX 432E-83I-01T	A	From Leg	0.00	0.0000	184.00	No Ice	1.20	0.75	0.03
(CSP)			0.00			1/2" Ice	1.34	0.86	0.04
			0.00			1" Ice	1.48	0.98	0.05
APX16DWV-16DWVS-E-A	A	From Leg	3.00	0.0000	140.00	No Ice	6.46	2.15	0.04
20			-5.00			1/2" Ice	6.83	2.49	0.07
(T-Mobile Existing)			0.00			1" Ice	7.21	2.84	0.11
APX16DWV-16DWVS-E-A	B	From Leg	3.00	0.0000	140.00	No Ice	6.46	2.15	0.04
20			-5.00			1/2" Ice	6.83	2.49	0.07
(T-Mobile Existing)			0.00			1" Ice	7.21	2.84	0.11
APX16DWV-16DWVS-E-A	C	From Leg	3.00	0.0000	140.00	No Ice	6.46	2.15	0.04
20			-5.00			1/2" Ice	6.83	2.49	0.07
(T-Mobile Existing)			0.00			1" Ice	7.21	2.84	0.11
APXVAARR24-43	A	From Leg	3.00	0.0000	140.00	No Ice	20.24	8.89	0.15

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	Verizon Wireless	TJL

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C _A A _A Front ft ²	C _A A _A Side ft ²	Weight K
(T-Mobile Existing)			5.00			1/2" Ice	20.89	9.49	0.27
			0.00			1" Ice	21.54	10.09	0.39
APXVAARR24-43	B	From Leg	3.00	0.0000	140.00	No Ice	20.24	8.89	0.15
(T-Mobile Existing)			5.00			1/2" Ice	20.89	9.49	0.27
			0.00			1" Ice	21.54	10.09	0.39
APXVAARR24-43	C	From Leg	3.00	0.0000	140.00	No Ice	20.24	8.89	0.15
(T-Mobile Existing)			5.00			1/2" Ice	20.89	9.49	0.27
			0.00			1" Ice	21.54	10.09	0.39
RRUS-11	A	From Leg	3.00	0.0000	140.00	No Ice	2.57	1.07	0.05
(T-Mobile Existing)			-1.00			1/2" Ice	2.76	1.21	0.07
			2.50			1" Ice	2.97	1.36	0.09
RRUS-11	A	From Leg	3.00	0.0000	140.00	No Ice	2.57	1.07	0.05
(T-Mobile Existing)			-1.00			1/2" Ice	2.76	1.21	0.07
			-2.50			1" Ice	2.97	1.36	0.09
RRUS-11	B	From Leg	3.00	0.0000	140.00	No Ice	2.57	1.07	0.05
(T-Mobile Existing)			-1.00			1/2" Ice	2.76	1.21	0.07
			2.50			1" Ice	2.97	1.36	0.09
RRUS-11	B	From Leg	3.00	0.0000	140.00	No Ice	2.57	1.07	0.05
(T-Mobile Existing)			-1.00			1/2" Ice	2.76	1.21	0.07
			-2.50			1" Ice	2.97	1.36	0.09
RRUS-11	C	From Leg	3.00	0.0000	140.00	No Ice	2.57	1.07	0.05
(T-Mobile Existing)			-1.00			1/2" Ice	2.76	1.21	0.07
			2.50			1" Ice	2.97	1.36	0.09
RRUS-11	C	From Leg	3.00	0.0000	140.00	No Ice	2.57	1.07	0.05
(T-Mobile Existing)			-1.00			1/2" Ice	2.76	1.21	0.07
			-2.50			1" Ice	2.97	1.36	0.09
Radio 4449 B71 B12	A	From Leg	3.00	0.0000	140.00	No Ice	1.64	1.29	0.07
(T-Mobile Existing)			5.00			1/2" Ice	1.80	1.44	0.09
			0.00			1" Ice	1.97	1.59	0.11
Radio 4449 B71 B12	B	From Leg	3.00	0.0000	140.00	No Ice	1.64	1.29	0.07
(T-Mobile Existing)			5.00			1/2" Ice	1.80	1.44	0.09
			0.00			1" Ice	1.97	1.59	0.11
Radio 4449 B71 B12	C	From Leg	3.00	0.0000	140.00	No Ice	1.64	1.29	0.07
(T-Mobile Existing)			5.00			1/2" Ice	1.80	1.44	0.09
			0.00			1" Ice	1.97	1.59	0.11
10-ft T-Frame	A	From Leg	1.00	0.0000	140.00	No Ice	13.60	13.60	0.38
(T-Mobile Existing)			0.00			1/2" Ice	17.50	17.50	0.53
			0.00			1" Ice	21.40	21.40	0.68
10-ft T-Frame	B	From Leg	1.00	0.0000	140.00	No Ice	13.60	13.60	0.38
(T-Mobile Existing)			0.00			1/2" Ice	17.50	17.50	0.53
			0.00			1" Ice	21.40	21.40	0.68
10-ft T-Frame	C	From Leg	1.00	0.0000	140.00	No Ice	13.60	13.60	0.38
(T-Mobile Existing)			0.00			1/2" Ice	17.50	17.50	0.53
			0.00			1" Ice	21.40	21.40	0.68
DS2C03F36D-D	A	From Leg	4.00	0.0000	117.50	No Ice	7.30	7.30	0.08
(Eversource)			0.00			1/2" Ice	9.77	9.77	0.13
			9.00			1" Ice	12.25	12.25	0.20
Pirol 4' Side Mount Standoff	A	From Leg	4.00	0.0000	117.50	No Ice	2.72	2.72	0.05
(1)			0.00			1/2" Ice	4.91	4.91	0.09
(Eversource)			0.00			1" Ice	7.10	7.10	0.13

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Dishes

Description	Face or Leg	Dish Type	Offset Type	Offsets: Horz Lateral Vert ft	Azimuth Adjustment °	3 dB Beam Width °	Elevation ft	Outside Diameter ft	Aperture Area ft ²	Weight K
PA6-65AC (CSP)	B	Paraboloid w/o Radome	From Leg	1.00 0.00 0.00	-50.0000		102.25	6.00	No Ice 28.27 1/2" Ice 29.05 1" Ice 29.83	0.09 0.24 0.39
PA6-65AC (CSP)	A	Paraboloid w/o Radome	From Face	1.00 0.00 0.00	-10.0000		194.25	6.00	No Ice 28.27 1/2" Ice 29.05 1" Ice 29.83	0.09 0.24 0.39
1.2M (Verizon)	B	Paraboloid w/o Radome	From Leg	2.00 0.00 0.00	40.0000		17.00	4.00	No Ice 12.17 1/2" Ice 13.09 1" Ice 14.01	0.17 0.23 0.30

Truss-Leg Interaction Properties

Section Designation	Area in ²	Area Ice in ²	Self Weight K	Ice Weight K	Equiv. Diameter in	Equiv. Diameter Ice in	Section Modulus S _x in ³	Section Modulus S _y in ³	Leg Area in ²
Pirod 105245	1090.3344	3704.6418	0.68	1.39	7.5718	25.7267	18.4723	21.3300	5.3014
Pirod 105217	2296.2363	7024.0136	0.59	2.50	7.9730	24.3889	18.4723	21.3300	5.3014
Pirod 105218	2425.3141	7062.7245	0.72	2.46	8.4212	24.5233	25.1958	29.0936	7.2158
Pirod 105218 reinf. w/1" dia. S.R.	2638.2422	7138.7823	0.98	2.43	9.1606	24.7874	38.1835	44.0905	10.8915
Pirod 105219 reinf. w/1" dia. S.R.	2799.7828	7152.9920	1.35	2.44	9.7215	24.8368	46.3174	53.4827	13.1787
Pirod 105219 reinf. w/1" dia. S.R.	2799.7828	7091.4325	1.35	2.31	9.7215	24.6230	46.3174	53.4827	13.1787
Pirod 105220 reinf. w/1" dia. S.R.	2877.1901	7042.1146	1.46	2.16	9.9902	24.4518	51.8434	59.8636	14.7262
Pirod 105220 reinf. w/1" dia. S.R.	2877.1901	6876.4820	1.46	1.85	9.9902	23.8767	51.8434	59.8636	14.7262

Tower Pressures - No Ice

$$G_H = 0.850$$

Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg % ft	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
T1 197.00-187.00	192.00	1.452	29	46.458	A	1.089	6.053	2.917	40.84	2.737	0.000
					B	1.089	6.053		40.84	5.918	0.000
					C	1.089	6.053		40.84	0.000	0.000
T2 187.00-172.00	179.50	1.431	28	70.000	A	0.000	9.972	5.000	50.14	5.865	0.000
					B	0.000	9.972		50.14	28.424	0.000
					C	0.000	9.972		50.14	0.000	0.000
T3 172.00-152.00	162.00	1.401	28	98.750	A	0.000	15.045	7.501	49.85	41.282	0.000
					B	0.000	15.045		49.85	41.827	0.000
					C	0.000	15.045		49.85	0.000	0.000
T4 152.00-142.00	147.00	1.373	27	66.264	A	5.673	12.641	12.641	69.02	29.650	0.000
					B	5.673	12.641		69.02	20.914	0.000

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Section Elevation	z	K _Z	q _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
ft	ft		psf	ft ²		ft ²	ft ²	ft ²			
T5 142.00-122.00	132.00	1.342	27	162.528	C	5.673	12.641		69.02	20.825	0.000
					A	13.687	27.153	26.621	65.18	59.300	0.000
					B	13.687	27.153		65.18	53.707	0.000
					C	13.687	27.153		65.18	55.392	0.000
T6 122.00-102.00	112.00	1.296	26	202.945	A	15.184	28.118	28.118	64.93	63.185	0.000
					B	15.184	28.118		64.93	53.707	0.000
					C	15.184	28.118		64.93	59.832	0.000
T7 102.00-82.00	92.00	1.244	25	243.613	A	18.990	31.198	30.586	60.94	63.740	0.000
					B	18.990	31.198		60.94	58.034	0.000
					C	18.990	31.198		60.94	60.942	0.000
T8 82.00-62.00	72.00	1.181	23	283.972	A	18.364	32.459	32.459	63.87	63.740	0.000
					B	18.364	32.459		63.87	60.354	0.000
					C	18.364	32.459		63.87	60.942	0.000
T9 62.00-42.00	52.00	1.103	22	323.972	A	22.855	33.108	32.459	58.00	63.740	0.000
					B	22.855	33.108		58.00	61.514	0.000
					C	22.855	33.108		58.00	60.942	0.000
T10 42.00-22.00	32.00	0.996	20	364.197	A	24.881	33.356	33.356	57.28	63.740	0.000
					B	24.881	33.356		57.28	61.514	0.000
					C	24.881	33.356		57.28	60.942	0.000
T11 22.00-2.00	12.00	0.85	17	404.197	A	30.345	34.023	33.356	51.82	47.805	0.000
					B	30.345	34.023		51.82	46.136	0.000
					C	30.345	34.023		51.82	46.407	0.000

Tower Pressure - With Ice

$$G_H = 0.850$$

Section Elevation	z	K _Z	q _z	t _z	A _G	F a c e	A _F	A _R	A _{leg}	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
ft	ft		psf	in	ft ²		ft ²	ft ²	ft ²			
T1 197.00-187.00	192.00	1.452	5	2.9814	51.427	A	1.089	39.527	12.855	31.65	16.403	0.000
						B	1.089	39.527		31.65	40.291	0.000
						C	1.089	39.527		31.65	0.000	0.000
T2 187.00-172.00	179.50	1.431	5	2.9614	77.403	A	0.000	57.821	19.807	34.26	34.986	0.000
						B	0.000	57.821		34.26	142.349	0.000
						C	0.000	57.821		34.26	0.000	0.000
T3 172.00-152.00	162.00	1.401	5	2.9312	108.522	A	0.000	78.817	27.044	34.31	132.734	0.000
						B	0.000	78.817		34.31	203.700	0.000
						C	0.000	78.817		34.31	0.000	0.000
T4 152.00-142.00	147.00	1.373	5	2.9028	71.108	A	5.673	53.281	42.949	72.85	89.172	0.000
						B	5.673	53.281		72.85	101.185	0.000
						C	5.673	53.281		72.85	50.232	0.000
T5 142.00-122.00	132.00	1.342	5	2.8717	172.113	A	13.687	105.218	81.432	68.48	177.333	0.000
						B	13.687	105.218		68.48	244.527	0.000
						C	13.687	105.218		68.48	145.502	0.000
T6 122.00-102.00	112.00	1.296	5	2.8249	212.374	A	15.184	106.103	81.881	67.51	200.400	0.000
						B	15.184	106.103		67.51	242.018	0.000
						C	15.184	106.103		67.51	171.298	0.000
T7 102.00-82.00	92.00	1.244	4	2.7699	252.857	A	18.990	115.778	82.762	61.41	201.740	0.000
						B	18.990	115.778		61.41	265.204	0.000
						C	18.990	115.778		61.41	176.047	0.000
T8 82.00-62.00	72.00	1.181	4	2.7028	292.992	A	18.364	111.832	82.927	63.69	199.093	0.000
						B	18.364	111.832		63.69	284.409	0.000
						C	18.364	111.832		63.69	173.596	0.000
T9 62.00-42.00	52.00	1.103	4	2.6163	332.703	A	22.855	115.364	82.213	59.48	195.679	0.000

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Section Elevation ft	z ft	K _Z	q _z psf	t _z in	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
T10 42.00-22.00	32.00	0.996	3	2.4923	372.515	B	22.855	115.364		59.48	289.861	0.000
						C	22.855	115.364		59.48	170.435	0.000
						A	24.881	113.981	81.642	58.79	190.793	0.000
						B	24.881	113.981		58.79	280.984	0.000
T11 22.00-2.00	12.00	0.85	3	2.2595	411.738	C	24.881	113.981		58.79	165.908	0.000
						A	30.345	113.924	79.721	55.26	136.222	0.000
						B	30.345	113.924		55.26	198.247	0.000
						C	30.345	113.924		55.26	127.309	0.000

Tower Pressure - Service

$$G_H = 0.850$$

Section Elevation ft	z ft	K _Z	q _z psf	A _G ft ²	F a c e	A _F ft ²	A _R ft ²	A _{leg} ft ²	Leg %	C _A A _A In Face ft ²	C _A A _A Out Face ft ²
T1 197.00-187.00	192.00	1.452	11	46.458	A	1.089	6.053	2.917	40.84	2.737	0.000
					B	1.089	6.053		40.84	5.918	0.000
					C	1.089	6.053		40.84	0.000	0.000
T2 187.00-172.00	179.50	1.431	11	70.000	A	0.000	9.972	5.000	50.14	5.865	0.000
					B	0.000	9.972		50.14	28.424	0.000
					C	0.000	9.972		50.14	0.000	0.000
T3 172.00-152.00	162.00	1.401	11	98.750	A	0.000	15.045	7.501	49.85	41.282	0.000
					B	0.000	15.045		49.85	41.827	0.000
					C	0.000	15.045		49.85	0.000	0.000
T4 152.00-142.00	147.00	1.373	11	66.264	A	5.673	12.641	12.641	69.02	29.650	0.000
					B	5.673	12.641		69.02	20.914	0.000
					C	5.673	12.641		69.02	20.825	0.000
T5 142.00-122.00	132.00	1.342	11	162.528	A	13.687	27.153	26.621	65.18	59.300	0.000
					B	13.687	27.153		65.18	53.707	0.000
					C	13.687	27.153		65.18	55.392	0.000
T6 122.00-102.00	112.00	1.296	10	202.945	A	15.184	28.118	28.118	64.93	63.185	0.000
					B	15.184	28.118		64.93	53.707	0.000
					C	15.184	28.118		64.93	59.832	0.000
T7 102.00-82.00	92.00	1.244	10	243.613	A	18.990	31.198	30.586	60.94	63.740	0.000
					B	18.990	31.198		60.94	58.034	0.000
					C	18.990	31.198		60.94	60.942	0.000
T8 82.00-62.00	72.00	1.181	9	283.972	A	18.364	32.459	32.459	63.87	63.740	0.000
					B	18.364	32.459		63.87	60.354	0.000
					C	18.364	32.459		63.87	60.942	0.000
T9 62.00-42.00	52.00	1.103	9	323.972	A	22.855	33.108	32.459	58.00	63.740	0.000
					B	22.855	33.108		58.00	61.514	0.000
					C	22.855	33.108		58.00	60.942	0.000
T10 42.00-22.00	32.00	0.996	8	364.197	A	24.881	33.356	33.356	57.28	63.740	0.000
					B	24.881	33.356		57.28	61.514	0.000
					C	24.881	33.356		57.28	60.942	0.000
T11 22.00-2.00	12.00	0.85	7	404.197	A	30.345	34.023	33.356	51.82	47.805	0.000
					B	30.345	34.023		51.82	46.136	0.000
					C	30.345	34.023		51.82	46.407	0.000

Tower Forces - No Ice - Wind Normal To Face

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	Verizon Wireless	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1 197.00-187.00	0.04	0.61	A	0.154	2.758	29	1	1	4.526	0.43	43.24	C
			B	0.154	2.758		1	1	4.526			
			C	0.154	2.758		1	1	4.526			
T2 187.00-172.00	0.16	0.94	A	0.142	2.799	28	1	1	5.652	0.88	58.52	C
			B	0.142	2.799		1	1	5.652			
			C	0.142	2.799		1	1	5.652			
T3 172.00-152.00	0.41	1.60	A	0.152	2.763	28	1	1	8.542	1.73	86.70	C
			B	0.152	2.763		1	1	8.542			
			C	0.152	2.763		1	1	8.542			
T4 152.00-142.00	0.47	1.24	A	0.276	2.361	27	1	1	13.156	1.71	170.87	C
			B	0.276	2.361		1	1	13.156			
			C	0.276	2.361		1	1	13.156			
T5 142.00-122.00	1.05	2.33	A	0.251	2.434	27	1	1	29.580	3.91	195.58	C
			B	0.251	2.434		1	1	29.580			
			C	0.251	2.434		1	1	29.580			
T6 122.00-102.00	1.09	3.00	A	0.213	2.552	26	1	1	31.407	4.07	203.30	C
			B	0.213	2.552		1	1	31.407			
			C	0.213	2.552		1	1	31.407			
T7 102.00-82.00	1.11	3.99	A	0.206	2.576	25	1	1	36.946	4.29	214.56	C
			B	0.206	2.576		1	1	36.946			
			C	0.206	2.576		1	1	36.946			
T8 82.00-62.00	1.12	5.31	A	0.179	2.668	23	1	1	36.902	4.17	208.40	C
			B	0.179	2.668		1	1	36.902			
			C	0.179	2.668		1	1	36.902			
T9 62.00-42.00	1.13	5.37	A	0.173	2.69	22	1	1	41.734	4.16	208.08	C
			B	0.173	2.69		1	1	41.734			
			C	0.173	2.69		1	1	41.734			
T10 42.00-22.00	1.13	6.16	A	0.16	2.735	20	1	1	43.848	3.89	194.31	C
			B	0.16	2.735		1	1	43.848			
			C	0.16	2.735		1	1	43.848			
T11 22.00-2.00	0.90	6.18	A	0.159	2.738	17	1	1	49.689	3.15	157.71	C
			B	0.159	2.738		1	1	49.689			
			C	0.159	2.738		1	1	49.689			
Sum Weight:	8.60	38.22						OTM	2753.12 kip-ft	32.39		

Tower Forces - No Ice - Wind 45 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1 197.00-187.00	0.04	0.61	A	0.154	2.758	29	0.825	1	4.336	0.42	41.95	C
			B	0.154	2.758		0.825	1	4.336			
			C	0.154	2.758		0.825	1	4.336			
T2 187.00-172.00	0.16	0.94	A	0.142	2.799	28	0.825	1	5.652	0.88	58.52	C
			B	0.142	2.799		0.825	1	5.652			
			C	0.142	2.799		0.825	1	5.652			
T3 172.00-152.00	0.41	1.60	A	0.152	2.763	28	0.825	1	8.542	1.73	86.70	C
			B	0.152	2.763		0.825	1	8.542			
			C	0.152	2.763		0.825	1	8.542			
T4 152.00-142.00	0.47	1.24	A	0.276	2.361	27	0.825	1	12.163	1.65	165.45	C
			B	0.276	2.361		0.825	1	12.163			

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T5 142.00-122.00	1.05	2.33	C	0.276	2.361		0.825	1	12.163			
			A	0.251	2.434	27	0.825	1	27.185	3.78	188.99	C
			B	0.251	2.434		0.825	1	27.185			
T6 122.00-102.00	1.09	3.00	C	0.251	2.434		0.825	1	27.185			
			A	0.213	2.552	26	0.825	1	28.749	3.92	195.89	C
			B	0.213	2.552		0.825	1	28.749			
			C	0.213	2.552		0.825	1	28.749			
T7 102.00-82.00	1.11	3.99	A	0.206	2.576	25	0.825	1	33.623	4.11	205.59	C
			B	0.206	2.576		0.825	1	33.623			
			C	0.206	2.576		0.825	1	33.623			
T8 82.00-62.00	1.12	5.31	A	0.179	2.668	23	0.825	1	33.688	4.00	199.87	C
			B	0.179	2.668		0.825	1	33.688			
			C	0.179	2.668		0.825	1	33.688			
T9 62.00-42.00	1.13	5.37	A	0.173	2.69	22	0.825	1	37.735	3.96	198.08	C
			B	0.173	2.69		0.825	1	37.735			
			C	0.173	2.69		0.825	1	37.735			
T10 42.00-22.00	1.13	6.16	A	0.16	2.735	20	0.825	1	39.494	3.69	184.32	C
			B	0.16	2.735		0.825	1	39.494			
			C	0.16	2.735		0.825	1	39.494			
T11 22.00-2.00	0.90	6.18	A	0.159	2.738	17	0.825	1	44.379	2.95	147.30	C
			B	0.159	2.738		0.825	1	44.379			
			C	0.159	2.738		0.825	1	44.379			
Sum Weight:	8.60	38.22						OTM	2663.24 kip-ft	31.09		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1 197.00-187.00	0.04	0.61	A	0.154	2.758	29	0.8	1	4.309	0.42	41.77	C
			B	0.154	2.758		0.8	1	4.309			
			C	0.154	2.758		0.8	1	4.309			
T2 187.00-172.00	0.16	0.94	A	0.142	2.799	28	0.8	1	5.652	0.88	58.52	C
			B	0.142	2.799		0.8	1	5.652			
			C	0.142	2.799		0.8	1	5.652			
T3 172.00-152.00	0.41	1.60	A	0.152	2.763	28	0.8	1	8.542	1.73	86.70	C
			B	0.152	2.763		0.8	1	8.542			
			C	0.152	2.763		0.8	1	8.542			
T4 152.00-142.00	0.47	1.24	A	0.276	2.361	27	0.8	1	12.021	1.65	164.68	C
			B	0.276	2.361		0.8	1	12.021			
			C	0.276	2.361		0.8	1	12.021			
T5 142.00-122.00	1.05	2.33	A	0.251	2.434	27	0.8	1	26.843	3.76	188.05	C
			B	0.251	2.434		0.8	1	26.843			
			C	0.251	2.434		0.8	1	26.843			
T6 122.00-102.00	1.09	3.00	A	0.213	2.552	26	0.8	1	28.370	3.90	194.83	C
			B	0.213	2.552		0.8	1	28.370			
			C	0.213	2.552		0.8	1	28.370			
T7 102.00-82.00	1.11	3.99	A	0.206	2.576	25	0.8	1	33.148	4.09	204.31	C
			B	0.206	2.576		0.8	1	33.148			
			C	0.206	2.576		0.8	1	33.148			
T8 82.00-62.00	1.12	5.31	A	0.179	2.668	23	0.8	1	33.229	3.97	198.66	C
			B	0.179	2.668		0.8	1	33.229			

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Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T9 62.00-42.00	1.13	5.37	C	0.179	2.668		0.8	1	33.229			
			A	0.173	2.69	22	0.8	1	37.163	3.93	196.65	C
			B	0.173	2.69		0.8	1	37.163			
			C	0.173	2.69		0.8	1	37.163			
T10 42.00-22.00	1.13	6.16	A	0.16	2.735	20	0.8	1	38.872	3.66	182.89	C
			B	0.16	2.735		0.8	1	38.872			
			C	0.16	2.735		0.8	1	38.872			
T11 22.00-2.00	0.90	6.18	A	0.159	2.738	17	0.8	1	43.620	2.92	145.81	C
			B	0.159	2.738		0.8	1	43.620			
			C	0.159	2.738		0.8	1	43.620			
Sum Weight:	8.60	38.22						OTM	2650.40 kip-ft	30.90		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T1 197.00-187.00	0.04	0.61	A	0.154	2.758	29	0.85	1	4.363	0.42	42.14	C
			B	0.154	2.758		0.85	1	4.363			
			C	0.154	2.758		0.85	1	4.363			
T2 187.00-172.00	0.16	0.94	A	0.142	2.799	28	0.85	1	5.652	0.88	58.52	C
			B	0.142	2.799		0.85	1	5.652			
			C	0.142	2.799		0.85	1	5.652			
T3 172.00-152.00	0.41	1.60	A	0.152	2.763	28	0.85	1	8.542	1.73	86.70	C
			B	0.152	2.763		0.85	1	8.542			
			C	0.152	2.763		0.85	1	8.542			
T4 152.00-142.00	0.47	1.24	A	0.276	2.361	27	0.85	1	12.305	1.66	166.22	C
			B	0.276	2.361		0.85	1	12.305			
			C	0.276	2.361		0.85	1	12.305			
T5 142.00-122.00	1.05	2.33	A	0.251	2.434	27	0.85	1	27.527	3.80	189.93	C
			B	0.251	2.434		0.85	1	27.527			
			C	0.251	2.434		0.85	1	27.527			
T6 122.00-102.00	1.09	3.00	A	0.213	2.552	26	0.85	1	29.129	3.94	196.95	C
			B	0.213	2.552		0.85	1	29.129			
			C	0.213	2.552		0.85	1	29.129			
T7 102.00-82.00	1.11	3.99	A	0.206	2.576	25	0.85	1	34.098	4.14	206.87	C
			B	0.206	2.576		0.85	1	34.098			
			C	0.206	2.576		0.85	1	34.098			
T8 82.00-62.00	1.12	5.31	A	0.179	2.668	23	0.85	1	34.147	4.02	201.09	C
			B	0.179	2.668		0.85	1	34.147			
			C	0.179	2.668		0.85	1	34.147			
T9 62.00-42.00	1.13	5.37	A	0.173	2.69	22	0.85	1	38.306	3.99	199.51	C
			B	0.173	2.69		0.85	1	38.306			
			C	0.173	2.69		0.85	1	38.306			
T10 42.00-22.00	1.13	6.16	A	0.16	2.735	20	0.85	1	40.116	3.71	185.75	C
			B	0.16	2.735		0.85	1	40.116			
			C	0.16	2.735		0.85	1	40.116			
T11 22.00-2.00	0.90	6.18	A	0.159	2.738	17	0.85	1	45.137	2.98	148.78	C
			B	0.159	2.738		0.85	1	45.137			
			C	0.159	2.738		0.85	1	45.137			
Sum Weight:	8.60	38.22						OTM	2676.08 kip-ft	31.27		

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	Verizon Wireless	TJL

Tower Forces - With Ice - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				psf			ft ²	K	plf	
T1 197.00-187.00	1.01	3.36	A	0.79	1.809	5	1	1	35.779	0.33	32.93	C
			B	0.79	1.809		1	1	35.779			
			C	0.79	1.809		1	1	35.779			
T2 187.00-172.00	3.31	4.66	A	0.747	1.786	5	1	1	48.875	0.56	37.33	C
			B	0.747	1.786		1	1	48.875			
			C	0.747	1.786		1	1	48.875			
T3 172.00-152.00	6.76	6.69	A	0.726	1.78	5	1	1	65.419	0.86	43.23	C
			B	0.726	1.78		1	1	65.419			
			C	0.726	1.78		1	1	65.419			
T4 152.00-142.00	5.40	4.89	A	0.829	1.84	5	1	1	52.895	0.56	56.24	C
			B	0.829	1.84		1	1	52.895			
			C	0.829	1.84		1	1	52.895			
T5 142.00-122.00	12.47	13.49	A	0.691	1.776	5	1	1	96.964	1.38	69.01	C
			B	0.691	1.776		1	1	96.964			
			C	0.691	1.776		1	1	96.964			
T6 122.00-102.00	13.16	14.33	A	0.571	1.825	5	1	1	90.971	1.65	82.32	C
			B	0.571	1.825		1	1	90.971			
			C	0.571	1.825		1	1	90.971			
T7 102.00-82.00	13.50	16.25	A	0.533	1.861	4	1	1	99.256	1.78	89.24	C
			B	0.533	1.861		1	1	99.256			
			C	0.533	1.861		1	1	99.256			
T8 82.00-62.00	13.40	17.15	A	0.444	1.983	4	1	1	90.726	1.90	95.24	C
			B	0.444	1.983		1	1	90.726			
			C	0.444	1.983		1	1	90.726			
T9 62.00-42.00	13.05	17.55	A	0.415	2.034	4	1	1	96.035	1.89	94.45	C
			B	0.415	2.034		1	1	96.035			
			C	0.415	2.034		1	1	96.035			
T10 42.00-22.00	12.35	18.00	A	0.373	2.12	3	1	1	95.174	1.72	86.10	C
			B	0.373	2.12		1	1	95.174			
			C	0.373	2.12		1	1	95.174			
T11 22.00-2.00	8.52	17.36	A	0.35	2.171	3	1	1	99.713	1.24	62.07	C
			B	0.35	2.171		1	1	99.713			
			C	0.35	2.171		1	1	99.713			
Sum Weight:	102.93	135.22						OTM	1194.87 kip-ft	13.89		

Tower Forces - With Ice - Wind 45 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				psf			ft ²	K	plf	
T1 197.00-187.00	1.01	3.36	A	0.79	1.809	5	0.825	1	35.588	0.33	32.78	C
			B	0.79	1.809		0.825	1	35.588			
			C	0.79	1.809		0.825	1	35.588			
T2	3.31	4.66	A	0.747	1.786	5	0.825	1	48.875	0.56	37.33	C

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	Client	Verizon Wireless	Designed by	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
187.00-172.00			B	0.747	1.786		0.825	1	48.875			
			C	0.747	1.786		0.825	1	48.875			
T3	6.76	6.69	A	0.726	1.78	5	0.825	1	65.419	0.86	43.23	C
172.00-152.00			B	0.726	1.78		0.825	1	65.419			
			C	0.726	1.78		0.825	1	65.419			
T4	5.40	4.89	A	0.829	1.84	5	0.825	1	51.903	0.56	55.50	C
152.00-142.00			B	0.829	1.84		0.825	1	51.903			
			C	0.829	1.84		0.825	1	51.903			
T5	12.47	13.49	A	0.691	1.776	5	0.825	1	94.569	1.36	68.16	C
142.00-122.00			B	0.691	1.776		0.825	1	94.569			
			C	0.691	1.776		0.825	1	94.569			
T6	13.16	14.33	A	0.571	1.825	5	0.825	1	88.314	1.63	81.39	C
122.00-102.00			B	0.571	1.825		0.825	1	88.314			
			C	0.571	1.825		0.825	1	88.314			
T7	13.50	16.25	A	0.533	1.861	4	0.825	1	95.933	1.76	88.11	C
102.00-82.00			B	0.533	1.861		0.825	1	95.933			
			C	0.533	1.861		0.825	1	95.933			
T8	13.40	17.15	A	0.444	1.983	4	0.825	1	87.512	1.88	94.13	C
82.00-62.00			B	0.444	1.983		0.825	1	87.512			
			C	0.444	1.983		0.825	1	87.512			
T9	13.05	17.55	A	0.415	2.034	4	0.825	1	92.035	1.86	93.13	C
62.00-42.00			B	0.415	2.034		0.825	1	92.035			
			C	0.415	2.034		0.825	1	92.035			
T10	12.35	18.00	A	0.373	2.12	3	0.825	1	90.820	1.69	84.74	C
42.00-22.00			B	0.373	2.12		0.825	1	90.820			
			C	0.373	2.12		0.825	1	90.820			
T11	8.52	17.36	A	0.35	2.171	3	0.825	1	94.403	1.21	60.62	C
22.00-2.00			B	0.35	2.171		0.825	1	94.403			
			C	0.35	2.171		0.825	1	94.403			
Sum Weight:	102.93	135.22						OTM	1183.23 kip-ft	13.71		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1	1.01	3.36	A	0.79	1.809	5	0.8	1	35.561	0.33	32.76	C
197.00-187.00			B	0.79	1.809		0.8	1	35.561			
			C	0.79	1.809		0.8	1	35.561			
T2	3.31	4.66	A	0.747	1.786	5	0.8	1	48.875	0.56	37.33	C
187.00-172.00			B	0.747	1.786		0.8	1	48.875			
			C	0.747	1.786		0.8	1	48.875			
T3	6.76	6.69	A	0.726	1.78	5	0.8	1	65.419	0.86	43.23	C
172.00-152.00			B	0.726	1.78		0.8	1	65.419			
			C	0.726	1.78		0.8	1	65.419			
T4	5.40	4.89	A	0.829	1.84	5	0.8	1	51.761	0.55	55.40	C
152.00-142.00			B	0.829	1.84		0.8	1	51.761			
			C	0.829	1.84		0.8	1	51.761			
T5	12.47	13.49	A	0.691	1.776	5	0.8	1	94.227	1.36	68.04	C
142.00-122.00			B	0.691	1.776		0.8	1	94.227			
			C	0.691	1.776		0.8	1	94.227			
T6	13.16	14.33	A	0.571	1.825	5	0.8	1	87.934	1.63	81.26	C

