

Centerline Communications
Ryan Clark
750 West Center Street, Floor 3
West Bridgewater, MA 02379
203-300-7310
rclark@clinellc.com

April 30, 2021

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

Notice of Exempt Modification
1712 Main Street Coventry, CT 06238
Latitude: 41.77983333
Longitude: -72.31005556
Sprint/T-Mobile Site#: CTHA616A_Sprint Keep

Dear Ms. Bachman:

Sprint/T-Mobile currently maintains six (6) antennas at the 180-foot level of the existing 190-foot self-support tower at 1712 Main Street Coventry, CT 06238. The 190-foot tower and property is owned by the Town of Coventry. Sprint/ T-Mobile now intends to replace six (6) of its existing antennas and add an additional (3) three antennas. The new antennas would be installed at the 180-foot level of the tower. New mounts are to be installed as recommended in the attached Mount Analysis. The proposed modifications will make the site available for 5G at some point in the future.

Planned Modifications:

Remove and Replace:

- (3) RFS APXVTM14-ALU-I20 **(Remove)** - (3) APX16DWV-16DWV-S-E-A20 **(Replace)**
- (3) Commscope NNVV-65B-R4 **(Remove)** – (3) APXVAALL24_43-U-NA20 **(Replace)**
- (3) Acatel-Lucent TD-RRH 8x20-25 **(Remove)** - (3) RRU 4449 B12/B71 **(Replace)**
- (3) Alcatel-Lucent RRH 4x45-1900 **(Remove)**- (3) RRU 4415 B66A **(Replace)**
- (3) Alcatel-Lucent RRH 2x50-800 **(Remove)**- (3) RRU 4424 B25 **(Replace)**

Install New:

- (3) AIR6449 B41 Antennas
- (3) Fiber Hybrid Line

Remove:

- (6) 1-5/8" Coax

Ground:

- (1) Proposed underground conduit runs
- (1) Replace cabinet

This facility was not originally approved by the Siting Council due to the fact it is owned by a municipality. I have attached the previous Decision Letter in regards to the Sprint/T-Mobile facility.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies § 16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Town Manager John Elsesser Chief Elected Official and Eric Trott, Director of Land Use for the Town of Coventry as well as the property owner and the tower owner.

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

1. The proposed modifications will not result in an increase in the height of the existing structure.
2. The proposed modifications will not require the extension of the site boundary.
3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.
4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.
5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.
6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Ryan Clark

Mobile: 203-300-7310

Fax: 508-819-3017

Office: 750 West Center Street, Floor 3 West Bridgewater, MA 02379

Email: rclark@clinellc.com

Attachments

cc: Town Manager John Elsesser- Chief Elected Official

Eric Trott, Director of Land Use

Town of Coventry- Tower and Property Owner

CONNECTICUT SITING COUNCIL

Check: 25808
Date: 4/6/2021
Vendor: 0

<u>Invoice</u>	<u>P.O. Num.</u>	<u>Invoice Amt</u>	<u>Prior Balance</u>	<u>Retention</u>	<u>Discount</u>	<u>Amt. Paid</u>
572055-008		625.00	625.00	0.00	0.00	625.00
CTHA616A						
		<u>625.00</u>	<u>625.00</u>	<u>0.00</u>	<u>0.00</u>	<u>625.00</u>

Centerline Communications LLC750 W. Center Street
Suite 301
W. Bridgewater, MA 02379
(781) 713-4725ROCKLAND TRUST COMPANY
MEDFIELD, MA 02052

53-447/113

025808

DATE

AMOUNT

25808

4/6/2021

*****625.00

PAY
TO THE
ORDER
OF

THE SUM OF SIX HUNDRED TWENTY FIVE DOLLARS AND NO CENTS

CONNECTICUT SITING COUNCIL

VOID AFTER 90 DAYS

AUTHORIZED SIGNATURE

Security features. Details on back

⑈025808⑈ ⑆011304478⑆ 2922009879⑈

Exhibit A

Facility Approval



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

www.ct.gov/csc

September 17, 2018

Paul F. Sagristano
Cherundolo Consulting
4 Davis Road West, Suite 5
Old Lyme, CT 06371

RE: **EM-SPRINT-032-180830** – Sprint Spectrum Realty Company, LP notice of intent to modify an existing telecommunications facility located at 1712 Main Street, Coventry, Connecticut.

Dear Mr. Sagristano:

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 with the following conditions:

1. Prior to Sprint's antenna installation, the tower modifications shall be installed in accordance with the Self-Support Tower and Mount utilization and Modifications Report and Construction Drawings, both prepared by Maser Consulting, dated July 23, 2018 and July 27, 2018 respectively, and stamped and signed by Petros Tsoukalas;
2. Within 45 days following completion of equipment installations, Sprint shall provide documentation that its installation complied with the recommendations of the Antenna Mount Structural Analysis Report;
3. Any deviation from the proposed modification as specified in this notice and supporting materials with the Council shall render this acknowledgement invalid;
4. Any material changes to this modification as proposed shall require the filing of a new notice with the Council;
5. Within 45 days after completion of construction, the Council shall be notified in writing that construction has been completed;
6. Any nonfunctioning antenna and associated antenna mounting equipment on this facility owned and operated by Sprint shall be removed within 60 days of the date the antenna ceased to function;
7. The validity of this action shall expire one year from the date of this letter; and
8. The applicant may file a request for an extension of time beyond the one year deadline provided that such request is submitted to the Council not less than 60 days prior to the expiration.

The proposed modifications including the placement of all necessary equipment and shelters within the tower compound are to be implemented as specified here and in your notice dated August 13, 2018. 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 by any dimension, increase noise levels at the tower site boundary by six decibels or more, and increase the total radio frequencies electromagnetic radiation power density measured

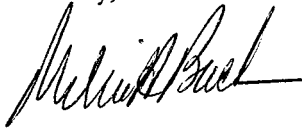


CONNECTICUT SITING COUNCIL
Affirmative Action / Equal Opportunity Employer

at the tower site boundary to or above the standards adopted by the Federal Communications Commission pursuant to Section 704 of the Telecommunications Act of 1996 and by the state Department of Energy and Environmental Protection pursuant to Connecticut 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. Thank you for your attention and cooperation.

Sincerely,



Melanie A. Bachman
Executive Director

MAB/FC/emr

- c: The Honorable Joan A. Lewis, Chairman, Town of Coventry
John A. Elsesser, Town Manager, Town of Coventry
Eric M. Trott, Director of Planning & Development, Town of Coventry

Exhibit B

Property Card

1712 MAIN ST

Location 1712 MAIN ST

Mblu 29/ / 159/ /

Acct# R30305

Owner COVENTRY TOWN OF

PBN

Assessment \$16,333,700

Appraisal \$23,333,600

PID 6578

Building Count 5

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2019	\$20,161,600	\$3,172,000	\$23,333,600
Assessment			
Valuation Year	Improvements	Land	Total
2019	\$14,113,300	\$2,220,400	\$16,333,700

Owner of Record

Owner COVENTRY TOWN OF
Co-Owner
Address 1712 MAIN ST
COVENTRY, CT 06238

Sale Price \$0
Certificate
Book & Page 0100/0064
Sale Date 01/06/1960
Instrument 29

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
COVENTRY TOWN OF	\$0		0100/0064	29	01/06/1960

Building Information

Building 1 : Section 1

Year Built: 1962
Living Area: 6,036
Replacement Cost: \$1,464,038
Building Percent Good: 69

Replacement Cost
Less Depreciation: \$1,010,200

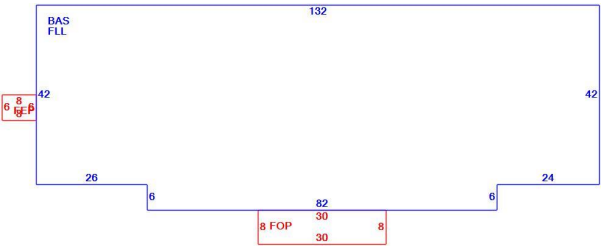
Building Attributes	
Field	Description
Style	City/Town Hall
Model	Comm/Ind
Grade	C
Stories:	1
Occupancy	1.00
Exterior Wall 1	Brick
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Asphalt Tile
Interior Floor 2	Carpet
Heating Fuel	Oil
Heating Type	Forced Air
AC Type	Central
Struct Class	
Bldg Use	Town MDL-94
Total Rooms	0
Usrflid 216	
Total Baths	
Usrflid 218	
Usrflid 219	
1st Floor Use:	201
Heat/AC	HEAT/AC PKGS
Frame Type	MASONRY
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	9.00
% Comn Wall	0.00
Usrflid 100	
Usrflid 302	
Usrflid 301	
Usrflid 303	
Usrflid 103	
Usrflid 107	

Building Photo



(http://images.vgsi.com/photos/CoventryCTPhotos/\A00\00\55\03.jpg)

Building Layout



(ParcelSketch.ashx?pid=6578&bid=6578)

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	6,036	6,036
FEP	Porch, Enclosed	48	0
FLL	Fin. Lower Level	6,036	0
FOP	Porch, Open	240	0
		12,360	6,036

Usrflid 304	
Usrflid 104	
Usrflid 105	
Usrflid 101	
Usrflid 225	
Usrflid 300	
Usrflid 220	
Usrflid 221	
Usrflid 102	
Usrflid 701	
Usrflid 106	
Usrflid 305	
Usrflid 900	No
Usrflid 901	No

Building 2 : Section 1

Year Built:	1970
Living Area:	1,152
Replacement Cost:	\$151,027
Building Percent Good:	72
Replacement Cost Less Depreciation:	\$108,700

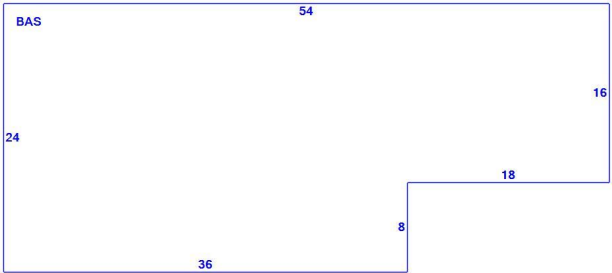
Building Attributes : Bldg 2 of 5	
Field	Description
Style	Office
Model	Comm/Ind
Grade	C
Stories:	1
Occupancy	1.00
Exterior Wall 1	Vinyl
Exterior Wall 2	
Roof Structure	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air
AC Type	Central
Struct Class	
Bldg Use	Town MDL-94

Building Photo



(<http://images.vgsi.com/photos/CoventryCTPhotos/\00\00\55\04.jpg>)

Building Layout



(ParcelSketch.ashx?pid=6578&bid=20111)

Building Sub-Areas (sq ft)			Legend
Code	Description	Gross Area	Living Area
BAS	First Floor	1,152	1,152

Total Rooms	0
Usrflid 216	
Total Baths	
Usrflid 218	
Usrflid 219	
1st Floor Use:	201
Heat/AC	HEAT/AC SPLIT
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	8.00
% Comn Wall	0.00
Usrflid 100	
Usrflid 302	
Usrflid 301	
Usrflid 303	
Usrflid 103	
Usrflid 107	
Usrflid 304	
Usrflid 104	
Usrflid 105	
Usrflid 101	
Usrflid 225	
Usrflid 300	
Usrflid 220	
Usrflid 221	
Usrflid 102	
Usrflid 701	
Usrflid 106	
Usrflid 305	
Usrflid 900	No
Usrflid 901	No

		1,152	1,152
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Building 3 : Section 1

Year Built: 1999
Living Area: 4,324
Replacement Cost: \$400,359
Building Percent Good: 86
Replacement Cost
Less Depreciation: \$344,300

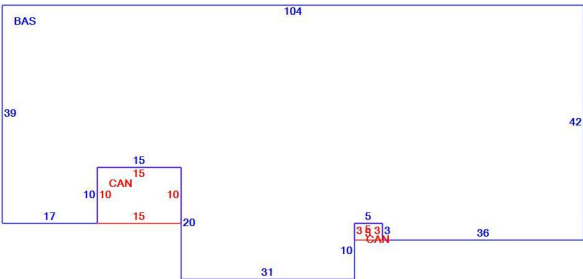
Field	Description
Style	Office
Model	Comm/Ind
Grade	C
Stories:	1
Occupancy	1.00
Exterior Wall 1	Brick
Exterior Wall 2	Vinyl
Roof Structure	Gable
Roof Cover	Asphalt Shingl
Interior Wall 1	Drywall
Interior Wall 2	
Interior Floor 1	Carpet
Interior Floor 2	
Heating Fuel	Gas
Heating Type	Forced Air
AC Type	Central
Struct Class	
Bldg Use	Town MDL-94
Total Rooms	0
Usrflid 216	
Total Baths	
Usrflid 218	
Usrflid 219	
1st Floor Use:	201
Heat/AC	HEAT/AC PKGS
Frame Type	WOOD FRAME
Baths/Plumbing	AVERAGE
Ceiling/Wall	SUS-CEIL & WL
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	0.00
Usrflid 100	
Usrflid 302	
Usrflid 301	
Usrflid 303	
Usrflid 103	
Usrflid 107	
Usrflid 304	
Usrflid 104	
Usrflid 105	

Building Photo



(<http://images.vgsi.com/photos/CoventryCTPhotos/A00\00\55\02.jpg>)

Building Layout



(ParcelSketch.ashx?pid=6578&bid=20112)

Building Sub-Areas (sq ft)			<u>Legend</u>
Code	Description	Gross Area	Living Area
BAS	First Floor	4,324	4,324
CAN	Canopy	165	0
		4,489	4,324

Usrflid 218	
Usrflid 219	
1st Floor Use:	201
Heat/AC	HEAT ONLY
Frame Type	STEEL
Baths/Plumbing	AVERAGE
Ceiling/Wall	CEIL & WALLS
Rooms/Prtns	AVERAGE
Wall Height	10.00
% Comn Wall	0.00
Usrflid 100	
Usrflid 302	
Usrflid 301	
Usrflid 303	
Usrflid 103	
Usrflid 107	
Usrflid 304	
Usrflid 104	
Usrflid 105	
Usrflid 101	
Usrflid 225	
Usrflid 300	
Usrflid 220	
Usrflid 221	
Usrflid 102	
Usrflid 701	
Usrflid 106	
Usrflid 305	
Usrflid 900	No
Usrflid 901	No

Building 5 : Section 1

Year Built: 1962
Living Area: 75,960
Replacement Cost: \$9,998,986
Building Percent Good: 69
Replacement Cost
Less Depreciation: \$6,899,300

Building Attributes : Bldg 5 of 5	
Field	Description
Style	Schools-Public
Model	Comm/Ind

Code	Description	Gross Area	Living Area
BAS	First Floor	131,671	131,671
FOP	Porch, Open	840	0
GRN	Greenhouse	297	0
PTO	Patio	5,362	0
		138,170	131,671

Usrflid 220	
Usrflid 221	
Usrflid 102	
Usrflid 701	
Usrflid 106	
Usrflid 305	
Usrflid 900	No
Usrflid 901	No

Extra Features

Extra Features				<u>Legend</u>
Code	Description	Size	Value	Bldg #
SP	Solar Panel	18.00 UNITS	\$0	2
A/C	Air Condition	3240.00 S.F.	\$4,500	5
SPR1	Sprinklers-Wet	76920.00 S.F.	\$42,500	5
SP	Solar Panel	320.00 UNITS	\$0	5
SPR1	Sprinklers-Wet	138169.00 S.F.	\$76,300	4
A/C	Air Condition	35390.00 S.F.	\$48,800	4
MEZ1	Mezzanine-Unf	1984.00 S.F.	\$11,000	4

Land

Land Use		Land Line Valuation	
Use Code	901	Size (Acres)	98.00
Description	Town MDL-94	Frontage	
Zone	GR40	Depth	
Neighborhood	G	Assessed Value	\$2,220,400
Alt Land Appr Category	No	Appraised Value	\$3,172,000