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	Client	Designed by
	Verizon Wireless	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
122.00-102.00			B	0.571	1.825		0.8	1	87.934			
			C	0.571	1.825		0.8	1	87.934			
T7	13.50	16.25	A	0.533	1.861	4	0.8	1	95.458	1.76	87.94	C
102.00-82.00			B	0.533	1.861		0.8	1	95.458			
			C	0.533	1.861		0.8	1	95.458			
T8	13.40	17.15	A	0.444	1.983	4	0.8	1	87.053	1.88	93.97	C
82.00-62.00			B	0.444	1.983		0.8	1	87.053			
			C	0.444	1.983		0.8	1	87.053			
T9	13.05	17.55	A	0.415	2.034	4	0.8	1	91.464	1.86	92.94	C
62.00-42.00			B	0.415	2.034		0.8	1	91.464			
			C	0.415	2.034		0.8	1	91.464			
T10	12.35	18.00	A	0.373	2.12	3	0.8	1	90.198	1.69	84.55	C
42.00-22.00			B	0.373	2.12		0.8	1	90.198			
			C	0.373	2.12		0.8	1	90.198			
T11	8.52	17.36	A	0.35	2.171	3	0.8	1	93.644	1.21	60.41	C
22.00-2.00			B	0.35	2.171		0.8	1	93.644			
			C	0.35	2.171		0.8	1	93.644			
Sum Weight:	102.93	135.22						OTM	1181.56 kip-ft	13.69		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1	1.01	3.36	A	0.79	1.809	5	0.85	1	35.615	0.33	32.80	C
197.00-187.00			B	0.79	1.809		0.85	1	35.615			
			C	0.79	1.809		0.85	1	35.615			
T2	3.31	4.66	A	0.747	1.786	5	0.85	1	48.875	0.56	37.33	C
187.00-172.00			B	0.747	1.786		0.85	1	48.875			
			C	0.747	1.786		0.85	1	48.875			
T3	6.76	6.69	A	0.726	1.78	5	0.85	1	65.419	0.86	43.23	C
172.00-152.00			B	0.726	1.78		0.85	1	65.419			
			C	0.726	1.78		0.85	1	65.419			
T4	5.40	4.89	A	0.829	1.84	5	0.85	1	52.044	0.56	55.61	C
152.00-142.00			B	0.829	1.84		0.85	1	52.044			
			C	0.829	1.84		0.85	1	52.044			
T5	12.47	13.49	A	0.691	1.776	5	0.85	1	94.911	1.37	68.29	C
142.00-122.00			B	0.691	1.776		0.85	1	94.911			
			C	0.691	1.776		0.85	1	94.911			
T6	13.16	14.33	A	0.571	1.825	5	0.85	1	88.693	1.63	81.52	C
122.00-102.00			B	0.571	1.825		0.85	1	88.693			
			C	0.571	1.825		0.85	1	88.693			
T7	13.50	16.25	A	0.533	1.861	4	0.85	1	96.407	1.77	88.27	C
102.00-82.00			B	0.533	1.861		0.85	1	96.407			
			C	0.533	1.861		0.85	1	96.407			
T8	13.40	17.15	A	0.444	1.983	4	0.85	1	87.971	1.89	94.29	C
82.00-62.00			B	0.444	1.983		0.85	1	87.971			
			C	0.444	1.983		0.85	1	87.971			
T9	13.05	17.55	A	0.415	2.034	4	0.85	1	92.606	1.87	93.32	C
62.00-42.00			B	0.415	2.034		0.85	1	92.606			
			C	0.415	2.034		0.85	1	92.606			
T10	12.35	18.00	A	0.373	2.12	3	0.85	1	91.442	1.70	84.94	C

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	Verizon Wireless	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
42.00-22.00			B	0.373	2.12		0.85	1	91.442			
			C	0.373	2.12		0.85	1	91.442			
T11	8.52	17.36	A	0.35	2.171	3	0.85	1	95.162	1.22	60.83	C
22.00-2.00			B	0.35	2.171		0.85	1	95.162			
			C	0.35	2.171		0.85	1	95.162			
Sum Weight:	102.93	135.22						OTM	1184.89 kip-ft	13.74		

Tower Forces - Service - Wind Normal To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1	0.04	0.61	A	0.154	2.758	11	1	1	4.526	0.17	17.09	C
197.00-187.00			B	0.154	2.758		1	1	4.526			
			C	0.154	2.758		1	1	4.526			
T2	0.16	0.94	A	0.142	2.799	11	1	1	5.652	0.35	23.13	C
187.00-172.00			B	0.142	2.799		1	1	5.652			
			C	0.142	2.799		1	1	5.652			
T3	0.41	1.60	A	0.152	2.763	11	1	1	8.542	0.69	34.27	C
172.00-152.00			B	0.152	2.763		1	1	8.542			
			C	0.152	2.763		1	1	8.542			
T4	0.47	1.24	A	0.276	2.361	11	1	1	13.156	0.68	67.53	C
152.00-142.00			B	0.276	2.361		1	1	13.156			
			C	0.276	2.361		1	1	13.156			
T5	1.05	2.33	A	0.251	2.434	11	1	1	29.580	1.55	77.30	C
142.00-122.00			B	0.251	2.434		1	1	29.580			
			C	0.251	2.434		1	1	29.580			
T6	1.09	3.00	A	0.213	2.552	10	1	1	31.407	1.61	80.34	C
122.00-102.00			B	0.213	2.552		1	1	31.407			
			C	0.213	2.552		1	1	31.407			
T7	1.11	3.99	A	0.206	2.576	10	1	1	36.946	1.70	84.79	C
102.00-82.00			B	0.206	2.576		1	1	36.946			
			C	0.206	2.576		1	1	36.946			
T8	1.12	5.31	A	0.179	2.668	9	1	1	36.902	1.65	82.36	C
82.00-62.00			B	0.179	2.668		1	1	36.902			
			C	0.179	2.668		1	1	36.902			
T9	1.13	5.37	A	0.173	2.69	9	1	1	41.734	1.64	82.23	C
62.00-42.00			B	0.173	2.69		1	1	41.734			
			C	0.173	2.69		1	1	41.734			
T10	1.13	6.16	A	0.16	2.735	8	1	1	43.848	1.54	76.79	C
42.00-22.00			B	0.16	2.735		1	1	43.848			
			C	0.16	2.735		1	1	43.848			
T11	0.90	6.18	A	0.159	2.738	7	1	1	49.689	1.25	62.33	C
22.00-2.00			B	0.159	2.738		1	1	49.689			
			C	0.159	2.738		1	1	49.689			
Sum Weight:	8.60	38.22						OTM	1088.05 kip-ft	12.80		

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	Client	Verizon Wireless	Designed by	TJL

Tower Forces - Service - Wind 45 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				psf			ft ²	K	plf	
T1 197.00-187.00	0.04	0.61	A	0.154	2.758	11	0.825	1	4.336	0.17	16.58	C
			B	0.154	2.758		0.825	1	4.336			
			C	0.154	2.758		0.825	1	4.336			
T2 187.00-172.00	0.16	0.94	A	0.142	2.799	11	0.825	1	5.652	0.35	23.13	C
			B	0.142	2.799		0.825	1	5.652			
			C	0.142	2.799		0.825	1	5.652			
T3 172.00-152.00	0.41	1.60	A	0.152	2.763	11	0.825	1	8.542	0.69	34.27	C
			B	0.152	2.763		0.825	1	8.542			
			C	0.152	2.763		0.825	1	8.542			
T4 152.00-142.00	0.47	1.24	A	0.276	2.361	11	0.825	1	12.163	0.65	65.39	C
			B	0.276	2.361		0.825	1	12.163			
			C	0.276	2.361		0.825	1	12.163			
T5 142.00-122.00	1.05	2.33	A	0.251	2.434	11	0.825	1	27.185	1.49	74.69	C
			B	0.251	2.434		0.825	1	27.185			
			C	0.251	2.434		0.825	1	27.185			
T6 122.00-102.00	1.09	3.00	A	0.213	2.552	10	0.825	1	28.749	1.55	77.42	C
			B	0.213	2.552		0.825	1	28.749			
			C	0.213	2.552		0.825	1	28.749			
T7 102.00-82.00	1.11	3.99	A	0.206	2.576	10	0.825	1	33.623	1.63	81.25	C
			B	0.206	2.576		0.825	1	33.623			
			C	0.206	2.576		0.825	1	33.623			
T8 82.00-62.00	1.12	5.31	A	0.179	2.668	9	0.825	1	33.688	1.58	78.99	C
			B	0.179	2.668		0.825	1	33.688			
			C	0.179	2.668		0.825	1	33.688			
T9 62.00-42.00	1.13	5.37	A	0.173	2.69	9	0.825	1	37.735	1.57	78.28	C
			B	0.173	2.69		0.825	1	37.735			
			C	0.173	2.69		0.825	1	37.735			
T10 42.00-22.00	1.13	6.16	A	0.16	2.735	8	0.825	1	39.494	1.46	72.84	C
			B	0.16	2.735		0.825	1	39.494			
			C	0.16	2.735		0.825	1	39.494			
T11 22.00-2.00	0.90	6.18	A	0.159	2.738	7	0.825	1	44.379	1.16	58.21	C
			B	0.159	2.738		0.825	1	44.379			
			C	0.159	2.738		0.825	1	44.379			
Sum Weight:	8.60	38.22						OTM	1052.53 kip-ft	12.29		

Tower Forces - Service - Wind 60 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z	D _F	D _R	A _E	F	w	Ctrl. Face
ft	K	K				psf			ft ²	K	plf	
T1 197.00-187.00	0.04	0.61	A	0.154	2.758	11	0.8	1	4.309	0.17	16.51	C
			B	0.154	2.758		0.8	1	4.309			
			C	0.154	2.758		0.8	1	4.309			
T2 187.00-172.00	0.16	0.94	A	0.142	2.799	11	0.8	1	5.652	0.35	23.13	C
			B	0.142	2.799		0.8	1	5.652			
			C	0.142	2.799		0.8	1	5.652			
T3 172.00-152.00	0.41	1.60	A	0.152	2.763	11	0.8	1	8.542	0.69	34.27	C
			B	0.152	2.763		0.8	1	8.542			
			C	0.152	2.763		0.8	1	8.542			

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	Project	Date
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	Client	Designed by
	Verizon Wireless	TJL

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T4 152.00-142.00	0.47	1.24	A	0.276	2.361	11	0.8	1	12.021	0.65	65.08	C
			B	0.276	2.361		0.8	1	12.021			
			C	0.276	2.361		0.8	1	12.021			
T5 142.00-122.00	1.05	2.33	A	0.251	2.434	11	0.8	1	26.843	1.49	74.32	C
			B	0.251	2.434		0.8	1	26.843			
			C	0.251	2.434		0.8	1	26.843			
T6 122.00-102.00	1.09	3.00	A	0.213	2.552	10	0.8	1	28.370	1.54	77.00	C
			B	0.213	2.552		0.8	1	28.370			
			C	0.213	2.552		0.8	1	28.370			
T7 102.00-82.00	1.11	3.99	A	0.206	2.576	10	0.8	1	33.148	1.61	80.74	C
			B	0.206	2.576		0.8	1	33.148			
			C	0.206	2.576		0.8	1	33.148			
T8 82.00-62.00	1.12	5.31	A	0.179	2.668	9	0.8	1	33.229	1.57	78.51	C
			B	0.179	2.668		0.8	1	33.229			
			C	0.179	2.668		0.8	1	33.229			
T9 62.00-42.00	1.13	5.37	A	0.173	2.69	9	0.8	1	37.163	1.55	77.72	C
			B	0.173	2.69		0.8	1	37.163			
			C	0.173	2.69		0.8	1	37.163			
T10 42.00-22.00	1.13	6.16	A	0.16	2.735	8	0.8	1	38.872	1.45	72.28	C
			B	0.16	2.735		0.8	1	38.872			
			C	0.16	2.735		0.8	1	38.872			
T11 22.00-2.00	0.90	6.18	A	0.159	2.738	7	0.8	1	43.620	1.15	57.62	C
			B	0.159	2.738		0.8	1	43.620			
			C	0.159	2.738		0.8	1	43.620			
Sum Weight:	8.60	38.22						OTM	1047.46 kip-ft	12.21		

Tower Forces - Service - Wind 90 To Face

Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
ft	K	K										
T1 197.00-187.00	0.04	0.61	A	0.154	2.758	11	0.85	1	4.363	0.17	16.65	C
			B	0.154	2.758		0.85	1	4.363			
			C	0.154	2.758		0.85	1	4.363			
T2 187.00-172.00	0.16	0.94	A	0.142	2.799	11	0.85	1	5.652	0.35	23.13	C
			B	0.142	2.799		0.85	1	5.652			
			C	0.142	2.799		0.85	1	5.652			
T3 172.00-152.00	0.41	1.60	A	0.152	2.763	11	0.85	1	8.542	0.69	34.27	C
			B	0.152	2.763		0.85	1	8.542			
			C	0.152	2.763		0.85	1	8.542			
T4 152.00-142.00	0.47	1.24	A	0.276	2.361	11	0.85	1	12.305	0.66	65.69	C
			B	0.276	2.361		0.85	1	12.305			
			C	0.276	2.361		0.85	1	12.305			
T5 142.00-122.00	1.05	2.33	A	0.251	2.434	11	0.85	1	27.527	1.50	75.06	C
			B	0.251	2.434		0.85	1	27.527			
			C	0.251	2.434		0.85	1	27.527			
T6 122.00-102.00	1.09	3.00	A	0.213	2.552	10	0.85	1	29.129	1.56	77.84	C
			B	0.213	2.552		0.85	1	29.129			
			C	0.213	2.552		0.85	1	29.129			
T7 102.00-82.00	1.11	3.99	A	0.206	2.576	10	0.85	1	34.098	1.64	81.76	C
			B	0.206	2.576		0.85	1	34.098			
			C	0.206	2.576		0.85	1	34.098			

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Section Elevation	Add Weight	Self Weight	F a c e	e	C _F	q _z psf	D _F	D _R	A _E ft ²	F K	w plf	Ctrl. Face
T8 82.00-62.00	1.12	5.31	A	0.179	2.668	9	0.85	1	34.147	1.59	79.47	C
			B	0.179	2.668		0.85	1	34.147			
			C	0.179	2.668		0.85	1	34.147			
T9 62.00-42.00	1.13	5.37	A	0.173	2.69	9	0.85	1	38.306	1.58	78.85	C
			B	0.173	2.69		0.85	1	38.306			
			C	0.173	2.69		0.85	1	38.306			
T10 42.00-22.00	1.13	6.16	A	0.16	2.735	8	0.85	1	40.116	1.47	73.41	C
			B	0.16	2.735		0.85	1	40.116			
			C	0.16	2.735		0.85	1	40.116			
T11 22.00-2.00	0.90	6.18	A	0.159	2.738	7	0.85	1	45.137	1.18	58.80	C
			B	0.159	2.738		0.85	1	45.137			
			C	0.159	2.738		0.85	1	45.137			
Sum Weight:	8.60	38.22						OTM	1057.60 kip-ft	12.36		

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M _x kip-ft	Sum of Overturning Moments, M _z kip-ft	Sum of Torques kip-ft
Leg Weight	26.37					
Bracing Weight	10.36					
Total Member Self-Weight	36.73			-3.14	16.61	
Gusset Weight	1.49					
Total Weight	58.31			-3.14	16.61	
Wind 0 deg - No Ice		-0.19	-44.92	-4619.65	49.85	-44.24
Wind 30 deg - No Ice		22.04	-37.79	-3888.32	-2312.62	-41.36
Wind 45 deg - No Ice		31.46	-30.62	-3134.49	-3327.01	-34.39
Wind 60 deg - No Ice		38.27	-21.27	-2161.50	-4036.09	-26.51
Wind 90 deg - No Ice		44.36	0.50	83.75	-4638.77	-6.95
Wind 120 deg - No Ice		39.48	22.60	2341.61	-4104.91	15.89
Wind 135 deg - No Ice		32.12	31.34	3246.34	-3367.18	26.72
Wind 150 deg - No Ice		22.84	37.79	3927.60	-2427.36	35.61
Wind 180 deg - No Ice		0.16	43.79	4577.22	-75.86	41.34
Wind 210 deg - No Ice		-22.61	37.66	3892.45	2370.31	40.96
Wind 225 deg - No Ice		-31.37	30.69	3177.54	3283.60	35.47
Wind 240 deg - No Ice		-39.27	22.50	2309.02	4064.03	27.08
Wind 270 deg - No Ice		-44.38	0.07	15.48	4635.12	5.68
Wind 300 deg - No Ice		-38.35	-21.58	-2249.98	4026.25	-19.82
Wind 315 deg - No Ice		-31.59	-30.77	-3206.46	3312.92	-30.46
Wind 330 deg - No Ice		-22.28	-37.87	-3936.19	2333.44	-37.35
Member Ice	97.00					
Gusset Ice	2.03					
Total Weight Ice	294.67			-75.31	194.12	
Wind 0 deg - Ice		-0.04	-19.12	-2042.02	201.73	-16.76
Wind 30 deg - Ice		9.53	-16.40	-1760.26	-796.88	-19.86
Wind 45 deg - Ice		13.54	-13.35	-1443.30	-1218.37	-19.17
Wind 60 deg - Ice		16.55	-9.37	-1031.60	-1528.52	-17.48
Wind 90 deg - Ice		19.12	0.10	-57.07	-1788.99	-10.91
Wind 120 deg - Ice		16.71	9.59	916.09	-1537.04	-1.08
Wind 135 deg - Ice		13.64	13.46	1314.94	-1225.23	4.23
Wind 150 deg - Ice		9.69	16.40	1619.62	-821.38	9.23
Wind 180 deg - Ice		0.03	18.99	1891.26	174.69	16.19

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Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M _x kip-ft	Sum of Overturning Moments, M _z kip-ft	Sum of Torques kip-ft
Wind 210 deg - Ice		-9.65	16.37	1611.65	1189.93	19.81
Wind 225 deg - Ice		-13.53	13.36	1302.42	1591.32	19.42
Wind 240 deg - Ice		-16.66	9.57	907.97	1909.50	17.61
Wind 270 deg - Ice		-19.13	0.01	-72.68	2169.87	10.69
Wind 300 deg - Ice		-16.57	-9.44	-1050.95	1909.10	0.37
Wind 315 deg - Ice		-13.57	-13.38	-1459.00	1598.49	-4.92
Wind 330 deg - Ice		-9.58	-16.42	-1770.76	1184.31	-9.54
Total Weight	58.31			-3.14	16.61	
Wind 0 deg - Service		-0.07	-17.76	-1828.51	8.12	-17.46
Wind 30 deg - Service		8.72	-14.94	-1539.27	-926.32	-16.32
Wind 45 deg - Service		12.44	-12.11	-1241.10	-1327.54	-13.57
Wind 60 deg - Service		15.13	-8.41	-856.25	-1608.03	-10.46
Wind 90 deg - Service		17.54	0.20	31.88	-1846.42	-2.74
Wind 120 deg - Service		15.61	8.94	924.98	-1635.22	6.27
Wind 135 deg - Service		12.70	12.39	1282.86	-1343.42	10.55
Wind 150 deg - Service		9.03	14.95	1552.35	-971.67	14.05
Wind 180 deg - Service		0.06	17.32	1809.29	-41.56	16.31
Wind 210 deg - Service		-8.94	14.89	1538.46	925.97	16.16
Wind 225 deg - Service		-12.40	12.14	1255.67	1287.23	14.00
Wind 240 deg - Service		-15.53	8.90	912.10	1595.91	10.69
Wind 270 deg - Service		-17.55	0.03	4.89	1821.82	2.24
Wind 300 deg - Service		-15.16	-8.53	-891.21	1580.98	-7.82
Wind 315 deg - Service		-12.49	-12.17	-1269.55	1298.82	-12.02
Wind 330 deg - Service		-8.81	-14.98	-1558.19	911.40	-14.74

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	0.9 Dead+1.6 Wind 0 deg - No Ice
4	1.2 Dead+1.6 Wind 30 deg - No Ice
5	0.9 Dead+1.6 Wind 30 deg - No Ice
6	1.2 Dead+1.6 Wind 45 deg - No Ice
7	0.9 Dead+1.6 Wind 45 deg - No Ice
8	1.2 Dead+1.6 Wind 60 deg - No Ice
9	0.9 Dead+1.6 Wind 60 deg - No Ice
10	1.2 Dead+1.6 Wind 90 deg - No Ice
11	0.9 Dead+1.6 Wind 90 deg - No Ice
12	1.2 Dead+1.6 Wind 120 deg - No Ice
13	0.9 Dead+1.6 Wind 120 deg - No Ice
14	1.2 Dead+1.6 Wind 135 deg - No Ice
15	0.9 Dead+1.6 Wind 135 deg - No Ice
16	1.2 Dead+1.6 Wind 150 deg - No Ice
17	0.9 Dead+1.6 Wind 150 deg - No Ice
18	1.2 Dead+1.6 Wind 180 deg - No Ice
19	0.9 Dead+1.6 Wind 180 deg - No Ice
20	1.2 Dead+1.6 Wind 210 deg - No Ice
21	0.9 Dead+1.6 Wind 210 deg - No Ice
22	1.2 Dead+1.6 Wind 225 deg - No Ice
23	0.9 Dead+1.6 Wind 225 deg - No Ice
24	1.2 Dead+1.6 Wind 240 deg - No Ice
25	0.9 Dead+1.6 Wind 240 deg - No Ice
26	1.2 Dead+1.6 Wind 270 deg - No Ice
27	0.9 Dead+1.6 Wind 270 deg - No Ice

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<i>Comb. No.</i>	<i>Description</i>
28	1.2 Dead+1.6 Wind 300 deg - No Ice
29	0.9 Dead+1.6 Wind 300 deg - No Ice
30	1.2 Dead+1.6 Wind 315 deg - No Ice
31	0.9 Dead+1.6 Wind 315 deg - No Ice
32	1.2 Dead+1.6 Wind 330 deg - No Ice
33	0.9 Dead+1.6 Wind 330 deg - No Ice
34	1.2 Dead+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
39	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
40	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
41	1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp
42	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
43	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
44	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
45	1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp
46	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
47	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
48	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
49	1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp
50	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
51	Dead+ Wind 0 deg - Service
52	Dead+ Wind 30 deg - Service
53	Dead+ Wind 45 deg - Service
54	Dead+ Wind 60 deg - Service
55	Dead+ Wind 90 deg - Service
56	Dead+ Wind 120 deg - Service
57	Dead+ Wind 135 deg - Service
58	Dead+ Wind 150 deg - Service
59	Dead+ Wind 180 deg - Service
60	Dead+ Wind 210 deg - Service
61	Dead+ Wind 225 deg - Service
62	Dead+ Wind 240 deg - Service
63	Dead+ Wind 270 deg - Service
64	Dead+ Wind 300 deg - Service
65	Dead+ Wind 315 deg - Service
66	Dead+ Wind 330 deg - Service

Maximum Member Forces

<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Condition</i>	<i>Gov. Load Comb.</i>	<i>Axial K</i>	<i>Major Axis Moment kip-ft</i>	<i>Minor Axis Moment kip-ft</i>
T1	197 - 187	Leg	Max Tension	7	4.07	0.40	-0.33
			Max. Compression	12	-5.15	-0.11	-0.07
			Max. Mx	6	-1.38	0.65	-0.13
			Max. My	2	0.49	-0.14	-0.52
			Max. Vy	6	1.20	-0.15	0.03
			Max. Vx	2	-0.97	0.04	0.12
		Diagonal	Max Tension	4	1.63	0.00	0.00
			Max. Compression	22	-1.65	0.00	0.00
			Max. Mx	39	0.29	-0.01	0.00
			Max. My	23	-1.64	-0.00	0.00
			Max. Vy	38	0.02	-0.01	0.00
			Max. Vx	22	-0.00	-0.00	0.00
		Top Girt	Max Tension	7	0.19	0.00	0.00
			Max. Compression	8	-0.26	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
T2	187 - 172	Bottom Girt	Max. Mx	43	-0.03	-0.09	0.00
			Max. My	22	0.05	0.00	-0.00
			Max. Vy	43	0.08	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
			Max Tension	6	0.68	0.00	0.00
			Max. Compression	13	-0.76	0.00	0.00
			Max. Mx	43	0.21	0.04	0.00
			Max. My	22	0.22	0.00	0.00
			Max. Vy	43	-0.04	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
		Leg	Max Tension	7	21.56	-0.30	0.36
			Max. Compression	12	-26.89	-0.39	-0.33
			Max. Mx	26	-2.57	-1.49	0.01
			Max. My	18	19.51	0.09	1.35
			Max. Vy	26	-2.88	0.43	0.01
			Max. Vx	18	2.70	0.01	-0.43
			Max Tension	6	4.13	0.00	0.00
			Max. Compression	22	-4.21	0.00	0.00
			Max. Mx	48	1.19	-0.01	-0.00
			Max. My	22	-4.21	-0.00	0.00
		Diagonal	Max. Vy	48	0.02	-0.01	-0.00
			Max. Vx	22	-0.00	-0.00	0.00
			Max Tension	12	0.81	0.00	0.00
			Max. Compression	6	-0.73	0.00	0.00
			Max. Mx	43	-0.23	0.04	0.00
			Max. My	22	-0.22	0.00	0.00
			Max. Vy	43	-0.04	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
			Max Tension	8	1.58	0.00	0.00
			Max. Compression	12	-1.72	0.00	0.00
		Top Girt	Max. Mx	43	0.58	0.04	0.00
			Max. My	22	0.52	0.00	0.00
			Max. Vy	43	-0.04	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
			Max Tension	12	0.81	0.00	0.00
			Max. Compression	6	-0.73	0.00	0.00
			Max. Mx	43	-0.23	0.04	0.00
			Max. My	22	-0.22	0.00	0.00
			Max. Vy	43	-0.04	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
T3	172 - 152	Bottom Girt	Max Tension	8	1.58	0.00	0.00
			Max. Compression	12	-1.72	0.00	0.00
			Max. Mx	43	0.58	0.04	0.00
			Max. My	22	0.52	0.00	0.00
			Max. Vy	43	-0.04	0.00	0.00
			Max. Vx	22	-0.00	0.00	0.00
			Max Tension	9	68.92	0.79	-0.10
			Max. Compression	12	-79.43	3.36	0.28
			Max. Mx	12	-79.43	3.36	0.28
			Max. My	26	-2.60	-0.01	-2.23
		Leg	Max. Vy	12	-6.73	3.36	0.28
			Max. Vx	26	3.57	0.02	-1.70
			Max Tension	4	6.14	0.00	0.00
			Max. Compression	22	-6.23	0.00	0.00
			Max. Mx	35	1.22	-0.02	-0.00
			Max. My	22	-4.64	-0.00	0.00
			Max. Vy	35	0.03	-0.02	-0.00
			Max. Vx	22	-0.00	-0.00	0.00
			Max Tension	12	1.81	0.00	0.00
			Max. Compression	8	-1.69	0.00	0.00
Diagonal	Max. Mx	43	-0.61	0.04	0.00		
	Max. My	4	0.04	0.00	0.00		
	Max. Vy	43	0.04	0.00	0.00		
	Max. Vx	4	0.00	0.00	0.00		
	Max Tension	8	0.64	0.00	0.00		
	Max. Compression	13	-0.66	0.00	0.00		
	Max. Mx	48	0.34	0.05	0.00		
	Max. My	4	-0.06	0.00	0.00		
	Max. Vy	48	-0.04	0.00	0.00		
	Max. Vx	4	0.00	0.00	0.00		
T4	152 - 142	Leg	Max Tension	9	77.83	-3.09	0.27
			Max. Compression	12	-89.32	5.79	-0.14
			Max. Mx	8	75.81	-6.03	-0.65

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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		
T5	142 - 122	Diagonal	Max. My	10	0.77	-0.52	7.88		
			Max. Vy	18	-1.00	-3.09	-0.03		
			Max. Vx	16	1.15	-0.73	-7.63		
			Max Tension	7	10.21	0.05	0.00		
			Max. Compression	24	-10.87	0.00	0.00		
			Max. Mx	48	1.19	0.06	0.01		
		Leg	Max. My	24	-10.84	-0.04	-0.06		
			Max. Vy	48	0.05	0.06	0.01		
			Max. Vx	24	0.01	0.00	0.00		
			Max Tension	9	132.04	-5.18	-0.39		
			Max. Compression	12	-149.85	7.31	0.04		
			Max. Mx	12	-149.85	7.31	0.04		
		Diagonal	Max. My	10	0.50	-0.52	7.88		
			Max. Vy	8	-1.18	-6.03	-0.65		
			Max. Vx	16	-1.38	-0.73	-7.63		
			Max Tension	20	12.04	0.00	0.00		
			Max. Compression	20	-12.41	0.00	0.00		
			Max. Mx	35	1.07	0.15	0.02		
T6	122 - 102	Leg	Max. My	22	-12.06	-0.05	-0.04		
			Max. Vy	35	-0.08	0.15	0.02		
			Max. Vx	22	0.01	0.00	0.00		
			Max Tension	29	182.45	-4.83	0.10		
			Max. Compression	12	-205.16	8.28	-0.09		
			Max. Mx	12	-205.16	8.28	-0.09		
		Diagonal	Max. My	10	-2.12	-0.54	9.30		
			Max. Vy	24	-1.02	7.87	-0.38		
			Max. Vx	16	-1.05	-0.66	-9.28		
			Max Tension	7	12.74	0.00	0.00		
			Max. Compression	22	-13.39	0.00	0.00		
			Max. Mx	35	1.29	0.18	-0.02		
		T7	102 - 82	Leg	Max. My	3	-8.65	-0.02	0.04
					Max. Vy	49	0.10	0.16	0.03
					Max. Vx	37	-0.01	0.00	0.00
					Max Tension	29	232.17	-4.92	0.13
					Max. Compression	12	-260.15	7.62	-0.12
					Max. Mx	12	-232.27	8.28	-0.09
Diagonal	Max. My			10	-3.57	-0.51	8.87		
	Max. Vy			12	0.58	8.28	-0.09		
	Max. Vx			16	1.07	-0.60	-8.85		
	Max Tension			20	12.55	0.00	0.00		
	Max. Compression			20	-12.84	0.00	0.00		
	Max. Mx			35	1.83	0.19	0.03		
Top Girt	Max. My			4	-12.24	-0.03	0.04		
	Max. Vy			48	0.11	0.18	0.03		
	Max. Vx			37	-0.01	0.00	0.00		
	Max Tension			8	4.47	0.00	0.00		
	Max. Compression			13	-4.10	0.00	0.00		
	Max. Mx			34	1.74	-0.35	0.00		
T8	82 - 62	Leg	Max. My	46	2.03	0.00	0.01		
			Max. Vy	34	-0.14	0.00	0.00		
			Max. Vx	46	0.00	0.00	0.00		
			Max Tension	29	277.92	-6.27	0.05		
			Max. Compression	12	-311.01	6.14	-0.06		
			Max. Mx	12	-285.30	7.62	-0.12		
		Diagonal	Max. My	16	-0.44	-0.22	-6.62		
			Max. Vy	18	-0.31	-7.17	-0.07		
			Max. Vx	2	0.37	-3.44	5.84		
			Max Tension	20	13.11	0.00	0.00		
			Max. Compression	20	-13.45	0.00	0.00		
			Max. Mx	48	2.04	0.24	0.03		
Max. My	46	-0.12	0.20	-0.04					

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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
T9	62 - 42	Leg	Max. Vy	48	0.13	0.24	0.03
			Max. Vx	46	-0.01	0.00	0.00
			Max Tension	29	320.95	-5.99	0.07
			Max. Compression	12	-359.37	7.41	-0.17
			Max. Mx	12	-359.37	7.41	-0.17
			Max. My	16	-4.76	-0.25	-7.38
		Diagonal	Max. Vy	8	0.29	-7.16	-0.03
			Max. Vx	2	-0.36	-3.55	6.51
			Max Tension	20	13.55	0.00	0.00
			Max. Compression	20	-13.97	0.00	0.00
			Max. Mx	48	2.07	0.30	0.04
			Max. My	45	0.67	0.27	-0.04
			Max. Vy	48	0.16	0.30	-0.04
			Max. Vx	45	-0.01	0.00	0.00
T10	42 - 22	Leg	Max Tension	29	361.88	-6.22	0.07
			Max. Compression	12	-406.38	6.47	0.01
			Max. Mx	12	-382.29	7.41	-0.17
			Max. My	16	-5.05	-0.25	-7.38
			Max. Vy	38	0.79	-6.53	0.10
			Max. Vx	32	0.37	-0.05	5.96
		Diagonal	Max Tension	20	14.46	0.00	0.00
			Max. Compression	20	-14.85	0.00	0.00
			Max. Mx	48	2.87	0.37	0.04
			Max. My	37	-3.05	0.32	0.05
			Max. Vy	48	0.18	0.37	0.04
			Max. Vx	37	0.01	0.00	0.00
		Leg	Max Tension	29	399.63	-6.41	0.07
			Max. Compression	12	-450.70	0.00	-0.00
			Max. Mx	46	-211.18	9.70	0.27
			Max. My	26	-20.30	-0.39	-10.72
			Max. Vy	37	-1.38	-6.48	0.43
			Max. Vx	16	-1.24	-0.62	-10.66
T11	22 - 2	Diagonal	Max Tension	5	15.45	0.00	0.00
			Max. Compression	20	-16.08	0.00	0.00
			Max. Mx	48	0.10	0.42	0.06
			Max. My	37	-6.22	0.38	0.06
			Max. Vy	47	0.18	0.36	-0.05
			Max. Vx	37	-0.01	0.00	0.00

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Leg C	Max. Vert	24	457.13	39.40	-24.16
	Max. H _x	24	457.13	39.40	-24.16
	Max. H _z	7	-395.65	-34.19	22.81
	Min. Vert	9	-407.48	-35.90	22.27
	Min. H _x	9	-407.48	-35.90	22.27
	Min. H _z	24	457.13	39.40	-24.16
Leg B	Max. Vert	12	462.63	-40.62	-22.64
	Max. H _x	29	-409.62	37.25	20.39
	Max. H _z	29	-409.62	37.25	20.39
	Min. Vert	29	-409.62	37.25	20.39
	Min. H _x	12	462.63	-40.62	-22.64
	Min. H _z	12	462.63	-40.62	-22.64
Leg A	Max. Vert	2	452.31	-2.03	45.86

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Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
	Max. H _x	25	-196.78	4.50	-20.96
	Max. H _z	2	452.31	-2.03	45.86
	Min. Vert	19	-407.19	2.08	-42.24
	Min. H _x	9	217.84	-4.00	22.16
	Min. H _z	19	-407.19	2.08	-42.24

Tower Mast Reaction Summary

Load Combination	Vertical K	Shear _x K	Shear _z K	Overturning Moment, M _x kip-ft	Overturning Moment, M _z kip-ft	Torque kip-ft
Dead Only	58.31	0.00	0.00	-3.15	16.62	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	69.97	-0.30	-71.87	-7430.21	74.04	-70.93
0.9 Dead+1.6 Wind 0 deg - No Ice	52.48	-0.30	-71.87	-7419.13	68.87	-70.90
1.2 Dead+1.6 Wind 30 deg - No Ice	69.97	35.26	-60.46	-6253.83	-3727.06	-66.30
0.9 Dead+1.6 Wind 30 deg - No Ice	52.48	35.26	-60.46	-6244.37	-3726.88	-66.26
1.2 Dead+1.6 Wind 45 deg - No Ice	69.97	50.33	-49.00	-5041.08	-5359.34	-55.15
0.9 Dead+1.6 Wind 45 deg - No Ice	52.48	50.33	-49.00	-5033.30	-5356.83	-55.10
1.2 Dead+1.6 Wind 60 deg - No Ice	69.97	61.23	-34.03	-3475.73	-6500.09	-42.54
0.9 Dead+1.6 Wind 60 deg - No Ice	52.48	61.23	-34.03	-3470.12	-6496.03	-42.51
1.2 Dead+1.6 Wind 90 deg - No Ice	69.97	70.98	0.80	136.19	-7469.48	-11.23
0.9 Dead+1.6 Wind 90 deg - No Ice	52.48	70.98	0.80	136.88	-7464.15	-11.21
1.2 Dead+1.6 Wind 120 deg - No Ice	69.97	63.17	36.16	3768.24	-6610.55	25.42
0.9 Dead+1.6 Wind 120 deg - No Ice	52.48	63.17	36.16	3764.03	-6606.42	25.42
1.2 Dead+1.6 Wind 135 deg - No Ice	69.97	51.40	50.14	5223.72	-5423.88	42.81
0.9 Dead+1.6 Wind 135 deg - No Ice	52.48	51.40	50.14	5217.52	-5421.33	42.80
1.2 Dead+1.6 Wind 150 deg - No Ice	69.97	36.54	60.47	6319.75	-3912.07	57.07
0.9 Dead+1.6 Wind 150 deg - No Ice	52.48	36.54	60.47	6312.03	-3911.55	57.05
1.2 Dead+1.6 Wind 180 deg - No Ice	69.97	0.26	70.07	7364.89	-129.32	66.27
0.9 Dead+1.6 Wind 180 deg - No Ice	52.48	0.26	70.07	7355.69	-133.93	66.23
1.2 Dead+1.6 Wind 210 deg - No Ice	69.97	-36.18	60.26	6262.74	3806.63	65.68
0.9 Dead+1.6 Wind 210 deg - No Ice	52.48	-36.18	60.26	6255.16	3796.43	65.63
1.2 Dead+1.6 Wind 225 deg - No Ice	69.97	-50.19	49.10	5112.66	5275.77	56.89
0.9 Dead+1.6 Wind 225 deg - No Ice	52.48	-50.19	49.10	5106.66	5263.57	56.85
1.2 Dead+1.6 Wind 240 deg - No Ice	69.97	-62.84	36.00	3715.41	6530.96	43.47

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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
No Ice						
0.9 Dead+1.6 Wind 240 deg - No Ice	52.48	-62.84	36.00	3711.32	6517.08	43.44
1.2 Dead+1.6 Wind 270 deg - No Ice	69.97	-71.01	0.11	25.91	7449.86	9.20
0.9 Dead+1.6 Wind 270 deg - No Ice	52.48	-71.01	0.11	26.87	7434.65	9.18
1.2 Dead+1.6 Wind 300 deg - No Ice	69.97	-61.35	-34.52	-3618.51	6470.48	-31.72
0.9 Dead+1.6 Wind 300 deg - No Ice	52.48	-61.35	-34.52	-3612.52	6456.59	-31.72
1.2 Dead+1.6 Wind 315 deg - No Ice	69.97	-50.54	-49.23	-5157.14	5322.94	-48.81
0.9 Dead+1.6 Wind 315 deg - No Ice	52.48	-50.54	-49.23	-5149.05	5310.64	-48.79
1.2 Dead+1.6 Wind 330 deg - No Ice	69.97	-35.64	-60.60	-6330.95	3747.30	-59.88
0.9 Dead+1.6 Wind 330 deg - No Ice	52.48	-35.64	-60.60	-6321.27	3737.17	-59.86
1.2 Dead+1.0 Ice+1.0 Temp	306.33	0.00	0.00	-79.03	202.34	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	306.33	-0.04	-19.12	-2098.31	210.51	-17.12
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	306.33	9.53	-16.40	-1808.97	-815.09	-20.29
1.2 Dead+1.0 Wind 45 deg+1.0 Ice+1.0 Temp	306.33	13.54	-13.35	-1483.47	-1248.03	-19.59
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	306.33	16.55	-9.37	-1060.72	-1566.45	-17.87
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	306.33	19.12	0.10	-60.23	-1833.73	-11.14
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	306.33	16.71	9.59	938.78	-1575.03	-1.11
1.2 Dead+1.0 Wind 135 deg+1.0 Ice+1.0 Temp	306.33	13.64	13.46	1348.29	-1254.96	4.31
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	306.33	9.69	16.40	1661.16	-840.41	9.42
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	306.33	0.03	18.99	1940.16	182.14	16.55
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	306.33	-9.65	16.37	1652.84	1224.97	20.24
1.2 Dead+1.0 Wind 225 deg+1.0 Ice+1.0 Temp	306.33	-13.53	13.36	1335.40	1637.07	19.84
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	306.33	-16.66	9.57	930.40	1963.62	17.99
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	306.33	-19.13	0.01	-76.45	2231.08	10.93
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	306.33	-16.57	-9.44	-1080.96	1963.35	0.39
1.2 Dead+1.0 Wind 315 deg+1.0 Ice+1.0 Temp	306.33	-13.57	-13.38	-1499.91	1644.40	-5.01
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	306.33	-9.58	-16.42	-1819.94	1219.15	-9.74
Dead+ Wind 0 deg - Service	58.31	-0.07	-17.76	-1837.51	29.95	-17.49
Dead+ Wind 30 deg - Service	58.31	8.72	-14.94	-1546.95	-908.87	-16.36
Dead+ Wind 45 deg - Service	58.31	12.44	-12.11	-1247.40	-1311.99	-13.60
Dead+ Wind 60 deg - Service	58.31	15.13	-8.41	-860.77	-1593.75	-10.49
Dead+ Wind 90 deg - Service	58.31	17.54	0.20	31.38	-1833.19	-2.75
Dead+ Wind 120 deg - Service	58.31	15.61	8.94	928.50	-1621.02	6.27
Dead+ Wind 135 deg - Service	58.31	12.70	12.39	1288.01	-1327.92	10.55
Dead+ Wind 150 deg - Service	58.31	9.03	14.95	1558.74	-954.50	14.06
Dead+ Wind 180 deg - Service	58.31	0.06	17.32	1816.88	-20.18	16.34

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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
Dead+Wind 210 deg - Service	58.31	-8.94	14.89	1544.72	951.92	16.21
Dead+Wind 225 deg - Service	58.31	-12.40	12.14	1260.66	1314.82	14.03
Dead+Wind 240 deg - Service	58.31	-15.53	8.90	915.51	1624.86	10.72
Dead+Wind 270 deg - Service	58.31	-17.55	0.03	4.18	1851.85	2.25
Dead+Wind 300 deg - Service	58.31	-15.16	-8.53	-896.03	1609.93	-7.83
Dead+Wind 315 deg - Service	58.31	-12.49	-12.17	-1276.09	1326.47	-12.03
Dead+Wind 330 deg - Service	58.31	-8.81	-14.98	-1566.02	937.28	-14.76

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	-58.31	0.00	0.00	58.31	0.00	0.000%
2	-0.30	-69.97	-71.87	0.30	69.97	71.87	0.000%
3	-0.30	-52.48	-71.87	0.30	52.48	71.87	0.000%
4	35.26	-69.97	-60.46	-35.26	69.97	60.46	0.000%
5	35.26	-52.48	-60.46	-35.26	52.48	60.46	0.000%
6	50.33	-69.97	-49.00	-50.33	69.97	49.00	0.000%
7	50.33	-52.48	-49.00	-50.33	52.48	49.00	0.000%
8	61.23	-69.97	-34.03	-61.23	69.97	34.03	0.000%
9	61.23	-52.48	-34.03	-61.23	52.48	34.03	0.000%
10	70.98	-69.97	0.80	-70.98	69.97	-0.80	0.000%
11	70.98	-52.48	0.80	-70.98	52.48	-0.80	0.000%
12	63.17	-69.97	36.16	-63.17	69.97	-36.16	0.000%
13	63.17	-52.48	36.16	-63.17	52.48	-36.16	0.000%
14	51.40	-69.97	50.14	-51.40	69.97	-50.14	0.000%
15	51.40	-52.48	50.14	-51.40	52.48	-50.14	0.000%
16	36.54	-69.97	60.47	-36.54	69.97	-60.47	0.000%
17	36.54	-52.48	60.47	-36.54	52.48	-60.47	0.000%
18	0.26	-69.97	70.07	-0.26	69.97	-70.07	0.000%
19	0.26	-52.48	70.07	-0.26	52.48	-70.07	0.000%
20	-36.18	-69.97	60.26	36.18	69.97	-60.26	0.000%
21	-36.18	-52.48	60.26	36.18	52.48	-60.26	0.000%
22	-50.19	-69.97	49.10	50.19	69.97	-49.10	0.000%
23	-50.19	-52.48	49.10	50.19	52.48	-49.10	0.000%
24	-62.84	-69.97	36.00	62.84	69.97	-36.00	0.000%
25	-62.84	-52.48	36.00	62.84	52.48	-36.00	0.000%
26	-71.01	-69.97	0.11	71.01	69.97	-0.11	0.000%
27	-71.01	-52.48	0.11	71.01	52.48	-0.11	0.000%
28	-61.35	-69.97	-34.52	61.35	69.97	34.52	0.000%
29	-61.35	-52.48	-34.52	61.35	52.48	34.52	0.000%
30	-50.54	-69.97	-49.23	50.54	69.97	49.23	0.000%
31	-50.54	-52.48	-49.23	50.54	52.48	49.23	0.000%
32	-35.64	-69.97	-60.60	35.64	69.97	60.60	0.000%
33	-35.64	-52.48	-60.60	35.64	52.48	60.60	0.000%
34	0.00	-306.33	0.00	-0.00	306.33	-0.00	0.000%
35	-0.04	-306.33	-19.12	0.04	306.33	19.12	0.000%
36	9.53	-306.33	-16.40	-9.53	306.33	16.40	0.000%
37	13.54	-306.33	-13.35	-13.54	306.33	13.35	0.000%
38	16.55	-306.33	-9.37	-16.55	306.33	9.37	0.000%
39	19.12	-306.33	0.10	-19.12	306.33	-0.10	0.000%
40	16.71	-306.33	9.59	-16.71	306.33	-9.59	0.000%
41	13.64	-306.33	13.46	-13.64	306.33	-13.46	0.000%
42	9.69	-306.33	16.40	-9.69	306.33	-16.40	0.000%
43	0.03	-306.33	18.99	-0.03	306.33	-18.99	0.000%
44	-9.65	-306.33	16.37	9.65	306.33	-16.37	0.000%
45	-13.53	-306.33	13.36	13.53	306.33	-13.36	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	
46	-16.66	-306.33	9.57	16.66	306.33	-9.57	0.000%
47	-19.13	-306.33	0.01	19.13	306.33	-0.01	0.000%
48	-16.57	-306.33	-9.44	16.57	306.33	9.44	0.000%
49	-13.57	-306.33	-13.38	13.57	306.33	13.38	0.000%
50	-9.58	-306.33	-16.42	9.58	306.33	16.42	0.000%
51	-0.07	-58.31	-17.76	0.07	58.31	17.76	0.000%
52	8.72	-58.31	-14.94	-8.72	58.31	14.94	0.000%
53	12.44	-58.31	-12.11	-12.44	58.31	12.11	0.000%
54	15.13	-58.31	-8.41	-15.13	58.31	8.41	0.000%
55	17.54	-58.31	0.20	-17.54	58.31	-0.20	0.000%
56	15.61	-58.31	8.94	-15.61	58.31	-8.94	0.000%
57	12.70	-58.31	12.39	-12.70	58.31	-12.39	0.000%
58	9.03	-58.31	14.95	-9.03	58.31	-14.95	0.000%
59	0.06	-58.31	17.32	-0.06	58.31	-17.32	0.000%
60	-8.94	-58.31	14.89	8.94	58.31	-14.89	0.000%
61	-12.40	-58.31	12.14	12.40	58.31	-12.14	0.000%
62	-15.53	-58.31	8.90	15.53	58.31	-8.90	0.000%
63	-17.55	-58.31	0.03	17.55	58.31	-0.03	0.000%
64	-15.16	-58.31	-8.53	15.16	58.31	8.53	0.000%
65	-12.49	-58.31	-12.17	12.49	58.31	12.17	0.000%
66	-8.81	-58.31	-14.98	8.81	58.31	14.98	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	4	0.00000001	0.00000186
3	Yes	4	0.00000001	0.00000157
4	Yes	4	0.00000001	0.00000096
5	Yes	4	0.00000001	0.00000069
6	Yes	4	0.00000001	0.00000132
7	Yes	4	0.00000001	0.00000123
8	Yes	4	0.00000001	0.00000196
9	Yes	4	0.00000001	0.00000186
10	Yes	4	0.00000001	0.00000210
11	Yes	4	0.00000001	0.00000191
12	Yes	4	0.00000001	0.00000167
13	Yes	4	0.00000001	0.00000156
14	Yes	4	0.00000001	0.00000172
15	Yes	4	0.00000001	0.00000157
16	Yes	4	0.00000001	0.00000204
17	Yes	4	0.00000001	0.00000181
18	Yes	4	0.00000001	0.00000152
19	Yes	4	0.00000001	0.00000131
20	Yes	4	0.00000001	0.00000114
21	Yes	4	0.00000001	0.00000089
22	Yes	4	0.00000001	0.00000210
23	Yes	4	0.00000001	0.00000190
24	Yes	4	0.00000001	0.00000267
25	Yes	4	0.00000001	0.00000249
26	Yes	4	0.00000001	0.00000193
27	Yes	4	0.00000001	0.00000178
28	Yes	4	0.00000001	0.00000098
29	Yes	4	0.00000001	0.00000081
30	Yes	4	0.00000001	0.00000149

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31	Yes	4	0.00000001	0.00000129
32	Yes	4	0.00000001	0.00000197
33	Yes	4	0.00000001	0.00000177
34	Yes	4	0.00000001	0.00000830
35	Yes	4	0.00000001	0.00005226
36	Yes	4	0.00000001	0.00005108
37	Yes	4	0.00000001	0.00005098
38	Yes	4	0.00000001	0.00005032
39	Yes	4	0.00000001	0.00004796
40	Yes	4	0.00000001	0.00004605
41	Yes	4	0.00000001	0.00004594
42	Yes	4	0.00000001	0.00004648
43	Yes	4	0.00000001	0.00004836
44	Yes	4	0.00000001	0.00004957
45	Yes	4	0.00000001	0.00005039
46	Yes	4	0.00000001	0.00005141
47	Yes	4	0.00000001	0.00005375
48	Yes	4	0.00000001	0.00005499
49	Yes	4	0.00000001	0.00005476
50	Yes	4	0.00000001	0.00005398
51	Yes	4	0.00000001	0.00000001
52	Yes	4	0.00000001	0.00000001
53	Yes	4	0.00000001	0.00000001
54	Yes	4	0.00000001	0.00000001
55	Yes	4	0.00000001	0.00000001
56	Yes	4	0.00000001	0.00000001
57	Yes	4	0.00000001	0.00000001
58	Yes	4	0.00000001	0.00000001
59	Yes	4	0.00000001	0.00000001
60	Yes	4	0.00000001	0.00000001
61	Yes	4	0.00000001	0.00000001
62	Yes	4	0.00000001	0.00000001
63	Yes	4	0.00000001	0.00000001
64	Yes	4	0.00000001	0.00000001
65	Yes	4	0.00000001	0.00000001
66	Yes	4	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	197 - 187	6.514	56	0.3104	0.1599
T2	187 - 172	5.851	56	0.3097	0.1442
T3	172 - 152	4.851	56	0.2990	0.1082
T4	152 - 142	3.625	56	0.2585	0.0770
T5	142 - 122	3.084	56	0.2355	0.0621
T6	122 - 102	2.171	56	0.1805	0.0430
T7	102 - 82	1.485	56	0.1348	0.0308
T8	82 - 62	0.956	56	0.1030	0.0227
T9	62 - 42	0.554	56	0.0760	0.0166
T10	42 - 22	0.263	56	0.0488	0.0103
T11	22 - 2	0.082	56	0.0243	0.0051

Critical Deflections and Radius of Curvature - Service Wind

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Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
196.26	Single Dipole	56	6.465	0.3104	0.1589	157559
196.00	PIROD 6'-8" Rigid Side Arm	56	6.448	0.3104	0.1586	157559
194.92	6'x4" Pipe Mount	56	6.377	0.3104	0.1571	157559
194.25	PA6-65AC	56	6.332	0.3104	0.1562	157559
192.75	9' x 3" Dia Omni	56	6.233	0.3103	0.1540	157559
190.25	OGT9-840	56	6.067	0.3102	0.1501	118679
186.50	Piroad 4' Side Mount Standoff (1)	56	5.818	0.3096	0.1432	111856
185.25	DB222-A	56	5.734	0.3092	0.1405	140271
184.00	SC479-HF1LDF	56	5.650	0.3088	0.1376	208228
183.00	Filter Box	56	5.583	0.3084	0.1353	350913
182.25	PD220	56	5.533	0.3081	0.1334	465332
181.50	BCD-87077	56	5.482	0.3077	0.1316	253120
181.25	PIROD 15' Rotatable Platform (Lattice)	56	5.465	0.3076	0.1310	219714
180.25	DB222-A	56	5.398	0.3070	0.1285	143800
175.25	12' x 3" Dia Omni	56	5.065	0.3029	0.1158	50470
174.25	10' x 3" Dia Omni	56	4.998	0.3018	0.1134	44704
173.75	ANT150D6-9	56	4.966	0.3012	0.1122	42431
172.25	Piroad 6' Side Mount Standoff (1)	56	4.867	0.2993	0.1088	37427
170.20	3' Sidearm	56	4.734	0.2963	0.1044	33666
162.00	LPA-80080-4CF	56	4.216	0.2809	0.0902	27823
150.00	7770.00	56	3.512	0.2540	0.0741	23025
140.00	APX16DWV-16DWVS-E-A20	56	2.982	0.2305	0.0594	21621
135.00	SRL110A	56	2.738	0.2170	0.0538	20863
134.00	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	56	2.691	0.2142	0.0527	20716
130.00	DB586-Y	56	2.508	0.2029	0.0491	20150
126.00	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	56	2.334	0.1915	0.0459	19617
125.00	DB586-Y	56	2.293	0.1887	0.0452	19514
120.67	DB212-1	56	2.119	0.1770	0.0421	19881
120.50	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	56	2.112	0.1765	0.0420	19934
117.50	DS2C03F36D-D	56	1.999	0.1688	0.0399	21231
109.25	DB205-L	56	1.712	0.1495	0.0346	26670
106.00	Ice Canopy	56	1.607	0.1427	0.0327	29658
102.25	PA6-65AC	56	1.492	0.1353	0.0309	33209
101.20	6'8"x4" Pipe Mount	56	1.461	0.1333	0.0304	33883
100.83	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	56	1.450	0.1326	0.0302	34069
94.00	DB224	56	1.257	0.1209	0.0272	35279
90.41	PD220	56	1.162	0.1152	0.0258	35678
85.00	2-ft Stand Off	56	1.026	0.1073	0.0238	36309
82.67	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	56	0.971	0.1040	0.0230	36707
79.50	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	56	0.899	0.0996	0.0219	37635
75.00	12' x 3" Dia Omni	56	0.802	0.0935	0.0205	39466
70.25	DB432-A	56	0.706	0.0871	0.0191	41638
17.00	1.2M	56	0.055	0.0183	0.0039	53082
15.00	2-ft Stand Off	56	0.046	0.0158	0.0034	61249

Maximum Tower Deflections - Design Wind

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	197 - 187	26.631	12	1.2782	0.6484
T2	187 - 172	23.904	12	1.2731	0.5848
T3	172 - 152	19.800	12	1.2259	0.4393
T4	152 - 142	14.781	12	1.0574	0.3122
T5	142 - 122	12.572	12	0.9630	0.2517
T6	122 - 102	8.843	12	0.7372	0.1745
T7	102 - 82	6.046	12	0.5499	0.1252
T8	82 - 62	3.889	12	0.4201	0.0924
T9	62 - 42	2.255	12	0.3099	0.0673
T10	42 - 22	1.067	12	0.1988	0.0419
T11	22 - 2	0.332	12	0.0990	0.0209

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
196.26	Single Dipole	12	26.430	1.2780	0.6443	42940
196.00	PIROD 6'-8" Rigid Side Arm	12	26.359	1.2780	0.6429	42940
194.92	6'x4" Pipe Mount	12	26.066	1.2777	0.6369	42940
194.25	PA6-65AC	12	25.884	1.2776	0.6331	42940
192.75	9' x 3" Dia Omni	12	25.475	1.2771	0.6244	42940
190.25	OGT9-840	12	24.794	1.2759	0.6087	32297
186.50	Piroad 4' Side Mount Standoff (1)	12	23.767	1.2725	0.5807	29305
185.25	DB222-A	12	23.423	1.2709	0.5699	35315
184.00	SC479-HF1LDF	12	23.079	1.2688	0.5584	50509
183.00	Filter Box	12	22.803	1.2670	0.5488	84114
182.25	PD220	12	22.597	1.2654	0.5414	105910
181.50	BCD-87077	12	22.390	1.2636	0.5339	62867
181.25	PIROD 15' Rotatable Platform (Lattice)	12	22.321	1.2630	0.5314	53577
180.25	DB222-A	12	22.046	1.2604	0.5212	33673
175.25	12' x 3" Dia Omni	12	20.677	1.2425	0.4700	11825
174.25	10' x 3" Dia Omni	12	20.406	1.2378	0.4602	10553
173.75	ANT150D6-9	12	20.271	1.2354	0.4554	10046
172.25	Piroad 6' Side Mount Standoff (1)	12	19.867	1.2273	0.4415	8918
170.20	3' Sidearm	12	19.320	1.2147	0.4239	8054
162.00	LPA-80080-4CF	12	17.201	1.1504	0.3663	6682
150.00	7770.00	12	14.322	1.0389	0.3003	5565
140.00	APX16DWV-16DWVS-E-A20	12	12.157	0.9422	0.2410	5289
135.00	SRL110A	12	11.158	0.8869	0.2179	5100
134.00	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	12	10.966	0.8754	0.2139	5063
130.00	DB586-Y	12	10.219	0.8289	0.1991	4921
126.00	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	12	9.511	0.7824	0.1862	4787
125.00	DB586-Y	12	9.340	0.7709	0.1832	4761
120.67	DB212-1	12	8.630	0.7227	0.1707	4849
120.50	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	12	8.603	0.7208	0.1702	4862
117.50	DS2C03F36D-D	12	8.140	0.6893	0.1619	5179
109.25	DB205-L	12	6.970	0.6102	0.1405	6510
106.00	Ice Canopy	12	6.545	0.5821	0.1331	7242
102.25	PA6-65AC	12	6.076	0.5519	0.1256	8115
101.20	6'8"x4" Pipe Mount	12	5.949	0.5438	0.1236	8281
100.83	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	12	5.904	0.5410	0.1229	8327

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Elevation	Appurtenance	Gov. Load Comb.	Deflection	Tilt	Twist	Radius of Curvature
ft			in	°	°	ft
94.00	DB224	12	5.117	0.4929	0.1107	8638
90.41	PD220	12	4.729	0.4699	0.1048	8744
85.00	2-ft Stand Off	12	4.178	0.4373	0.0967	8912
82.67	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	12	3.953	0.4239	0.0934	9014
79.50	PIROD 6' Rigid Side Arm w/ 3" STD mount pipe	12	3.658	0.4060	0.0891	9242
75.00	12' x 3" Dia Omni	12	3.262	0.3811	0.0833	9685
70.25	DB432-A	12	2.871	0.3551	0.0775	10209
17.00	1.2M	12	0.222	0.0744	0.0158	13016
15.00	2-ft Stand Off	12	0.185	0.0646	0.0137	15018

Bolt Design Data

Section No.	Elevation	Component Type	Bolt Grade	Bolt Size	Number Of Bolts	Maximum Load per Bolt K	Allowable Load per Bolt K	Ratio Load Allowable	Allowable Ratio	Criteria
	ft			in						
T1	197	Leg	A325N	0.6250	5	1.03	24.85	0.041 ✓	1	Bolt DS
T2	187	Leg	A325N	0.7500	5	5.38	35.78	0.150 ✓	1	Bolt DS
T3	172	Leg	A325N	1.0000	6	11.49	53.01	0.217 ✓	1	Bolt Tension
T4	152	Leg	A325N	1.0000	6	12.97	53.01	0.245 ✓	1	Bolt Tension
		Diagonal	A325N	1.0000	1	10.21	12.72	0.802 ✓	1	Member Bearing
T5	142	Leg	A325N	1.0000	6	22.01	53.01	0.415 ✓	1	Bolt Tension
		Diagonal	A325X	1.0000	1	12.04	14.26	0.844 ✓	1	Member Bearing
T6	122	Leg	A325N	1.0000	6	30.41	53.01	0.574 ✓	1	Bolt Tension
		Diagonal	A325N	1.0000	1	12.74	19.01	0.670 ✓	1	Member Bearing
T7	102	Leg	A325N	1.0000	6	38.70	53.01	0.730 ✓	1	Bolt Tension
		Diagonal	A325X	1.0000	1	12.55	19.01	0.660 ✓	1	Member Bearing
		Top Girt	A325N	1.0000	1	4.51	12.72	0.355 ✓	1	Member Bearing
T8	82	Leg	A325N	1.2500	6	46.32	82.83	0.559 ✓	1	Bolt Tension
		Diagonal	A325N	1.2500	1	13.11	26.64	0.492 ✓	1	Member Bearing
T9	62	Leg	A325N	1.2500	6	53.49	82.83	0.646 ✓	1	Bolt Tension
		Diagonal	A325X	1.2500	1	13.55	23.89	0.567 ✓	1	Member Bearing
T10	42	Leg	A325N	1.2500	6	60.31	82.83	0.728 ✓	1	Bolt Tension
		Diagonal	A325N	1.2500	1	14.46	26.64	0.543 ✓	1	Member Bearing
T11	22	Leg	A687	1.2500	6	66.61	96.64	0.689 ✓	1	Bolt Tension
		Diagonal	A325X	1.2500	1	15.45	23.89	0.647 ✓	1	Member Bearing

Compression Checks

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Leg Design Data (Compression)

Section No.	Elevation	Size	L	L _u	Kl/r	A	P _u	φP _n	Ratio $\frac{P_u}{\phi P_n}$
	ft		ft	ft		in ²	K	K	
T1	197 - 187	1 3/4	10.00	2.17	59.4	2.4053	-1.67	83.62	0.020
					K=1.00				
T2	187 - 172	2	15.00	2.28	54.7	3.1416	-26.81	113.63	0.236
					K=1.00				
T3	172 - 152	2 1/4	20.00	2.34	50.0	3.9761	-79.43	149.02	0.533
					K=1.00				
T4	152 - 142	Pirod 105245	10.02	10.02	37.8	5.3014	-87.16	214.86	0.406
					K=1.00				
T5	142 - 122	Pirod 105217	20.03	10.02	37.8	5.3014	-149.85	214.86	0.697
					K=1.00				
T6	122 - 102	Pirod 105218	20.03	10.02	32.4	7.2158	-205.16	300.68	0.682
					K=1.00				
T7	102 - 82	Pirod 105218 reinf. w/1" dia. S.R.	20.03	10.02	26.4	10.8915	-260.15	465.78	0.559
					K=1.00				
T8	82 - 62	Pirod 105219 reinf. w/1" dia. S.R.	20.03	10.02	24.4	13.1787	-310.32	567.86	0.546
					K=1.00				
T9	62 - 42	Pirod 105219 reinf. w/1" dia. S.R.	20.03	10.02	24.4	13.1787	-359.37	567.86	0.633
					K=1.00				
T10	42 - 22	Pirod 105220 reinf. w/1" dia. S.R.	20.03	10.02	24.3	14.7262	-406.38	634.59	0.640
					K=1.00				
T11	22 - 2	Pirod 105220 reinf. w/1" dia. S.R.	20.03	10.02	24.3	14.7262	-450.31	634.59	0.710
					K=1.00				

Leg Bending Design Data (Compression)

Section No.	Elevation	Size	M _{ux}	φM _{nx}	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M _{uy}	φM _{ny}	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
	ft		kip-ft	kip-ft		kip-ft	kip-ft	
T1	197 - 187	1 3/4	0.66	3.35	0.198	0.00	3.35	0.000
T2	187 - 172	2	1.51	5.00	0.301	0.00	5.00	0.000
T3	172 - 152	2 1/4	3.37	7.12	0.474	0.00	7.12	0.000
T4	152 - 142	Pirod 105245	5.62	62.39	0.090	1.49	72.04	0.021
T5	142 - 122	Pirod 105217	7.31	62.39	0.117	0.04	72.04	0.001
T6	122 - 102	Pirod 105218	8.28	87.49	0.095	-0.09	101.03	0.001
T7	102 - 82	Pirod 105218 reinf. w/1" dia. S.R.	7.62	136.08	0.056	-0.12	157.13	0.001
T8	82 - 62	Pirod 105219 reinf. w/1" dia. S.R.	6.36	166.32	0.038	-0.06	192.04	0.000
T9	62 - 42	Pirod 105219 reinf. w/1" dia. S.R.	7.41	166.32	0.045	-0.17	192.04	0.001
T10	42 - 22	Pirod 105220 reinf. w/1" dia. S.R.	6.47	186.17	0.035	0.01	214.97	0.000
T11	22 - 2	Pirod 105220 reinf. w/1" dia. S.R.	5.91	186.17	0.032	-0.06	214.97	0.000

Leg Interaction Design Data (Compression)

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Section No.	Elevation ft	Size	Ratio P_u ϕP_n	Ratio M_{ux} ϕM_{nx}	Ratio M_{uy} ϕM_{ny}	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	197 - 187	1 3/4	0.020	0.198	0.000	0.208	1.000	4.8.1 ✓
T2	187 - 172	2	0.236	0.301	0.000	0.477	1.000	4.8.1 ✓
T3	172 - 152	2 1/4	0.533	0.474	0.000	0.895	1.000	4.8.1 ✓
T4	152 - 142	Pirol 105245	0.406	0.090	0.021	0.516	1.000	4.8.1 ✓
T5	142 - 122	Pirol 105217	0.697	0.117	0.001	0.815	1.000	4.8.1 ✓
T6	122 - 102	Pirol 105218	0.682	0.095	0.001	0.778	1.000	4.8.1 ✓
T7	102 - 82	Pirol 105218 reinf. w/1" dia. S.R.	0.559	0.056	0.001	0.615	1.000	4.8.1 ✓
T8	82 - 62	Pirol 105219 reinf. w/1" dia. S.R.	0.546	0.038	0.000	0.585	1.000	4.8.1 ✓
T9	62 - 42	Pirol 105219 reinf. w/1" dia. S.R.	0.633	0.045	0.001	0.678	1.000	4.8.1 ✓
T10	42 - 22	Pirol 105220 reinf. w/1" dia. S.R.	0.640	0.035	0.000	0.675	1.000	4.8.1 ✓
T11	22 - 2	Pirol 105220 reinf. w/1" dia. S.R.	0.710	0.032	0.000	0.742	1.000	4.8.1 ✓

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in ²	V_u K	ϕV_n K	Stress Ratio
T4	152 - 142	0.5	1.47	120.0	238.57	0.1963	1.16	3.45	0.336
T5	142 - 122	0.5	1.47	120.0	238.57	0.1963	1.40	3.34	0.422
T6	122 - 102	0.5	1.46	119.0	324.71	0.1963	1.22	3.38	0.363
T7	102 - 82	0.5	1.44	117.4	490.12	0.1963	1.07	3.44	0.311
T8	82 - 62	0.625	1.43	93.3	593.04	0.3068	0.40	7.04	0.058
T9	62 - 42	0.625	1.43	93.3	593.04	0.3068	0.40	7.04	0.058
T10	42 - 22	0.625	1.42	92.9	662.68	0.3068	0.79	7.06	0.111
T11	22 - 2	0.625	1.42	92.9	662.68	0.3068	1.38	7.06	0.196

Diagonal Design Data (Compression)

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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 $\frac{P_u}{\phi P_n}$
T1	197 - 187	7/8	4.99	2.42	119.3 K=0.90	0.6013	-1.65	9.55	0.173 ¹ ✓
T2	187 - 172	7/8	5.04	2.43	119.9 K=0.90	0.6013	-4.21	9.45	0.445 ¹ ✓
T3	172 - 152	1	5.48	2.65	114.6 K=0.90	0.7854	-6.23	13.51	0.461 ¹ ✓
T4	152 - 142	L2 1/2x2 1/2x3/16	11.42	5.02	121.8 K=1.00	0.9020	-10.87	13.38	0.812 ¹ ✓
T5	142 - 122	L3x3x3/16	12.50	5.67	115.6 K=1.01	1.0900	-12.41	18.13	0.685 ¹ ✓
T6	122 - 102	L3x3x1/4	13.80	6.37	129.1 K=1.00	1.4400	-13.39	19.52	0.686 ¹ ✓
T7	102 - 82	L3x3x1/4	15.24	7.12	144.4 K=1.00	1.4400	-12.84	15.60	0.823 ¹ ✓
T8	82 - 62	L3x3x5/16	16.80	7.89	160.8 K=1.00	1.7800	-13.45	15.55	0.865 ¹ ✓
T9	62 - 42	L3 1/2x3 1/2x1/4	18.45	8.73	150.9 K=1.00	1.6900	-13.97	16.76	0.834 ¹ ✓
T10	42 - 22	L3 1/2x3 1/2x5/16	20.16	9.59	166.8 K=1.00	2.0900	-14.85	16.96	0.876 ¹ ✓
T11	22 - 2	L4x4x1/4	21.92	10.48	158.2 K=1.00	1.9400	-16.08	17.52	0.918 ¹ ✓

¹ P_u / φP_n controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	197 - 187	L3x3x5/16	4.50	4.35	88.7 K=1.00	1.7800	-0.26	38.11	0.007 ¹ ✓
T2	187 - 172	1	4.50	4.33	85.3 K=0.41	0.7854	-0.73	20.77	0.035 ¹ ✓
T3	172 - 152	1	4.52	4.33	85.3 K=0.41	0.7854	-1.69	20.77	0.081 ¹ ✓
T7	102 - 82	L3x3x3/16	10.00	8.67	174.5 K=1.00	1.0900	-4.51	8.09	0.558 ¹ ✓

¹ P_u / φP_n controls

Bottom Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	197 - 187	7/8	4.50	4.35	167.2	0.6013	-0.76	4.86	0.157 ¹

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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 $\frac{P_u}{\phi P_n}$
T2	187 - 172	1	4.50	4.33	K=0.70 85.3	0.7854	-1.72	20.77	0.083 ¹ ✓
T3	172 - 152	1	4.98	4.80	K=0.41 84.8 K=0.37	0.7854	-1.38	20.89	0.066 ¹ ✓