Outbuildings

Outbuildings						<u>Legend</u>
Code	Description	Sub Code	Sub Description	Size	Value	Bldg #
FGR1	Garage			2400.00 S.F.	\$48,000	4
PAV1	Paving			5000.00 S.F.	\$6,300	5
SHD5	Cell Shed			288.00 S.F.	\$82,100	1
PAV1	Paving			26000.00 S.F.	\$32,800	4
PAV1	Paving			20000.00 S.F.	\$25,200	1
TEN	Tennis Court			3.00 UNITS	\$42,000	5
TNK1	Elevated Tank			10000.00 GALS	\$16,600	4
BHS1	Bathhouse			510.00 S.F.	\$7,800	4
FNC	Fence	M	Metal	1500.00 L.F.	\$20,000	5

SHD1	Shed			600.00 S.F.	\$4,800	1
FOP	Open Porch			304.00 S.F.	\$5,800	4
SHD5	Cell Shed			200.00 S.F.	\$57,000	1
SHD1	Shed			384.00 S.F.	\$3,600	4
FNC	Fence	M	Metal	1500.00 L.F.	\$14,700	5
SHD1	Shed			96.00 S.F.	\$900	1
TEN	Tennis Court			3.00 UNITS	\$57,000	4
FCP	Carport			5712.00 S.F.	\$40,000	5
FGR1	Garage			2000.00 S.F.	\$47,500	4
FNC	Fence	M	Metal	200.00 L.F.	\$2,700	1
LT1	Light 1			34.00 UNITS	\$64,600	1
OFSD	Off/Studio			960.00 S.F.	\$41,000	4
LT2	Light 2			7.00 UNITS	\$19,300	1
LNT	Lean-to			192.00 S.F.	\$900	4
LNT	Lean-to			192.00 S.F.	\$900	4
LT3	Light 3			0.00 UNITS	\$0	4

Valuation History

Appraisal			
Valuation Year	Improvements	Land	Total
2018	\$20,573,300	\$2,360,800	\$22,934,100
2018	\$20,573,300	\$2,360,800	\$22,934,100
2017	\$20,573,300	\$2,360,800	\$22,934,100

Assessment			
Valuation Year	Improvements	Land	Total
2018	\$14,401,400	\$1,652,600	\$16,054,000
2018	\$14,401,400	\$1,652,600	\$16,054,000
2017	\$14,401,400	\$1,652,600	\$16,054,000

Exhibit C

Construction Drawings

PROJECT INFORMATION

SITE NAME: CT03XC206
SITE NUMBER: CTHA616A
SITE ADDRESS: 1712 MAIN ST
COVENTRY, CT 06238
COUNTY: TOLLAND
MUNICIPALITY: COVENTRY
ZONING: C2
LATITUDE: 41.77983333
LONGITUDE: -72.31005556
TYPE OF SITE: SELF SUPPORT TOWER
STRUCTURE HEIGHT: 190'-0" AGL
ANTENNA CENTER: 180'-0" AGL
GROUND ELEVATION: 140.0'
BUILDING OWNER NAME: TOWN OF COVENTRY
BUILDING OWNER ADDRESS: 1712 MAIN ST
COVENTRY, CT 06238
APPLICANT: T-MOBILE NORTHEAST, LLC.
15 COMMERCE WAY, SUITE B
NORTON, MASSACHUSETTS 02766
APPLICANT PHONE: (508) 286-2700
APPLICANT FAX: (508) 286-2893

PROJECT DIRECTORY

ENGINEERING FIRM:
CENTERLINE COMMUNICATIONS
750 WEST CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
DEREK CREASER (617) 306-3034

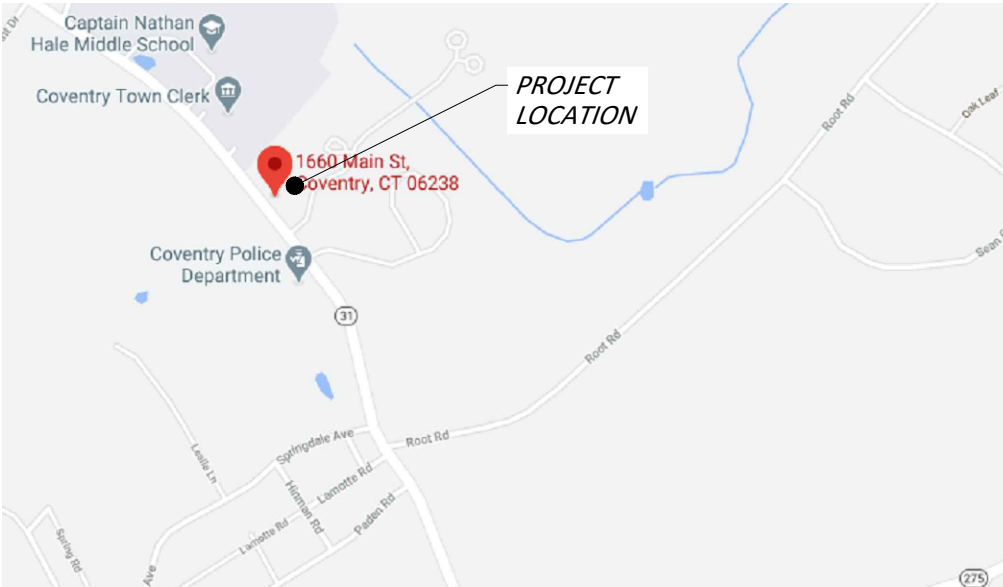
CARRIER:
T-MOBILE NORTHEAST, LLC.
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
PHONE: (508) 286-2700
FAX: (508) 286-2893



Know what's below.
Call before you dig.



T-Mobile
NORTHEAST LLC



VICINITY MAP
N.T.S.



LOCATION MAP
N.T.S.

SITE NAME: CT03XC206
SITE ID: CTHA616A
ADDRESS: 1712 MAIN ST.
COVENTRY, CT 06238

TECHNOLOGY: 67D5998C_1xAIR+1QP+10P (GSM ONLY)
MODIFICATION: NEW BUILD SPRINT KEEP

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSE OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SCOPE OF WORK

1. REMOVE AND REPLACE SIX EXISTING ANTENNAS W/NINE NEW ANTENNAS
2. REMOVE ALL EXISTING RRUS
3. INSTALL NINE NEW RRUS
4. INSTALL THREE NEW 6x24 HYBRID CABLES
5. INSTALL THREE NEW ANTENNA PIPE MOUNT ASSEMBLIES
6. REMOVE ALL UNUSED CABLES AND EQUIPMENT
7. REMOVE EXISTING PPC PANEL AND INSTALL NEW 200A PANEL
8. INSTALL 6230 CABINET ON 6230 RACK

DRAWING INDEX

NO.	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES, RF NOTES, CABLING NOTES
A-1	COMPOUND PLAN
A-2	EQUIPMENT LAYOUT
A-3	NORTHEAST ELEVATION
A-4	ANTENNA PLANS & SCHEDULE
A-5	DETAILS
A-6	ANTENNA AND RRU MOUNT DETAILS
A-7	PROPOSED PPC PRODUCT SPECS
SN-1	STRUCTURAL NOTES & SPECIAL INSPECTIONS
E-1	GROUNDING DETAILS & ONE LINE DIAGRAM

DRAWING SCALE NOTES:

THESE DRAWINGS ARE FORMATTED TO BE FULL SIZE AT 22"x34". CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

T-Mobile
NORTHEAST LLC

T-MOBILE NORTHEAST, LLC.
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
PHONE: (508) 286-2700
FAX: (508) 286-2893

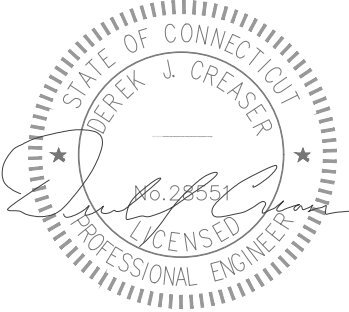


750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
1	04/30/21	CHANGED ADDRESS	MJS
0	04/29/21	ISSUED FOR CONSTRUCTION	MJS
A	04/05/21	ISSUED FOR REVIEW	TRP

DESIGNED BY: TRP	APPROVED BY: MK
---------------------	--------------------



DATE: 04/30/21

IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT. UNLESS EXPLICITLY AGREED TO BY THE ENGINEER IN WRITING, THE ENGINEER DISCLAIMS ALL LIABILITY ASSOCIATED WITH THE REUSE, ALTERATION OR MODIFICATION OF THE CONTENTS HEREIN.

SITE NAME: CT03XC206
SITE ID: CTHA616A
SITE ADDRESS: 1712 MAIN ST COVENTRY, CT 06238
SHEET TITLE: TITLE SHEET
DRAWING: T-1

RF NOTES

1. ACTUAL LENGTHS SHALL BE DETERMINED PER SITE CONDITION BY SUBCONTRACTOR
2. THE DESIGN IS BASED ON RF DATA SHEETS, SIGNED AND APPROVED.
3. RADIO SIGNAL CABLE AND RACEWAY SHALL COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC, NFPA 70), CHAPTER 8.
4. ALL SPECIFIED MATERIAL FOR EACH LOCATION (E.G. OUT DOORS-OCCUPIED, INDOORS-UNOCCUPIED, PLENUMS, RISER SHAFTS, ETC.) SHALL BE APPROVED, LISTED, OR LABELED AS REQUIRED BY THE NEC.
5. RADIO SIGNAL CABLE SHALL BE SUPPORTED AT MINIMUM OF EVERY THREE (3) FEET EXCEPT INSIDE MONOPOLES OR MONOPOLES WHERE CABLE AND CONNECTOR MANUFACTURERS SUPPORT RECOMMENDATIONS SHALL BE FOLLOWED. MANUFACTURER RECOMMENDATION CABLES SUPPORT ACCESSORIES SHALL BE USED.
6. THE OUTDOOR CABLE SUPPORT SYSTEM SHALL BE PROVIDED WITH AN ICE SHIELD TO SUPPORT AND PROTECT ANTENNA CABLE RUNS.
7. DRIP LOOPS SHALL BE REQUIRED ON ALL OUTSIDE CABLES. CABLES SHALL BE SLOPED AWAY FROM BUILDING OR OUTDOOR BTS CABINETS TO PREVENT WATER FROM ENTERING THROUGH THE COAXIAL CABLE PORT.
8. ALL FEEDER LINE AND JUMPER CONNECTORS SHALL BE 7/16 DIN CABLE CONNECTORS THAT MEET IP68 STANDARDS.
9. 7/16 DIN CONNECTORS REQUIRE NO ADDITIONAL WEATHER PROOFING IN INDOOR APPLICATIONS IF INSTALLED AND TORQUED PROPERLY. IN OUTDOOR APPLICATIONS WEATHER PROOFING IS REQUIRED AND THE FOLLOWING PROCEDURE SHOULD BE FOLLOWED.
10. USING WEATHERPROOFING KIT APPROVED BY CABLE MANUFACTURER AND CONTRACTOR START TAPE APPROXIMATELY 5 INCHES FROM THE CONNECTOR, AND WRAP 2 INCHES TOWARD THE CONNECTOR, THEN REVERSE THE TAPE SO THAT THE STICKY SIDE IS UP. TAPE OVER THE CONNECTOR OR SURGE ARRESTOR UNTIL THREE (3) TO FOUR (4) INCHES BEYOND THE CONNECTOR AND REVERSE AGAIN WITH THE STICKY SIDE DOWN FOR ANOTHER INCH OR TWO. PASS THE BUTYL RUBBER AND FINISH WITH A FINAL LAYER OF TAPE.
11. ANTENNAS SHALL BE PAINTED, WHEN REQUIRED, BY THE LANDLORD OR AUTHORITY OF HAVING JURISDICTION IN ACCORDANCE WITH ANTENNA MANUFACTURERS' SURFACES PREPARATION AND PAINTING REQUIREMENTS.
12. CABLE SHIELDS AND TOWER CONDUITS SHALL BE GROUNDED AT THE TOP OF THE TOWER WITHIN 10 FEET OF THEIR CONNECTORS, AND AT THE BOTTOM OF THE TOWER ABOUT 6 INCHES BEFORE THEY TURN TOWARD THE FACILITY. THEY SHALL BE GROUNDED AT THE MIDPOINT OF THE TOWERS THAT ARE BETWEEN 60 FEET AND 200 FEET HIGH, AND AT INTERVALS OF 60 FEET OR LESS ON TOWERS THAT ARE HIGHER THAN 200 FEET.

ANTENNA CABLE & SCHEDULING NOTES

1. SUBCONTRACTOR SHALL VERIFY THE ACTUAL LENGTH IN THE FIELD BEFORE INSTALLATION.
2. TAG AND COLOR CODE ALL MAIN CABLES AT LOCATIONS PER T-MOBILE ANTENNA CABLE MARKING STANDARD:
 - TOP OF TOWER END OF MAIN COAX
 - BOTTOM OF TOWER END OF MAIN COAX
 - DIRECTLY BEFORE AND AFTER RF EQUIPMENT
 - END OF JUMPERS AT BTS EQUIPMENT
3. ANTENNAS SHALL BE PROCURED AND INSTALLED WITH DOWN TILT MOUNTING BRACKETS SUPPLIED BY ANTENNA MANUFACTURER.
4. PRIOR APPROVAL IS REQUIRED BEFORE PERFORMING ANY WORK ON EXISTING CELL SITE EQUIPMENT.

GENERAL NOTES

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

 - CONTRACTOR - CENTERLINE COMMUNICATIONS
 - SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
 - OWNER - T-MOBILE MOBILITY

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 ($F_y = 36$ ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E ($F_y = 36$ ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE MOBILITY SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES:
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

2015 INTERNATIONAL BUILDING CODE
2015 INTERNATIONAL EXISTING BUILDING CODE
2015 INTERNATIONAL PLUMBING CODE
2015 INTERNATIONAL MECHANICAL CODE
2015 INTERNATIONAL ENERGY CONSERVATION CODE
2017 NATIONAL ELECTRICAL CODE (NFPA 70)
2018 CONNECTICUT STATE BUILDING CODE

SUBCONTRACTOR'S WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

AMERICAN CONCRETE INSTITUTE (ACI) 318: BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)
MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G,
STRUCTURAL STANDARDS FOR STEEL

ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

FOR ANY CONFLICTS BETWEEN SECTIONS OF LISTED CODES AND STANDARDS REGARDING MATERIAL, METHODS OF CONSTRUCTION, OR OTHER REQUIREMENTS, THE MOST RESTRICTIVE REQUIREMENT SHALL GOVERN. WHERE THERE IS CONFLICT BETWEEN A GENERAL REQUIREMENT AND A SPECIFIC REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ABBREVIATIONS

AGL	ABOVE GROUND LEVEL	GRC	GALVANIZED RIDGID CONDUIT	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAGE	MGB	MASTER GROUND BUSS	R&R	REMOVE AND REPLACE
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBR	TO BE REMOVED
BTS	BASE TRANSCEIVER STATION	NEC	NATIONAL ELEC. CODE	TYP	TYPICAL
EG	EQUIPMENT GROUND	NTS	NOT TO SCALE		
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		
G.C.	GENERAL CONTRACTOR	REQ	REQUIRED		

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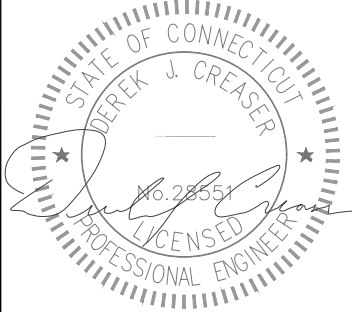


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PHONE: 781.713.4725

REVISIONS

1	04/30/21	CHANGED ADDRESS	MJS
0	04/29/21	ISSUED FOR CONSTRUCTION	MJS
A	04/05/21	ISSUED FOR REVIEW	TRP
REV	DATE	DESCRIPTION	BY