¹ P_u / φP_n controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	197 - 187	1 3/4	10.00	2.17	59.4	1.7942	1.16	87.47	0.013 [#]
T2	187 - 172	2	15.00	2.28	54.7	2.1885	21.55	106.69	0.202 [#]
T3	172 - 152	2 1/4	20.00	2.34	50.0	3.9761	68.92	178.92	0.385
T4	152 - 142	Pirod 105245	10.02	10.02	37.8	5.3014	77.29	238.57	0.324
T5	142 - 122	Pirod 105217	20.03	10.02	37.8	5.3014	128.71	238.57	0.539
T6	122 - 102	Pirod 105218	20.03	10.02	32.4	7.2158	182.15	324.71	0.561
T7	102 - 82	Pirod 105218 reinf. w/1" dia. S.R.	20.03	10.02	26.4	10.8915	231.90	490.12	0.473
T8	82 - 62	Pirod 105219 reinf. w/1" dia. S.R.	20.03	10.02	24.4	13.1787	277.92	593.04	0.469
T9	62 - 42	Pirod 105219 reinf. w/1" dia. S.R.	20.03	10.02	24.4	13.1787	320.47	593.04	0.540
T10	42 - 22	Pirod 105220 reinf. w/1" dia. S.R.	20.03	10.02	24.3	14.7262	361.88	662.68	0.546
T11	22 - 2	Pirod 105220 reinf. w/1" dia. S.R.	20.03	10.02	24.3	14.7262	399.63	662.68	0.603

[#] Based on net area of leg in section below

Leg Bending Design Data (Tension)

Section No.	Elevation ft	Size	M _{ux} kip-ft	φM _{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M _{uy} kip-ft	φM _{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T1	197 - 187	1 3/4	0.61	3.35	0.182	0.00	3.35	0.000
T2	187 - 172	2	1.41	5.00	0.282	0.00	5.00	0.000
T3	172 - 152	2 1/4	3.11	7.12	0.436	0.00	7.12	0.000
T4	152 - 142	Pirod 105245	-5.96	69.27	0.086	-0.66	79.99	0.008
T5	142 - 122	Pirod 105217	-6.62	69.27	0.096	1.40	79.99	0.018
T6	122 - 102	Pirod 105218	-7.18	94.48	0.076	-0.62	109.10	0.006
T7	102 - 82	Pirod 105218 reinf. w/1" dia. S.R.	-7.21	143.19	0.050	0.20	165.34	0.001
T8	82 - 62	Pirod 105219 reinf. w/1" dia. S.R.	-6.27	173.69	0.036	0.05	200.56	0.000

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Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
T9	62 - 42	Pirol 105219 reinf. w/1" dia. S.R.	-7.17	173.69	0.041	0.27	200.56	0.001
T10	42 - 22	Pirol 105220 reinf. w/1" dia. S.R.	-6.22	194.41	0.032	0.07	224.49	0.000
T11	22 - 2	Pirol 105220 reinf. w/1" dia. S.R.	-6.41	194.41	0.033	0.07	224.49	0.000

Leg Interaction Design Data (Tension)

Section No.	Elevation ft	Size	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
T1	197 - 187	1 3/4	0.013	0.182	0.000	0.189 #	1.000	4.8.1 ✓
T2	187 - 172	2	0.202	0.282	0.000	0.430 #	1.000	4.8.1 ✓
T3	172 - 152	2 1/4	0.385	0.436	0.000	0.730	1.000	4.8.1 ✓
T4	152 - 142	Pirol 105245	0.324	0.086	0.008	0.418	1.000	4.8.1 ✓
T5	142 - 122	Pirol 105217	0.539	0.096	0.018	0.653	1.000	4.8.1 ✓
T6	122 - 102	Pirol 105218	0.561	0.076	0.006	0.643	1.000	4.8.1 ✓
T7	102 - 82	Pirol 105218 reinf. w/1" dia. S.R.	0.473	0.050	0.001	0.525	1.000	4.8.1 ✓
T8	82 - 62	Pirol 105219 reinf. w/1" dia. S.R.	0.469	0.036	0.000	0.505	1.000	4.8.1 ✓
T9	62 - 42	Pirol 105219 reinf. w/1" dia. S.R.	0.540	0.041	0.001	0.583	1.000	4.8.1 ✓
T10	42 - 22	Pirol 105220 reinf. w/1" dia. S.R.	0.546	0.032	0.000	0.578	1.000	4.8.1 ✓
T11	22 - 2	Pirol 105220 reinf. w/1" dia. S.R.	0.603	0.033	0.000	0.636	1.000	4.8.1 ✓

Based on net area of leg in section below

Truss-Leg Diagonal Data

Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T4	152 - 142	0.5	1.47	120.0	238.57	0.1963	1.16	3.45	0.336 ✓
T5	142 - 122	0.5	1.47	120.0	238.57	0.1963	1.40	3.34	0.422 ✓
T6	122 - 102	0.5	1.46	119.0	324.71	0.1963	1.22	3.38	0.363 ✓
T7	102 - 82	0.5	1.44	117.4	490.12	0.1963	1.07	3.44	0.311 ✓

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Section No.	Elevation ft	Diagonal Size	L_d ft	Kl/r	ϕP_n K	A in^2	V_u K	ϕV_n K	Stress Ratio
T8	82 - 62	0.625	1.43	93.3	593.04	0.3068	0.40	7.04	0.058
T9	62 - 42	0.625	1.43	93.3	593.04	0.3068	0.40	7.04	0.058
T10	42 - 22	0.625	1.42	92.9	662.68	0.3068	0.79	7.06	0.111
T11	22 - 2	0.625	1.42	92.9	662.68	0.3068	1.38	7.06	0.196

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	197 - 187	7/8	4.99	2.42	132.5	0.6013	1.63	27.06	0.060 ¹
T2	187 - 172	7/8	5.04	2.43	133.2	0.6013	4.13	27.06	0.153 ¹
T3	172 - 152	1	5.48	2.65	127.4	0.7854	6.14	35.34	0.174 ¹
T4	152 - 142	L2 1/2x2 1/2x3/16	11.42	5.02	80.1	0.9020	10.21	29.22	0.349 ¹
T5	142 - 122	L3x3x3/16	11.93	5.42	71.5	0.8791	12.04	42.85	0.281 ¹
T6	122 - 102	L3x3x1/4	13.80	6.37	84.3	1.1588	12.74	56.49	0.226 ¹
T7	102 - 82	L3x3x1/4	15.24	7.12	94.1	1.1588	12.55	56.49	0.222 ¹
T8	82 - 62	L3x3x5/16	16.80	7.89	105.3	1.7800	13.11	57.67	0.227 ¹
T9	62 - 42	L3 1/2x3 1/2x1/4	18.45	8.73	98.3	1.3463	13.55	65.63	0.206 ¹
T10	42 - 22	L3 1/2x3 1/2x5/16	20.16	9.59	108.8	2.0900	14.46	67.72	0.213 ¹
T11	22 - 2	L4x4x1/4	21.92	10.48	102.5	1.5963	15.45	77.82	0.199 ¹

¹ $P_u / \phi P_n$ controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
T1	197 - 187	L3x3x5/16	4.50	4.35	56.7	1.7800	0.19	57.67	0.003 ¹
T2	187 - 172	1	4.50	4.33	208.0	0.7854	0.81	35.34	0.023 ¹

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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 $\frac{P_u}{\phi P_n}$
T3	172 - 152	1	4.52	4.33	207.7	0.7854	1.81	35.34	0.051 ¹
T7	102 - 82	L3x3x3/16	10.00	8.67	115.0	1.0900	4.51	35.32	0.128 ¹

¹ P_u / φP_n controls

Bottom Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u K	φP _n K	Ratio $\frac{P_u}{\phi P_n}$
T1	197 - 187	7/8	4.50	4.35	238.9	0.6013	0.68	27.06	0.025 ¹
T2	187 - 172	1	4.50	4.33	208.0	0.7854	1.58	35.34	0.045 ¹
T3	172 - 152	1	4.98	4.80	230.3	0.7854	1.38	35.34	0.039 ¹

¹ P_u / φP_n controls

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	φP _{allow} K	% Capacity	Pass Fail
T1	197 - 187	Leg	1 3/4	3	-1.67	83.62	20.8	Pass
T2	187 - 172	Leg	2	35	-26.81	113.63	47.7	Pass
T3	172 - 152	Leg	2 1/4	80	-79.43	149.02	89.5	Pass
T4	152 - 142	Leg	Pirol 105245	137	-87.16	214.86	51.6	Pass
T5	142 - 122	Leg	Pirol 105217	146	-149.85	214.86	81.5	Pass
T6	122 - 102	Leg	Pirol 105218	161	-205.16	300.68	77.8	Pass
T7	102 - 82	Leg	Pirol 105218 reinf. w/1" dia. S.R.	176	-260.15	465.78	61.5 73.0 (b)	Pass
T8	82 - 62	Leg	Pirol 105219 reinf. w/1" dia. S.R.	194	-310.32	567.86	58.5	Pass
T9	62 - 42	Leg	Pirol 105219 reinf. w/1" dia. S.R.	209	-359.37	567.86	67.8	Pass
T10	42 - 22	Leg	Pirol 105220 reinf. w/1" dia. S.R.	224	-406.38	634.59	67.5 72.8 (b)	Pass
T11	22 - 2	Leg	Pirol 105220 reinf. w/1" dia. S.R.	239	-450.31	634.59	74.2	Pass
T1	197 - 187	Diagonal	7/8	15	-1.65	9.55	17.3	Pass
T2	187 - 172	Diagonal	7/8	48	-4.21	9.45	44.5	Pass
T3	172 - 152	Diagonal	1	93	-6.23	13.51	46.1	Pass
T4	152 - 142	Diagonal	L2 1/2x2 1/2x3/16	144	-10.87	13.38	81.2	Pass
T5	142 - 122	Diagonal	L3x3x3/16	153	-12.41	18.13	68.5 84.4 (b)	Pass
T6	122 - 102	Diagonal	L3x3x1/4	168	-13.39	19.52	68.6	Pass
T7	102 - 82	Diagonal	L3x3x1/4	186	-12.84	15.60	82.3	Pass
T8	82 - 62	Diagonal	L3x3x5/16	201	-13.45	15.55	86.5	Pass

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Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
T9	62 - 42	Diagonal	L3 1/2x3 1/2x1/4	216	-13.97	16.76	83.4	Pass
T10	42 - 22	Diagonal	L3 1/2x3 1/2x5/16	231	-14.85	16.96	87.6	Pass
T11	22 - 2	Diagonal	L4x4x1/4	246	-16.08	17.52	91.8	Pass
T1	197 - 187	Top Girt	L3x3x5/16	6	-0.26	38.11	0.7	Pass
T2	187 - 172	Top Girt	1	38	-0.73	20.77	3.5	Pass
T3	172 - 152	Top Girt	1	83	-1.69	20.77	8.1	Pass
T7	102 - 82	Top Girt	L3x3x3/16	178	-4.51	8.09	55.8	Pass
T1	197 - 187	Bottom Girt	7/8	9	-0.76	4.86	15.7	Pass
T2	187 - 172	Bottom Girt	1	42	-1.72	20.77	8.3	Pass
T3	172 - 152	Bottom Girt	1	85	-1.38	20.89	6.6	Pass
Summary								
Leg (T3)							89.5	Pass
Diagonal (T11)							91.8	Pass
Top Girt (T7)							55.8	Pass
Bottom Girt (T1)							15.7	Pass
Bolt Checks							84.4	Pass
RATING =							91.8	Pass

Rock Anchor Foundation Analysis:

Input Data:

Max Pier Reactions:

Uplift =	Uplift := 410-kips	<i>user input</i>
Shear =	Shear := 47-kips	<i>user input</i>
Compression =	Axial := 463-kips	<i>user input</i>

Structure:

Footing Width =	B _{ftg} := 10.0ft	<i>user input</i>
Footing Length =	L _{ftg} := 10.0ft	<i>user input</i>
Footing Thickness =	T _{ftg} := 3.25ft	<i>user input</i>
Pier Length/Width =	L _{pier} := 4.0ft	<i>user input</i>
Pier Height =	T _{pier} := 3.25ft	<i>user input</i>
Pier Projection Above Grade =	P _p := 3.00-ft	<i>user input</i>

Depths:

Depth to Bottom of Footing =	D _{ftg} := 3.5ft	<i>user input</i>	(from grade line)
Depth to Suitable Rock =	D _{rock} := 5.0ft	<i>user input</i>	(from grade line)
Depth to Suitable Earth =	D _{earth} := 1.0ft	<i>user input</i>	(from grade line)
Anchor Length =	L _{anchor} := 26.75ft	<i>user input</i>	(from grade line)
Depth to Top of Submerged Anchor =	D _{anchortop} := 2.50ft	<i>user input</i>	(from grade line)
Anchor Depth =	D _{anchor} := D _{anchortop} + L _{anchor}		(from grade line)
	D _{anchor} = 29.25 ft		

Subgrade Properties:

Internal Friction Angle =	φ := 35deg	<i>user input</i>	
Unit Weight of Earth =	γ _{earth} := 120 $\frac{\text{lb}}{\text{ft}^3}$	<i>user input</i>	(Existing sub-grade conditions utilized in the analysis of the existing foundation system were obtained from a geo-technical soils study prepared by Clarence Welti & Assoc., P.E., P.C; dated March 3, 1998.
Unit Weight of Rock =	γ _{rock} := 165 $\frac{\text{lb}}{\text{ft}^3}$	<i>user input</i>	
Unit Weight of Conc =	γ _{conc} := 150 $\frac{\text{lb}}{\text{ft}^3}$	<i>user input</i>	
Ultimate Bearing =	Bearing := 20000-psf	<i>user input</i>	

RockAnchor Properties

Number of Anchors =	$N_{\text{anchor}} := 4$	<i>user input</i>	
Hole Diameter =	$hole_d := 3.00\text{in}$	<i>user input</i>	
Allowable Bond Stress Between Rock and Grout =	$\sigma_{\text{bond}} := 175\text{-psi}$	<i>user input</i>	Working bond Strength based on Weathered Rock/Sandstone
Grout Allowable Compressive Stress =	$fc_g := 5000\text{-psi}$	<i>user input</i>	
Anchor Spacing* (along length) =	$S_{\text{anchor}} := 5.50\text{ft}$	<i>user input</i>	
Required Factor of Safety =	$F_S := 1.0$	<i>user input</i>	
RockAnchor Ultimate Strength =	$Fu_{\text{anchor}} := 150.0\text{ksi}$	<i>user input</i>	Williams R71-11 1-3/8" dia. 150ksi Per Recommendation of PTI For Prestressed RockAnchor and Soil Anchors Section 6.6 Design Load Should not be more than 60% of Specified Minimum Tensile Strength.
RockAnchor Yield Strength =	$Fy_{\text{anchor}} := 127.7\text{ksi}$	<i>user input</i>	
RockAnchor Diameter =	$d_{ra} := 1.375\text{in}$	<i>user input</i>	
RockAnchor Area per Group =	$A_g := 1.58\text{in}^2$	<i>user input</i>	
RockAnchor Ultimate Tensile Load =	$T_u := 237\text{kips}$		
RockAnchor Allowable Tension =	$T_{\text{all}} := 0.60 \cdot T_u = 142.2\text{-kips}$		
RockAnchor Maximum Working Load to Yield =	$T_y := 0.80 \cdot T_u = 189.6\text{-kips}$		
RockAnchor Shear Capacity =	$Sh := 0.4 \cdot T_y = 75.84\text{-kips}$		
Total Volume of Concrete =	$V_{\text{conc}} := B_{\text{ftg}} \cdot L_{\text{ftg}} \cdot T_{\text{ftg}} + \frac{\pi \cdot L_{\text{pier}}^2}{4} \cdot T_{\text{pier}} = 365.8\text{-ft}^3$		
Weight of Pad =	$W_{\text{pad}} := (B_{\text{ftg}} \cdot L_{\text{ftg}} \cdot T_{\text{ftg}}) \cdot \gamma_{\text{conc}} = 48.75\text{-kips}$		
Weight of Pier =	$W_{\text{pier}} := (L_{\text{pier}}^2 \cdot T_{\text{pier}}) \cdot \gamma_{\text{conc}} = 7.8\text{-kips}$		
Total Weight of Concrete =	$W_{\text{conc}} := W_{\text{pad}} + W_{\text{pier}} = 56.5\text{-kips}$		

Rock Anchor Tension/Shear Check:

Actual Tension Force per Anchor =

$$T_a := \frac{\text{Uplift} - W_{\text{conc}}}{N_{\text{anchor}}} = 88.4\text{-kips}$$

Design Shear Force per Anchor =

$$S_a := \frac{\text{Shear}}{N_{\text{anchor}}} = 11.8\text{-kips}$$

Reduced Tension For Tension/Shear Combination =

$$T_{\text{allr}} := \left[1 - \left(\frac{S_a}{T_{\text{all}}} \right)^2 \right] \cdot T_{\text{all}} = 141.23\text{-kips}$$

Tension Check =

$$\text{TensionCheck} := \text{if}(T_{\text{allr}} \geq T_a, \text{"OK"}, \text{"IncreaseSize"}) = \text{"OK"}$$

Shear Check =

$$\text{ShearCheck} := \text{if}(S_h \geq S_a, \text{"OK"}, \text{"IncreaseSize"}) = \text{"OK"}$$

Provided Safety Factor =

$$\frac{T_{\text{allr}}}{T_a} = 1.60$$

$$\text{SafetyFactor} := \text{if}\left(\frac{T_{\text{allr}}}{T_a} \geq 1.0, \text{"OK"}, \text{"Overstressed"}\right)$$

SafetyFactor = "OK"

Rock Anchor Req'd Development Length in Rock:

Minimum Free Stress Length Required =

$$F_{\text{stressreqd}} := 10.0\text{ft}$$

(Original Centek design free stress length)

Minimum Free Stress Length Provided =

$$F_{\text{stressprov}} := 10.0\text{ft}$$

Controlling Free Stress Length:

$$L_f := \text{if}(F_{\text{stressprov}} > F_{\text{stressreqd}}, F_{\text{stressprov}}, F_{\text{stressreqd}}) \quad L_f = 10\text{ft}$$

Required Rock Anchor Proof Load (1.33x Design Load) =

$$T_p := T_a \cdot 1.33 = 117.5\text{-kips}$$

Provided Rock Anchor Proof Load (1.33x Design Load) =

$$T_{\text{pp}} := 40\text{kips} \cdot 1.33 \cdot F_S = 53.2\text{-kips}$$

$$T_{\text{PLmax}} := 0.80 \cdot T_u = 189.6\text{-kips}$$

Required Release Lock Off Load (1.10x Design Load) =

$$T_L := T_a \cdot 1.10 = 97.2\text{-kips}$$

Actual Release Lock Off Load (1.00x Design Load) =

$$T_{\text{LL}} := 40\text{kips} \cdot 1.00 \cdot F_S = 40\text{-kips}$$

$$T_{\text{LLmax}} := 0.70 \cdot T_u = 165.9\text{-kips}$$

Rock Anchor/Grout Bond Length:

$$L_d := \frac{\left(\frac{0.04}{\text{in}} T_{\text{LL}} \right)}{\sqrt{f_{c_g} \text{psi}}} \quad L_d = 1.89\text{-ft}$$

Required Rock/Grout Bond Length:

$$L_b := \frac{T_{\text{LL}}}{\pi \cdot \text{hole}_d \cdot \sigma_{\text{bond}}} = 2.02\text{ft}$$

Controlling Length:

$$L_a := \text{if}(L_b < L_d, L_d, L_b) \quad L_a = 2.02\text{ft}$$

$$L_{\text{bprov}} := D_{\text{anchor}} - L_f - D_{\text{anchortop}} = 16.75\text{ft}$$

$$\text{Bond_Length_Check} := \text{if}\left(\frac{L_a}{L_{\text{bprov}}} \leq 1.00, \text{"OK"}, \text{"Increase Length"}\right)$$

Bond_Length_Check = "OK"

Note:
 Max Allowable Tensile Load = 60% of Ultimate Strength.
 Max Lock Off Load = 70% of Ultimate Strength.
 Max Proof Load = 80% of Ultimate Strength.

Calculated Uplift Resistance:

Intermediate Dimension:

Suitable Earth Height =

$$H := D_{\text{rock}} - D_{\text{earth}} = 4\text{ft}$$

Suitable Rock Height =

$$Z := (D_{\text{anchor}} - D_{\text{rock}}) = 24.25\text{ft}$$

Total Anchor Width =

$$W := S_{\text{anchor}} = 5.5\text{ft}$$

Volumes:

BaseArea1 of Resisting Pyramid =

$$B_1 := W^2 = 30.25\text{ft}^2$$

BaseArea2 of Resisting Pyramid =

$$B_2 := [\tan(\phi) \cdot (Z \cdot 0.5) \cdot 2 + W]^2 = 505.4\text{ft}^2$$

BaseArea3 of Resisting Pyramid =

$$B_3 := [\tan(\phi) \cdot (Z \cdot 0.5 + H) \cdot 2 + W]^2 = 788.6\text{ft}^2$$

Total Volume of Resisting Material =

$$V_{\text{tot}} := \frac{[H + (Z \cdot 0.5)] \cdot (B_1 + B_3 + \sqrt{B_1 \cdot B_3})}{3} = 5231.4\text{ft}^3$$

Volume of Rock =

$$V_{\text{rock}} := \frac{(Z \cdot 0.5) \cdot (B_1 + B_2 + \sqrt{B_1 \cdot B_2})}{3} = 2664.4\text{ft}^3$$

Volume of Earth =

$$V_{\text{earth}} := V_{\text{tot}} - V_{\text{rock}} - V_{\text{conc}} = 2201.1\text{ft}^3$$

Resisting Forces:

Resisting Rock Force =

$$W_{\text{rock}} := V_{\text{rock}} \cdot \gamma_{\text{rock}} = 439.6\text{ kips}$$

Resisting Earth Force =

$$W_{\text{earth}} := V_{\text{earth}} \cdot \gamma_{\text{earth}} = 264.1\text{ kips}$$

Total Resisting Force =

$$W_{\text{total}} := 0.75W_{\text{rock}} + 0.75W_{\text{earth}} + 0.9W_{\text{conc}} = 578.7\text{ kips}$$

Foundation Uplift Check:

Factor of Safety =

$$\frac{W_{\text{total}}}{\text{Uplift}} = 1.41$$

$$\text{Uplift_Check} := \text{if} \left(\frac{W_{\text{total}}}{\text{Uplift}} \geq F_S, \text{"OK"}, \text{"Overstressed"} \right)$$

Uplift_Check = "OK"

Rock Bearing Capacity Check:

Bearing Force =

$$\text{MaxBearing} := \left[\frac{(\text{Axial} + W_{\text{conc}}) + (N_{\text{anchor}} T_{LL})}{B_{\text{ftg}} \cdot L_{\text{ftg}}} \right] = 6795\text{ psf}$$

$$\frac{\text{MaxBearing}}{0.75\text{Bearing}} = 0.45$$

$$\text{Rock_Bearing_Check} := \text{if} \left(\frac{\text{MaxBearing}}{0.75\text{Bearing}} \leq 1.00, \text{"OK"}, \text{"Overstressed"} \right)$$

Rock_Bearing_Check = "OK"



NORTH EAST > North East > New England > New England West > CORNWALL 2 CT

Gadasu, Shiva - shiva.gadasu@verizonwireless.com - 11/20/2020 15:10:2

Project Details		Location Information	
Carrier Aggregation: false		Site ID: 323626	
MPT Id:		E-NodeB ID: 064524	
eCIP-O: false		PSLC: 468473	
Project Name: 5G L-Sub6 - Carrier Add		Switch Name: Wallingford 1	
FUZE Project ID: 16271928		Tower Owner:	
Designed Sector Carrier 4G: 15		Tower Type: Monopole	
Designed Sector Carrier 5G: N/A		Site Type: MACRO	
Additional Sector Carrier 4G: N/A		Street Address: 7 Surdan Mountain Rd	
Additional Sector Carrier 5G: N/A		City: Cornwall	
SiteTraker Project Id:		State: CT	
FP Solution Type & Tech Type: MODIFICATION;5G_L-Sub6-Prep,5G_Radio Swap		Zip Code: 06753	
RFDS Project Scope: Ant, RRH upgrade 850LTE, AWS, PCS, LSub6 add Remove any unused coax, all shelter and tower diplexers		County: Litchfield	
Rev0_11.20.2020 : Initial Design		Latitude: 41.862039 / 41° 51' 43.3404" N	
Suffix: Rev0_11.20.2020		Longitude: -73.399625 / 73° 23' 58.65" W	

Antenna Summary

Added														
700	850	1900	AWS	AWS3	28 GHz	31 GHz	39 GHz	CBRS	LAA	L-Sub6	Make	Model	Centerline	Tip Height
LTE	LTE	LTE	LTE								JMA	MX06FT665-02	161.2	164.2
											TBD	nL-Sub6 Antenna	161.2	163.3
Removed														
700	850	1900	AWS	AWS3	28 GHz	31 GHz	39 GHz	CBRS	LAA	L-Sub6	Make	Model	Centerline	Tip Height
LTE											ANTEL	BXA-70063-6CF	161.2	164.2
												SPARE	161.2	
Retained														
700	850	1900	AWS	AWS3	28 GHz	31 GHz	39 GHz	CBRS	LAA	L-Sub6	Make	Model	Centerline	Tip Height
	CDMA										ANTEL	LPA-80080/4CF (171502)	161.2	163.2

Added: 9 Removed: 6 Retained: 6

Equipment Summary

[illegible]

Service Info

850 MHZ CDMA

Sector	D1	0000	D3	D2	5GLS	D3
Antenna Model	LPA-80080/4CF (171502)	LPA-80080/4CF (171502)	LPA-80080/4CF (171502)	LPA-80080/4CF (171502)	LPA-80080/4CF (171502)	LPA-80080/4CF (171502)
Antenna Make	ANTEL	ANTEL	ANTEL	ANTEL	ANTEL	ANTEL
Antenna Centerline(Ft)	161.2	161.2	161.2	161.2	161.2	161.2
Mechanical Down-Tilt(Deg.)	2	2	2	2	2	2
Electrical Down-Tilt	0	0	0	0	0	0
Tip Height	163.2	163.2	163.2	163.2	163.2	163.2
Regulatory Power	354	361.41	366.44	354	361.41	366.44
TMA Make						
TMA Model						
RRU Make						
RRU Model						
Number of Tx, Rx Lines						
Position						
Transmitter Id						
Source	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API

700 MHZ LTE

Sector	D1	0000	D2	D3	5GLS	03
Antenna Model	BXA-70063-6CF	BXA-70063-6CF	BXA-70063-6CF	BXA-70063-6CF	MX06FIT665-02	MX06FIT665-02
Antenna Make	ANTEL	ANTEL	ANTEL	ANTEL	JMA	JMA
Antenna Centerline(Ft)	161.2	161.2	161.2	161.2	161.2	161.2
Mechanical Down-Tilt(Deg.)	2	2	4	0	0	0
Electrical Down-Tilt	2	2	2	4	4	6
Tip Height	164.2	164.2	164.2	164.2	164.2	164.2
Regulatory Power	140.85	141.5	140.53	51.14	51.38	52.21
TMA Make						
TMA Model						
RRU Make	Nokia	Nokia	Nokia	Nokia	Samsung	Samsung
RRU Model	UHBA B13 RRH 4x30	UHBA B13 RRH 4x30	UHBA B13 RRH 4x30	UHBA B13 RRH 4x30	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)
Number of Tx, Rx Lines	2,4	2,4	2,4	2,4	4,4	4,4
Position						
Transmitter Id	1955157	1955153	1955154	1955154	9035540	9035537
Source	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API

nL-Sub6

Sector	0001	5GLS	0002	0003
Antenna Model	nL-Sub6 Antenna	nL-Sub6 Antenna	nL-Sub6 Antenna	nL-Sub6 Antenna
Antenna Make	TBD	TBD	TBD	TBD
Antenna Centerline(Ft)	161.2	161.2	161.2	161.2
Mechanical Down-Tilt(Deg.)	0	0	0	0
Electrical Down-Tilt	3	3	3	3
Tip Height	163.3	163.3	163.3	163.3
Regulatory Power	0	0	0	0
TMA Make				
TMA Model				
RRU Make	Samsung	Samsung	Samsung	Samsung
RRU Model	VZ501	VZ501	VZ501	VZ501
Number of Tx, Rx Lines	4,4	4,4	4,4	4,4
Position				
Transmitter Id	9035586	9035587	9035587	9035589
Source	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API

1900 MHZ LTE

5GLS			
Cell / ENode B ID	Sector		Azimuth
	01	02	03
Antenna Model	90	210	330
	064524	064524	064524
Antenna Make	MX06FIT665-02		MX06FIT665-02
	MX06FIT665-02		MX06FIT665-02
Antenna Centerline(Ft)	JMA	JMA	JMA
	161.2	161.2	161.2
Mechanical Down-Tilt(Deg.)	0	0	0
	0	0	0
Electrical Down-Tilt	2	2	4
	2	2	4
Tip Height	164.2	164.2	164.2
	164.2	164.2	164.2
Regulatory Power	175.29	176.1	167.02
	175.29	176.1	167.02
TMA Make	Samsung		Samsung
	4,4		4,4
TMA Model	B2/B66A RRH-BR049 (RFV01U-D1A)		B2/B66A RRH-BR049 (RFV01U-D1A)
	4,4		4,4
RRU Make	Samsung		Samsung
	4,4		4,4
RRU Model	B2/B66A RRH-BR049 (RFV01U-D1A)		B2/B66A RRH-BR049 (RFV01U-D1A)
	4,4		4,4
Number of Tx, Rx Lines	9404579		9404581
	ATOLL_API		ATOLL_API
Position	9404579		9404581
	ATOLL_API		ATOLL_API
Transmitter Id	9404579		9404581
	ATOLL_API		ATOLL_API
Source	9404579		9404581
	ATOLL_API		ATOLL_API

2100 MHZ LTE

5GLS			
Cell / ENode B ID	Sector		Azimuth
	01	02	03
Antenna Model	90	210	330
	064524	064524	064524
Antenna Make	MX06FIT665-02		MX06FIT665-02
	MX06FIT665-02		MX06FIT665-02
Antenna Centerline(Ft)	JMA	JMA	JMA
	161.2	161.2	161.2
Mechanical Down-Tilt(Deg.)	0	0	0
	0	0	0
Electrical Down-Tilt	2	2	4
	2	2	4
Tip Height	164.2	164.2	164.2
	164.2	164.2	164.2
Regulatory Power	89.69	90.1	85.45
	89.69	90.1	85.45
TMA Make	Samsung		Samsung
	4,4		4,4
TMA Model	B2/B66A RRH-BR049 (RFV01U-D1A)		B2/B66A RRH-BR049 (RFV01U-D1A)
	4,4		4,4
RRU Make	Samsung		Samsung
	4,4		4,4
RRU Model	B2/B66A RRH-BR049 (RFV01U-D1A)		B2/B66A RRH-BR049 (RFV01U-D1A)
	4,4		4,4
Number of Tx, Rx Lines	9404576		9404578
	ATOLL_API		ATOLL_API
Position	9404576		9404578
	ATOLL_API		ATOLL_API
Transmitter Id	9404576		9404578
	ATOLL_API		ATOLL_API
Source	9404576		9404578
	ATOLL_API		ATOLL_API

850 MHZ LTE

5GLS			
Cell / ENode B ID	Sector		Azimuth
	01	02	03
Antenna Model	90	210	330
	064524	064524	064524
Antenna Make	MX06FIT665-02		MX06FIT665-02
	MX06FIT665-02		MX06FIT665-02
Antenna Centerline(Ft)	JMA	JMA	JMA
	161.2	161.2	161.2
Mechanical Down-Tilt(Deg.)	0	0	0
	0	0	0
Electrical Down-Tilt	4	4	6
	4	4	6
Tip Height	164.2	164.2	164.2
	164.2	164.2	164.2
Regulatory Power	245.93	247.07	251.08
	245.93	247.07	251.08
TMA Make	Samsung		Samsung
	4,4		4,4
TMA Model	B5/B13 RRH-BR04C (RFV01U-D2A)		B5/B13 RRH-BR04C (RFV01U-D2A)
	4,4		4,4
RRU Make	Samsung		Samsung
	4,4		4,4
RRU Model	B5/B13 RRH-BR04C (RFV01U-D2A)		B5/B13 RRH-BR04C (RFV01U-D2A)
	4,4		4,4
Number of Tx, Rx Lines	9403864		9403866
	ATOLL_API		ATOLL_API
Position	9403864		9403866
	ATOLL_API		ATOLL_API
Transmitter Id	9403864		9403866
	ATOLL_API		ATOLL_API
Source	9403864		9403866
	ATOLL_API		ATOLL_API

Service Comments

Callsigns Per Antenna

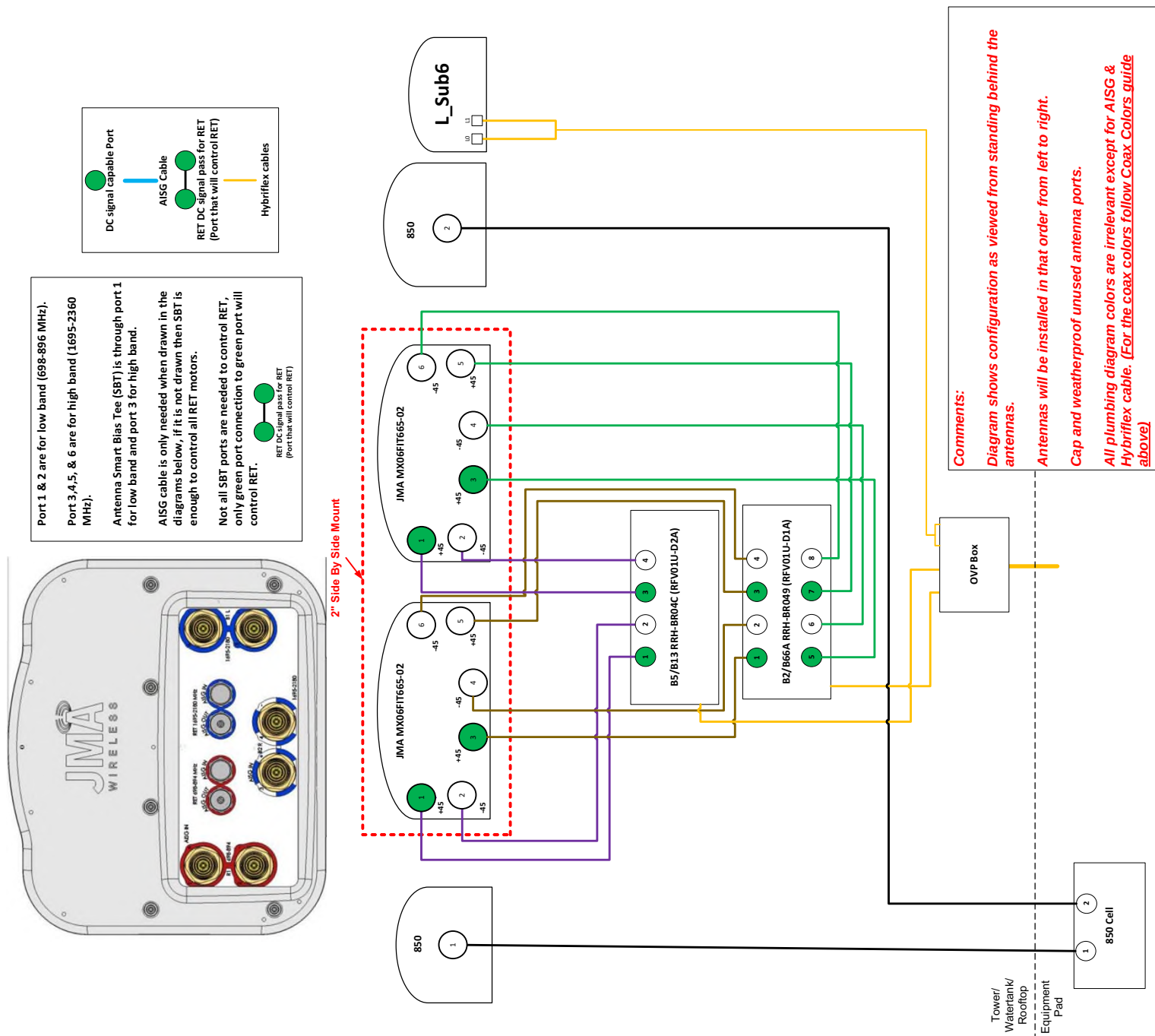
Sector	Antenna Make	Antenna Model	Ant CL Height AGL	Tip Height	Azimuth (TW)	Electrical Tilt	Mechanical Tilt	Gain	Beamwidth	Regulatory Power	Callsigns	850	1900	2100	28 GHz	31 GHz	39 GHz

No data available.

Callsigns

Callsign	Market	Radio Code	Market Number	Block	State	County	Licensee Name	Wholly Owned	Total MHz	Freq Range 1	Freq Range 2	Freq Range 3	Freq Range 4	Regulatory Power (W)	Threshold (W)	POPs/Sq Mi	Status	Action	Approved for Insvc
WQJG689	Northeast	WU	REA001	C	CT	Litchfield	Cellico Partnership	Yes	22.000	746.000-757.000	1975.000-787.000	.000-.000	.000-.000	52.21	1000	206.32	Active	added	Yes
KNHK833	Connecticut 1 - Litchfield	CL	CMA357	A	CT	Litchfield	Cellico Partnership	Yes	25.000	824.000-835.000	869.000-880.000	845.000-846.500	890.000-891.500	366.44	400	206.32	Active	added	Yes
WQEM953	New Haven-Waterbury-Meriden, CT	CW	BTA318	C	CT	Litchfield	Cellico Partnership	Yes	10.000	1895.000-1900.000	1975.000-1980.000	.000-.000	.000-.000	176.1	1640	206.32	Active	added	Yes
KNLH262	New Haven-Waterbury-Meriden, CT	CW	BTA318	F	CT	Litchfield	Cellico Partnership	Yes	10.000	1890.000-1895.000	1970.000-1975.000	.000-.000	.000-.000	176.1	1640	206.32	Active	added	Yes
WQGD528	Connecticut 1 - Litchfield	AW	CMA357	A	CT	Litchfield	Cellico Partnership	Yes	20.000	1710.000-1720.000	2110.000-2120.000	.000-.000	.000-.000	90.1	1640	206.32	Active	added	Yes
WQVQ458	New York- No. New Jer.-Long Island, NY- NJ-CT-PA-MA-	AW	BEA010	B	CT	Litchfield	Cellico Partnership	Yes	20.000	1720.000-1730.000	2120.000-2130.000	.000-.000	.000-.000	90.1	1640	206.32	Active	added	Yes
WQCS396	New Haven-Waterbury-Meriden, CT	CW	BTA318	C	CT	Litchfield	Cellico Partnership	Yes	10.000	1905.000-1910.000	1985.000-1990.000	.000-.000	.000-.000		1640	206.32	Active		Yes
WPOH945	New Haven-Waterbury-Meriden, CT	LD	BTA318	A	CT	Litchfield	Cellico Partnership	Yes	300.000	29100.000-29250.000	31075.000-31225.000	.000-.000	.000-.000			206.32	Active		No
WPLM399	New Haven-Waterbury-Meriden, CT	LD	BTA318	B	CT	Litchfield	Cellico Partnership	Yes	150.000	31000.000-31075.000	31225.000-31300.000	.000-.000	.000-.000			206.32	Active		No
WRBA736	New Haven-Waterbury-Meriden, CT	UU	BTA318	L1	CT	Litchfield	Cellico Partnership	Yes	325.000	27600.000-27925.000	.000-.000	.000-.000	.000-.000			206.32	Active		Yes
WRBA737	New Haven-Waterbury-Meriden, CT	UU	BTA318	L2	CT	Litchfield	Cellico Partnership	Yes	325.000	27925.000-27950.000	28050.000-28350.000	.000-.000	.000-.000			206.32	Active		Yes
WRHD609	New York, NY	UU	PEA001	M1	CT	Litchfield	Straight Path Spectrum, LLC	Yes	100.000	37600.000-37700.000	.000-.000	.000-.000	.000-.000			206.32	Active		Yes
WRHD610	New York, NY	UU	PEA001	M10	CT	Litchfield	Straight Path Spectrum, LLC	Yes	100.000	38500.000-38600.000	.000-.000	.000-.000	.000-.000			206.32	Active		Yes
WRHD611	New York, NY	UU	PEA001	M2	CT	Litchfield	Straight Path Spectrum, LLC	Yes	100.000	37700.000-37800.000	.000-.000	.000-.000	.000-.000			206.32	Active		Yes
WRHD612	New York, NY	UU	PEA001	M3	CT	Litchfield	Straight Path Spectrum, LLC	Yes	100.000	37800.000-37900.000	.000-.000	.000-.000	.000-.000			206.32	Active		Yes
WRHD613	New York, NY	UU	PEA001	M4	CT	Litchfield	Straight Path Spectrum, LLC	Yes	100.000	37900.000-38000.000	.000-.000	.000-.000	.000-.000			206.32	Active		Yes

WRHD614	New York, NY	UU	PEA001	M5	CT	Litchfield	Straight Path Spectrum, LLC	Yes	100.000	38000.000-38100.000	.000-.000	.000-.000	.000-.000	.000-.000		206.32	Active		Yes
WRHD615	New York, NY	UU	PEA001	M6	CT	Litchfield	Straight Path Spectrum, LLC	Yes	100.000	38100.000-38200.000	.000-.000	.000-.000	.000-.000	.000-.000		206.32	Active		Yes
WRHD616	New York, NY	UU	PEA001	M7	CT	Litchfield	Straight Path Spectrum, LLC	Yes	100.000	38200.000-38300.000	.000-.000	.000-.000	.000-.000	.000-.000		206.32	Active		Yes
WRHD617	New York, NY	UU	PEA001	M8	CT	Litchfield	Straight Path Spectrum, LLC	Yes	100.000	38300.000-38400.000	.000-.000	.000-.000	.000-.000	.000-.000		206.32	Active		Yes
WRHD618	New York, NY	UU	PEA001	M9	CT	Litchfield	Straight Path Spectrum, LLC	Yes	100.000	38400.000-38500.000	.000-.000	.000-.000	.000-.000	.000-.000		206.32	Active		Yes
WRHD619	New York, NY	UU	PEA001	N1	CT	Litchfield	Straight Path Spectrum, LLC	Yes	100.000	38600.000-38700.000	.000-.000	.000-.000	.000-.000	.000-.000		206.32	Active		No
WRDG500	New York, NY	UU	PEA001	S2	CT	Litchfield	Celco Partnership	Yes	400.000	37800.000-38200.000	.000-.000	.000-.000	.000-.000	.000-.000		206.32	Active		Yes
WQVQ457	New York-No. New Jer.-Long Island, NY-NJ-CT-PA-MA-	AW	BEA010	C	CT	Litchfield	Celco Partnership	Yes	10.000	1730.000-1735.000	2130.000-2135.000	.000-.000	.000-.000	.000-.000	1640	206.32	Active		Yes





Maser Consulting Connecticut
2000 Midlantic Drive, Suite 100
Mt. Laurel, NJ 08054
(856) 797-0412
peter.albano@colliersengineering.com

Post-Mod Antenna Mount Analysis Report and PMI Requirements

Mount Fix

SMART Tool Project #: 10068864
Maser Consulting Connecticut Project #: 21777229A

June 9, 2021

Site Information

Site ID: 468473-VZW / CORNWALL 2 CT
Site Name: CORNWALL 2 CT
Carrier Name: Verizon Wireless
Address: 7 Surdan Mountain Road
Cornwall, Connecticut 06753
Litchfield County
Latitude: 41.862039°
Longitude: -73.399625°

Structure Information

Tower Type: Self Support
Mount Type: 15.00-Ft T-Frame

FUZE ID # 16271928

Analysis Results

T-Frame: 74.2% 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 also Noted on Mount Modification Drawings

Requirements may also be Noted on A & E drawings

Report Prepared By: Selene Chen



Digitally signed by Derek Hartzell
Date: 2021.06.09 07:55:07-07'00

Executive Summary:

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

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

Sources of Information:

Document Type	Remarks
Radio Frequency Data Sheet (RFDS)	Verizon RFDS, Site ID: 323626, dated November 20, 2020
Mount Mapping Report	Roaming Networks Inc., Site ID: 468473, dated April 5, 2021
Mount Analysis Report	Maser Consulting Connecticut, Project #: 21777229A, dated May 4, 2021
Mount Modification Drawings	Maser Consulting Connecticut, Project #: 21777229A, dated June 9, 2021

Analysis Criteria:

Codes and Standards:	ANSI/TIA-222-H	
Wind Parameters:	Basic Wind Speed (Ultimate 3-sec. Gust),	114 mph
	Ice Wind Speed (3-sec. Gust):	40 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
Seismic Parameters:	Ground Elevation Factor, K_e :	0.952
	S _s :	0.171
	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 :	500 lbs.
Analysis Software:	RISA-3D (V17)	

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
			JMA Wireless		Added
			Samsung		
			Samsung		
			Samsung		
			Raycap		
			Antel		Retained

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
DB-B1-6C-12AB-0Z	6	OVP-6
RVZDC-6627-PF-48	12	OVP-12

Standard Conditions:

1. All engineering services are performed on the basis that the information provided to Maser Consulting Connecticut 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 Maser Consulting Connecticut 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 by Maser Consulting Connecticut, 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. Maser Consulting Connecticut is not responsible for the conclusion, opinions, and recommendations made by others based on the information supplied.
7. Structural Steel Grades have been assumed as follows, if applicable, unless otherwise noted in this analysis:
 - o Channel, Solid Round, Angle, Plate ASTM A36 (Gr. 36)
 - o HSS (Rectangular) ASTM 500 (Gr. B-46)
 - o Pipe ASTM A53 (Gr. B-35)
 - o Threaded Rod F1554 (Gr. 36)
 - o Bolts ASTM A325
8. Any mount modifications listed under Sources of Information are assumed to have been installed per the design specifications.

Discrepancies between in-field conditions and the assumptions listed above may render this analysis invalid unless explicitly approved by Maser Consulting Connecticut.

Analysis Results:

Component	Utilization %	Pass/Fail
Connection		Pass
Standoff Plate		Pass
Standoff HSS		Pass
Mast Pipe		Pass
Standoff Pipe		Pass
Standoff Vertical		Pass
Face Horizontal		Pass
Face Vertical		Pass
Mount Pipe		Pass
Stabilizer		Pass
V-Bracing		Pass

Structure Rating – (Controlling Utilization of all Components)	74.2%
---	--------------

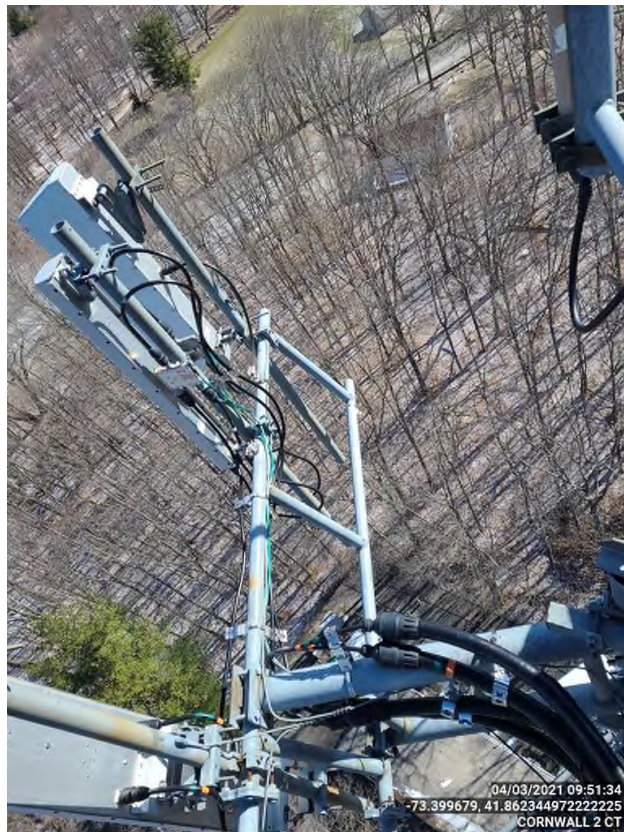
Recommendation:

The existing mounts will be **SUFFICIENT** for the final loading after the proposed modifications are successfully completed.

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

Attachments:

Mount Photos
Mount Mapping Report (for reference only)
Analysis Calculations
Contractor Required PMI Report Deliverables
Antenna Placement Diagrams
TIA Adoption and Wind Speed Usage Letter



Antenna Mount Mapping Form (PATENT PENDING)

ECC #

N/A

Tower Owner:	OTHER
--------------	-------

Site Name:	CORNWALL 2 CT
------------	---------------

Site Number or ID:	468473
--------------------	--------

Mapping Contractor:	Roaming Networks inc.
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Mapping Date:

04.05.2021.

Tower Type:	
-------------	--

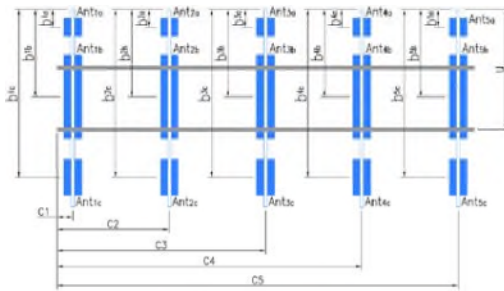
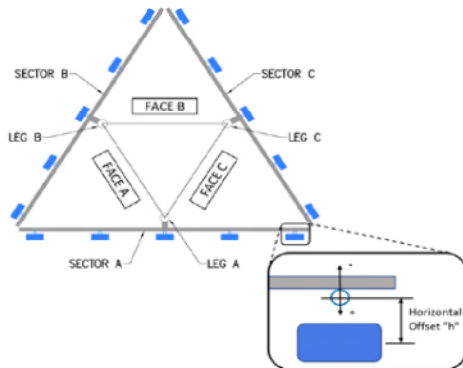
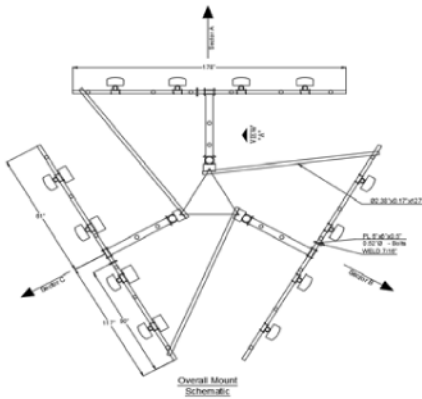
Self Support

Tower Height (

Mount Elevation (Ft.)

156

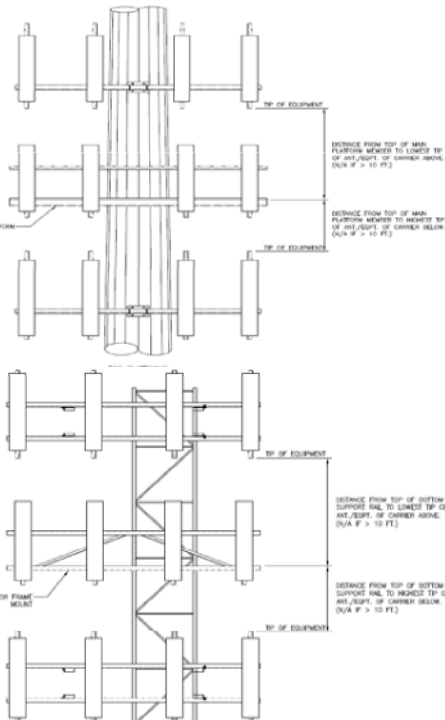
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Antenna Layout (Looking Out From Tower)

Mount Pipe Configuration and Geometries [Unit = Inches]							
Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "H"	Horizontal Offset "C1, C2, C3, etc."	Sector / Position	Mount Pipe Size & Length	Vertical Offset Dimension "H"	Horizontal Offset "C1, C2, C3, etc."
A1	PIPE Ø 2.38" x 0.23" x96"	75.00	7.00	C1	PIPE Ø 2.38" x 0.23" x96"	75.00	7.00
A2	PIPE Ø 2.38" x 0.23" x96"	75.00	91.00	C2	PIPE Ø 2.38" x 0.23" x96"	75.00	91.00
A3	PIPE Ø 2.38" x 0.23" x96"	75.00	147.00	C3	PIPE Ø 2.38" x 0.23" x96"	75.00	147.00
A4	PIPE Ø 2.38" x 0.23" x96"	75.00	173.00	C4	PIPE Ø 2.38" x 0.23" x96"	75.00	173.00
A5				C5			
A6				C6			
B1	PIPE Ø 2.38" x 0.23" x96"	75.00	7.00	D1			
B2	PIPE Ø 2.38" x 0.23" x96"	75.00	91.00	D2			
B3	PIPE Ø 2.38" x 0.23" x96"	75.00	147.00	D3			
B4	PIPE Ø 2.38" x 0.23" x96"	75.00	173.00	D4			
B5				D5			
B6				D6			
Distance between bottom rail and mount CL elevation (dim d). Unit is inches. See 'Mount Elev Ref' tab for details.:							0.00
Distance from top of bottom support rail to lowest tip of ant./eqpt. of Carrier above. (N/A if > 10 ft.) :							
Distance from top of bottom support rail to highest tip of ant./eqpt. of Carrier below. (N/A if > 10 ft.) :							
Please enter additional information or comments below.							
Tower Face Width at Mount Elev. (ft.):		4.8	Tower Leg Size or Pole Shaft Diameter at Mount Elev. (in.):				2.29

[illegible]

Mount Azimuth (Degree) for Each Sector				Tower Leg Azimuth (Degree) for Each Sector		Sector B																
Sector A:	74.00	Deg	Leg A:	22.00	Deg	Ant _{1a}	UNKNOWN					160.25	24.00	15.00	266.00	255						
Sector B:	266.00	Deg	Leg B:	142.00	Deg	Ant _{1b}																
Sector C:	342.00	Deg	Leg C:	262.00	Deg	Ant _{1c}																
Sector D:		Deg	Leg D:		Deg	Ant _{2a}	BXA-80063/6CF	11.20	4.50	71.10		159.25	36.00	8.00	266.00	256						
Climbing Facility Information						Ant _{2b}																
Climbing Facility	Location:	22.00	Deg	On Leg A		Ant _{3a}	BXA-80063/6CF	11.20	4.50	71.10		160.25	24.00	8.00	266.00	256						
	Corrosion Type:			Good condition.		Ant _{3b}																
	Access:			Climbing path was obstructed.		Ant _{3c}																
	Condition:			Good condition.		Ant _{4a}	UNKNOWN					160.25	24.00	15.00	266.00	257						
						Ant _{4b}																
						Ant _{4c}																
						Ant _{5a}																
						Ant _{5b}																
						Ant _{5c}																
						Ant on Standoff																
						Ant on Standoff																
						Ant on Tower																
						Ant on Tower																
						Sector C																
						Ant _{1a}	UNKNOWN						160.25	24.00	15.00	342.00	268					
Ant _{1b}																						
Ant _{1c}																						
Ant _{2a}	BXA-80063/6CF	11.20	4.50	71.10		159.25	36.00	8.00	342.00	269												
Ant _{2b}																						
Ant _{3a}	BXA-80063/6CF	11.20	4.50	71.10		160.25	24.00	8.00	342.00	269												
Ant _{3b}																						
Ant _{3c}																						
Ant _{4a}	UNKNOWN						160.25	24.00	15.00	342.00	269											
Ant _{4b}																						
Ant _{4c}																						
Ant _{5a}																						
Ant _{5b}																						
Ant _{5c}																						
Ant on Standoff																						
Ant on Standoff																						
Ant on Tower																						
Ant on Tower																						
Sector D																						
Ant _{1a}																						
Ant _{1b}																						
Ant _{1c}																						
Ant _{2a}																						
Ant _{2b}																						
Ant _{2c}																						
Ant _{3a}																						
Ant _{3b}																						
Ant _{3c}																						
Ant _{4a}																						
Ant _{4b}																						
Ant _{4c}																						
Ant _{5a}																						
Ant _{5b}																						
Ant _{5c}																						
Ant on Standoff																						
Ant on Standoff																						
Ant on Tower																						
Ant on Tower																						

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

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)

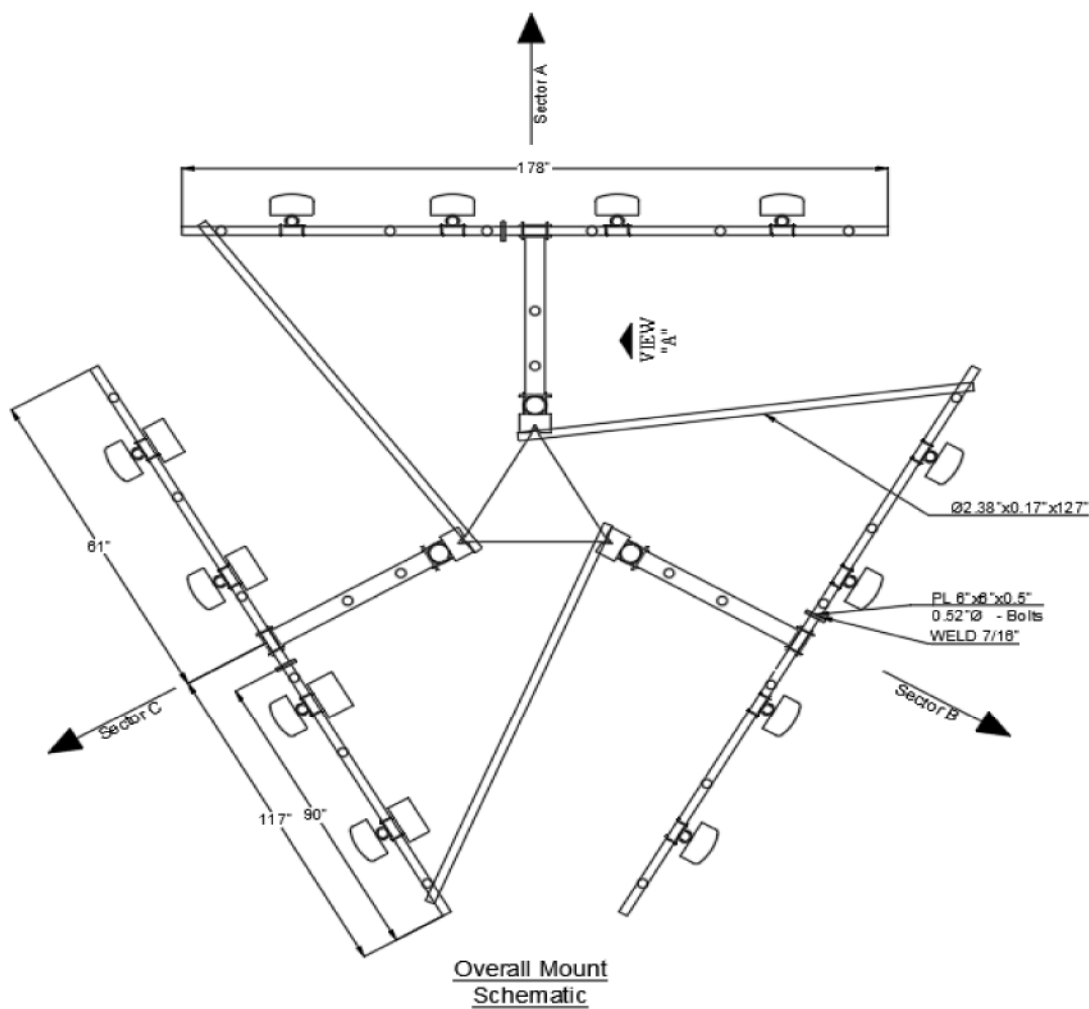
FCC #

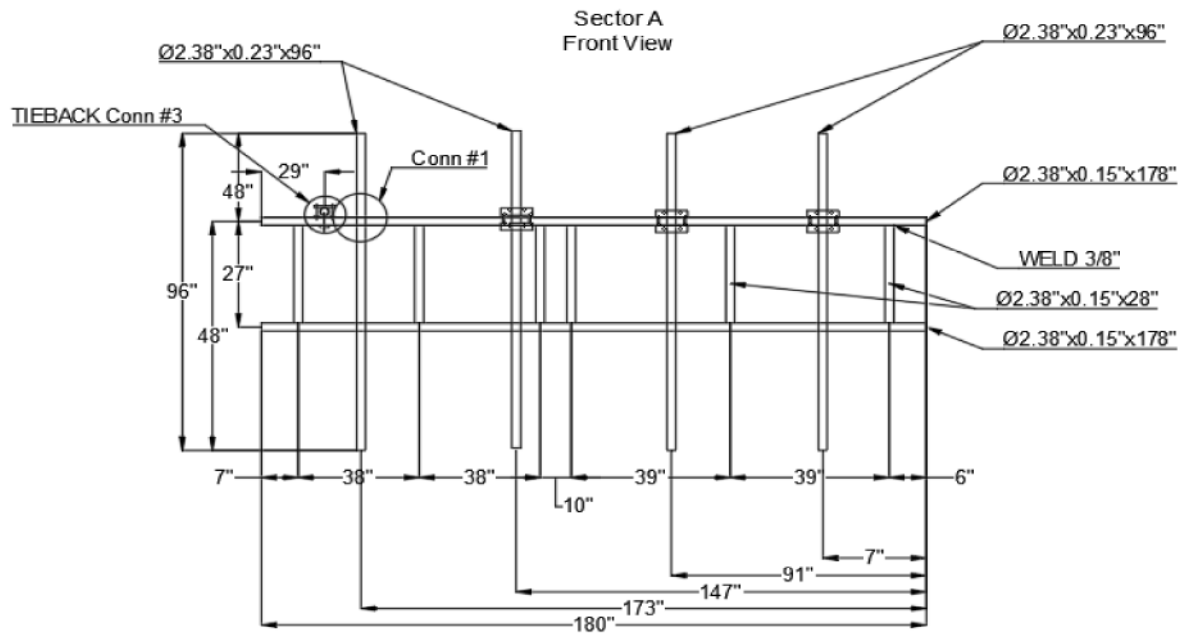
N/A

Tower Owner:	OTHER	Mapping Date:	04.05.2021.
Site Name:	CORNWALL 2 CT	Tower Type:	Self Support
Site Number or ID:	468473	Tower Height (Ft.):	
Mapping Contractor:	Roaming Networks inc.	Mount Elevation (Ft.):	156

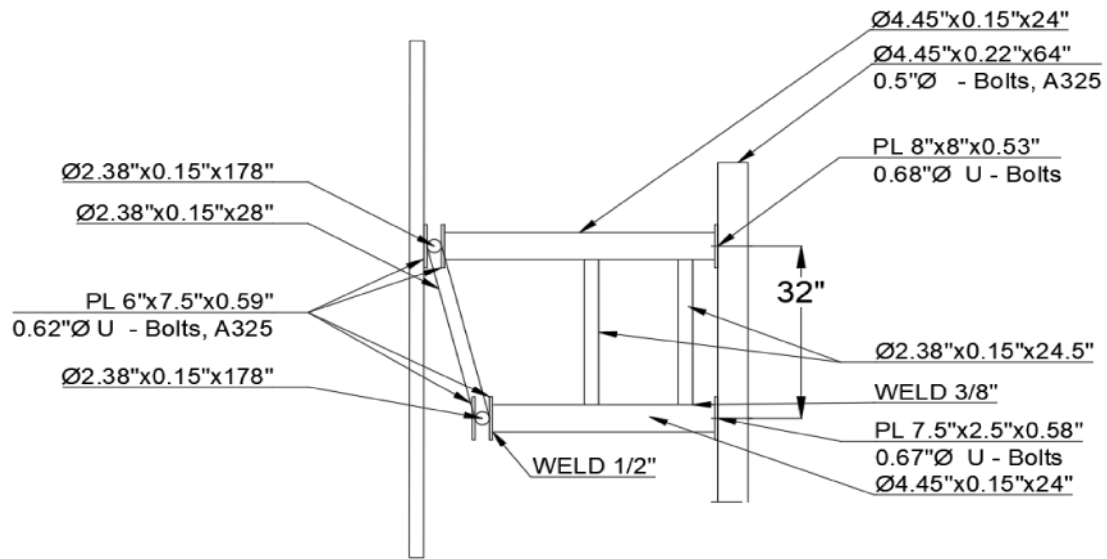
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Please Insert Sketches of the Antenna Mount

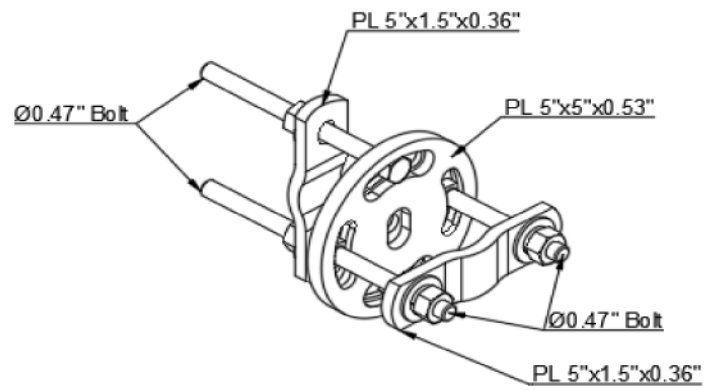


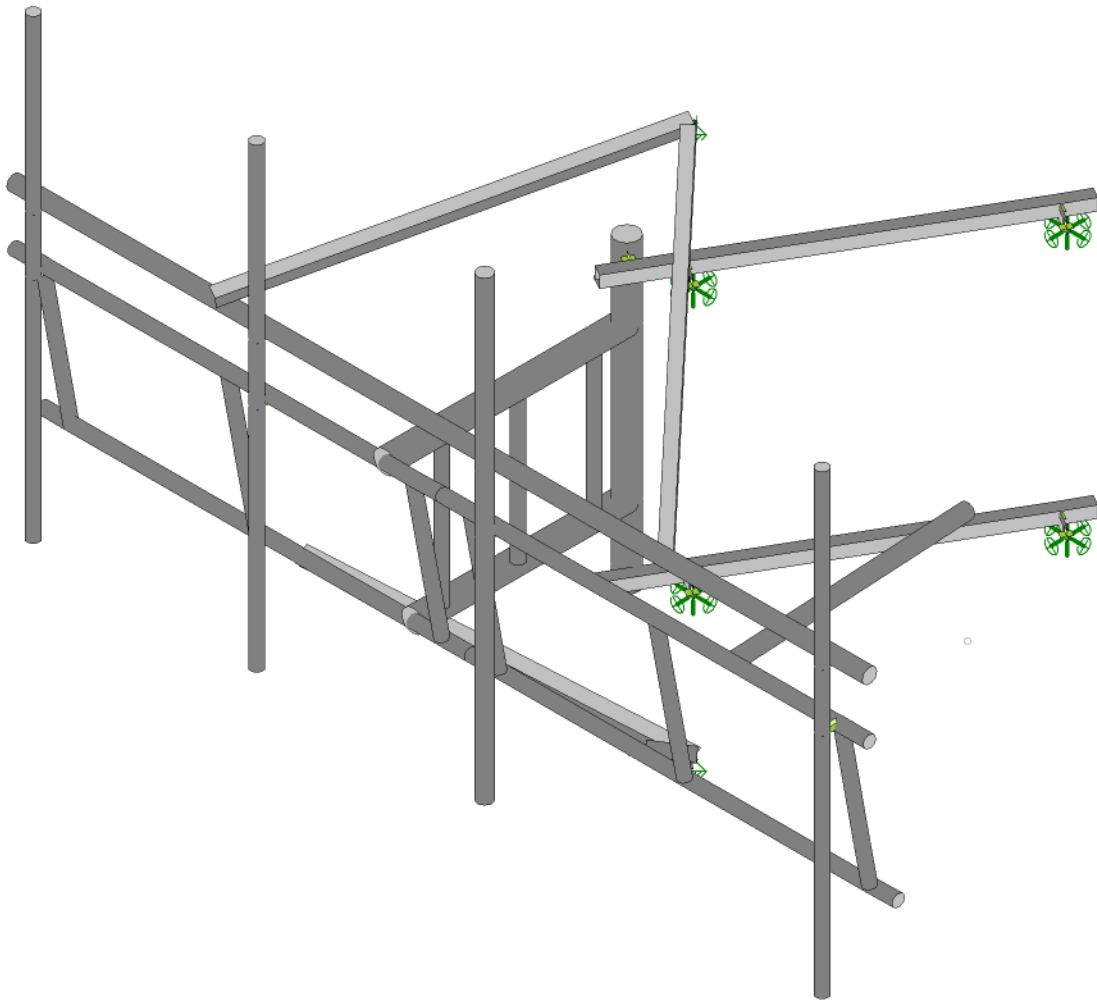
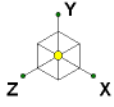


VIEW "A"