DESIGNED BY: TRP	APPROVED BY: MK
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DATE: 04/30/21

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CT03XC206

SITE ID:

CTHA616A

SITE ADDRESS

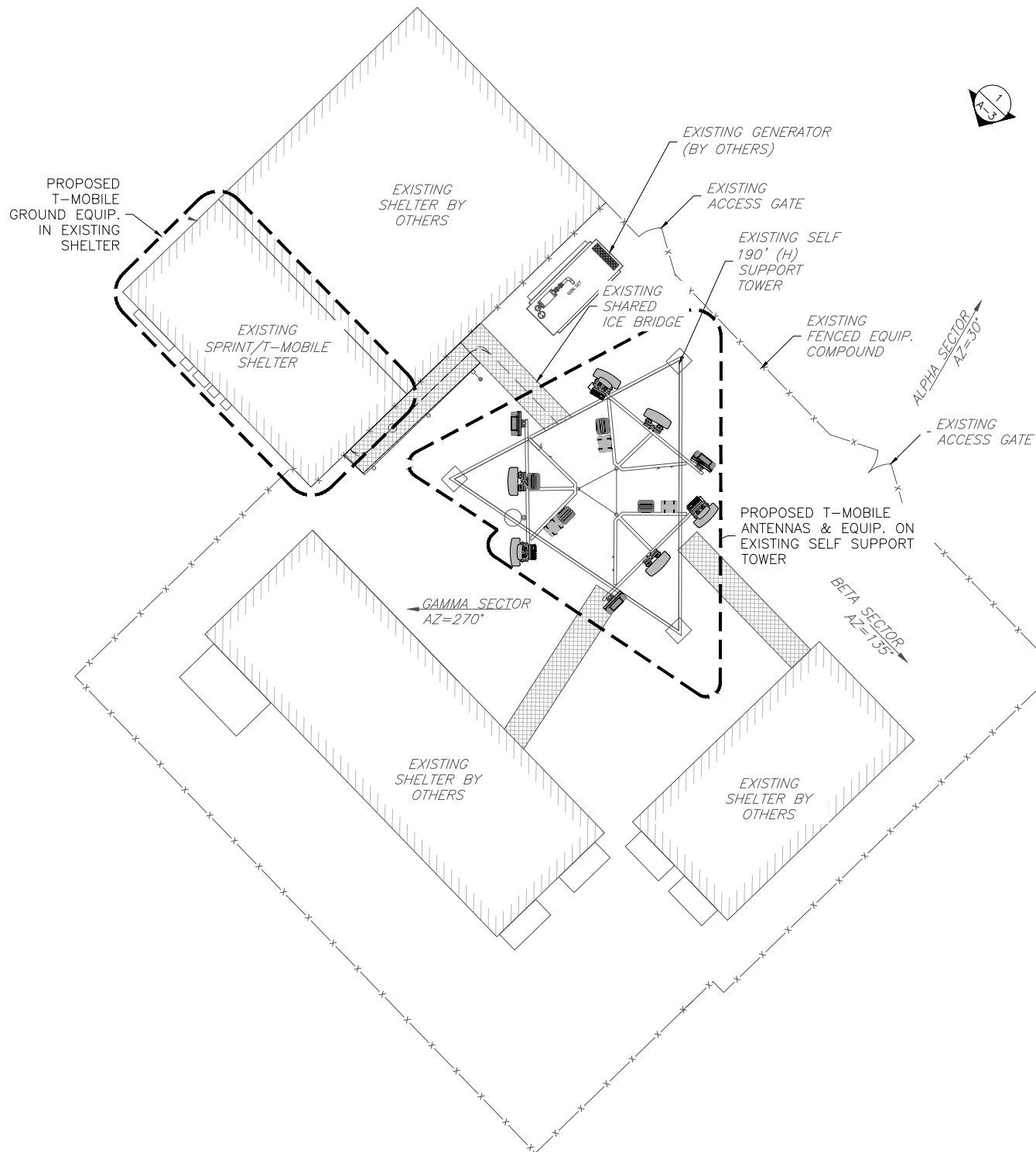
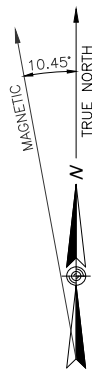
1712 MAIN ST
COVENTRY, CT 06238

SHEET TITLE:

GENERAL NOTES, RF NOTES, CABLING NOTES

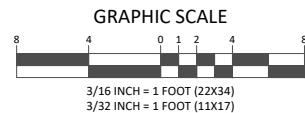
DRAWING:

GN-1



1
A-1

COMPOUND PLAN



NOTES

1. CONTRACTOR SHALL MAKE A UTILITY "ONE CALL" TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
2. CONSTRUCTION TO COMMENCE UPON COMPLETION OF A PASSING STRUCTURAL ANALYSIS.
3. REFERENCE STRUCTURAL ANALYSIS FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
4. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA MODELS AND SETTINGS.

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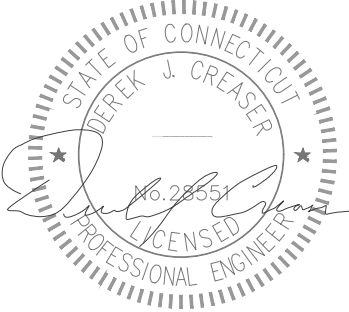


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SHEET TITLE:	COMPOUND PLAN
DRAWING:	A-1

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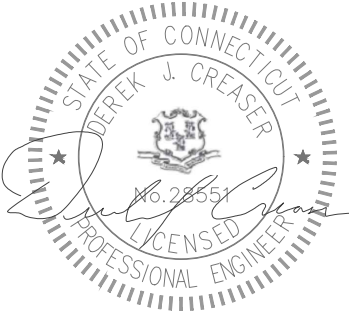


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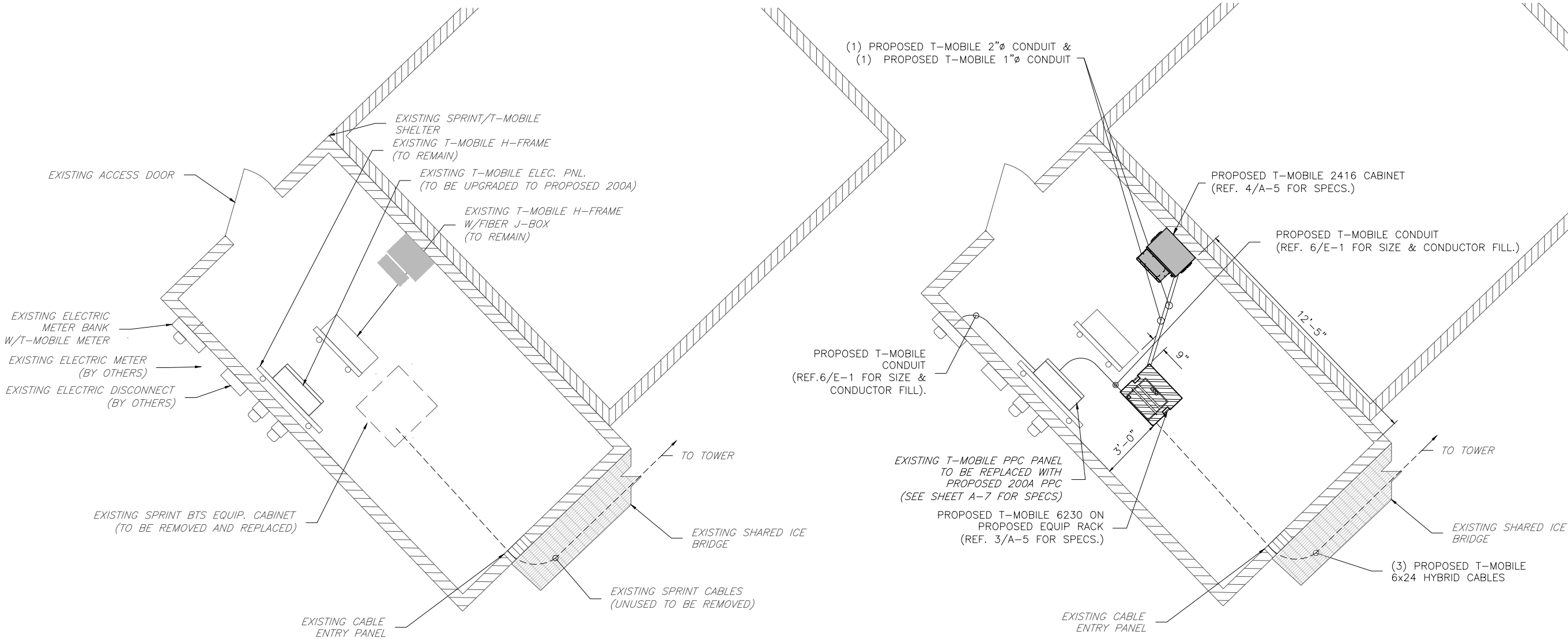


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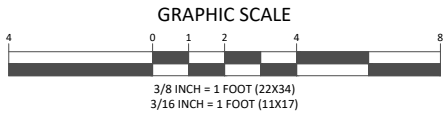
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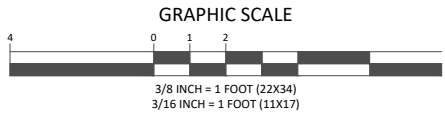
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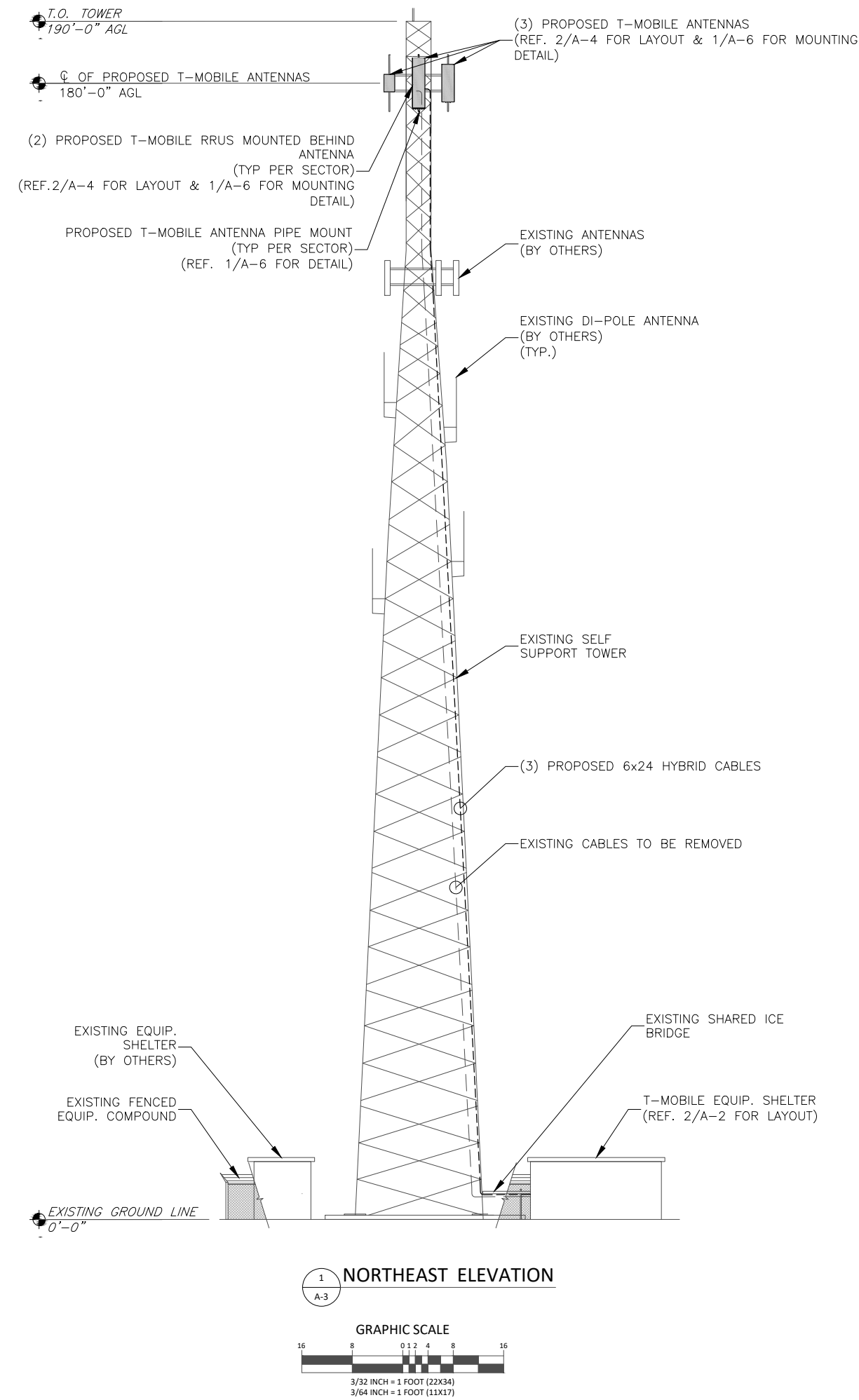


1
A-2
EXISTING EQUIP. LAYOUT



2
A-2
PROPOSED EQUIP. LAYOUT





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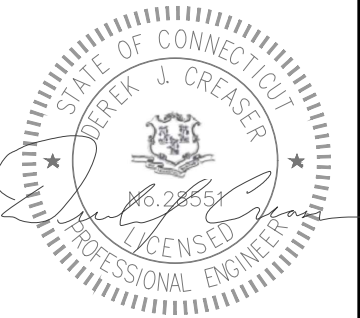


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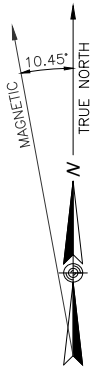
SITE NAME:
CT03XC206

SITE ID:
CTHA616A

SITE ADDRESS:
1712 MAIN ST
COVENTRY, CT 06238

SHEET TITLE:
NORTHEAST ELEVATION

DRAWING:
A-3



ANTENNA & CABLE NOTES:

1. REFERENCE STRUCTURAL ANALYSIS BY CENTERLINE COMMUNICATIONS FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
2. REFERENCE MOUNT ANALYSIS BY CENTERLINE COMMUNICATIONS FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
3. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.
4. REMOVE ALL UNUSED CABLE, RRU's AND TMAs.

STRUCTURAL NOTES:

CONCLUSION:

THE RESULTS OF THE ANALYSIS CONCLUDED THAT THE EXISTING STRUCTURE IS ADEQUATE TO SUPPORT THE PROPOSED AND EXISTING T-MOBILE EQUIPMENT LOADING.

THE RESULTS OF THE ANALYSIS CONCLUDED THAT THE EXISTING MOUNTS ARE ADEQUATE TO SUPPORT THE EXISTING AND PROPOSED T-MOBILE EQUIPMENT LOADING UPON COMPLETION OF THE FOLLOWING MODIFICATIONS. CENTERLINE RECOMMENDS THE FOLLOWING:

- INSTALL (1) 2" STD. x8'-0" LONG MOUNTING PIPE USING (2) SITE PRO 1 UB1212 U-BOLTS AT POSITION 2 OF EACH SECTOR.