CONN. #3





Envelope Only Solution

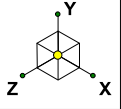
Maser Consulting

468473-VZW_MT_LOT_SectorA_H

SK - 1

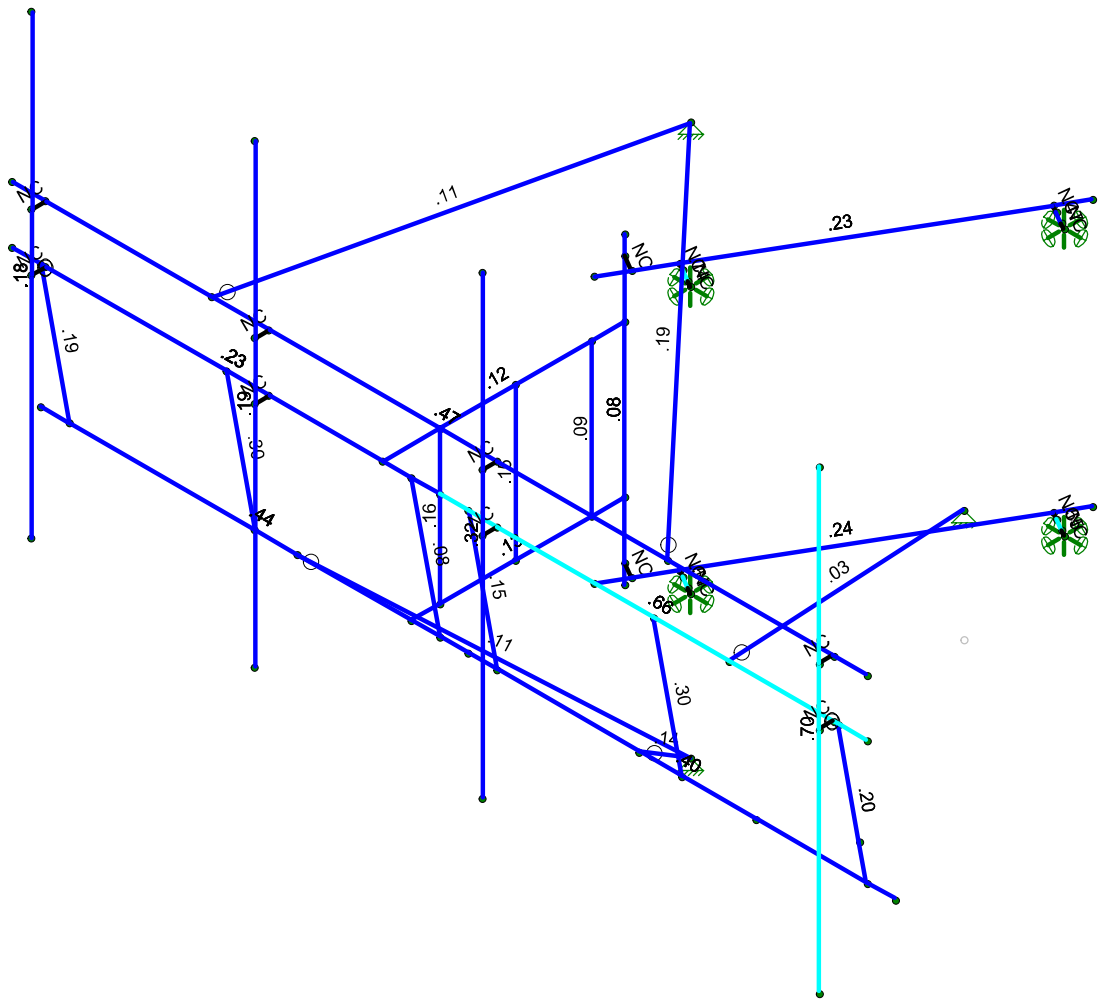
June 7, 2021 at 2:52 PM

468473-VZW_MT_LOT_A_H.r3d



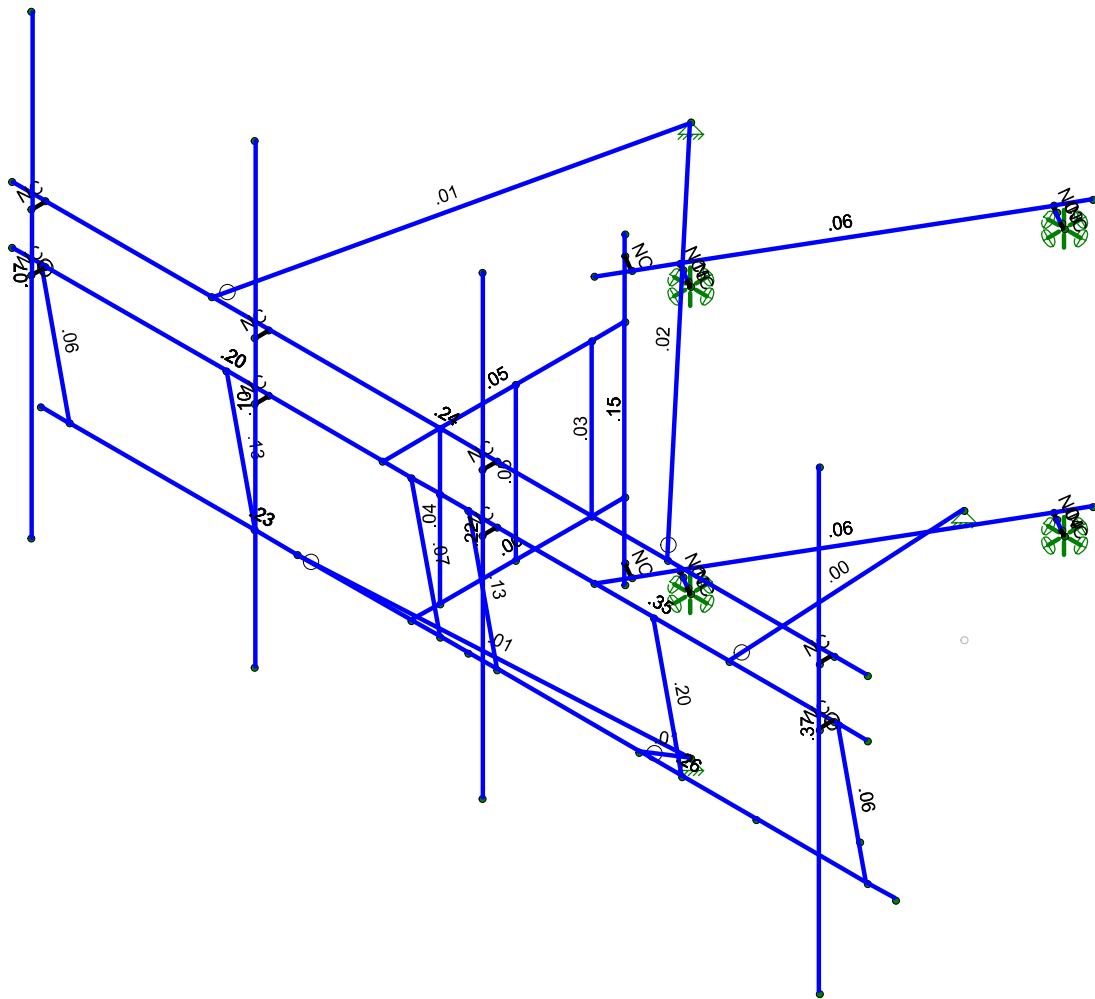
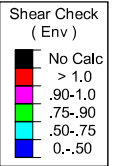
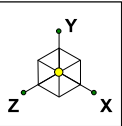
Code Check
(Env)

- No Calc
- > 1.0
- .90-1.0
- .75-.90
- .50-.75
- 0-.50



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

Maser Consulting	468473-VZW_MT_LOT_SectorA_H	SK - 2
		June 7, 2021 at 2:52 PM
		468473-VZW_MT_LOT_A_H.r3d



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

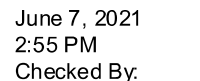
Maser Consulting

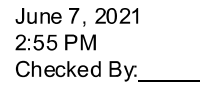
468473-VZW_MT_LOT_SectorA_H

SK - 3

June 7, 2021 at 2:55 PM

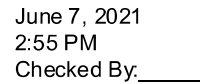
468473-VZW_MT_LOT_A_H.r3d





	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
52	Structure Wo (330 De...	None						64	
53	Structure Wi (0 Deg)	None						64	
54	Structure Wi (30 Deg)	None						64	
55	Structure Wi (60 Deg)	None						64	
56	Structure Wi (90 Deg)	None						64	
57	Structure Wi (120 De...	None						64	
58	Structure Wi (150 De...	None						64	
59	Structure Wi (180 De...	None						64	
60	Structure Wi (210 De...	None						64	
61	Structure Wi (240 De...	None						64	
62	Structure Wi (270 De...	None						64	
63	Structure Wi (300 De...	None						64	
64	Structure Wi (330 De...	None						64	
65	Structure Wm (0 Deg)	None						64	
66	Structure Wm (30 D...	None						64	
67	Structure Wm (60 D...	None						64	
68	Structure Wm (90 D...	None						64	
69	Structure Wm (120 ...	None						64	
70	Structure Wm (150 ...	None						64	
71	Structure Wm (180 ...	None						64	
72	Structure Wm (210 ...	None						64	
73	Structure Wm (240 ...	None						64	
74	Structure Wm (270 ...	None						64	
75	Structure Wm (300 ...	None						64	
76	Structure Wm (330 ...	None						64	
77	Lm1	None					1		
78	Lm2	None					1		
79	Lv1	None					1		
80	Lv2	None					1		

	Description	Solve	PDelta	S...	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..	BLCFac..
1	1.2D+1.0Wo (0...	Yes	Y		1	1.2	39	1.2	3	1	41	1							
2	1.2D+1.0Wo (3...	Yes	Y		1	1.2	39	1.2	4	1	42	1							
3	1.2D+1.0Wo (6...	Yes	Y		1	1.2	39	1.2	5	1	43	1							
4	1.2D+1.0Wo (9...	Yes	Y		1	1.2	39	1.2	6	1	44	1							
5	1.2D+1.0Wo (1...	Yes	Y		1	1.2	39	1.2	7	1	45	1							
6	1.2D+1.0Wo (1...	Yes	Y		1	1.2	39	1.2	8	1	46	1							
7	1.2D+1.0Wo (1...	Yes	Y		1	1.2	39	1.2	9	1	47	1							
8	1.2D+1.0Wo (2...	Yes	Y		1	1.2	39	1.2	10	1	48	1							
9	1.2D+1.0Wo (2...	Yes	Y		1	1.2	39	1.2	11	1	49	1							
10	1.2D+1.0Wo (2...	Yes	Y		1	1.2	39	1.2	12	1	50	1							
11	1.2D+1.0Wo (3...	Yes	Y		1	1.2	39	1.2	13	1	51	1							
12	1.2D+1.0Wo (3...	Yes	Y		1	1.2	39	1.2	14	1	52	1							
13	1.2D + 1.0Di + ...	Yes	Y		1	1.2	39	1.2	2	1	40	1	15	1	53	1			
14	1.2D + 1.0Di + ...	Yes	Y		1	1.2	39	1.2	2	1	40	1	16	1	54	1			
15	1.2D + 1.0Di + ...	Yes	Y		1	1.2	39	1.2	2	1	40	1	17	1	55	1			
16	1.2D + 1.0Di + ...	Yes	Y		1	1.2	39	1.2	2	1	40	1	18	1	56	1			
17	1.2D + 1.0Di + ...	Yes	Y		1	1.2	39	1.2	2	1	40	1	19	1	57	1			
18	1.2D + 1.0Di + ...	Yes	Y		1	1.2	39	1.2	2	1	40	1	20	1	58	1			



RISA-3D Version 17.0.4 [\\.\...\Rev. 0\RISA\468473-VZW MT LOT A H.r3d] Page 3

Joint Coordinates and Temperatures (Continued)

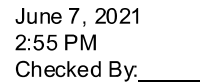
	Label	X [ft]	Y [ft]	Z [ft]	Temp [F]	Detach From Diap...
67	N69	6.806637	-0.083333	-2.867382	0	
68	N70	9.423144	4.583333	-6.899304	0	
69	N71	7.023144	4.583333	-2.742382	0	
70	N72	9.423144	-0.083333	-6.899304	0	
71	N73	7.023144	-0.083333	-2.742382	0	
72	N73A	11.931397	3.583333	-2.679882	0	
73	N73B	7.083333	4.583333	1.677083	0	
74	N74	-0.416667	4.583333	1.677083	0	
75	N75	14.583333	4.583333	1.677083	0	
76	N76	14	4.583333	1.677083	0	
77	N77	14	4.583333	1.927083	0	
78	N78	8.0833	4.583333	1.677083	0	
79	N79	8.0833	4.583333	1.927083	0	
80	N80	4.083333	4.583333	1.677083	0	
81	N81	4.083333	4.583333	1.927083	0	
82	N82	0.166667	4.583333	1.677083	0	
83	N83	0.166667	4.583333	1.927083	0	
84	N84	7.131397	7.083333	-2.679882	0	
85	N85	11.083333	4.583333	1.677083	0	
86	N86	3.083333	4.583333	1.677083	0	
87	N97	7.131397	-2.583367	-2.679882	0	
88	N98	10.083333	0.916633	1.177083	0	
89	N99	4.083333	0.916633	1.177083	0	
90	N90	12.139667	0.916633	1.177083	0	
91	N92	14.083333	1.617589	1.308506	0	
92	N93	11.931397	1.616633	-2.679882	0	

Hot Rolled Steel Section Sets

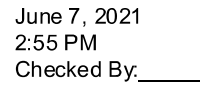
	Label	Shape	Type	Design List	Material	Design Rul...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Standoff HSS	HSS2.5X2...	Beam	Tube	A500 Gr. B ...	Typical	1.97	1.63	1.63	2.79
2	Mast Pipe	PIPE 4.0	Column	Pipe	A53 Gr. B	Typical	2.96	6.82	6.82	13.6
3	Standoff Pipe	PIPE 4.0	Beam	Pipe	A53 Gr. B	Typical	2.96	6.82	6.82	13.6
4	Standoff/Face Braci...	PIPE 2.0	Column	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
5	Face Horizontal	PIPE 2.0	Beam	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
6	Mount Pipe	PIPE 2.0	Column	Pipe	A53 Gr. B	Typical	1.02	.627	.627	1.25
7	Dual Antenna	PIPE 2.5	Column	Pipe	A53 Gr. B	Typical	1.61	1.45	1.45	2.89
8	Stabilizer	PIPE 2.5	Beam	Pipe	A53 Gr. B	Typical	1.61	1.45	1.45	2.89
9	Connection Plate	PL1/2x2	Beam	RECT	A36 Gr.36	Typical	1	.021	.333	.07
10	Proposed Face Hori...	PIPE 2.5	Beam	RECT	A53 Gr. B	Typical	1.61	1.45	1.45	2.89
11	Proposed V-Bracing	L2.5x2.5x4	Beam	RECT	A36 Gr.36	Typical	1.19	.692	.692	.026

Hot Rolled Steel Properties

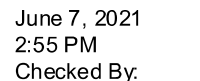
	Label	E [ksi]	G [ksi]	Nu	Therm (/1E...	Density[k/ft...	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A36 Gr.36	29000	11154	.3	.65	.49	36	1.5	58	1.2
2	A53 Gr. B	29000	11154	.3	.65	.49	35	1.5	60	1.2
3	A572 Gr.50	29000	11154	.3	.65	.49	50	1.1	65	1.1
4	A992	29000	11154	.3	.65	.49	50	1.1	65	1.1
5	A500 Gr. B 42	29000	11154	.3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



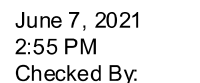
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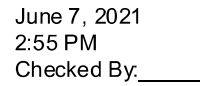


Member Point Loads (BLC 3 : Antenna Wo (0 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
18	MP3A	Mx	-.019	4
19	MP2A	X	0	5
20	MP2A	Z	-70.635	5
21	MP2A	Mx	0	5
22	MP3A	X	0	5
23	MP3A	Z	-70.635	5
24	MP3A	Mx	0	5
25	M13	X	0	1.5
26	M13	Z	-94.759	1.5
27	M13	Mx	0	1.5
28	MP1A	X	0	1.5
29	MP1A	Z	-49.293	1.5
30	MP1A	Mx	0	1.5
31	MP1A	X	0	4.5
32	MP1A	Z	-49.293	4.5
33	MP1A	Mx	0	4.5
34	MP4A	X	0	1.5
35	MP4A	Z	-49.293	1.5
36	MP4A	Mx	0	1.5
37	MP4A	X	0	4.5
38	MP4A	Z	-49.293	4.5
39	MP4A	Mx	0	4.5

Member Point Loads (BLC 4 : Antenna Wo (30 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	75.044	.5
2	MP2A	Z	-129.981	.5
3	MP2A	Mx	-.113	.5
4	MP2A	X	75.044	5.5
5	MP2A	Z	-129.981	5.5
6	MP2A	Mx	-.113	5.5
7	MP2A	X	75.044	.5
8	MP2A	Z	-129.981	.5
9	MP2A	Mx	.038	.5
10	MP2A	X	75.044	5.5
11	MP2A	Z	-129.981	5.5
12	MP2A	Mx	.038	5.5
13	MP3A	X	24.127	2
14	MP3A	Z	-41.79	2
15	MP3A	Mx	-.021	2
16	MP3A	X	24.127	4
17	MP3A	Z	-41.79	4
18	MP3A	Mx	-.021	4
19	MP2A	X	32.39	5
20	MP2A	Z	-56.101	5
21	MP2A	Mx	.016	5
22	MP3A	X	31.269	5
23	MP3A	Z	-54.159	5
24	MP3A	Mx	.016	5
25	M13	X	53.429	1.5
26	M13	Z	-92.542	1.5

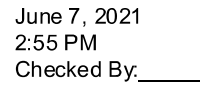
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Member Point Loads (BLC 7 : Antenna Wo (120 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
3	MP2A	Mx	-.02	.5
4	MP2A	X	123.34	5.5
5	MP2A	Z	71.21	5.5
6	MP2A	Mx	-.02	5.5
7	MP2A	X	123.34	.5
8	MP2A	Z	71.21	.5
9	MP2A	Mx	-.103	.5
10	MP2A	X	123.34	5.5
11	MP2A	Z	71.21	5.5
12	MP2A	Mx	-.103	5.5
13	MP3A	X	65.179	2
14	MP3A	Z	37.631	2
15	MP3A	Mx	-.019	2
16	MP3A	X	65.179	4
17	MP3A	Z	37.631	4
18	MP3A	Mx	-.019	4
19	MP2A	X	45.96	5
20	MP2A	Z	26.535	5
21	MP2A	Mx	.023	5
22	MP3A	X	40.133	5
23	MP3A	Z	23.171	5
24	MP3A	Mx	.02	5
25	M13	X	113.5	1.5
26	M13	Z	65.529	1.5
27	M13	Mx	0	1.5
28	MP1A	X	76.9	1.5
29	MP1A	Z	44.398	1.5
30	MP1A	Mx	-.038	1.5
31	MP1A	X	76.9	4.5
32	MP1A	Z	44.398	4.5
33	MP1A	Mx	-.038	4.5
34	MP4A	X	76.9	1.5
35	MP4A	Z	44.398	1.5
36	MP4A	Mx	-.038	1.5
37	MP4A	X	76.9	4.5
38	MP4A	Z	44.398	4.5
39	MP4A	Mx	-.038	4.5

Member Point Loads (BLC 8 : Antenna Wo (150 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	75.044	.5
2	MP2A	Z	129.981	.5
3	MP2A	Mx	.038	.5
4	MP2A	X	75.044	5.5
5	MP2A	Z	129.981	5.5
6	MP2A	Mx	.038	5.5
7	MP2A	X	75.044	.5
8	MP2A	Z	129.981	.5
9	MP2A	Mx	-.113	.5
10	MP2A	X	75.044	5.5
11	MP2A	Z	129.981	5.5

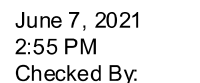


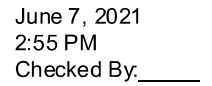
Member Point Loads (BLC 9 : Antenna Wo (180 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
21	MP2A	Mx	0	5
22	MP3A	X	0	5
23	MP3A	Z	70.635	5
24	MP3A	Mx	0	5
25	M13	X	0	1.5
26	M13	Z	94.759	1.5
27	M13	Mx	0	1.5
28	MP1A	X	0	1.5
29	MP1A	Z	49.293	1.5
30	MP1A	Mx	0	1.5
31	MP1A	X	0	4.5
32	MP1A	Z	49.293	4.5
33	MP1A	Mx	0	4.5
34	MP4A	X	0	1.5
35	MP4A	Z	49.293	1.5
36	MP4A	Mx	0	1.5
37	MP4A	X	0	4.5
38	MP4A	Z	49.293	4.5
39	MP4A	Mx	0	4.5

Member Point Loads (BLC 10 : Antenna Wo (210 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-75.044	.5
2	MP2A	Z	129.981	.5
3	MP2A	Mx	.113	.5
4	MP2A	X	-75.044	5.5
5	MP2A	Z	129.981	5.5
6	MP2A	Mx	.113	5.5
7	MP2A	X	-75.044	.5
8	MP2A	Z	129.981	.5
9	MP2A	Mx	-.038	.5
10	MP2A	X	-75.044	5.5
11	MP2A	Z	129.981	5.5
12	MP2A	Mx	-.038	5.5
13	MP3A	X	-24.127	2
14	MP3A	Z	41.79	2
15	MP3A	Mx	.021	2
16	MP3A	X	-24.127	4
17	MP3A	Z	41.79	4
18	MP3A	Mx	.021	4
19	MP2A	X	-32.39	5
20	MP2A	Z	56.101	5
21	MP2A	Mx	-.016	5
22	MP3A	X	-31.269	5
23	MP3A	Z	54.159	5
24	MP3A	Mx	-.016	5
25	M13	X	-53.429	1.5
26	M13	Z	92.542	1.5
27	M13	Mx	0	1.5
28	MP1A	X	-31.23	1.5
29	MP1A	Z	54.093	1.5





	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
39	MP4A	Mx	.038	4.5

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	-138.587	.5
2	MP2A	Z	0	.5
3	MP2A	Mx	.069	.5
4	MP2A	X	-138.587	5.5
5	MP2A	Z	0	5.5
6	MP2A	Mx	.069	5.5
7	MP2A	X	-138.587	.5
8	MP2A	Z	0	.5
9	MP2A	Mx	.069	.5
10	MP2A	X	-138.587	5.5
11	MP2A	Z	0	5.5
12	MP2A	Mx	.069	5.5
13	MP3A	X	-48.255	2
14	MP3A	Z	0	2
15	MP3A	Mx	.021	2
16	MP3A	X	-48.255	4
17	MP3A	Z	0	4
18	MP3A	Mx	.021	4
19	MP2A	X	-47.216	5
20	MP2A	Z	0	5
21	MP2A	Mx	-.024	5
22	MP3A	X	-38.245	5
23	MP3A	Z	0	5
24	MP3A	Mx	-.019	5
25	M13	X	-143.158	1.5
26	M13	Z	0	1.5
27	M13	Mx	0	1.5
28	MP1A	X	-101.964	1.5
29	MP1A	Z	0	1.5
30	MP1A	Mx	.051	1.5
31	MP1A	X	-101.964	4.5
32	MP1A	Z	0	4.5
33	MP1A	Mx	.051	4.5
34	MP4A	X	-101.964	1.5
35	MP4A	Z	0	1.5
36	MP4A	Mx	.051	1.5
37	MP4A	X	-101.964	4.5
38	MP4A	Z	0	4.5
39	MP4A	Mx	.051	4.5

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-123.34	.5
2	MP2A	Z	-71.21	.5
3	MP2A	Mx	.02	.5
4	MP2A	X	-123.34	5.5
5	MP2A	Z	-71.21	5.5

Member Point Loads (BLC 13 : Antenna Wo (300 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
6	MP2A	Mx	.02	5.5
7	MP2A	X	-123.34	.5
8	MP2A	Z	-71.21	.5
9	MP2A	Mx	.103	.5
10	MP2A	X	-123.34	5.5
11	MP2A	Z	-71.21	5.5
12	MP2A	Mx	.103	5.5
13	MP3A	X	-65.179	2
14	MP3A	Z	-37.631	2
15	MP3A	Mx	.019	2
16	MP3A	X	-65.179	4
17	MP3A	Z	-37.631	4
18	MP3A	Mx	.019	4
19	MP2A	X	-45.96	5
20	MP2A	Z	-26.535	5
21	MP2A	Mx	-.023	5
22	MP3A	X	-40.133	5
23	MP3A	Z	-23.171	5
24	MP3A	Mx	-.02	5
25	M13	X	-113.5	1.5
26	M13	Z	-65.529	1.5
27	M13	Mx	0	1.5
28	MP1A	X	-76.9	1.5
29	MP1A	Z	-44.398	1.5
30	MP1A	Mx	.038	1.5
31	MP1A	X	-76.9	4.5
32	MP1A	Z	-44.398	4.5
33	MP1A	Mx	.038	4.5
34	MP4A	X	-76.9	1.5
35	MP4A	Z	-44.398	1.5
36	MP4A	Mx	.038	1.5
37	MP4A	X	-76.9	4.5
38	MP4A	Z	-44.398	4.5
39	MP4A	Mx	.038	4.5

Member Point Loads (BLC 14 : Antenna Wo (330 Deg))

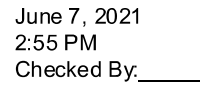
	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-75.044	.5
2	MP2A	Z	-129.981	.5
3	MP2A	Mx	-.038	.5
4	MP2A	X	-75.044	5.5
5	MP2A	Z	-129.981	5.5
6	MP2A	Mx	-.038	5.5
7	MP2A	X	-75.044	.5
8	MP2A	Z	-129.981	.5
9	MP2A	Mx	.113	.5
10	MP2A	X	-75.044	5.5
11	MP2A	Z	-129.981	5.5
12	MP2A	Mx	.113	5.5
13	MP3A	X	-44.383	2
14	MP3A	Z	-76.873	2

Member Point Loads (BLC 14 : Antenna Wo (330 Deg)) (Continued)

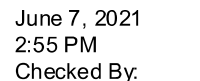
	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
15	MP3A	Mx	0	2
16	MP3A	X	-44.383	4
17	MP3A	Z	-76.873	4
18	MP3A	Mx	0	4
19	MP2A	X	-32.39	5
20	MP2A	Z	-56.101	5
21	MP2A	Mx	-.016	5
22	MP3A	X	-31.269	5
23	MP3A	Z	-54.159	5
24	MP3A	Mx	-.016	5
25	M13	X	-53.429	1.5
26	M13	Z	-92.542	1.5
27	M13	Mx	0	1.5
28	MP1A	X	-31.23	1.5
29	MP1A	Z	-54.093	1.5
30	MP1A	Mx	.016	1.5
31	MP1A	X	-31.23	4.5
32	MP1A	Z	-54.093	4.5
33	MP1A	Mx	.016	4.5
34	MP4A	X	-31.23	1.5
35	MP4A	Z	-54.093	1.5
36	MP4A	Mx	.016	1.5
37	MP4A	X	-31.23	4.5
38	MP4A	Z	-54.093	4.5
39	MP4A	Mx	.016	4.5

Member Point Loads (BLC 15 : Antenna Wi (0 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft, %]
1	MP2A	X	0	.5
2	MP2A	Z	-20.911	.5
3	MP2A	Mx	-.012	.5
4	MP2A	X	0	5.5
5	MP2A	Z	-20.911	5.5
6	MP2A	Mx	-.012	5.5
7	MP2A	X	0	.5
8	MP2A	Z	-20.911	.5
9	MP2A	Mx	.012	.5
10	MP2A	X	0	5.5
11	MP2A	Z	-20.911	5.5
12	MP2A	Mx	.012	5.5
13	MP3A	X	0	2
14	MP3A	Z	-10.593	2
15	MP3A	Mx	-.003	2
16	MP3A	X	0	4
17	MP3A	Z	-10.593	4
18	MP3A	Mx	-.003	4
19	MP2A	X	0	5
20	MP2A	Z	-10.43	5
21	MP2A	Mx	0	5
22	MP3A	X	0	5
23	MP3A	Z	-10.43	5



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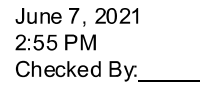


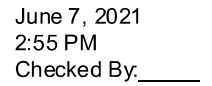
Member Point Loads (BLC 18 : Antenna Wi (90 Deg))

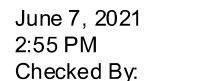
	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	18.959	.5
2	MP2A	Z	0	.5
3	MP2A	Mx	-.009	.5
4	MP2A	X	18.959	5.5
5	MP2A	Z	0	5.5
6	MP2A	Mx	-.009	5.5
7	MP2A	X	18.959	.5
8	MP2A	Z	0	.5
9	MP2A	Mx	-.009	.5
10	MP2A	X	18.959	5.5
11	MP2A	Z	0	5.5
12	MP2A	Mx	-.009	5.5
13	MP3A	X	7.047	2
14	MP3A	Z	0	2
15	MP3A	Mx	-.003	2
16	MP3A	X	7.047	4
17	MP3A	Z	0	4
18	MP3A	Mx	-.003	4
19	MP2A	X	7.259	5
20	MP2A	Z	0	5
21	MP2A	Mx	.004	5
22	MP3A	X	6.054	5
23	MP3A	Z	0	5
24	MP3A	Mx	.003	5
25	M13	X	20.067	1.5
26	M13	Z	0	1.5
27	M13	Mx	0	1.5
28	MP1A	X	14.076	1.5
29	MP1A	Z	0	1.5
30	MP1A	Mx	-.007	1.5
31	MP1A	X	14.076	4.5
32	MP1A	Z	0	4.5
33	MP1A	Mx	-.007	4.5
34	MP4A	X	14.076	1.5
35	MP4A	Z	0	1.5
36	MP4A	Mx	-.007	1.5
37	MP4A	X	14.076	4.5
38	MP4A	Z	0	4.5
39	MP4A	Mx	-.007	4.5

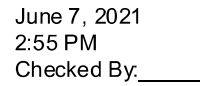
Member Point Loads (BLC 19 : Antenna Wi (120 Deg))

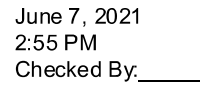
	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	16.842	.5
2	MP2A	Z	9.724	.5
3	MP2A	Mx	-.003	.5
4	MP2A	X	16.842	5.5
5	MP2A	Z	9.724	5.5
6	MP2A	Mx	-.003	5.5
7	MP2A	X	16.842	.5
8	MP2A	Z	9.724	.5
9	MP2A	Mx	-.014	.5









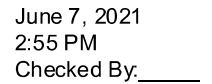


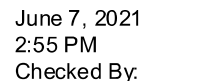
Member Point Loads (BLC 25 : Antenna Wi (300 Deg)) (Continued)

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
13	MP3A	X	-9.174	2
14	MP3A	Z	-5.296	2
15	MP3A	Mx	.003	2
16	MP3A	X	-9.174	4
17	MP3A	Z	-5.296	4
18	MP3A	Mx	.003	4
19	MP2A	X	-6.973	5
20	MP2A	Z	-4.026	5
21	MP2A	Mx	-.003	5
22	MP3A	X	-6.191	5
23	MP3A	Z	-3.574	5
24	MP3A	Mx	-.003	5
25	M13	X	-16.007	1.5
26	M13	Z	-9.242	1.5
27	M13	Mx	0	1.5
28	MP1A	X	-10.739	1.5
29	MP1A	Z	-6.2	1.5
30	MP1A	Mx	.005	1.5
31	MP1A	X	-10.739	4.5
32	MP1A	Z	-6.2	4.5
33	MP1A	Mx	.005	4.5
34	MP4A	X	-10.739	1.5
35	MP4A	Z	-6.2	1.5
36	MP4A	Mx	.005	1.5
37	MP4A	X	-10.739	4.5
38	MP4A	Z	-6.2	4.5
39	MP4A	Mx	.005	4.5

Member Point Loads (BLC 26 : Antenna Wi (330 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	-10.212	.5
2	MP2A	Z	-17.687	.5
3	MP2A	Mx	-.005	.5
4	MP2A	X	-10.212	5.5
5	MP2A	Z	-17.687	5.5
6	MP2A	Mx	-.005	5.5
7	MP2A	X	-10.212	.5
8	MP2A	Z	-17.687	.5
9	MP2A	Mx	.015	.5
10	MP2A	X	-10.212	5.5
11	MP2A	Z	-17.687	5.5
12	MP2A	Mx	.015	5.5
13	MP3A	X	-6.183	2
14	MP3A	Z	-10.709	2
15	MP3A	Mx	0	2
16	MP3A	X	-6.183	4
17	MP3A	Z	-10.709	4
18	MP3A	Mx	0	4
19	MP2A	X	-4.819	5
20	MP2A	Z	-8.346	5
21	MP2A	Mx	-.002	5

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	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
31	MP1A	X	0	4.5
32	MP1A	Z	-3.414	4.5
33	MP1A	Mx	0	4.5
34	MP4A	X	0	1.5
35	MP4A	Z	-3.414	1.5
36	MP4A	Mx	0	1.5
37	MP4A	X	0	4.5
38	MP4A	Z	-3.414	4.5
39	MP4A	Mx	0	4.5

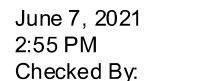
	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	5.197	.5
2	MP2A	Z	-9.001	.5
3	MP2A	Mx	-.008	.5
4	MP2A	X	5.197	5.5
5	MP2A	Z	-9.001	5.5
6	MP2A	Mx	-.008	5.5
7	MP2A	X	5.197	.5
8	MP2A	Z	-9.001	.5
9	MP2A	Mx	.003	.5
10	MP2A	X	5.197	5.5
11	MP2A	Z	-9.001	5.5
12	MP2A	Mx	.003	5.5
13	MP3A	X	1.671	2
14	MP3A	Z	-2.894	2
15	MP3A	Mx	-.001	2
16	MP3A	X	1.671	4
17	MP3A	Z	-2.894	4
18	MP3A	Mx	-.001	4
19	MP2A	X	2.243	5
20	MP2A	Z	-3.885	5
21	MP2A	Mx	.001	5
22	MP3A	X	2.165	5
23	MP3A	Z	-3.751	5
24	MP3A	Mx	.001	5
25	M13	X	3.7	1.5
26	M13	Z	-6.409	1.5
27	M13	Mx	0	1.5
28	MP1A	X	2.163	1.5
29	MP1A	Z	-3.746	1.5
30	MP1A	Mx	-.001	1.5
31	MP1A	X	2.163	4.5
32	MP1A	Z	-3.746	4.5
33	MP1A	Mx	-.001	4.5
34	MP4A	X	2.163	1.5
35	MP4A	Z	-3.746	1.5
36	MP4A	Mx	-.001	1.5
37	MP4A	X	2.163	4.5
38	MP4A	Z	-3.746	4.5
39	MP4A	Mx	-.001	4.5

Member Point Loads (BLC 29 : Antenna Wm (60 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	8.542	.5
2	MP2A	Z	-4.931	.5
3	MP2A	Mx	-.007	.5
4	MP2A	X	8.542	5.5
5	MP2A	Z	-4.931	5.5
6	MP2A	Mx	-.007	5.5
7	MP2A	X	8.542	.5
8	MP2A	Z	-4.931	.5
9	MP2A	Mx	-.001	.5
10	MP2A	X	8.542	5.5
11	MP2A	Z	-4.931	5.5
12	MP2A	Mx	-.001	5.5
13	MP3A	X	2.084	2
14	MP3A	Z	-1.203	2
15	MP3A	Mx	-.001	2
16	MP3A	X	2.084	4
17	MP3A	Z	-1.203	4
18	MP3A	Mx	-.001	4
19	MP2A	X	3.183	5
20	MP2A	Z	-1.838	5
21	MP2A	Mx	.002	5
22	MP3A	X	2.779	5
23	MP3A	Z	-1.605	5
24	MP3A	Mx	.001	5
25	M13	X	7.86	1.5
26	M13	Z	-4.538	1.5
27	M13	Mx	0	1.5
28	MP1A	X	5.325	1.5
29	MP1A	Z	-3.075	1.5
30	MP1A	Mx	-.003	1.5
31	MP1A	X	5.325	4.5
32	MP1A	Z	-3.075	4.5
33	MP1A	Mx	-.003	4.5
34	MP4A	X	5.325	1.5
35	MP4A	Z	-3.075	1.5
36	MP4A	Mx	-.003	1.5
37	MP4A	X	5.325	4.5
38	MP4A	Z	-3.075	4.5
39	MP4A	Mx	-.003	4.5