ANTENNA & CABLE SCHEDULE

LOCATION		AZIMUTH	RAD CENTER	STATUS	TECHNOLOGY	ANTENNA MODEL	MECH. DOWN-TILT	ELEC. DOWN-TILT	CABLES	DIPLEXERS	TMA/RRU MODEL	CABLE SIZE	CABLE LENGTH
ALPHA	A-1	30°	180'-0"	PROPOSED	L2100	RFS-APX16DWV-16DVW-S-E-A20	0°	2°	(4) 10' COAX JUMPERS	-	RRU-4415 B66A	6x24 HYBRID	240'
	A-2	30°	180'-0"	PROPOSED	L700 L600 N600 L1900 G1900	RFS-APXVAA1L24_43-U-NA20	0°	2°/2°	(8) 10' COAX JUMPERS	-	RRU-4449 B71+B85 RRU-4424 B25	SHARED	-
	A-3	30°	180'-0"	PROPOSED	L2500 N2500	AIR6449 B41	0°	2°	-	-	-	SHARED	-
BETA	B-1	135°	180'-0"	PROPOSED	L2100	RFS-APX16DWV-16DVW-S-E-A20	0°	2°	(4) 10' COAX JUMPERS	-	RRU-4415 B66A	6x24 HYBRID	240'
	B-2	135°	180'-0"	PROPOSED	L700 L600 N600 L1900 G1900	RFS-APXVAA1L24_43-U-NA20	0°	2°/2°	(8) 10' COAX JUMPERS	-	RRU-4449 B71+B85 RRU-4424 B25	SHARED	-
	B-3	135°	180'-0"	PROPOSED	L2500 N2500	AIR6449 B41	0°	2°	-	-	-	SHARED	-
GAMMA	C1	270°	180'-0"	PROPOSED	L2100	RFS-APX16DWV-16DVW-S-E-A20	0°	2°	(4) 10' COAX JUMPERS	-	RRU-4415 B66A	6x24 HYBRID	240'
	C2	270°	180'-0"	PROPOSED	L700 L600 N600 L1900 G1900	RFS-APXVAA1L24_43-U-NA20	0°	2°/2°	(8) 10' COAX JUMPERS	-	RRU-4449 B71+B85 RRU-4424 B25	SHARED	-
	C3	270°	180'-0"	PROPOSED	L2500 N2500	AIR6449 B41	0°	2°	-	-	-	SHARED	-
NOTE: DARK TEXT IN TABLE ABOVE DENOTES PROPOSED EQUIPMENT											TOTAL 6x24 HYBRID CABLE	±720'	

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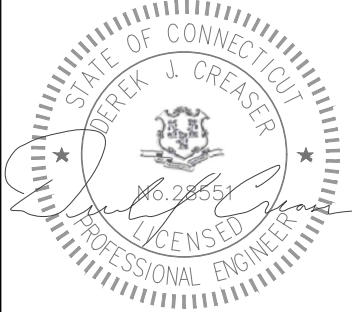


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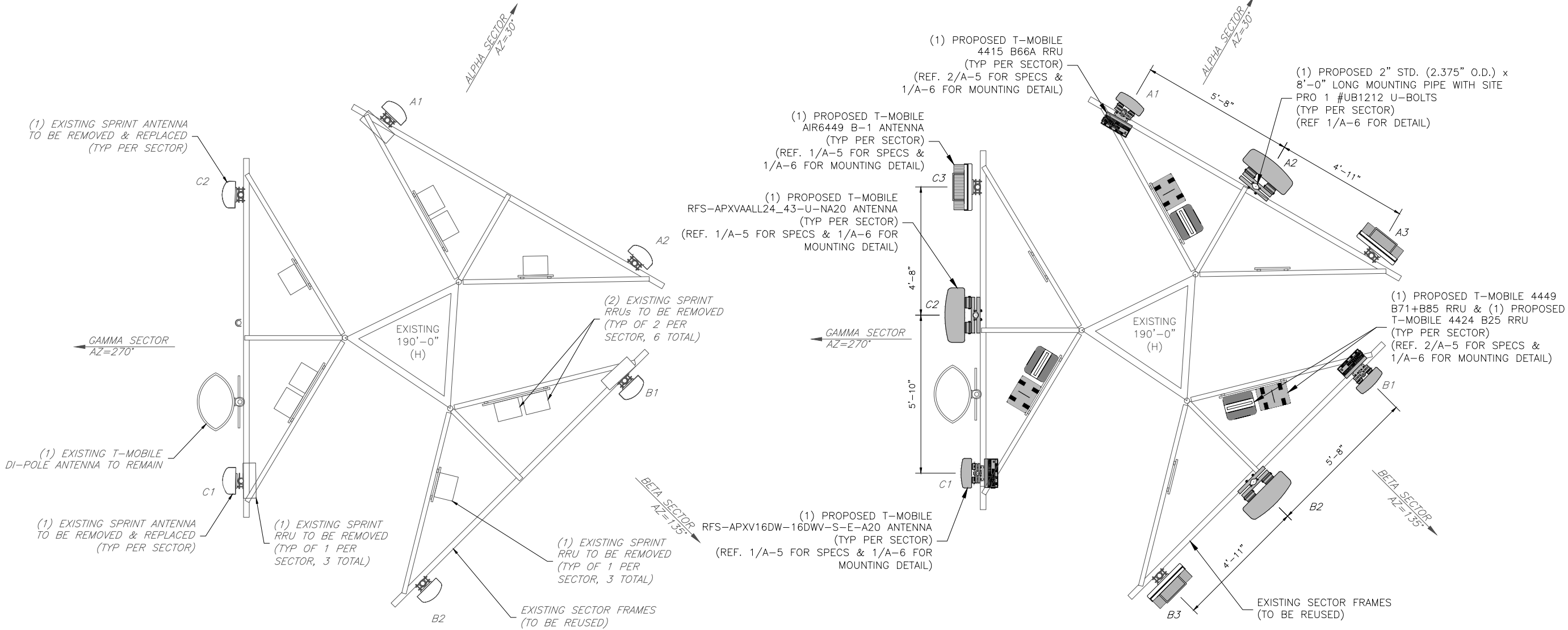


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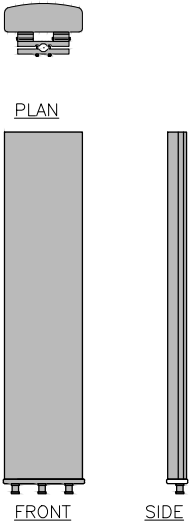
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DRAWING:	A-4



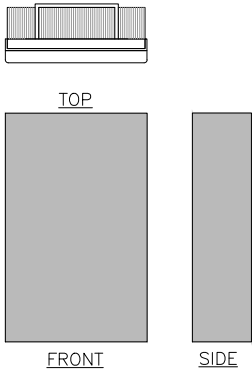
1 EXISTING ANTENNA PLAN
A-4 NOT TO SCALE

2 PROPOSED ANTENNA PLAN
A-4 NOT TO SCALE

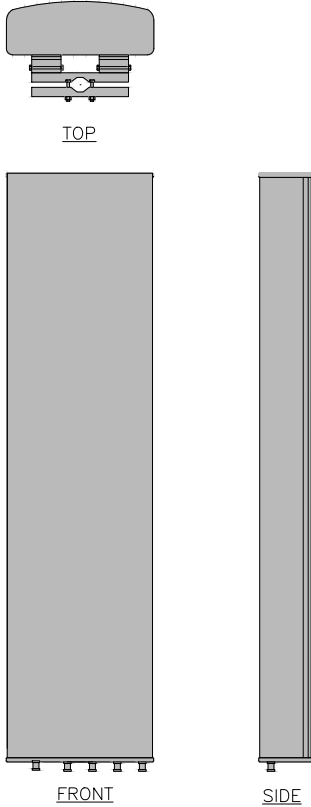
RFS APX16DWV	
MODEL #	APX16DWV-16DWV-S-E-A20 (QUAD)
MANUF.	RFS
HEIGHT	55.9"
WIDTH	13.3"
DEPTH	3.15"
WEIGHT	18.5 LBS



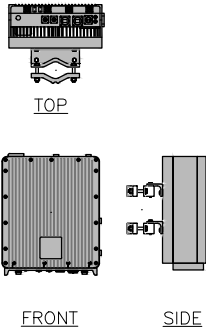
ERICSSON AIR6449-B41 ANTENNA DETAILS	
MODEL #	AIR6449
MANUF.	ERICSSON
WIDTH	20.6"(1'-8 1/2")
DEPTH (W/ DOOR)	8.6" (8 1/2")
HEIGHT	33.1"(2'9 1/8")
WEIGHT	104± LBS
(INSTALL PER MANUFACTURER'S INSTALLATION GUIDELINES)	



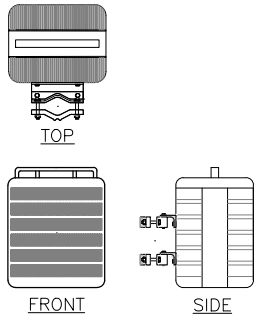
RFS APXVAARR24_43-U-NA20	
MODEL #	APXVAARR24_43-U-NA20 (OCTA)
MANUF.	RFS
HEIGHT	95.9"
WIDTH	24"
DEPTH	8.7"
WEIGHT	128/153.3 LBS with Mounting Hardware



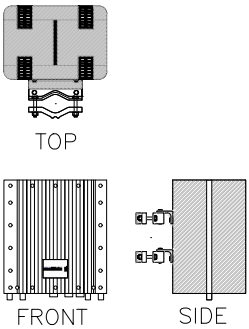
RADIO 4415 DIMENSIONS	
MODEL #	RADIO 4415 B66A RADIO 4415 B25
MANUF.	ERICSSON
WIDTH	13.47"
DEPTH	5.9"
HEIGHT	16.54"
WEIGHT	49.6 LBS



RADIO 4449 DIMENSIONS	
MODEL #	RADIO 4449 B71+B12 (WITH FILTER)
MANUF.	ERICSSON
HEIGHT	17.91"
WIDTH	13.18"
DEPTH	10.63"
WEIGHT	91.09 LBS

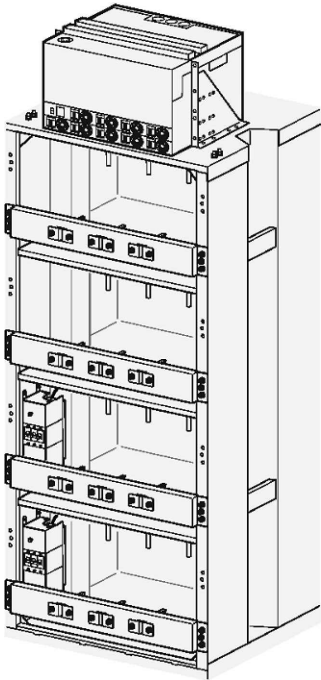
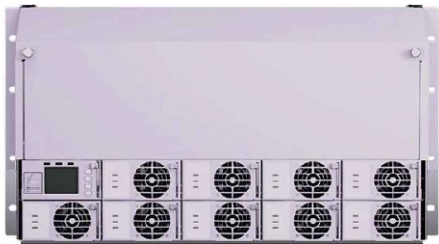


RADIO 4424 DIMENSIONS	
MODEL #	RADIO 4424 B25
MANUF.	ERICSSON
WIDTH	13.2"
DEPTH	5.4"
HEIGHT	14.9"
WEIGHT	46.3 LBS



2 RADIO DETAILS
A-5 NOT TO SCALE

1 ANTENNA DETAILS
A-5 NOT TO SCALE

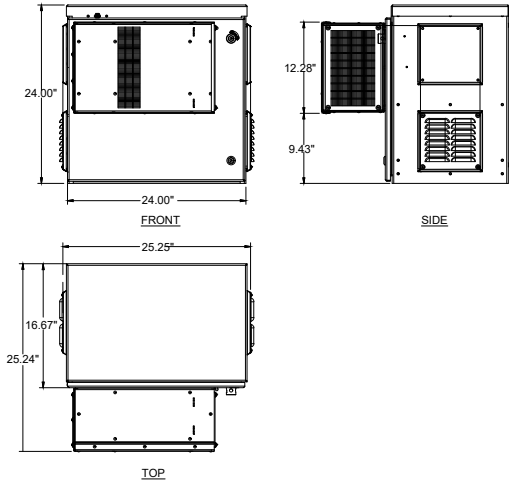


6230 POWER PLANT	
Dimensions	6U / 19" rack mount / 15.5" depth
Mounting	Rack, wall
Input voltage	3P+N+PE: 346/200-415/240 VAC 2P+N+PE: 208/120-220/127 1P+N+PE: 200-250 VAC
Input power	<33 kW
Output load (-48VDC)	24 kW
Total capacity (-48VDC)	31.5 kW
PSU capacity	3500 W
PSU slots	9x
AC SPD	Class 2/Type 2
DC SPD	Class 2/Type 2
Ingress protection	IP20
Temperature range	0°C to +50°C
External alarms	32x

6230 POWER PLANT

EQUIPMENT RACK

2416 CABINET DIMENSIONS	
MODEL #	2416 CABINET
MANUF.	ERICSSON
WIDTH	24"
DEPTH (W/ DOOR)	16"
HEIGHT	24"
WEIGHT	ENCLOSURE 64 LBS., WITHOUT FOUR(4) BATTERIES: 36LBS. TOTAL
(INSTALL PER MANUFACTURER'S INSTALLATION GUIDELINES)	



4 2416 CABINET SPECS.
A-5 NOT TO SCALE

3 EQUIP. RACK SPECS.
A-5 NOT TO SCALE

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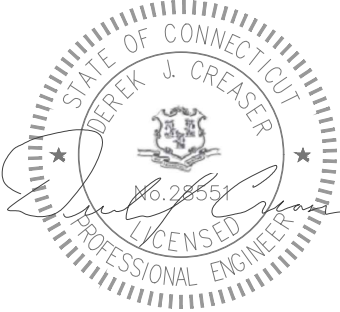


750 W CENTER ST, SUITE 301
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PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
1	04/30/21	CHANGED ADDRESS	MJS
0	04/29/21	ISSUED FOR CONSTRUCTION	MJS
A	04/05/21	ISSUED FOR REVIEW	TRP

DESIGNED BY: TRP	APPROVED BY: MK
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DATE: 04/30/21

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SITE NAME:	CT03XC206
SITE ID:	CTHA616A
SITE ADDRESS:	1712 MAIN ST COVENTRY, CT 06238

SHEET TITLE:	DETAILS
DRAWING:	A-5

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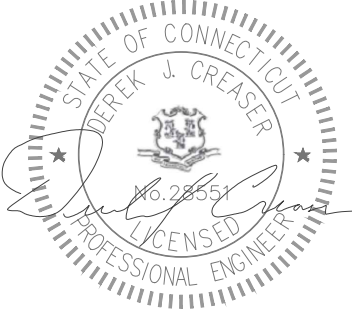


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REVISIONS

REV	DATE	DESCRIPTION	BY
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A	04/05/21	ISSUED FOR REVIEW	TRP

DESIGNED BY: TRP	APPROVED BY: MK
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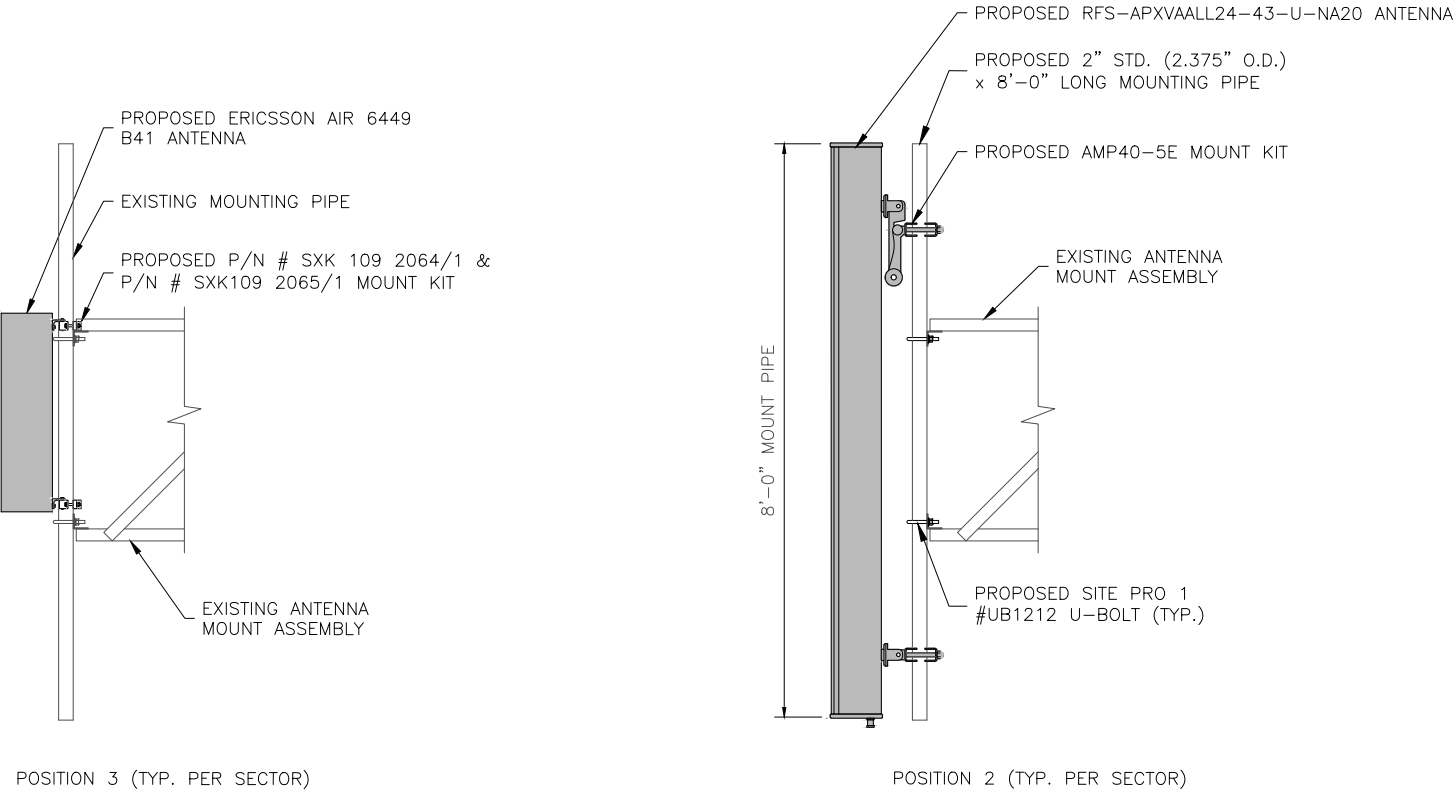


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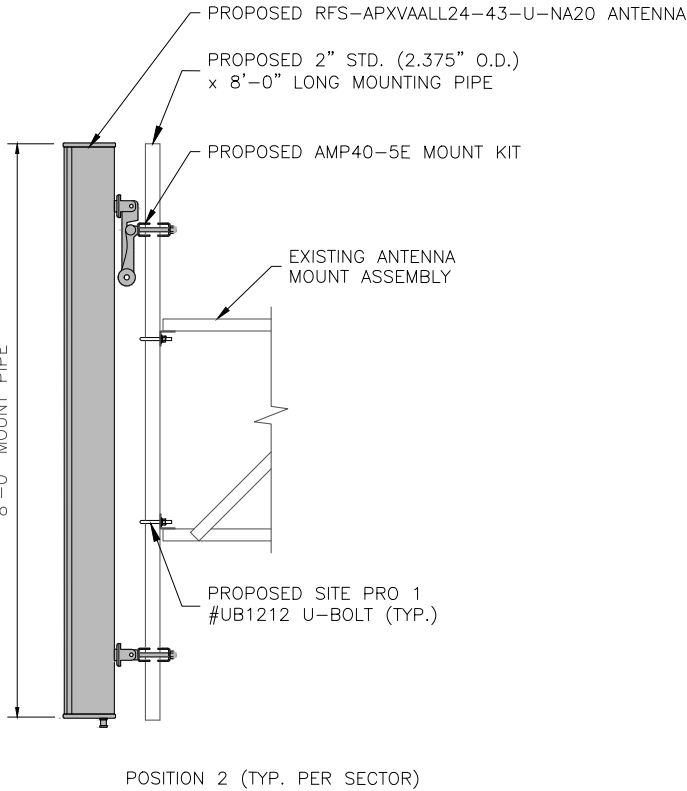
SITE NAME:	CT03XC206
SITE ID:	CTHA616A
SITE ADDRESS:	1712 MAIN ST COVENTRY, CT 06238

SHEET TITLE:	ANTENNA AND RRU MOUNT DETAILS
DRAWING:	A-6



NOTES

1. ANTENNA MOUNT DETAIL FOR POSITION A3, B3, & G3.

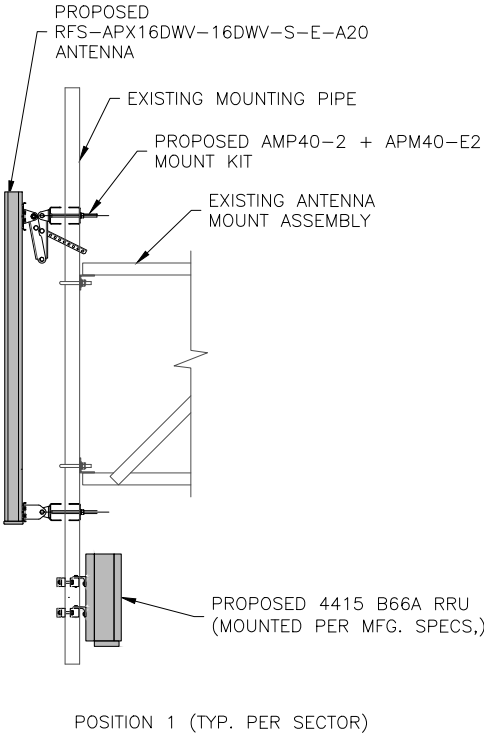


NOTES

1. ANTENNA MOUNT DETAIL FOR POSITION A2, B2, & G2.

- NOTES FOR ANTENNA MOUNTS:
- AIR6449-B41: P/N# SXX 109 2064/1 & P/N# SXX109 2065/1 MOUNTING KIT.
 - APXVAALL24_43-U-NA20 : APM40-5E PIPE MOUNT KIT
 - RFS-APX16DWV-16DWV-S-E-A20: MOUNT KIT = APM40-2 + APM40-E2

1 ANTENNA MOUNTING DETAIL
A-6 NOT TO SCALE



NOTES

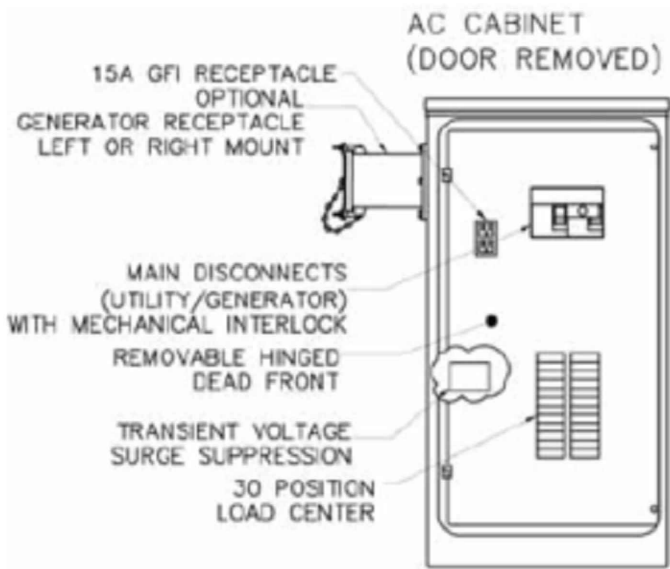
1. ANTENNA MOUNT DETAIL FOR POSITION A1, B1, & G1.



CAC-A75201090
Specifications

- Cabinet Configuration**
- 120/240 VAC, 1 Phase, 3 Wire & Ground
 - Cabinet Dimensions: 20"W x 10"D x 40"H
 - Weight: approx. 80 lbs.
 - NEMA 3R Type Enclosure
 - Wall or Bracket Mount
 - Suitable For Use As Service Equipment
 - UL Listed 891, Dead Front Switch Boards

- Component Configuration**
- Service: 200 Amp Utility/Standby
 - Slide Bar Mechanical Interlock (prevents both source from being energized simultaneously)
 - 65kAIC Rated Utility Service Disconnect
 - 30 Position Square-D Load Center (12 position shown)
 - 15Amp, 120Vac GFI duplex receptacle
 - N-G Bonding Jumper Kit (customer installed if required)
 - Standby Power Receptacle Appleton AR20044RS
 - Transient Voltage Surge Suppression rated 100kA



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www.northern-tech.com
D0315-A-0822 Rev. 1 (04/09/07)



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A	04/05/21	ISSUED FOR REVIEW		TRP
REV	DATE	DESCRIPTION		BY

DESIGNED BY: TRP	APPROVED BY: MK
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SITE NAME:	CT03XC206
SITE ID:	CTHA616A
SITE ADDRESS:	1712 MAIN ST COVENTRY, CT 06238

SHEET TITLE:	PROPOSED PPC PRODUCT SPECS
DRAWING:	A-6

STRUCTURAL NOTES:

1. DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
2. CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
3. DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
4. STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
5. STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
6. STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
7. ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
8. ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
9. FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
10. CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
11. INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
12. UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
13. EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
14. EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
15. LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
16. WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
17. ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
18. NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
19. SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

GENERAL: WHERE APPLICATION IS MADE FOR CONSTRUCTION, THE OWNER OR THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE ACTING AS THE OWNER'S AGENT SHALL EMPLOY ONE OR MORE APPROVED AGENCIES TO PERFORM INSPECTIONS DURING CONSTRUCTION ON THE TYPES OF WORK LISTED IN THE INSPECTION CHECKLIST ABOVE.

THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE AND ENGINEERS OF RECORD INVOLVED IN THE DESIGN OF THE PROJECT ARE PERMITTED TO ACT AS THE APPROVED AGENCY AND THEIR PERSONNEL ARE PERMITTED TO ACT AS THE SPECIAL INSPECTOR FOR THE WORK DESIGNED BY THEM, PROVIDED THOSE PERSONNEL MEET THE QUALIFICATION REQUIREMENTS.

STATEMENT OF SPECIAL INSPECTIONS: THE APPLICANT SHALL SUBMIT A STATEMENT OF SPECIAL INSPECTIONS PREPARED BY THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE IN ACCORDANCE WITH SECTION 107.1 AS A CONDITION FOR ISSUANCE. THIS STATEMENT SHALL BE IN ACCORDANCE WITH SECTION 1705.

REPORT REQUIREMENT: SPECIAL INSPECTORS SHALL KEEP RECORDS OF INSPECTIONS. THE SPECIAL INSPECTOR SHALL FURNISH INSPECTION REPORTS TO THE BUILDING OFFICIAL, AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. REPORTS SHALL INDICATE THAT WORK INSPECTED WAS OR WAS NOT COMPLETED IN CONFORMANCE TO APPROVED CONSTRUCTION DOCUMENTS. DISCREPANCIES SHALL BE BROUGHT TO THE IMMEDIATE ATTENTION OF THE CONTRACTOR FOR CORRECTION. IF THEY ARE NOT CORRECTED, THE DISCREPANCIES SHALL BE BROUGHT TO THE ATTENTION OF THE BUILDING OFFICIAL AND TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE. A FINAL REPORT DOCUMENTING REQUIRED SPECIAL INSPECTIONS SHALL BE SUBMITTED.

SPECIAL INSPECTION CHECKLIST	
BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS ¹
N/A	MATERIAL SPECIFICATIONS REPORT ²
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS ³
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS ⁴
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION ⁵
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS ⁶
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTES:

1. REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
2. PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
3. PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
4. HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
5. ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
6. AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

NOTES:

1. ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"Ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
2. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
3. SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
4. VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
5. CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
6. EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

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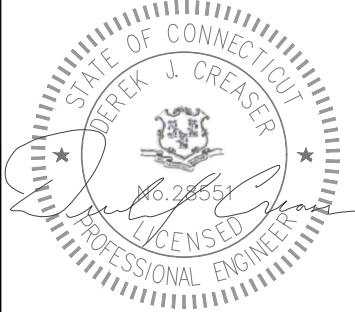


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REV	DATE	DESCRIPTION	BY

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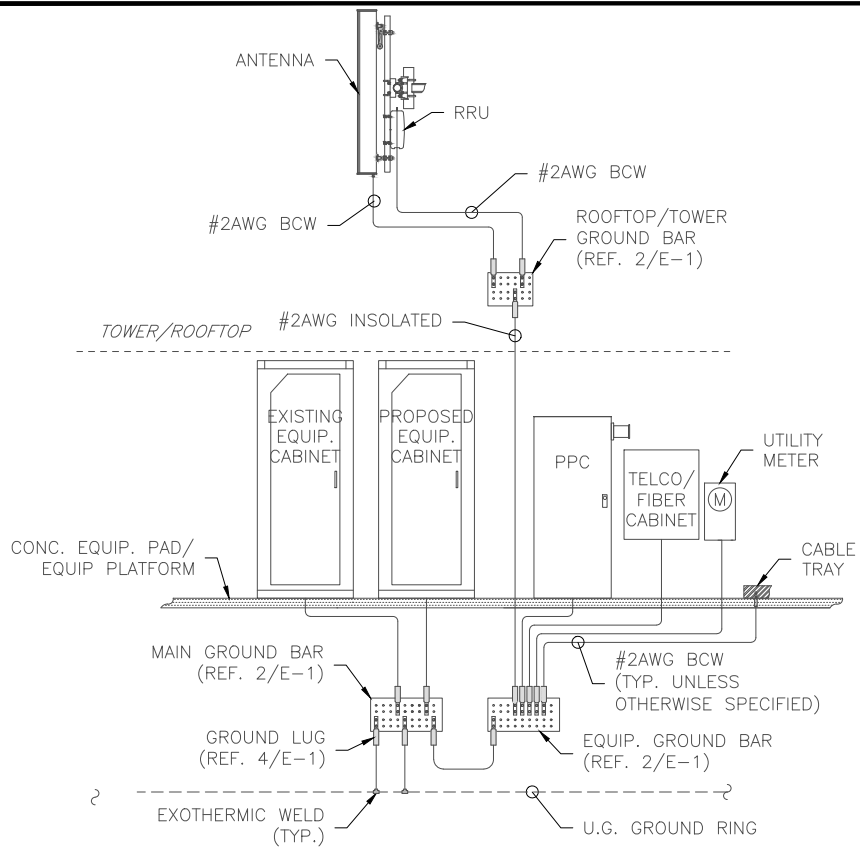


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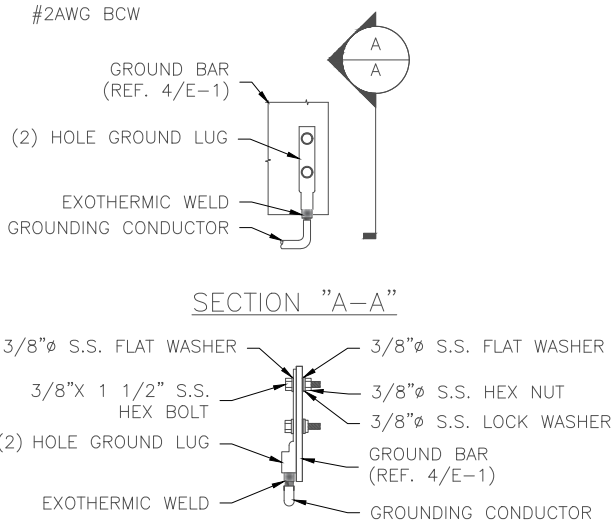
SITE NAME:	CT03XC206
SITE ID:	CTHA616A
SITE ADDRESS:	1712 MAIN ST COVENTRY, CT 06238

SHEET TITLE:	STRUCTURAL NOTES & SPECIAL INSPECTIONS
DRAWING:	SN-1



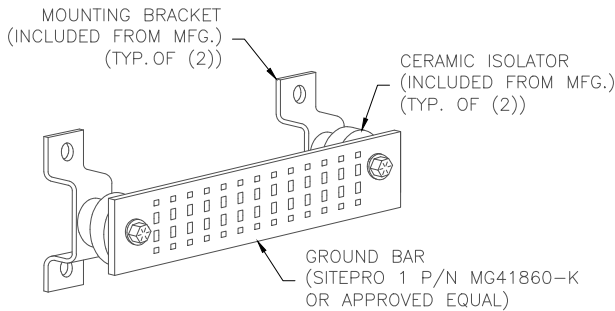
GROUNDING RISER NOTE:
UNLESS OTHERWISE SPECIFIED ALL GROUNDING CONDUCTORS ARE TO BE #2AWG BCW

1
E-1
GROUNDING RISER DIAGRAM
NOT TO SCALE



GROUNDING LUG NOTES:
1. DO NOT DOUBLE UP OR STACK LUGS.
2. OXIDE INHIBITING COMPOUND TO BE APPLIED TO ALL LUGS.
3. ALL LUGS ARE TO BE EXOTHERMIC WELDED TO GROUNDING CONDUCTORS.
4. FOR INSOLATED GROUNDING CONDUCTORS, EXPOSED BARE COPPER TO BE KEPT TO ABSOLUTE MINIMUM.
5. NO INSULATION IS ALLOWED WITHIN THE BARREL OF THE COMPRESSION TERMINAL.