Member Point Loads (BLC 30 : Antenna Wm (90 Deg))

	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	9.597	.5
2	MP2A	Z	0	.5
3	MP2A	Mx	-.005	.5
4	MP2A	X	9.597	5.5
5	MP2A	Z	0	5.5
6	MP2A	Mx	-.005	5.5
7	MP2A	X	9.597	.5
8	MP2A	Z	0	.5
9	MP2A	Mx	-.005	.5

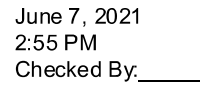
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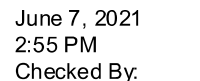
Member Point Loads (BLC 31 : Antenna Wm (120 Deg)) (Continued)

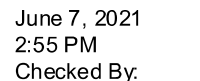
	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
19	MP2A	X	3.183	5
20	MP2A	Z	1.838	5
21	MP2A	Mx	.002	5
22	MP3A	X	2.779	5
23	MP3A	Z	1.605	5
24	MP3A	Mx	.001	5
25	M13	X	7.86	1.5
26	M13	Z	4.538	1.5
27	M13	Mx	0	1.5
28	MP1A	X	5.325	1.5
29	MP1A	Z	3.075	1.5
30	MP1A	Mx	-.003	1.5
31	MP1A	X	5.325	4.5
32	MP1A	Z	3.075	4.5
33	MP1A	Mx	-.003	4.5
34	MP4A	X	5.325	1.5
35	MP4A	Z	3.075	1.5
36	MP4A	Mx	-.003	1.5
37	MP4A	X	5.325	4.5
38	MP4A	Z	3.075	4.5
39	MP4A	Mx	-.003	4.5

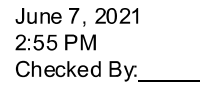
Member Point Loads (BLC 32 : Antenna Wm (150 Deg))

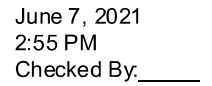
	Member Label	Direction	Magnitude[lb,k-ft]	Location[ft,%]
1	MP2A	X	5.197	.5
2	MP2A	Z	9.001	.5
3	MP2A	Mx	.003	.5
4	MP2A	X	5.197	5.5
5	MP2A	Z	9.001	5.5
6	MP2A	Mx	.003	5.5
7	MP2A	X	5.197	.5
8	MP2A	Z	9.001	.5
9	MP2A	Mx	-.008	.5
10	MP2A	X	5.197	5.5
11	MP2A	Z	9.001	5.5
12	MP2A	Mx	-.008	5.5
13	MP3A	X	3.074	2
14	MP3A	Z	5.324	2
15	MP3A	Mx	0	2
16	MP3A	X	3.074	4
17	MP3A	Z	5.324	4
18	MP3A	Mx	0	4
19	MP2A	X	2.243	5
20	MP2A	Z	3.885	5
21	MP2A	Mx	.001	5
22	MP3A	X	2.165	5
23	MP3A	Z	3.751	5
24	MP3A	Mx	.001	5
25	M13	X	3.7	1.5
26	M13	Z	6.409	1.5
27	M13	Mx	0	1.5

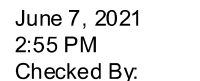
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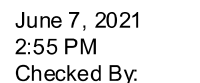










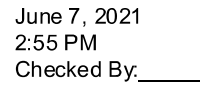


Member Distributed Loads (BLC 42 : Structure Wo (30 Deg)) (Continued)

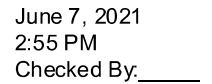
	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
21	M17	X	3.364	3.364	0	%100
22	M17	Z	-5.827	-5.827	0	%100
23	M18	X	3.364	3.364	0	%100
24	M18	Z	-5.827	-5.827	0	%100
25	M19	X	3.457	3.457	0	%100
26	M19	Z	-5.988	-5.988	0	%100
27	M20	X	3.457	3.457	0	%100
28	M20	Z	-5.988	-5.988	0	%100
29	M21	X	3.457	3.457	0	%100
30	M21	Z	-5.988	-5.988	0	%100
31	M22	X	3.457	3.457	0	%100
32	M22	Z	-5.988	-5.988	0	%100
33	M23	X	3.457	3.457	0	%100
34	M23	Z	-5.988	-5.988	0	%100
35	M24	X	3.457	3.457	0	%100
36	M24	Z	-5.988	-5.988	0	%100
37	MP1A	X	4.485	4.485	0	%100
38	MP1A	Z	-7.769	-7.769	0	%100
39	MP2A	X	5.43	5.43	0	%100
40	MP2A	Z	-9.405	-9.405	0	%100
41	MP3A	X	4.485	4.485	0	%100
42	MP3A	Z	-7.769	-7.769	0	%100
43	MP4A	X	4.485	4.485	0	%100
44	MP4A	Z	-7.769	-7.769	0	%100
45	M33	X	1.415	1.415	0	%100
46	M33	Z	-2.451	-2.451	0	%100
47	M34	X	3.777	3.777	0	%100
48	M34	Z	-6.542	-6.542	0	%100
49	M35	X	3.777	3.777	0	%100
50	M35	Z	-6.542	-6.542	0	%100
51	M36	X	3.777	3.777	0	%100
52	M36	Z	-6.542	-6.542	0	%100
53	M37	X	3.777	3.777	0	%100
54	M37	Z	-6.542	-6.542	0	%100
55	M42	X	3.364	3.364	0	%100
56	M42	Z	-5.827	-5.827	0	%100
57	M47	X	1.515	1.515	0	%100
58	M47	Z	-2.624	-2.624	0	%100
59	M48	X	7.247	7.247	0	%100
60	M48	Z	-12.552	-12.552	0	%100
61	M54	X	2.756	2.756	0	%100
62	M54	Z	-4.774	-4.774	0	%100
63	M55	X	7.106	7.106	0	%100
64	M55	Z	-12.308	-12.308	0	%100

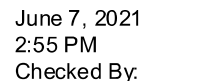
Member Distributed Loads (BLC 43 : Structure Wo (60 Deg))

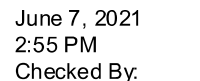
	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M3	X	2.13	2.13	0	%100
2	M3	Z	-1.23	-1.23	0	%100
3	M6	X	2.13	2.13	0	%100
4	M6	Z	-1.23	-1.23	0	%100

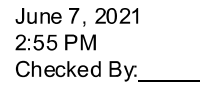


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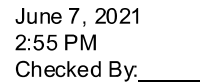
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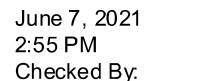






	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
9	M11	X	1.352	1.352	0	%100
10	M11	Z	2.342	2.342	0	%100
11	M12	X	3.528	3.528	0	%100
12	M12	Z	6.111	6.111	0	%100
13	M13	X	3.528	3.528	0	%100
14	M13	Z	6.111	6.111	0	%100
15	M14	X	3.528	3.528	0	%100
16	M14	Z	6.111	6.111	0	%100
17	M15	X	3.364	3.364	0	%100
18	M15	Z	5.827	5.827	0	%100
19	M16	X	3.364	3.364	0	%100
20	M16	Z	5.827	5.827	0	%100
21	M17	X	3.364	3.364	0	%100
22	M17	Z	5.827	5.827	0	%100
23	M18	X	3.364	3.364	0	%100
24	M18	Z	5.827	5.827	0	%100
25	M19	X	3.457	3.457	0	%100
26	M19	Z	5.988	5.988	0	%100
27	M20	X	3.457	3.457	0	%100
28	M20	Z	5.988	5.988	0	%100
29	M21	X	3.457	3.457	0	%100
30	M21	Z	5.988	5.988	0	%100
31	M22	X	3.457	3.457	0	%100
32	M22	Z	5.988	5.988	0	%100
33	M23	X	3.457	3.457	0	%100
34	M23	Z	5.988	5.988	0	%100
35	M24	X	3.457	3.457	0	%100
36	M24	Z	5.988	5.988	0	%100
37	MP1A	X	4.485	4.485	0	%100
38	MP1A	Z	7.769	7.769	0	%100
39	MP2A	X	5.43	5.43	0	%100
40	MP2A	Z	9.405	9.405	0	%100
41	MP3A	X	4.485	4.485	0	%100
42	MP3A	Z	7.769	7.769	0	%100
43	MP4A	X	4.485	4.485	0	%100
44	MP4A	Z	7.769	7.769	0	%100
45	M33	X	.972	.972	0	%100
46	M33	Z	1.684	1.684	0	%100
47	M34	X	.944	.944	0	%100
48	M34	Z	1.636	1.636	0	%100
49	M35	X	.944	.944	0	%100
50	M35	Z	1.636	1.636	0	%100
51	M36	X	.944	.944	0	%100
52	M36	Z	1.636	1.636	0	%100
53	M37	X	.944	.944	0	%100
54	M37	Z	1.636	1.636	0	%100
55	M42	X	3.364	3.364	0	%100
56	M42	Z	5.827	5.827	0	%100
57	M47	X	7.291	7.291	0	%100
58	M47	Z	12.628	12.628	0	%100
59	M48	X	1.502	1.502	0	%100
60	M48	Z	2.602	2.602	0	%100

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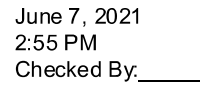


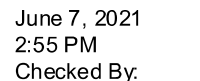
Member Distributed Loads (BLC 48 : Structure Wo (210 Deg)) (Continued)

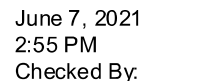
	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
29	M21	X	-3.457	-3.457	0	%100
30	M21	Z	5.988	5.988	0	%100
31	M22	X	-3.457	-3.457	0	%100
32	M22	Z	5.988	5.988	0	%100
33	M23	X	-3.457	-3.457	0	%100
34	M23	Z	5.988	5.988	0	%100
35	M24	X	-3.457	-3.457	0	%100
36	M24	Z	5.988	5.988	0	%100
37	MP1A	X	-4.485	-4.485	0	%100
38	MP1A	Z	7.769	7.769	0	%100
39	MP2A	X	-5.43	-5.43	0	%100
40	MP2A	Z	9.405	9.405	0	%100
41	MP3A	X	-4.485	-4.485	0	%100
42	MP3A	Z	7.769	7.769	0	%100
43	MP4A	X	-4.485	-4.485	0	%100
44	MP4A	Z	7.769	7.769	0	%100
45	M33	X	-1.415	-1.415	0	%100
46	M33	Z	2.451	2.451	0	%100
47	M34	X	-3.777	-3.777	0	%100
48	M34	Z	6.542	6.542	0	%100
49	M35	X	-3.777	-3.777	0	%100
50	M35	Z	6.542	6.542	0	%100
51	M36	X	-3.777	-3.777	0	%100
52	M36	Z	6.542	6.542	0	%100
53	M37	X	-3.777	-3.777	0	%100
54	M37	Z	6.542	6.542	0	%100
55	M42	X	-3.364	-3.364	0	%100
56	M42	Z	5.827	5.827	0	%100
57	M47	X	-1.515	-1.515	0	%100
58	M47	Z	2.624	2.624	0	%100
59	M48	X	-7.247	-7.247	0	%100
60	M48	Z	12.552	12.552	0	%100
61	M54	X	-2.756	-2.756	0	%100
62	M54	Z	4.774	4.774	0	%100
63	M55	X	-7.106	-7.106	0	%100
64	M55	Z	12.308	12.308	0	%100

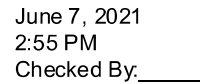
Member Distributed Loads (BLC 49 : Structure Wo (240 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M3	X	-2.13	-2.13	0	%100
2	M3	Z	1.23	1.23	0	%100
3	M6	X	-2.13	-2.13	0	%100
4	M6	Z	1.23	1.23	0	%100
5	M9	X	-10.01	-10.01	0	%100
6	M9	Z	5.779	5.779	0	%100
7	M10	X	-7.177	-7.177	0	%100
8	M10	Z	4.144	4.144	0	%100
9	M11	X	-7.025	-7.025	0	%100
10	M11	Z	4.056	4.056	0	%100
11	M12	X	-6.111	-6.111	0	%100
12	M12	Z	3.528	3.528	0	%100







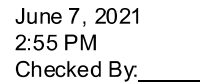
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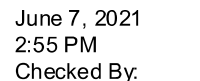
Member Distributed Loads (BLC 52 : Structure Wo (330 Deg)) (Continued)

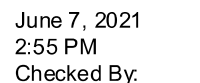
	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
21	M17	X	-3.364	-3.364	0	%100
22	M17	Z	-5.827	-5.827	0	%100
23	M18	X	-3.364	-3.364	0	%100
24	M18	Z	-5.827	-5.827	0	%100
25	M19	X	-3.457	-3.457	0	%100
26	M19	Z	-5.988	-5.988	0	%100
27	M20	X	-3.457	-3.457	0	%100
28	M20	Z	-5.988	-5.988	0	%100
29	M21	X	-3.457	-3.457	0	%100
30	M21	Z	-5.988	-5.988	0	%100
31	M22	X	-3.457	-3.457	0	%100
32	M22	Z	-5.988	-5.988	0	%100
33	M23	X	-3.457	-3.457	0	%100
34	M23	Z	-5.988	-5.988	0	%100
35	M24	X	-3.457	-3.457	0	%100
36	M24	Z	-5.988	-5.988	0	%100
37	MP1A	X	-4.485	-4.485	0	%100
38	MP1A	Z	-7.769	-7.769	0	%100
39	MP2A	X	-5.43	-5.43	0	%100
40	MP2A	Z	-9.405	-9.405	0	%100
41	MP3A	X	-4.485	-4.485	0	%100
42	MP3A	Z	-7.769	-7.769	0	%100
43	MP4A	X	-4.485	-4.485	0	%100
44	MP4A	Z	-7.769	-7.769	0	%100
45	M33	X	-.972	-.972	0	%100
46	M33	Z	-1.684	-1.684	0	%100
47	M34	X	-.944	-.944	0	%100
48	M34	Z	-1.636	-1.636	0	%100
49	M35	X	-.944	-.944	0	%100
50	M35	Z	-1.636	-1.636	0	%100
51	M36	X	-.944	-.944	0	%100
52	M36	Z	-1.636	-1.636	0	%100
53	M37	X	-.944	-.944	0	%100
54	M37	Z	-1.636	-1.636	0	%100
55	M42	X	-3.364	-3.364	0	%100
56	M42	Z	-5.827	-5.827	0	%100
57	M47	X	-7.291	-7.291	0	%100
58	M47	Z	-12.628	-12.628	0	%100
59	M48	X	-1.502	-1.502	0	%100
60	M48	Z	-2.602	-2.602	0	%100
61	M54	X	-7.156	-7.156	0	%100
62	M54	Z	-12.395	-12.395	0	%100
63	M55	X	-2.776	-2.776	0	%100
64	M55	Z	-4.809	-4.809	0	%100

Member Distributed Loads (BLC 53 : Structure Wi (0 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M3	X	0	0	0	%100
2	M3	Z	-.575	-.575	0	%100
3	M6	X	0	0	0	%100
4	M6	Z	-.575	-.575	0	%100

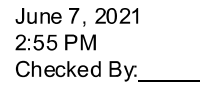
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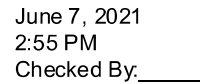


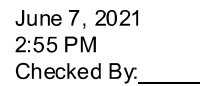


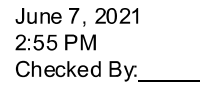
Member Distributed Loads (BLC 56 : Structure Wi (90 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
9	M11	X	2.483	2.483	0	%100
10	M11	Z	0	0	0	%100
11	M12	X	1.729	1.729	0	%100
12	M12	Z	0	0	0	%100
13	M13	X	1.729	1.729	0	%100
14	M13	Z	0	0	0	%100
15	M14	X	1.729	1.729	0	%100
16	M14	Z	0	0	0	%100
17	M15	X	0	0	0	%100
18	M15	Z	0	0	0	%100
19	M16	X	0	0	0	%100
20	M16	Z	0	0	0	%100
21	M17	X	0	0	0	%100
22	M17	Z	0	0	0	%100
23	M18	X	0	0	0	%100
24	M18	Z	0	0	0	%100
25	M19	X	1.738	1.738	0	%100
26	M19	Z	0	0	0	%100
27	M20	X	1.738	1.738	0	%100
28	M20	Z	0	0	0	%100
29	M21	X	1.738	1.738	0	%100
30	M21	Z	0	0	0	%100
31	M22	X	1.738	1.738	0	%100
32	M22	Z	0	0	0	%100
33	M23	X	1.738	1.738	0	%100
34	M23	Z	0	0	0	%100
35	M24	X	1.738	1.738	0	%100
36	M24	Z	0	0	0	%100
37	MP1A	X	2.193	2.193	0	%100
38	MP1A	Z	0	0	0	%100
39	MP2A	X	2.425	2.425	0	%100
40	MP2A	Z	0	0	0	%100
41	MP3A	X	2.193	2.193	0	%100
42	MP3A	Z	0	0	0	%100
43	MP4A	X	2.193	2.193	0	%100
44	MP4A	Z	0	0	0	%100
45	M33	X	2.198	2.198	0	%100
46	M33	Z	0	0	0	%100
47	M34	X	.391	.391	0	%100
48	M34	Z	0	0	0	%100
49	M35	X	.391	.391	0	%100
50	M35	Z	0	0	0	%100
51	M36	X	.391	.391	0	%100
52	M36	Z	0	0	0	%100
53	M37	X	.391	.391	0	%100
54	M37	Z	0	0	0	%100
55	M42	X	0	0	0	%100
56	M42	Z	0	0	0	%100
57	M47	X	1.835	1.835	0	%100
58	M47	Z	0	0	0	%100
59	M48	X	1.869	1.869	0	%100
60	M48	Z	0	0	0	%100

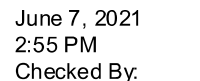
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	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
13	M13	X	0	0	0	%100
14	M13	Z	1.729	1.729	0	%100
15	M14	X	0	0	0	%100
16	M14	Z	1.729	1.729	0	%100
17	M15	X	0	0	0	%100
18	M15	Z	2.193	2.193	0	%100
19	M16	X	0	0	0	%100
20	M16	Z	2.193	2.193	0	%100
21	M17	X	0	0	0	%100
22	M17	Z	2.193	2.193	0	%100
23	M18	X	0	0	0	%100
24	M18	Z	2.193	2.193	0	%100
25	M19	X	0	0	0	%100
26	M19	Z	1.679	1.679	0	%100
27	M20	X	0	0	0	%100
28	M20	Z	1.679	1.679	0	%100
29	M21	X	0	0	0	%100
30	M21	Z	1.679	1.679	0	%100
31	M22	X	0	0	0	%100
32	M22	Z	1.679	1.679	0	%100
33	M23	X	0	0	0	%100
34	M23	Z	1.679	1.679	0	%100
35	M24	X	0	0	0	%100
36	M24	Z	1.679	1.679	0	%100
37	MP1A	X	0	0	0	%100
38	MP1A	Z	2.193	2.193	0	%100
39	MP2A	X	0	0	0	%100
40	MP2A	Z	2.425	2.425	0	%100
41	MP3A	X	0	0	0	%100
42	MP3A	Z	2.193	2.193	0	%100
43	MP4A	X	0	0	0	%100
44	MP4A	Z	2.193	2.193	0	%100
45	M33	X	0	0	0	%100
46	M33	Z	.006	.006	0	%100
47	M34	X	0	0	0	%100
48	M34	Z	1.174	1.174	0	%100
49	M35	X	0	0	0	%100
50	M35	Z	1.174	1.174	0	%100
51	M36	X	0	0	0	%100
52	M36	Z	1.174	1.174	0	%100
53	M37	X	0	0	0	%100
54	M37	Z	1.174	1.174	0	%100
55	M42	X	0	0	0	%100
56	M42	Z	2.193	2.193	0	%100
57	M47	X	0	0	0	%100
58	M47	Z	1.646	1.646	0	%100
59	M48	X	0	0	0	%100
60	M48	Z	1.62	1.62	0	%100
61	M54	X	0	0	0	%100
62	M54	Z	1.79	1.79	0	%100
63	M55	X	0	0	0	%100
64	M55	Z	1.77	1.77	0	%100

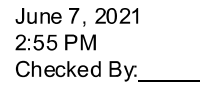


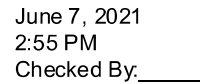
Member Distributed Loads (BLC 62 : Structure Wi (270 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
21	M17	X	0	0	0	%100
22	M17	Z	0	0	0	%100
23	M18	X	0	0	0	%100
24	M18	Z	0	0	0	%100
25	M19	X	-1.738	-1.738	0	%100
26	M19	Z	0	0	0	%100
27	M20	X	-1.738	-1.738	0	%100
28	M20	Z	0	0	0	%100
29	M21	X	-1.738	-1.738	0	%100
30	M21	Z	0	0	0	%100
31	M22	X	-1.738	-1.738	0	%100
32	M22	Z	0	0	0	%100
33	M23	X	-1.738	-1.738	0	%100
34	M23	Z	0	0	0	%100
35	M24	X	-1.738	-1.738	0	%100
36	M24	Z	0	0	0	%100
37	MP1A	X	-2.193	-2.193	0	%100
38	MP1A	Z	0	0	0	%100
39	MP2A	X	-2.425	-2.425	0	%100
40	MP2A	Z	0	0	0	%100
41	MP3A	X	-2.193	-2.193	0	%100
42	MP3A	Z	0	0	0	%100
43	MP4A	X	-2.193	-2.193	0	%100
44	MP4A	Z	0	0	0	%100
45	M33	X	-2.198	-2.198	0	%100
46	M33	Z	0	0	0	%100
47	M34	X	-.391	-.391	0	%100
48	M34	Z	0	0	0	%100
49	M35	X	-.391	-.391	0	%100
50	M35	Z	0	0	0	%100
51	M36	X	-.391	-.391	0	%100
52	M36	Z	0	0	0	%100
53	M37	X	-.391	-.391	0	%100
54	M37	Z	0	0	0	%100
55	M42	X	0	0	0	%100
56	M42	Z	0	0	0	%100
57	M47	X	-1.835	-1.835	0	%100
58	M47	Z	0	0	0	%100
59	M48	X	-1.869	-1.869	0	%100
60	M48	Z	0	0	0	%100
61	M54	X	-2.254	-2.254	0	%100
62	M54	Z	0	0	0	%100
63	M55	X	-2.29	-2.29	0	%100
64	M55	Z	0	0	0	%100

Member Distributed Loads (BLC 63 : Structure Wi (300 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M3	X	-1.991	-1.991	0	%100
2	M3	Z	-1.15	-1.15	0	%100
3	M6	X	-1.991	-1.991	0	%100
4	M6	Z	-1.15	-1.15	0	%100



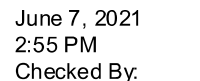
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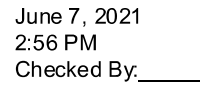
Member Distributed Loads (BLC 65 : Structure Wm (0 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
25	M19	X	0	0	0	%100
26	M19	Z	-.475	-.475	0	%100
27	M20	X	0	0	0	%100
28	M20	Z	-.475	-.475	0	%100
29	M21	X	0	0	0	%100
30	M21	Z	-.475	-.475	0	%100
31	M22	X	0	0	0	%100
32	M22	Z	-.475	-.475	0	%100
33	M23	X	0	0	0	%100
34	M23	Z	-.475	-.475	0	%100
35	M24	X	0	0	0	%100
36	M24	Z	-.475	-.475	0	%100
37	MP1A	X	0	0	0	%100
38	MP1A	Z	-.621	-.621	0	%100
39	MP2A	X	0	0	0	%100
40	MP2A	Z	-.752	-.752	0	%100
41	MP3A	X	0	0	0	%100
42	MP3A	Z	-.621	-.621	0	%100
43	MP4A	X	0	0	0	%100
44	MP4A	Z	-.621	-.621	0	%100
45	M33	X	0	0	0	%100
46	M33	Z	-.002	-.002	0	%100
47	M34	X	0	0	0	%100
48	M34	Z	-.392	-.392	0	%100
49	M35	X	0	0	0	%100
50	M35	Z	-.392	-.392	0	%100
51	M36	X	0	0	0	%100
52	M36	Z	-.392	-.392	0	%100
53	M37	X	0	0	0	%100
54	M37	Z	-.392	-.392	0	%100
55	M42	X	0	0	0	%100
56	M42	Z	-.621	-.621	0	%100
57	M47	X	0	0	0	%100
58	M47	Z	-.593	-.593	0	%100
59	M48	X	0	0	0	%100
60	M48	Z	-.583	-.583	0	%100
61	M54	X	0	0	0	%100
62	M54	Z	-.645	-.645	0	%100
63	M55	X	0	0	0	%100
64	M55	Z	-.638	-.638	0	%100

Member Distributed Loads (BLC 66 : Structure Wm (30 Deg))

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M3	X	0	0	0	%100
2	M3	Z	0	0	0	%100
3	M6	X	0	0	0	%100
4	M6	Z	0	0	0	%100
5	M9	X	.4	.4	0	%100
6	M9	Z	-.693	-.693	0	%100
7	M10	X	.096	.096	0	%100
8	M10	Z	-.166	-.166	0	%100



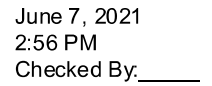
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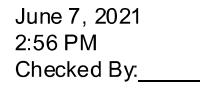
Member Distributed Loads (BLC 68 : Structure Wm (90 Deg)) (Continued)

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
29	M21	X	.491	.491	0	%100
30	M21	Z	0	0	0	%100
31	M22	X	.491	.491	0	%100
32	M22	Z	0	0	0	%100
33	M23	X	.491	.491	0	%100
34	M23	Z	0	0	0	%100
35	M24	X	.491	.491	0	%100
36	M24	Z	0	0	0	%100
37	MP1A	X	.621	.621	0	%100
38	MP1A	Z	0	0	0	%100
39	MP2A	X	.752	.752	0	%100
40	MP2A	Z	0	0	0	%100
41	MP3A	X	.621	.621	0	%100
42	MP3A	Z	0	0	0	%100
43	MP4A	X	.621	.621	0	%100
44	MP4A	Z	0	0	0	%100
45	M33	X	.656	.656	0	%100
46	M33	Z	0	0	0	%100
47	M34	X	.131	.131	0	%100
48	M34	Z	0	0	0	%100
49	M35	X	.131	.131	0	%100
50	M35	Z	0	0	0	%100
51	M36	X	.131	.131	0	%100
52	M36	Z	0	0	0	%100
53	M37	X	.131	.131	0	%100
54	M37	Z	0	0	0	%100
55	M42	X	0	0	0	%100
56	M42	Z	0	0	0	%100
57	M47	X	.661	.661	0	%100
58	M47	Z	0	0	0	%100
59	M48	X	.673	.673	0	%100
60	M48	Z	0	0	0	%100
61	M54	X	.812	.812	0	%100
62	M54	Z	0	0	0	%100
63	M55	X	.825	.825	0	%100
64	M55	Z	0	0	0	%100

Member Distributed Loads (BLC 69 : Structure Wm (120 Deg))

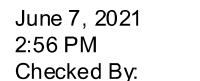
	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft,%]	End Location[ft,%]
1	M3	X	.59	.59	0	%100
2	M3	Z	.341	.341	0	%100
3	M6	X	.59	.59	0	%100
4	M6	Z	.341	.341	0	%100
5	M9	X	.693	.693	0	%100
6	M9	Z	.4	.4	0	%100
7	M10	X	.497	.497	0	%100
8	M10	Z	.287	.287	0	%100
9	M11	X	.486	.486	0	%100
10	M11	Z	.281	.281	0	%100
11	M12	X	.423	.423	0	%100
12	M12	Z	.244	.244	0	%100





	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
53	M37	X	.065	.065	0	%100
54	M37	Z	.113	.113	0	%100
55	M42	X	.233	.233	0	%100
56	M42	Z	.404	.404	0	%100
57	M47	X	.505	.505	0	%100
58	M47	Z	.875	.875	0	%100
59	M48	X	.104	.104	0	%100
60	M48	Z	.18	.18	0	%100
61	M54	X	.496	.496	0	%100
62	M54	Z	.858	.858	0	%100
63	M55	X	.192	.192	0	%100
64	M55	Z	.333	.333	0	%100

	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M3	X	0	0	0	%100
2	M3	Z	.17	.17	0	%100
3	M6	X	0	0	0	%100
4	M6	Z	.17	.17	0	%100
5	M9	X	0	0	0	%100
6	M9	Z	.8	.8	0	%100
7	M10	X	0	0	0	%100
8	M10	Z	0	0	0	%100
9	M11	X	0	0	0	%100
10	M11	Z	0	0	0	%100
11	M12	X	0	0	0	%100
12	M12	Z	.489	.489	0	%100
13	M13	X	0	0	0	%100
14	M13	Z	.489	.489	0	%100
15	M14	X	0	0	0	%100
16	M14	Z	.489	.489	0	%100
17	M15	X	0	0	0	%100
18	M15	Z	.621	.621	0	%100
19	M16	X	0	0	0	%100
20	M16	Z	.621	.621	0	%100
21	M17	X	0	0	0	%100
22	M17	Z	.621	.621	0	%100
23	M18	X	0	0	0	%100
24	M18	Z	.621	.621	0	%100
25	M19	X	0	0	0	%100
26	M19	Z	.475	.475	0	%100
27	M20	X	0	0	0	%100
28	M20	Z	.475	.475	0	%100
29	M21	X	0	0	0	%100
30	M21	Z	.475	.475	0	%100
31	M22	X	0	0	0	%100
32	M22	Z	.475	.475	0	%100
33	M23	X	0	0	0	%100
34	M23	Z	.475	.475	0	%100
35	M24	X	0	0	0	%100
36	M24	Z	.475	.475	0	%100

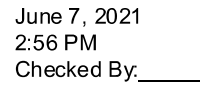


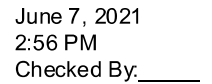
Member Distributed Loads (BLC 72 : Structure Wm (210 Deg)) (Continued)

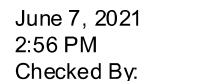
	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
21	M17	X	-.233	-.233	0	%100
22	M17	Z	.404	.404	0	%100
23	M18	X	-.233	-.233	0	%100
24	M18	Z	.404	.404	0	%100
25	M19	X	-.239	-.239	0	%100
26	M19	Z	.415	.415	0	%100
27	M20	X	-.239	-.239	0	%100
28	M20	Z	.415	.415	0	%100
29	M21	X	-.239	-.239	0	%100
30	M21	Z	.415	.415	0	%100
31	M22	X	-.239	-.239	0	%100
32	M22	Z	.415	.415	0	%100
33	M23	X	-.239	-.239	0	%100
34	M23	Z	.415	.415	0	%100
35	M24	X	-.239	-.239	0	%100
36	M24	Z	.415	.415	0	%100
37	MP1A	X	-.311	-.311	0	%100
38	MP1A	Z	.538	.538	0	%100
39	MP2A	X	-.376	-.376	0	%100
40	MP2A	Z	.651	.651	0	%100
41	MP3A	X	-.311	-.311	0	%100
42	MP3A	Z	.538	.538	0	%100
43	MP4A	X	-.311	-.311	0	%100
44	MP4A	Z	.538	.538	0	%100
45	M33	X	-.098	-.098	0	%100
46	M33	Z	.17	.17	0	%100
47	M34	X	-.262	-.262	0	%100
48	M34	Z	.453	.453	0	%100
49	M35	X	-.262	-.262	0	%100
50	M35	Z	.453	.453	0	%100
51	M36	X	-.262	-.262	0	%100
52	M36	Z	.453	.453	0	%100
53	M37	X	-.262	-.262	0	%100
54	M37	Z	.453	.453	0	%100
55	M42	X	-.233	-.233	0	%100
56	M42	Z	.404	.404	0	%100
57	M47	X	-.105	-.105	0	%100
58	M47	Z	.182	.182	0	%100
59	M48	X	-.502	-.502	0	%100
60	M48	Z	.869	.869	0	%100
61	M54	X	-.191	-.191	0	%100
62	M54	Z	.331	.331	0	%100
63	M55	X	-.492	-.492	0	%100
64	M55	Z	.852	.852	0	%100

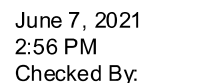
Member Distributed Loads (BLC 73 : Structure Wm (240 Deg))

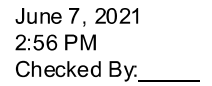
	Member Label	Direction	Start Magnitude[lb/ft,...	End Magnitude[lb/ft,F...	Start Location[ft, %]	End Location[ft, %]
1	M3	X	-.148	-.148	0	%100
2	M3	Z	.085	.085	0	%100
3	M6	X	-.148	-.148	0	%100
4	M6	Z	.085	.085	0	%100

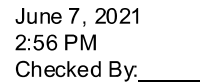


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Page 85



Page 87

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

	Member	Shape	Code C...	Loc[ft]	LC	Shear ...	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-...	phi*Mn z-...	Cb	Eqn
16	M21	PIPE 2.0	.202	0	11	.060	2.713		10	29415.792	32130	1.872	1.872	2....	H1-1b
17	MP3A	PIPE 2.0	.195	3	2	.098	3		31	14916.096	32130	1.872	1.872	2....	H1-1b
18	M24	PIPE 2.0	.194	2.713	49	.064	0		49	29415.792	32130	1.872	1.872	2....	H1-1b
19	M48	L2.5x2.5x4	.193	6.391	11	.019	6.391	y	3	10617.352	38556	1.114	2.13	1....	H2-1
20	MP4A	PIPE 2.0	.176	3	49	.068	3		49	14916.096	32130	1.872	1.872	4....	H1-1b
21	M14	PIPE 2.0	.162	0	24	.043	2.667		24	29504.097	32130	1.872	1.872	2....	H1-1b
22	M13	PIPE 2.0	.155	2.667	24	.045	2.667		24	29504.097	32130	1.872	1.872	2....	H1-1b
23	M19	PIPE 2.0	.147	0	10	.130	2.713		23	29415.792	32130	1.872	1.872	1....	H1-1b
24	M55	L2.5x2.5x4	.139	3.305	10	.013	5.987	z	20	12101.773	38556	1.114	2.15	1....	H2-1
25	M11	PIPE 4.0	.126	0	11	.063	.586		24	89138.702	93240	10.631	10.631	2....	H1-1b
26	M10	PIPE 4.0	.120	0	10	.051	0		20	88005.419	93240	10.631	10.631	2....	H1-1b
27	M54	L2.5x2.5x4	.111	6.035	14	.015	6.035	y	28	11910.109	38556	1.114	2.143	1....	H2-1
28	M47	L2.5x2.5x4	.108	3.226	1	.013	0	y	14	10421.174	38556	1.114	2.264	1....	H2-1
29	M12	PIPE 2.0	.086	2.667	24	.033	2.667		24	29504.097	32130	1.872	1.872	2....	H1-1b
30	M22	PIPE 2.0	.077	2.713	47	.068	2.713		24	29415.792	32130	1.872	1.872	2.2	H1-1b
31	M9	PIPE 4.0	.075	1.333	19	.153	.333		10	85130.772	93240	10.631	10.631	1....	H1-1b
32	M33	PIPE 2.5	.033	4.363	4	.002	4.363		22	43398.306	50715	3.596	3.596	1....	H1-1b*



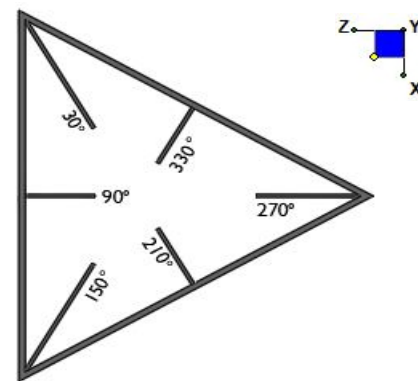
Client:	Verizon	Date:	6/7/2021
Site Name:	Cornwall 2 CT		
Project No.	21777229A		
Title:	Mount Analysis	Page:	1

Version 3.1

I. Mount-to-Tower Connection Check

RISA Model Data

Nodes (labeled per RISA)	Orientation (per graphic of typical platform)
N53	330
N2	330
N7	330
N8	330



TYPICAL PLATFORM

Tower Connection Bolt Checks

Any moment resistance?:

Bolt Quantity per Reaction:

d_x (in) (Delta X of typ. bolt config. sketch):

d_y (in) (Delta Y of typ. bolt config. sketch):

Bolt Type:

Bolt Diameter (in):

Required Tensile Strength (kips):

Required Shear Strength (kips):

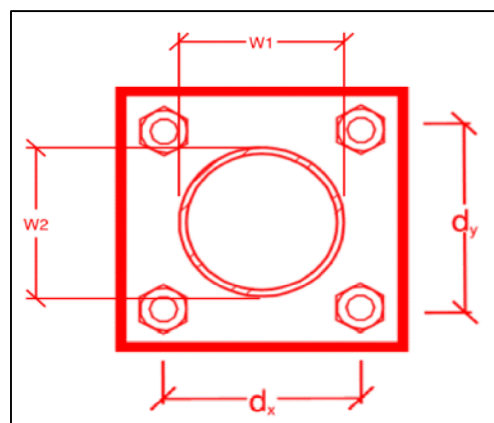
Tensile Strength / bolt (kips):

Shear Strength / bolt (kips):

Tensile Capacity Overall:

Shear Capacity Overall:

yes
4
4
3
A325N
0.375
2.5
0.9
7.5
4.5
8.2%*
4.9%



*Note: Tension reduction not required if tension or shear capacity < 30%

Tower Connection Plate and Weld Check

Connecting Standoff Member Shape:

Plate Width (in):

Plate Height (in):

W1 (in):

W2 (in):

Fy (ksi, plate):

t_{plate} (in):

Weld Size (1/16 in):

$\Phi \cdot R_n$ (kip/in):

Required Weld Strength (kip/in):

Plate Bending Capacity:

Weld Capacity:

Rect
6
4.5
0.5
2
36
0.39
3
4.18
1.40
8.3%
33.6%

Max Plate Bending Strengths

Mu_{xx} (kip-in):	0.6
$\Phi \cdot Mn_{xx}$ (kip-in):	7.4
Mu_{yy} (kip-in):	0.0
$\Phi \cdot Mn_{yy}$ (kip-in):	5.5

Mount Desktop – Post Modification Inspection (PMI) Report Requirements

Documents & Photos Required from Contractor – Mount Modification

Purpose – to provide Maser Consulting Connecticut 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 modification was completed in accordance with the modification drawings.
- Contractor shall relay any data that can impact the performance of the mount or the mount modification, this includes safety issues.