2
E-1
GROUND LUG DETAIL
NOT TO SCALE



4
E-1
GROUND BAR DETAIL
NOT TO SCALE

EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

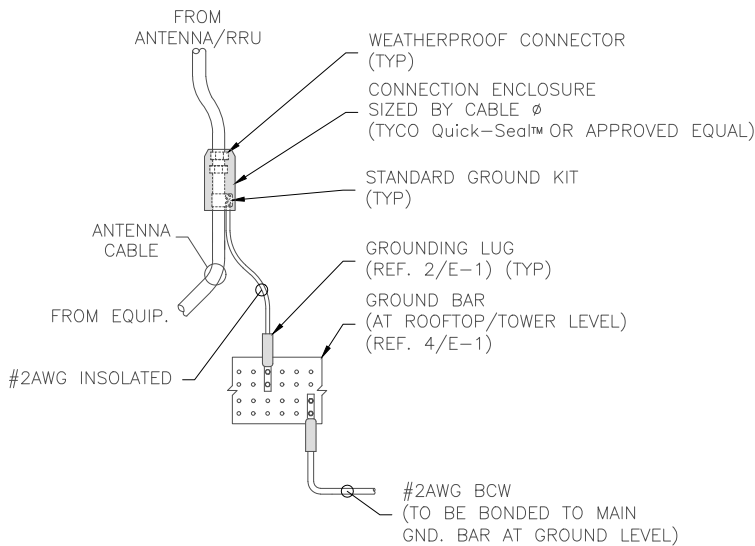
SECTION "P" – SURGE PRODUCERS

CABLE ENTRY PORTS (HATCH PLATES) (#2)
GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
TELCO GROUND BAR
COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
+24V POWER SUPPLY RETURN BAR (#2)
-48V POWER SUPPLY RETURN BAR (#2)
RECTIFIER FRAMES.

SECTION "A" – SURGE ABSORBERS

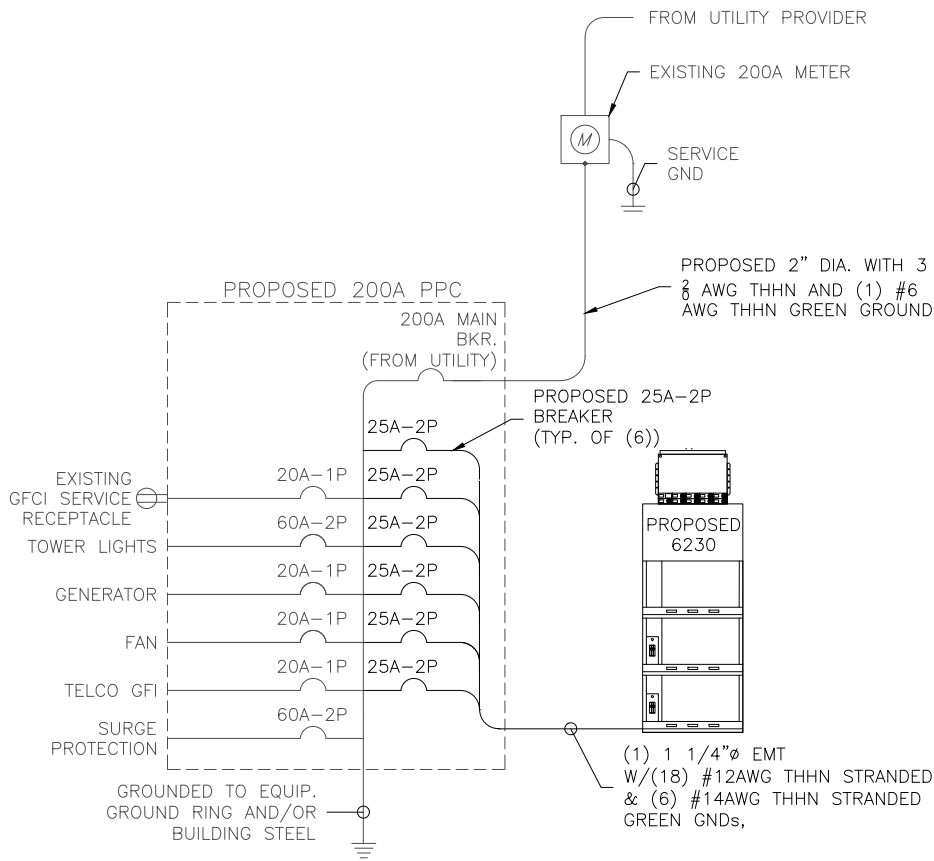
INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)

5
E-1
GROUND WIRE SCHEDULE
NOT TO SCALE



NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT BEND IN CABLE.
2. GROUND CABLES DIRECTLY TO CIGBE
3. JUMPER REQUIRED ONLY WHEN CABLE IS 1 1/4" OR LARGER

3
E-1
ANTENNA/RRU GROUNDING DETAIL
NOT TO SCALE



6
E-1
ONE LINE DIAGRAM
NOT TO SCALE

T - Mobile NORTHEAST LLC

T-MOBILE NORTHEAST, LLC.
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
PHONE: (508) 286-2700
FAX: (508) 286-2893

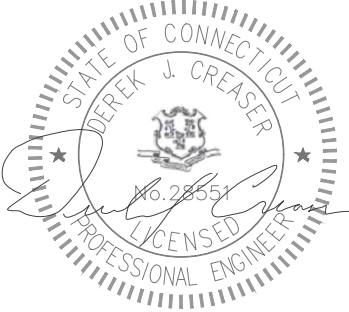


750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
1	04/30/21	CHANGED ADDRESS	MJS
0	04/29/21	ISSUED FOR CONSTRUCTION	MJS
A	04/05/21	ISSUED FOR REVIEW	TRP

DESIGNED BY: TRP	APPROVED BY: MK
---------------------	--------------------



DATE: 04/30/21

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SITE NAME:	CT03XC206
SITE ID:	CTHA616A
SITE ADDRESS:	1712 MAIN ST COVENTRY, CT 06238

SHEET TITLE:	GROUNDING DETAILS & ONE LINE DIAGRAM
DRAWING:	E-1

Exhibit D

Structural Analysis Report

Revised Structural Analysis Report

Site ID: CTHA616A

Site Name: CT03XC206

Project Name: Sprint Retain

Address: 1712 Main Street
Coventry, CT 06238

Client:



NORTHEAST, LLC

**15 Commerce Way, Suite B
Norton, MA 02766**

Date: 4/29/2021 (Rev. 1)

4/28/2021

Scope of Work:

Centerline Communications was authorized by T-Mobile Northeast LLC to perform an analysis of the existing structure to determine its capacity to support the proposed and existing T-Mobile equipment/appurtenances listed in this report.

Existing & Proposed Equipment:

Carrier	Mounting Level (ft)	Center Line Elevation (ft)	Number of Appurtenances	Antenna Manufacturer	Appurtenance Model	Feed Lines (in)
-	192.0	202.0	2	-	ASP-705	(2) 1-1/4 (2) 1/2 (5) 7/8
	192.0	202.0	1	-	DB420	
	192.0	196.0	1	-	PD1142-3	
	192.0	192.0	1	-	Halo	
	192.0	192.0	2	-	Obstruction Lights	
	190.0	190.0	1	-	3' Yagi	
		192.0	1	-	4'x3" Dia. Omni	
		190.0	1	-	3' Yagi	
	188.0	188.0	3	Pirot	4' Side Mount Standoff	
-	187.0	187.0	3	-	Paraflector	(1) 1/2
	187.0	195.0	1	-	PD1142-3	
T-Mobile	180.0	180.0	3	RFS	APX16DWV-16DWV-S-E-A20	(3) 6x24 Hybrid
			3	RFS	APXVAALL24_43-U-NA20	
			3	Ericsson	AIR 6449 B41	
			3	Ericsson	4415 B66A RRH	
			3	Ericsson	Radio 4449 B71+B85 RRH	
			3	Ericsson	4424 B25 RRH	
			3	-	Sector Frame	
-	156.0	166.0	2	-	ASP-705	(6) 1-5/8 (3) 7/8
		156.0	1	-	3' Grid Dish	
		156.0	2	Pirot	4' Side Mount Standoff	
Verizon	150.0	150.0	6	-	LNx-6514DS-T4M	(20) 1-5/8
			6	-	HBXX-6517DS-A2M	
			3	-	RRH2x60-AWS	
			3	-	RRH2x60-PCS	
			2	-	DB-T1-6Z-8AB-0Z	
			3	Pirot	12' Sector Mount	

-	144.0	144.0	2	-	Paraflector	(2) 7/8 (2) 1/2
	142.0	142.0	1	-	DB230-2A	
			1	-	DB264-A	
			1	-	DB436-C	
			2	Pirot	4' Side Mount Standoff	
-	136.0	139.0	1	-	Single Dipole	(1) 1/2
-	113.0	116.0	1	-	Dipole	(1) 7/8
		113.0	1	Pirot	4' Side Mount Standoff	(1) 1/2
-	110.0	110.0	1	-	PD320	-
-	109.0	116.0	1	-	14'x3" Dia. Omni	(1) 7/8
		109.0	1	Pirot	4' Side Mount Standoff	
-	103.0	110.0	1	-	14'x3" Dia. Omni	(1) 7/8
		103.0	1	Pirot	4' Side Mount Standoff	
-	102.0	102.0	1	-	GPS	(1) 1/2
			1	-	1' Standoff Mount	
-	94.0	94.0	1	-	DB212 Single Dipole	(1) 1/2
-	92.0	92.0	1	-	15' Single Dipole	(1) 7/8
-	74.0	74.0	1	-	PD320	(1) 7/8
-	70.0	70.0	1	-	15' Single Dipole	(1) 1/2
-	50.0	50.0	1	-	15' Single Dipole	(1) 1/2
-	50.0	50.0	1	-	DB212 Single Dipole	(1) 1/2
-	32.0	32.0	1	-	DB212 Single Dipole	(1) 1/2
-	31.0	31.0	1	-	15' Single Dipole	(1) 1/2
-	17.0	23.0	1	-	PD400	(1) 1/2
	17.0	21.0	1	-	3' Yagi	
		17.0	1	Pirot	4' Side Mount Standoff	

Note: Proposed equipment shown in **bold**.

Design Criteria:**Design Codes:**

2018 Connecticut State Building Code

2015 International Building Code

ASCE 7-10

TIA-222-G Standards

Ultimate Design Wind Speed (V_{ult})	130 mph
Wind Speed with Ice	50 mph
Ice Thickness	1.00 in.
Exposure Category	B
Topographic Category	1
Risk Category	II
Site Soil Class (Assumed)	D – Stiff Soil
Seismic Design Category	B
Spectral Response Acceleration Parameter at a Short Periods, S_s	0.176 g
Spectral Response Acceleration Parameter at a Period of 1 Second, S_1	0.063 g
Short Period Site Coefficient, F_a	1.60
Long Period Site Coefficient, F_v	2.40

***Refer to calculations for additional design criteria.**

Conclusion:

Section Capacity (Summary)

Section No.	Elevation ft	Component Type	Size	Critical Element	P lb	ϕP_{allow} lb	% Capacity	Pass Fail
T1	190 - 180	Leg	ROHN 2 STD	2	-5001.40	31617.20	15.8	Pass
T2	180 - 160	Leg	ROHN 2.5 STD	20	-41175.80	63560.30	64.8	Pass
T3	160 - 140	Leg	ROHN 3 EH	53	- 102224.00	119117.00	85.8	Pass
T4	140 - 136	Leg	ROHN 3.5 EH	86	- 114843.00	149924.00	76.6	Pass
T5	136 - 132	Leg	ROHN 3.5 EH	98	- 123691.00	149924.00	82.5	Pass
T6	132 - 128	Leg	ROHN 3.5 EH	107	- 130879.00	149926.00	87.3	Pass
T7	128 - 124	Leg	ROHN 3.5 EH	116	- 138161.00	149924.00	92.2	Pass
T8	124 - 120	Leg	ROHN 3.5 EH	125	- 144551.00	161228.00	89.7	Pass
T9	120 - 100	Leg	ROHN 4 EH	137	- 177379.00	192061.00	92.4	Pass
T10	100 - 80	Leg	ROHN 5 EH	176	- 210036.00	239388.00	87.7 89.7 (b)	Pass
T11	80 - 60	Leg	ROHN 5 EH	197	- 241316.00	265136.00	91.0	Pass
T12	60 - 40	Leg	6.0 EHS + HALF HSS7.625x0.375	227	- 276335.00	400079.00	69.1 77.6 (b)	Pass
T13	40 - 20	Leg	ROHN 6 EH	248	- 304630.00	356741.00	85.4	Pass
T14	20 - 0	Leg	ROHN 8 EHS	269	- 335912.00	386395.00	86.9	Pass
T1	190 - 180	Diagonal	L1 3/4x1 3/4x3/16	10	-1962.67	10333.60	19.0 33.5 (b)	Pass
T2	180 - 160	Diagonal	L1 3/4x1 3/4x3/16	24	-4018.07	11446.10	35.1 67.6 (b)	Pass
T3	160 - 140	Diagonal	L2x2x1/4	58	-7835.10	19074.20	41.1 80.5 (b)	Pass
T4	140 - 136	Diagonal	L1 3/4x1 3/4x3/16	94	-4603.01	10909.60	42.2 73.3 (b)	Pass
T5	136 - 132	Diagonal	L1 3/4x1 3/4x3/16	102	-4142.98	10379.70	39.9 69.3 (b)	Pass
T6	132 - 128	Diagonal	L1 3/4x1 3/4x3/16	111	-4112.45	9859.69	41.7 67.1 (b)	Pass
T7	128 - 124	Diagonal	L1 3/4x1 3/4x3/16	120	-4107.76	9280.71	44.3 67.5 (b)	Pass
T8	124 - 120	Diagonal	L1 3/4x1 3/4x3/16	129	-4541.07	8567.74	53.0 73.3 (b)	Pass
T9	120 - 100	Diagonal	L2x2x3/16	150	-5804.58	8389.57	69.2 78.4 (b)	Pass
T10	100 - 80	Diagonal	L2 1/2x2 1/2x3/16	180	-6159.41	9563.61	64.4 72.5 (b)	Pass
T11	80 - 60	Diagonal	L2 1/2x2 1/2x1/4	201	-7310.48	9369.88	78.0	Pass
T12	60 - 40	Diagonal	L3x3x1/4	231	-7846.91	13252.80	59.2 66.8 (b)	Pass
T13	40 - 20	Diagonal	L3 1/2x3 1/2x1/4	252	-9243.54	14151.80	65.3 77.6 (b)	Pass
T14	20 - 0	Diagonal	L3 1/2x3 1/2x1/4	273	-10310.00	12139.10	84.9	Pass
T8	124 - 120	Secondary Horizontal	L2x2x1/4	135	-1419.66	13968.10	10.2	Pass
T9	120 - 100	Secondary Horizontal	L2x2x1/4	165	-1870.27	12814.60	14.6	Pass
T11	80 - 60	Secondary Horizontal	L2 1/2x2 1/2x1/4	216	-1937.64	11663.90	16.6	Pass

T13	40 - 20	Secondary Horizontal	L3x3x5/16	258	-1837.27	13884.10	13.2	Pass
T1	190 - 180	Top Girt	L1 3/4x1 3/4x3/16	5	-447.98	6477.07	6.9 7.1 (b)	Pass
T4	140 - 136	Top Girt	L1 3/4x1 3/4x3/16	90	-560.33	6683.02	8.4	Pass
							Summary	
							Leg (T9)	92.4
							Diagonal (T14)	84.9
							Secondary Horizontal (T11)	16.6
							Top Girt (T4)	8.4
							Bolt Checks	89.7
							RATING =	92.4
								Pass

Structure Rating (max from all components) =	92.4%
---	--------------

Foundation Capacity (Summary)

Component	% Capacity	Pass/Fail
Soil Rating	63.5%	Pass

Foundation Rating (max from all components) =	63.5%
--	--------------

Recommendations:

The existing tower has sufficient capacity to support the existing and proposed loading for the final loading configuration. Modifications to the tower structure are not required.

Reference Documents:

- T-Mobile RFDS CTHA616A_Sprint Retain_1, dated January 15, 2021
- Construction Drawings by Maser Consulting, dated July 27, 2018
- Structural and Mount Analysis and Modifications by Maser Consulting, dated July 23, 2018

Assumptions and Limitations:

- The tower and structures were built and maintained with the manufacturer's specifications.
- The configuration of antennas, transmission cables, mounts and other appurtenances are as specified in this report and the referenced drawings.

Design Calculations

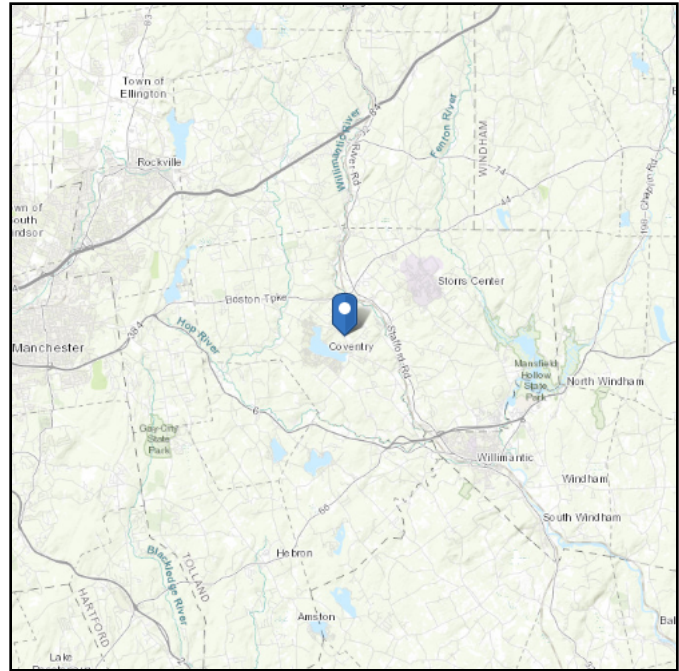


ASCE 7 Hazards Report

Address:
1660 Main St
Coventry, Connecticut
06238

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

Elevation: 692.83 ft (NAVD 88)
Latitude: 41.778476
Longitude: -72.309981



Wind

Results:

Wind Speed:	126 Vmph
10-year MRI	78 Vmph
25-year MRI	87 Vmph
50-year MRI	95 Vmph
100-year MRI	103 Vmph

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

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

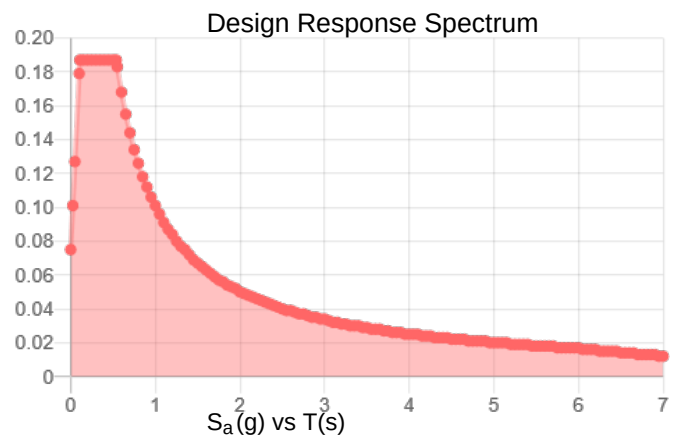
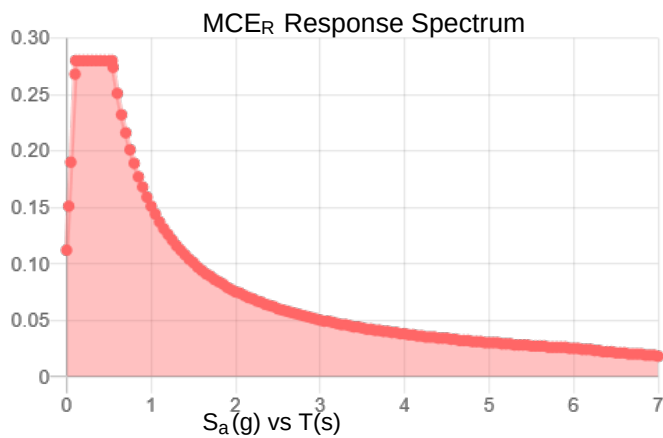
Site is in a hurricane-prone region as defined in ASCE/SEI 7-10 Section 26.2. Glazed openings need not be protected against wind-borne debris.

Site Soil Class: D - Stiff Soil

Results:

S_S :	0.175	S_{DS} :	0.187
S_1 :	0.063	S_{D1} :	0.101
F_a :	1.6	T_L :	6
F_v :	2.4	PGA :	0.088
S_{MS} :	0.28	PGA_M :	0.14
S_{M1} :	0.151	F_{PGA} :	1.6
		I_e :	1

Seismic Design Category B



Data Accessed:

Tue Apr 27 2021

Date Source:

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

Ice

Results:

Ice Thickness: 1.00 in.

Concurrent Temperature: 5 F

Gust Speed: 50 mph

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

Date Accessed: Tue Apr 27 2021

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

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

Snow

Results:

Ground Snow Load, p_g : 30 lb/ft²

Elevation: 692.8 ft

Data Source: ASCE/SEI 7-10, Fig. 7-1.

Date Accessed: Tue Apr 27 2021

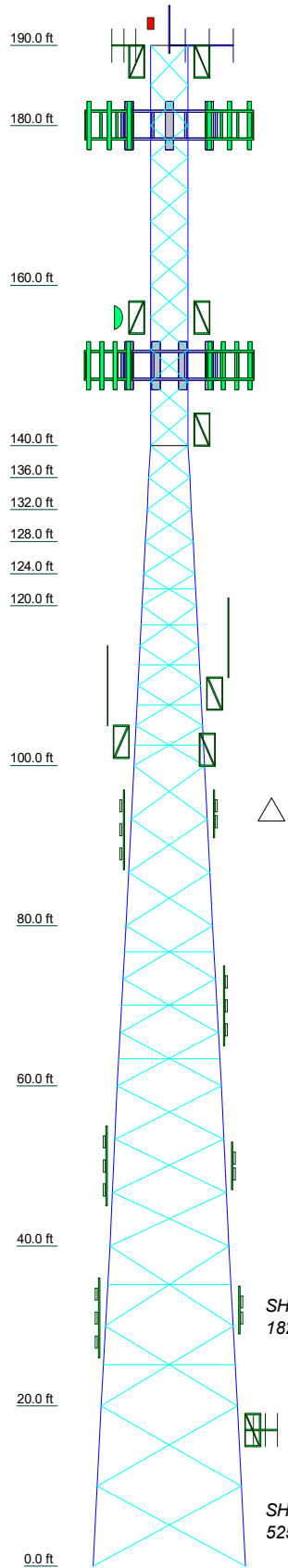
Values provided are ground snow loads. In areas designated "case study required," extreme local variations in ground snow loads preclude mapping at this scale. Site-specific case studies are required to establish ground snow loads at elevations not covered.

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

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Section	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	ROHN 8 EHS	ROHN 6 EH	B		ROHN 5 EH	ROHN 4 EH	ROHN 3.5 EH	ROHN 3 EH	ROHN 2.5 STD	A				
Leg Grade					A572-50									
Diagonals	L3 1/2x3 1/2x1/4	L3x3x1/4	L2 1/2x2 1/2x1/4	L2 1/2x2 1/2x3/16	L2 1/2x2 1/2x3/16	L2x2x3/16	L1 3/4x1 3/4x3/16	L2x2x1/4	L1 3/4x1 3/4x3/16					
Diagonal Grade		A572-50												
Top Girts				N.A.										
Sec. Horizontals	N.A.	L3x3x5/16	N.A.	L2 1/2x2 1/2x1/4	N.A.	L2x2x1/4								
Face Width (ft)	16.99	14.85	12.92	10.83	8.83	6.76	6.35	5.94	5.54	5.13	4.72	4.69		4.65
# Panels @ (ft)	4 @ 10	4 @ 10	9 @ 6.66667	9 @ 6.66667	9 @ 6.66667	4 @ 5	4 @ 5	4 @ 5	15 @ 4					2 @ 5
Weight (lb) 21258.1	3579.0	3774.6	3542.0	2869.2	2001.8	1827.9	326.1	255.6	251.1	248.8	273.9	1267.4	774.7	328.0

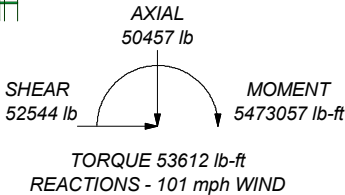
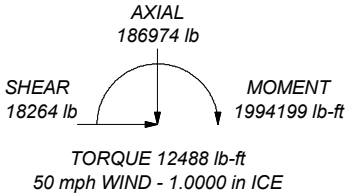


ALL REACTIONS
ARE FACTORED

MAX. CORNER REACTIONS AT BASE:

DOWN: 344137 lb
SHEAR: 33053 lb

UPLIFT: -302758 lb
SHEAR: 29484 lb



SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	ROHN 2 STD	C	L1 3/4x1 3/4x3/16
B	6.0 EHS + HALF HSS7.625x0.375		

MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in Tolland County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-G Standard.
3. Tower designed for a 101 mph basic wind in accordance with the TIA-222-G Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Structure Class II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. TOWER RATING: 92.4%

Centerline Communications

750 West Center Street, Suite 301

West Bridgewater, MA 02379

Phone: (781) 713-4725

FAX:

Job: CTHA616A

Project: ANCHOR

Client: T-MOBILE

Code: TIA-222-G

Path:

Drawn by: Joshua Gildert

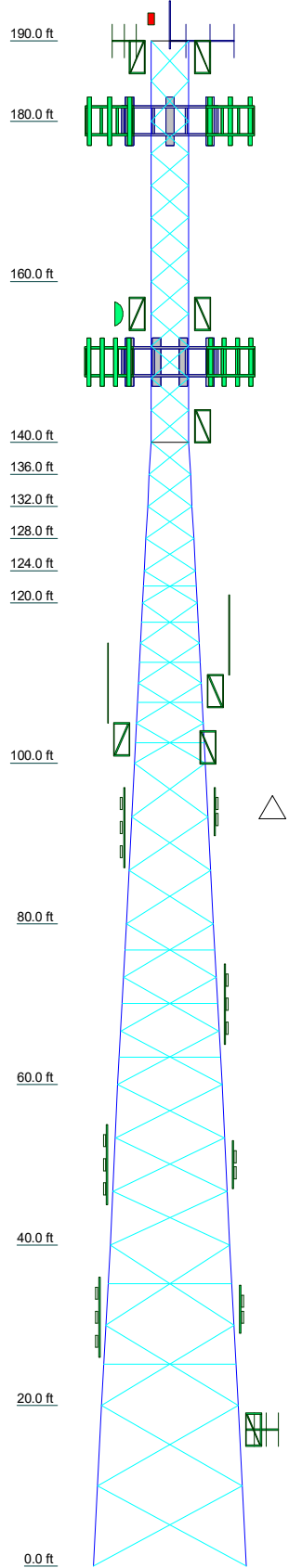
Date: 04/28/21

App'd:

Scale: NTS

Dwg No. E-1

Section	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1
Legs	ROHN 8 EHS	ROHN 6 EH	B		ROHN 5 EH	ROHN 4 EH		ROHN 3.5 EH				ROHN 3 EH	ROHN 2.5 STD	A
Leg Grade														
Diagonals	L3 1/2x3 1/2x1/4	L3 3x1/4		L2 1/2x2 1/2x1/4	L2 1/2x2 1/2x3/16	L2 2x3/16		L1 3/4x1 3/4x3/16				L2x2x1/4	L1 3/4x1 3/4x3/16	
Diagonal Grade		A572-50						A36						
Top Girts				N.A.										C
Sec. Horizontals	N.A.	L3x3x5/16	N.A.	L2 1/2x2 1/2x1/4	N.A.	L2x2x1/4						N.A.		
Face Width (ft)	16.99	14.85		10.83	8.83	6.76	6.35	5.94	5.54	5.13	4.72	4.69		4.65
# Panels @ (ft)	4 @ 10			9 @ 6.66667		4 @ 5						15 @ 4		2 @ 5
Weight (lb) 21258.1	3579.0	3774.6		2860.2	2001.8	1827.9	326.1	256.6	251.1	248.8	273.9	1267.4	774.7	328.0