Base Requirements:

- Any special photos outside of the standard requirements will be indicated on the drawings
- Provide “as built drawings” showing contractor’s name, preparer’s signature, and date. Any deviations from the drawings (proposed modification) must be shown.
- Notation that all hardware was properly installed, and the existing hardware was inspected for any issues.
- Verification that loading is as communicated in the modification drawings. NOTE If loading is different than what is conveyed in the modification drawing contact Maser Consulting Connecticut immediately.
- Each photo should be time and date stamped
- Photos should be high resolution and submitted in a Zip File and should be organized in the file structure as depicted in Schedule A attached.
- 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.
- The photos in the file structure should be uploaded to <https://pmi.vzwsmart.com> as depicted on the drawings

Photo Requirements:

- Base and “During Installation Photos”
 - Base pictures include
 - Photo of Gate Signs showing the tower owner, site name, and number
 - Photo of carrier shelter showing the carrier site name and number if available
 - Photos of the galvanizing compound and/or paint used (if applicable), clearly showing the label and name
 - “During Installation Photos if provided - must be placed only in this folder
- Photos taken at ground level
 - Overall tower structure before and after installation of the modifications
 - Photos of the appropriate mount before and after installation of the modifications; if the mounts are at different rad elevations, pictures must be provided for all elevations that the modifications were installed

- Photos taken at Mount Elevation
 - Photos showing each individual sector before and also after installation of modifications. Each entire sector must be in one photo to show in the inter-connection of members.
 - These photos should also certify that the placement and geometry of the equipment on the mount is as depicted on the sketch and table in the mount analysis
 - Close-up photos of each installed modification per the modification drawings; pictures should also include connection hardware (U-bolts, bolts, nuts, all-threaded rods, etc.)
 - Photos showing the measurements of the installed modification member sizes (i.e. lengths, widths, depths, diameters, thicknesses)
 - Photos showing the elevation or distances of the installed modifications from the appropriate reference locations shown in the modification drawings
 - Photos showing the installed modifications onto the tower with tape drop measurements (if applicable) (i.e. ring/collar mounts, tie-backs, V-bracing kits, etc.); if the existing mount elevation needs to be changed according to the modification drawings, a tape drop measurement shall be provided before the elevation change
 - Photos showing the safety climb wire rope above and below the mount prior to modification.
 - Photos showing the climbing facility and safety climb if present.

Material Certification:

- Materials utilized must be as per specification on the drawings or the equivalent as validated by Maser Consulting Connecticut.
 - If the drawings are as specified on the drawings
 - The contractor should provide the packing list or the materials utilized to perform the mount modification
 - If an equivalent is utilized
 - It is required that the Maser Consulting Connecticut certification of such is included in the contractor submission package. There may be an additional charge for this certification if the equivalent submission doesn't meet specifications as prescribed in the drawings.
- The contractor must certify that the materials meet these specifications by one of these methods.

☐ The Material utilized was as specified on the Maser Consulting Connecticut Mount Modification Drawings and included in the Material certification folder is a packing list or invoice for these materials

☐ The material utilized was an "equivalent" and included as part of the contractor submission is the Maser Consulting Connecticut certification, invoices, or specifications validating accepted status

Certifying Individual: Company _____

Name _____

Antenna & equipment placement and Geometry Confirmation:

- The contractor must certify that the antenna & equipment placement and geometry is in accordance with the antenna placement diagrams as included in this mount analysis.
- The contractor certifies that the photos support and the equipment on the mount is as depicted on the antenna placement diagrams as included in this mount analysis.
- The contractor notes that the equipment on the mount is not in accordance with the antenna placement diagrams and has accordingly marked up the diagrams or provided a diagram outlining the differences.

Certifying Individual:

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

Issue:

Install proposed OVP on existing middle standoff vertical pipe in Alpha sector.

Response:

--

Schedule A – Photo & Document File Structure



VzW Site Number / Name



Base & “During Installation” Photos



Pre-Installation Photos



Alpha



Beta



Gamma



Ground Level



Tape Drop



Post-Installation Photos



Alpha



Beta



Gamma



Ground Level



Tape Drop



Photos of climbing facility and safety climb – If Present



Certifications – Submission of this document including certifications



Specific Required Additional Photos

Sector: A

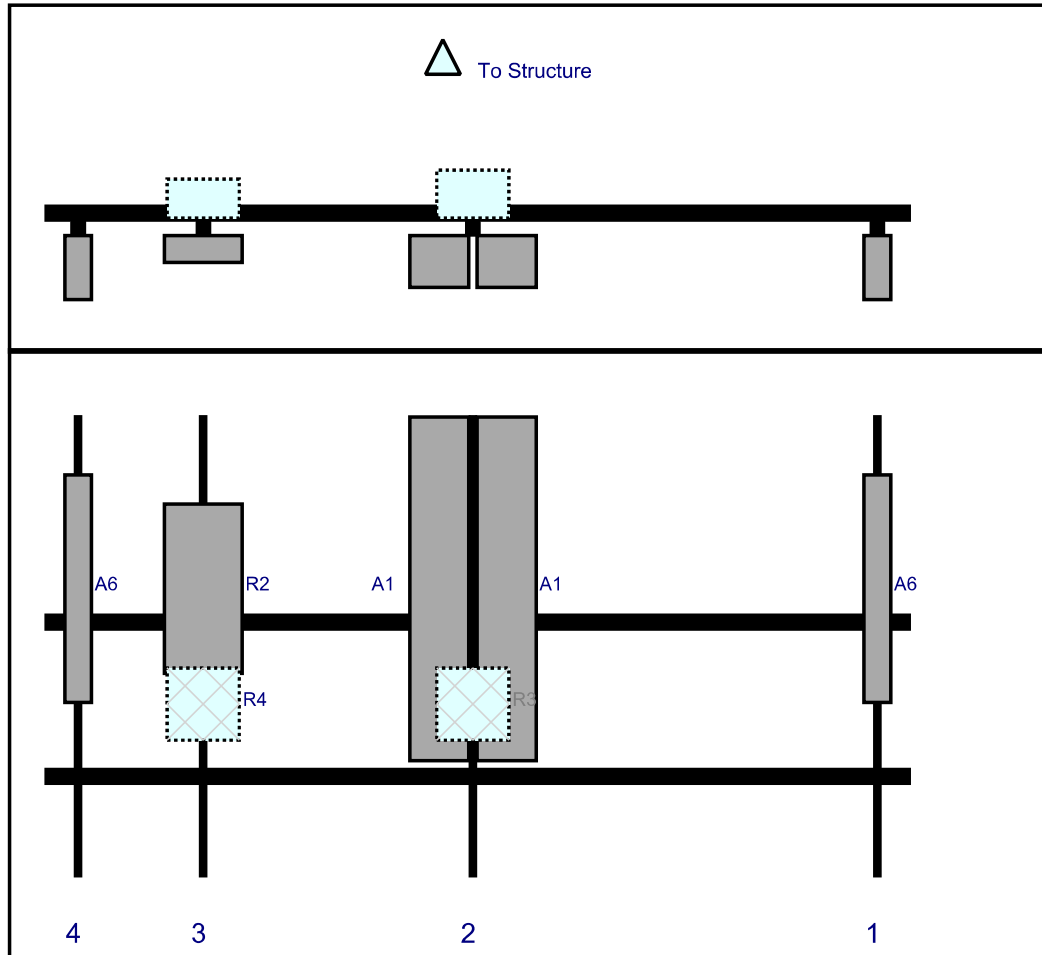
6/7/2021

Structure Type: Self Support

Mount Elev: 158.70

Page: 1

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
A6	LPA-80080/4CF	47.2	5.5	173	1	a	Front	36	0	Retained	04/05/2021
A1	MX06FIT665-02	71.3	12.2	89	2	a	Front	36	7	Added	
A1	MX06FIT665-02	71.3	12.2	89	2	b	Front	36	-7	Added	
R3	B2/B66A RRH-BR049	15	15	89	2	a	Behind	60	0	Added	
R2	MT6407-77A	35.1	16.1	33	3	a	Front	36	0	Added	
R4	B5/B13 RRH-BR04C	15	15	33	3	a	Behind	60	0	Added	
A6	LPA-80080/4CF	47.2	5.5	7	4	a	Front	36	0	Retained	04/05/2021

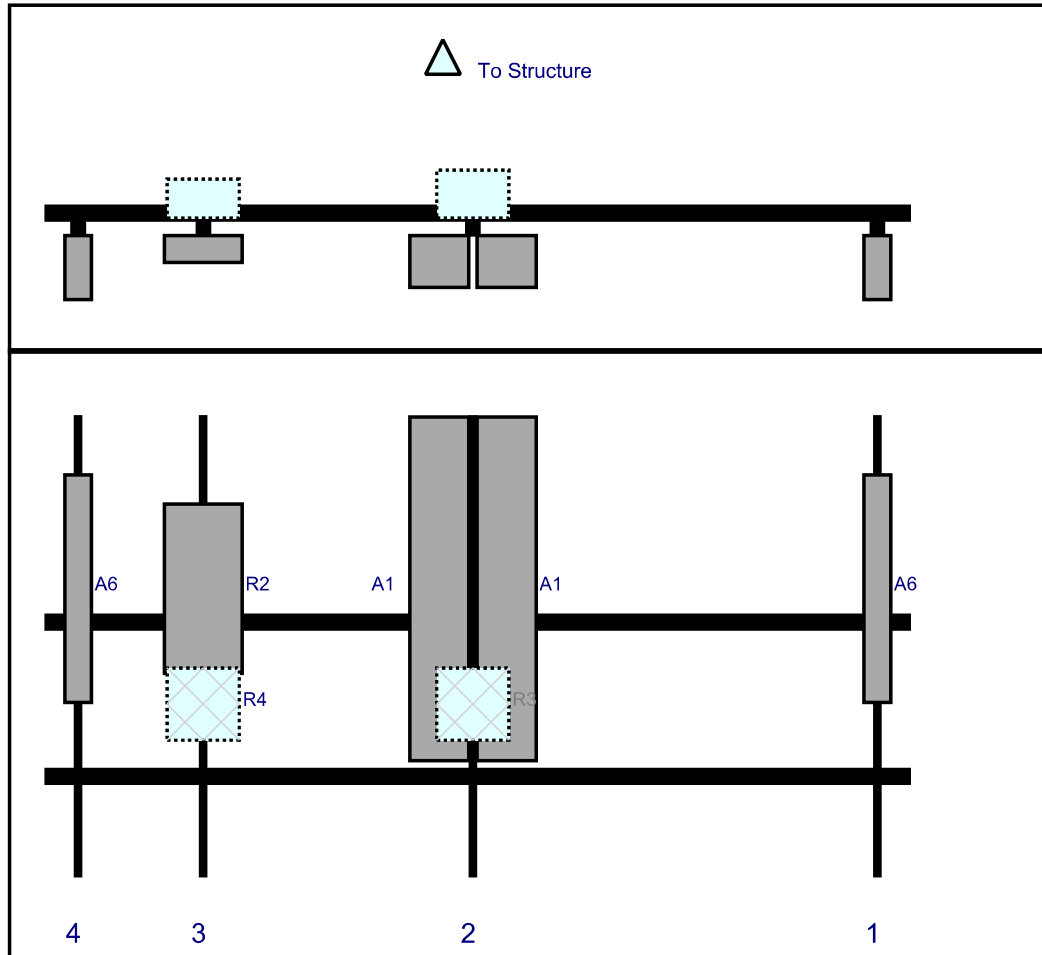
Sector: **B**

6/7/2021

Structure Type: Self Support

Mount Elev: 158.70

Page: 2

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
A6	LPA-80080/4CF	47.2	5.5	173	1	a	Front	36	0	Retained	04/05/2021
A1	MX06FIT665-02	71.3	12.2	89	2	a	Front	36	7	Added	
A1	MX06FIT665-02	71.3	12.2	89	2	b	Front	36	-7	Added	
R3	B2/B66A RRH-BR049	15	15	89	2	a	Behind	60	0	Added	
R2	MT6407-77A	35.1	16.1	33	3	a	Front	36	0	Added	
R4	B5/B13 RRH-BR04C	15	15	33	3	a	Behind	60	0	Added	
A6	LPA-80080/4CF	47.2	5.5	7	4	a	Front	36	0	Retained	04/05/2021

Sector: C

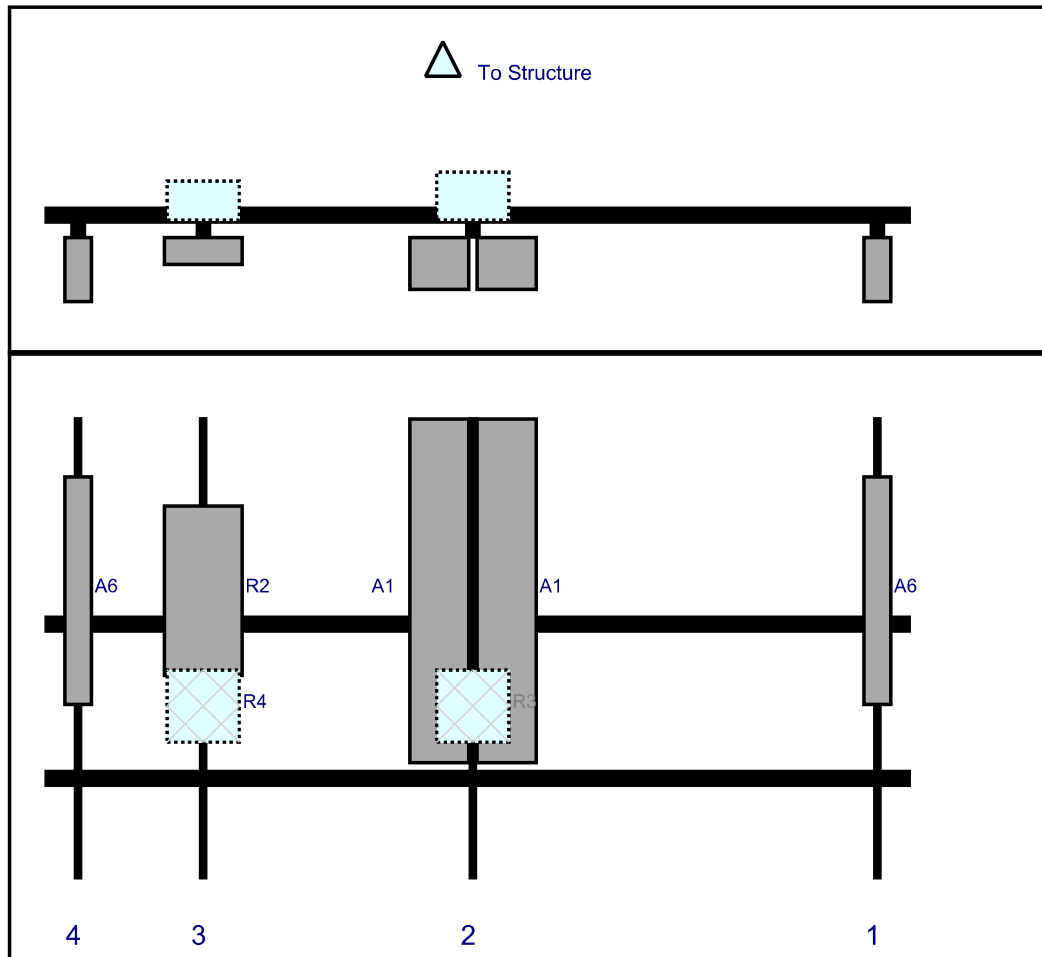
6/7/2021

Structure Type: Self Support

Mount Elev: 158.70

Page: 3

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
A6	LPA-80080/4CF	47.2	5.5	173	1	a	Front	36	0	Retained	04/05/2021
A1	MX06FIT665-02	71.3	12.2	89	2	a	Front	36	7	Added	
A1	MX06FIT665-02	71.3	12.2	89	2	b	Front	36	-7	Added	
R3	B2/B66A RRH-BR049	15	15	89	2	a	Behind	60	0	Added	
R2	MT6407-77A	35.1	16.1	33	3	a	Front	36	0	Added	
R4	B5/B13 RRH-BR04C	15	15	33	3	a	Behind	60	0	Added	
A6	LPA-80080/4CF	47.2	5.5	7	4	a	Front	36	0	Retained	04/05/2021

Maser Consulting Connecticut

Subject

TIA-222-H Usage

Site Information

Site ID:	468473-VZW / CORNWALL 2 CT
Site Name:	CORNWALL 2 CT
Carrier Name:	Verizon Wireless
Address:	7 Surdan Mountain Road Cornwall, Connecticut 06753 Litchfield County
Latitude:	41.862039°
Longitude:	-73.399625°

Structure Information

Tower Type:	Self Support
Mount Type:	15.00-Ft T-Frame

To Whom It May Concern,

We respectfully submit the above referenced Antenna Mount Structural Analysis report in conformance with ANSI/TIA-222-H, Structural Standard for Antenna Supporting Structures and Antennas and Small Wind Turbine Support Structures.

The 2015 International Building Code states that, in Section 3108, telecommunication towers shall be designed and constructed in accordance with the provisions of TIA-222. TIA-222-H is the latest revision of the TIA-222 Standard, effective as of January 01, 2018.

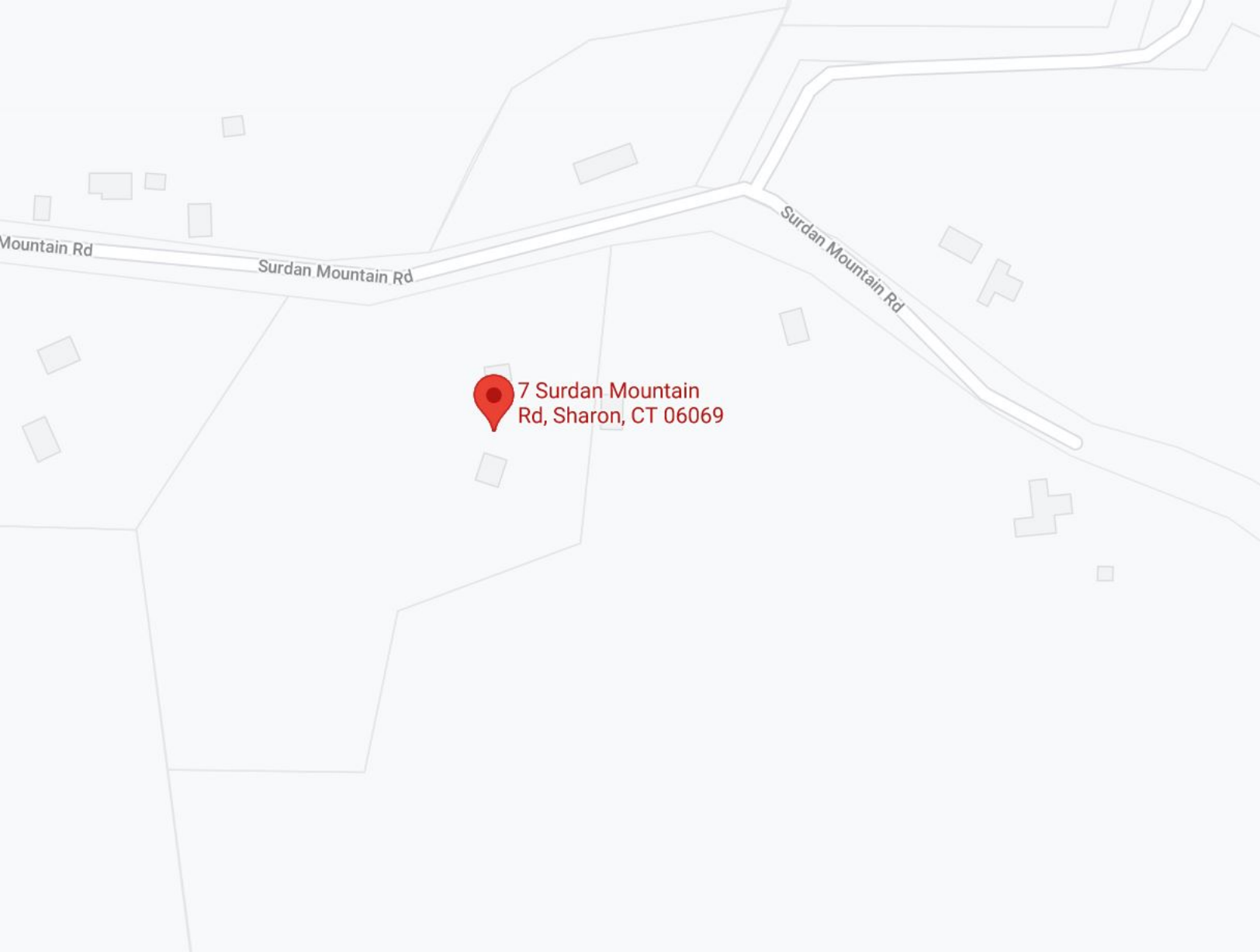
As with all ANSI standards and engineering best practice is to apply the most current revision of the standard. This ensures the engineer is applying all updates. As an example, the TIA-222-H Standard includes updates to bring it in line with the latest AISC and ACI standards and it also incorporates the latest wind speed maps by ASCE 7 based on updated studies of the wind data.

The TIA-222-H standard clarifies these specific requirements for the antenna mount analysis such as modeling methods, seismic analysis, 30-degree increment wind directions and maintenance loading. Therefore, it is our opinion that TIA-222-H is the most appropriate standard for antenna mount structural analysis and is acceptable for use at this site to ensure the engineer is taking into account the most current engineering standard available.

Sincerely,

Derek Hartzell, PE
Technical Specialist

ATTACHMENT 5



Mountain Rd

Surdan Mountain Rd

Surdan Mountain Rd

7 Surdan Mountain
Rd, Sharon, CT 06069

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Account Number	00173200
Parcel ID	15-2
Property Address	7 SURDAN MOUNTAIN RD
Use Class/Description	101 Single Family
Map/Block/Lot/Unit	15/2//
Zoning	RR
NBHD Code	5A
Acres	9.6
Utilities	Septic,Well,
Is Homesteaded	False

[View Map](#)

Owner

PRINDLE ANN ADELE

Current Appraised Value

Columns

Current Appraised Value			
Assessed Year	2019	2018	2017
Appraised Building Value	\$154,000.00	\$154,000.00	\$163,500.00
Appraised XF/OB Value	\$249,200.00	\$249,200.00	\$249,200.00
Appraised Land Value	\$222,500.00	\$222,500.00	\$264,700.00
Appraised Total Value	\$625,700.00	\$625,700.00	\$677,400.00
Assessed Building Value	\$107,800.00	\$107,800.00	\$114,500.00
Assessed XF/OB Value	\$174,400.00	\$174,400.00	\$174,400.00
Assessed Land Value	\$155,800.00	\$155,800.00	\$185,300.00
Assessed Total Value	\$438,000.00	\$438,000.00	\$474,200.00

Assessment History

Columns

Assessment History			
Assessed Year	2019	2018	2017
Appraised Building Value	\$154,000.00	\$154,000.00	\$163,500.00
Appraised XF/OB Value	\$249,200.00	\$249,200.00	\$249,200.00
Appraised Land Value	\$222,500.00	\$222,500.00	\$264,700.00
Appraised Total Value	\$625,700.00	\$625,700.00	\$677,400.00
Assessed Building Value	\$107,800.00	\$107,800.00	\$114,500.00
Assessed XF/OB Value	\$174,400.00	\$174,400.00	\$174,400.00
Assessed Land Value	\$155,800.00	\$155,800.00	\$185,300.00
Assessed Total Value	\$438,000.00	\$438,000.00	\$474,200.00

Land

Building Number1
Land Use101 - Single Family
Land Units2 AC
Value131,700

Building Number1
Land Use101 - Single Family
Land Units7.6 AC
Value90,800

Building Information

Building #1
StyleConventional
Occupancy1
Actual Year Built1952
Effective Year Built1998
Living Area1,736
Stories2
Grade04 C+
ConditionG
Exterior WallVinyl Siding
Interior WallDrywall
Fireplaces
Roof CoverAsphalt Shngl.
Roof StructureGable/Hip
Floor TypeHardwood Carpet
Heat TypeHot Water
Fuel TypeOil
ACNone
Bdrms/Full Bth/Hlf Bth/Ttl Rm03/2/0/7
Basement Finished Area
Basement Sq. Ft.560

Building Information

Code	Description	Living Area	Gross Area	Effective Area
BAS	First Floor	1,136	1,136	1,136
FEP	Enclosed Porch	0	79	55
FOP	Open Porch	0	49	12
FUS	Upper Story, Finished	600	600	600

PTO	Patio	0	198	20
UBM	Basement, Unfinished	0	560	112
Totals		1,736	2,622	1,935

Out Buildings\Extra Features

Description Barn 1 St.
Sub Description
Area 860 S.F.
Year Built1983
Value \$11,600

Description Shed
Sub Description
Area 100 S.F.
Year Built1986
Value \$1,400

Description Garage w/Shop
Sub Description
Area 1254 S.F.
Year Built1999
Value \$31,000

Description Cell Tower site
Sub Description
Area 1 UNITS
Year Built2008
Value \$205,200

Sales History

Sales History

Sales Date	Instrument Type	Grantor	Grantee	Book/Page	Sale Validity	Amount
4/19/2004		PRINDLE DARIEN R & ANN ADELE	PRINDLE ANN ADELE	0158-0453	U	\$0.00
9/23/1999	Transfer of Convenience	PRINDLE DARIEN R & ANN ADELE	PRINDLE DARIEN R & ANN ADELE	0136-0456	U	\$0.00
8/3/1998	Love and Affection	PRINDLE DARIEN	PRINDLE DARIEN R & ANN ADELE	0132-0861	U	\$115,000.00
10/19/1981	Family Sale		PRINDLE DARIEN	0098-0458	U	\$0.00

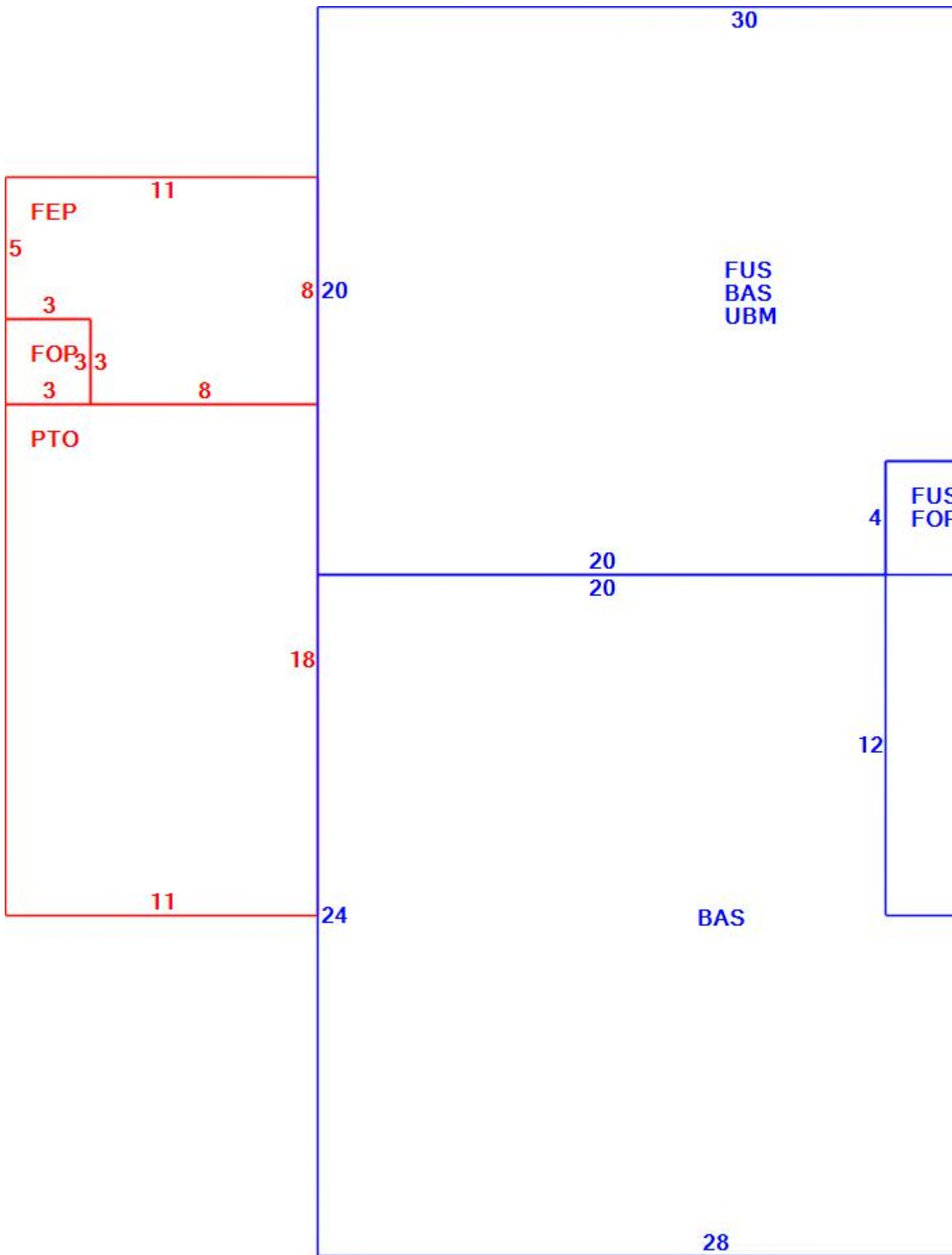
Recent Sales In Area

Sale date range: From: To:

Sales by Neighborhood

Search recent sales by distance

Sketch



[Building Sketch](#)

No data available for the following modules: Photos.

[Contact Information](#)

Information



Town of Sharon, CT

63 Main St.

Sharon, CT 06069

<https://www.sharonct.org> opens in a new tab

ASSESSOR, CCMA II

Jennifer Dubray

860-364-0205

Assistant Assessor, CCMA II

Patricia Braislin

860-364-0205

[Announcements](#)

Announcements

- [Search across multiple counties](#)

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ATTACHMENT 6



CORNWALL 2
Certificate of Mailing — Firm

Name and Address of Sender Kenneth C. Baldwin, Esq. Robinson & Cole LLP 280 Trumbull Street Hartford, CT 06103	TOTAL NO. of Pieces Listed by Sender 3	TOTAL NO. of Pieces Received at Post Office™ 3	Affix Stamp Here <i>Postmark with Date of Receipt.</i> neopost 07/12/2021 US POSTAGE \$002.89  ZIP 06103 041L12203937
	Postmaster, per (name of receiving employee) ELLEN D,		

USPS® Tracking Number Firm-specific Identifier	Address (Name, Street, City, State, and ZIP Code™)	Postage	Fee	Special Handling	Parcel Airlift
1.	Brent Colly, First Selectman Town of Sharon 63 Main Street Sharon, CT 06069				
2.	Jaime Casey, Land Use Administrator Town of Sharon 63 Main Street Sharon, CT 06069				
3.	Ann Adele Prindle 7 Surdan Mountain Road Sharon, CT 06069				
4.					
5.					
6.					