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
(2) Obstruction Lights	192	LNx-6514DS-T4M (VZW)	150
PD1142-3	192	HBXX-6517DS-A2M (VZW)	150
ASP-705	192	LNx-6514DS-T4M (VZW)	150
ASP-705	192	HBXX-6517DS-A2M (VZW)	150
DB420	192	LNx-6514DS-T4M (VZW)	150
Halo	192	HBXX-6517DS-A2M (VZW)	150
4"x3" Dia. Omni	190	LNx-6514DS-T4M (VZW)	150
3' Yagi	190	HBXX-6517DS-A2M (VZW)	150
3' Yagi	190	LNx-6514DS-T4M (VZW)	150
Pirot 4' Side Mount Standoff	188	HBXX-6517DS-A2M (VZW)	150
Pirot 4' Side Mount Standoff	188	RRH2x60-AWS (VZW)	150
Pirot 4' Side Mount Standoff	188	RRH2x60-AWS (VZW)	150
Paraflector	187	RRH2x60-AWS (VZW)	150
PD1142-3	187	RRH 2x60-PCS (VZW)	150
APX16DWV-16DWV-S-E-A20 (T-Mobile)	180	RRH 2x60-PCS (VZW)	150
APX16DWV-16DWV-S-E-A20 (T-Mobile)	180	RRH 2x60-PCS (VZW)	150
APX16DWV-16DWV-S-E-A20 (T-Mobile)	180	DB-T1-6Z-8AB-OZ (VZW)	150
APX16DWV-16DWV-S-E-A20 (T-Mobile)	180	DB-T1-6Z-8AB-OZ (VZW)	150
APXVAALL24_43-U-NA20 (T-Mobile)	180	Paraflector	144
APXVAALL24_43-U-NA20 (T-Mobile)	180	Pirot 4' Side Mount Standoff	142
APXVAALL24_43-U-NA20 (T-Mobile)	180	DB264-A	142
APXVAALL24_43-U-NA20 (T-Mobile)	180	DB436-C	142
AIR 6449 B41 (T-Mobile)	180	DB230-2A	142
AIR 6449 B41 (T-Mobile)	180	Pirot 4' Side Mount Standoff	142
AIR 6449 B41 (T-Mobile)	180	Paraflector	140
4415 B66A (T-Mobile)	180	Single Dipole	136
4415 B66A (T-Mobile)	180	Dipole	113
4415 B66A (T-Mobile)	180	Pirot 4' Side Mount Standoff	113
RADIO 4449 B71+B85 (T-Mobile)	180	PD320	110
RADIO 4449 B71+B85 (T-Mobile)	180	Pirot 4' Side Mount Standoff	109
RADIO 4449 B71+B85 (T-Mobile)	180	14"x3" Dia. Omni	109
4424 B25 (T-Mobile)	180	Pirot 4' Side Mount Standoff	103
4424 B25 (T-Mobile)	180	14"x3" Dia. Omni	103
4424 B25 (T-Mobile)	180	GPS	102
(3) Sector Frames (Sprint)	179.92	1' Standoff Mount	102
Pirot 4' Side Mount Standoff	156	DB212 Single Dipole	94
ASP-705	156	15' Single Dipole	92
Pirot 4' Side Mount Standoff	156	PD320	74
ASP-705	156	15' Single Dipole	70
3' Dish	156	15' Single Dipole	50
Pirot 12' T-Frame Sector Mount (VZW)	150	DB212 Single Dipole	50
Pirot 12' T-Frame Sector Mount (VZW)	150	DB212 Single Dipole	32
Pirot 12' T-Frame Sector Mount (VZW)	150	15' Single Dipole	31
LNx-6514DS-T4M (VZW)	150	Pirot 4' Side Mount Standoff	17
HBXX-6517DS-A2M (VZW)	150	PD400	17
		3' Yagi	17

SYMBOL LIST

MARK	SIZE	MARK	SIZE
A	ROHN 2 STD	C	L1 3/4x1 3/4x3/16
B	6.0 EHS + HALF HSS7.625x0.375		

MATERIAL STRENGTH

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

Centerline Communications

750 West Center Street, Suite 301

West Bridgewater, MA 02379

Phone: (781) 713-4725

FAX:

Job: **CTHA616A**

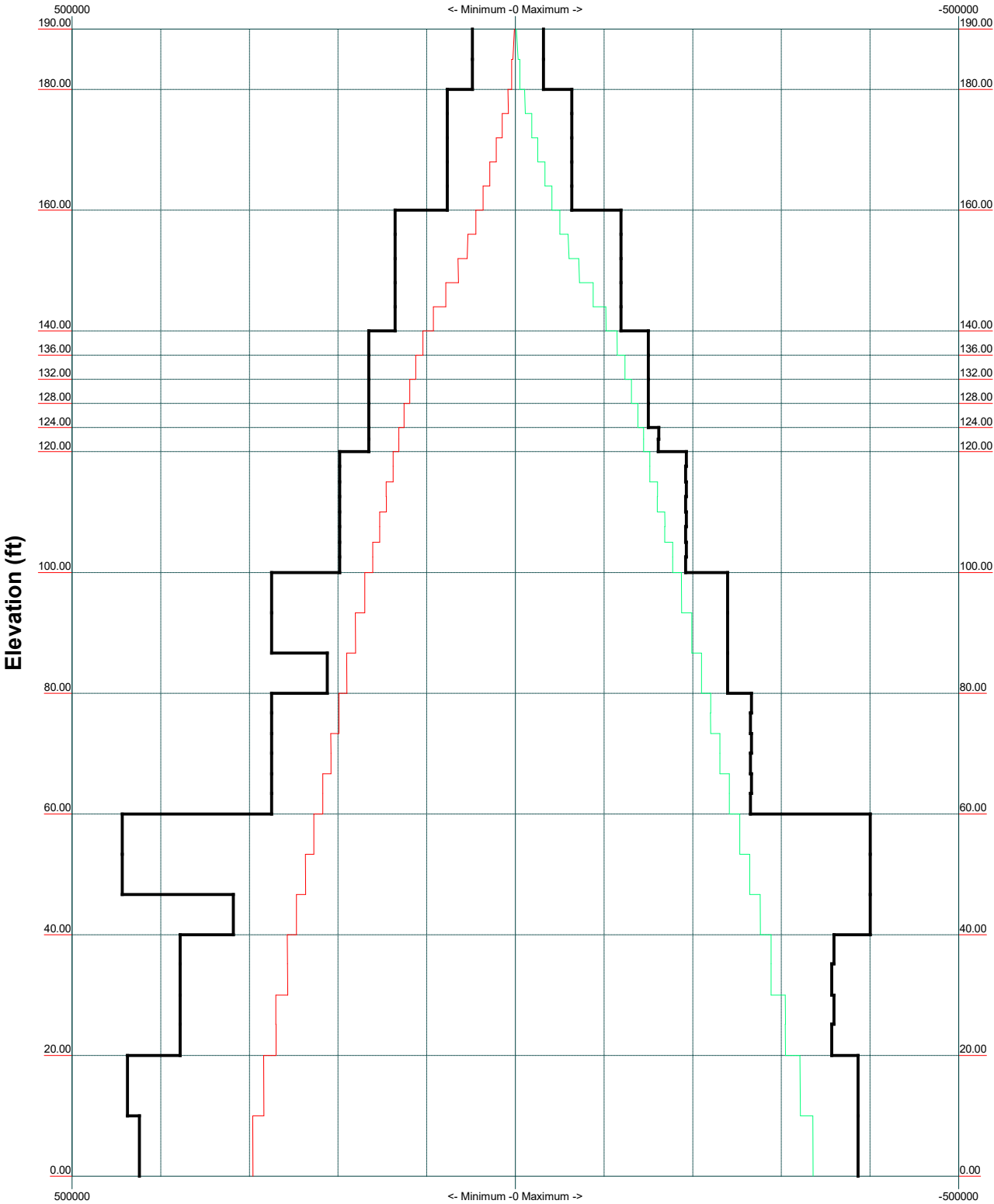
Project: **ANCHOR**

Client: T-MOBILE	Drawn by: Joshua Gildert	App'd:
Code: TIA-222-G	Date: 04/28/21	Scale: NTS
Path:		Dwg No. E-1

TIA-222-G - 101 mph/50 mph 1.0000 in Ice Exposure B

Leg Capacity ———

Leg Compression (lb)



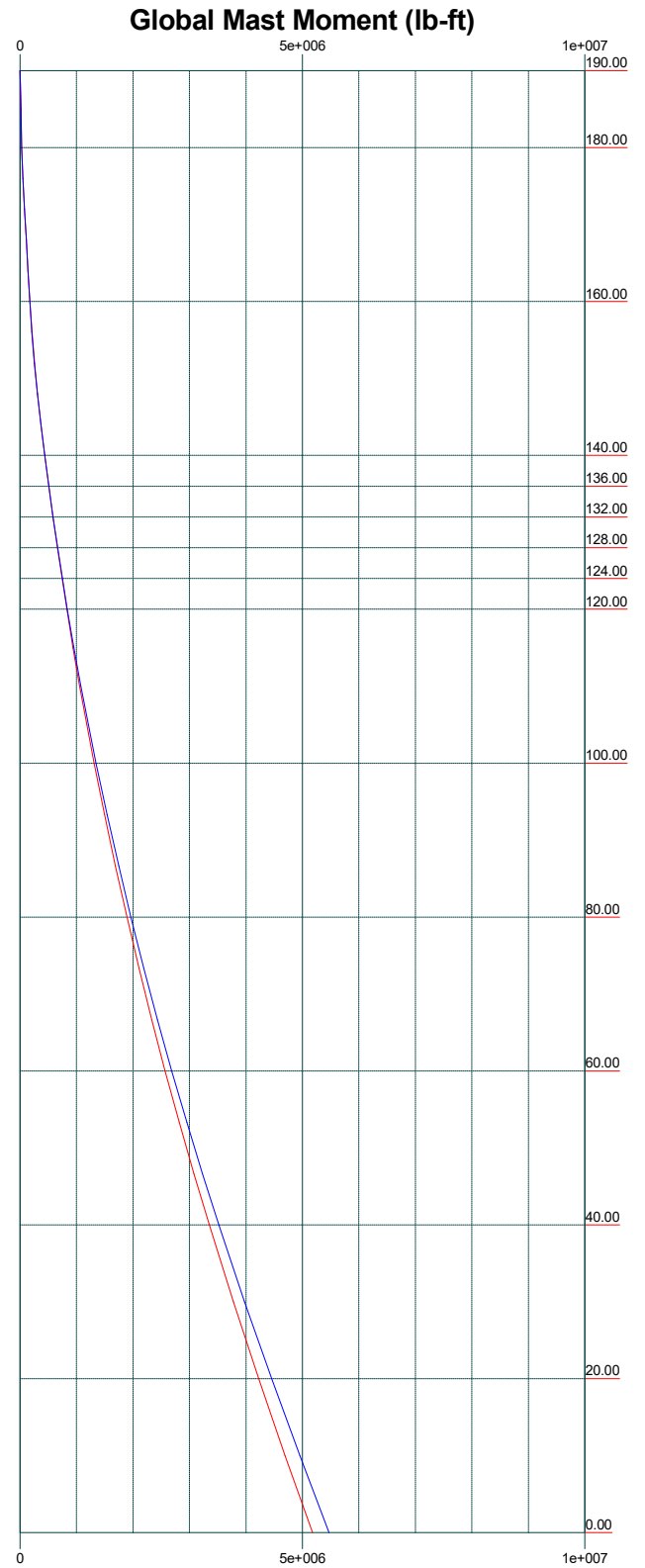
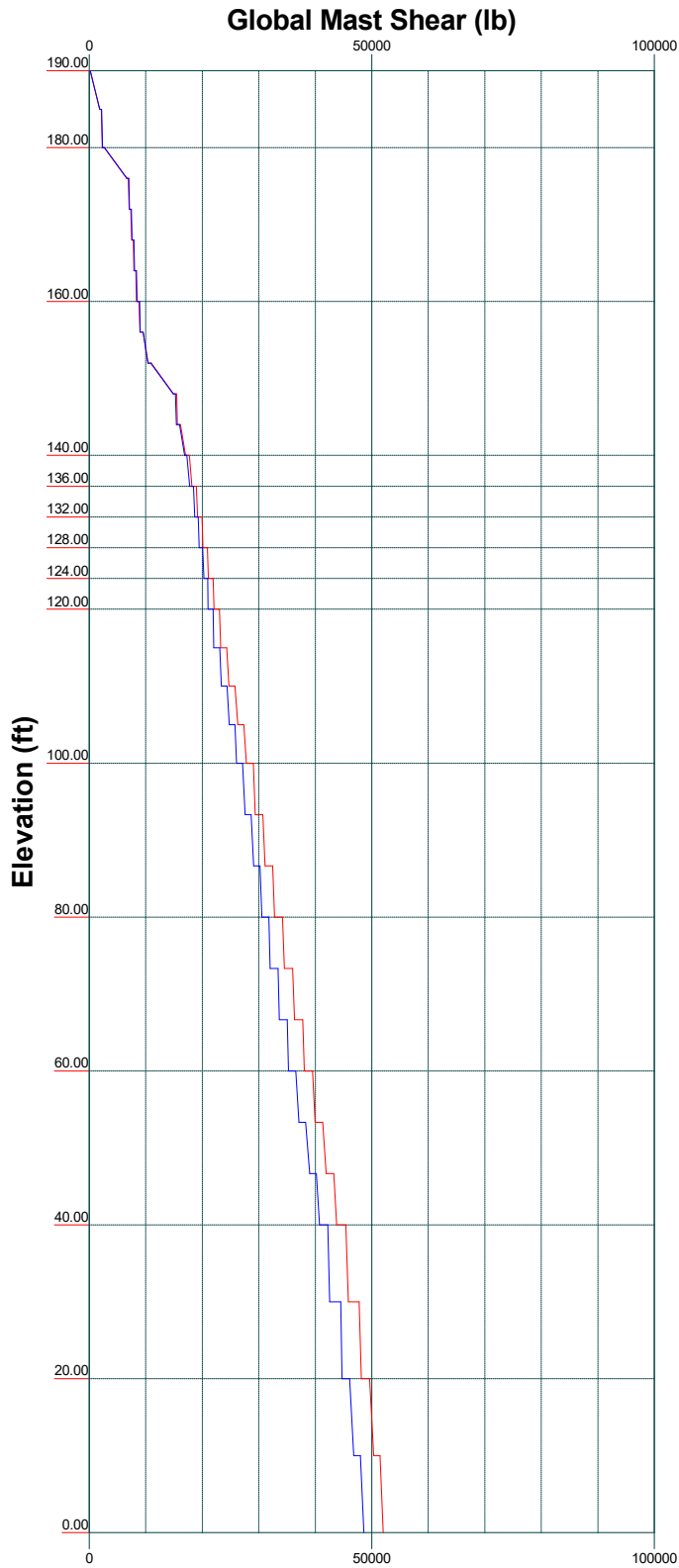
Centerline Communications			Job: CTHA616A	
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West Bridgewater, MA 02379			Client: T-MOBILE	Drawn by: Joshua Gildert
Phone: (781) 713-4725			Code: TIA-222-G	Date: 04/28/21
FAX:			Path:	Scale: NTS
			Dwg No. E-3	

Vx

Vz

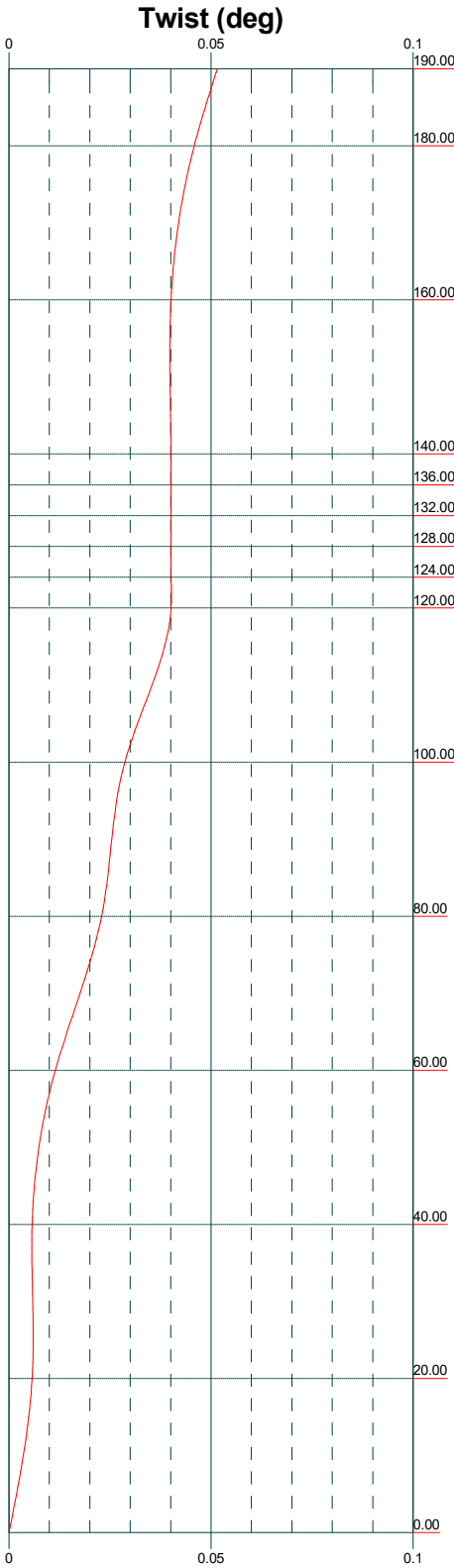
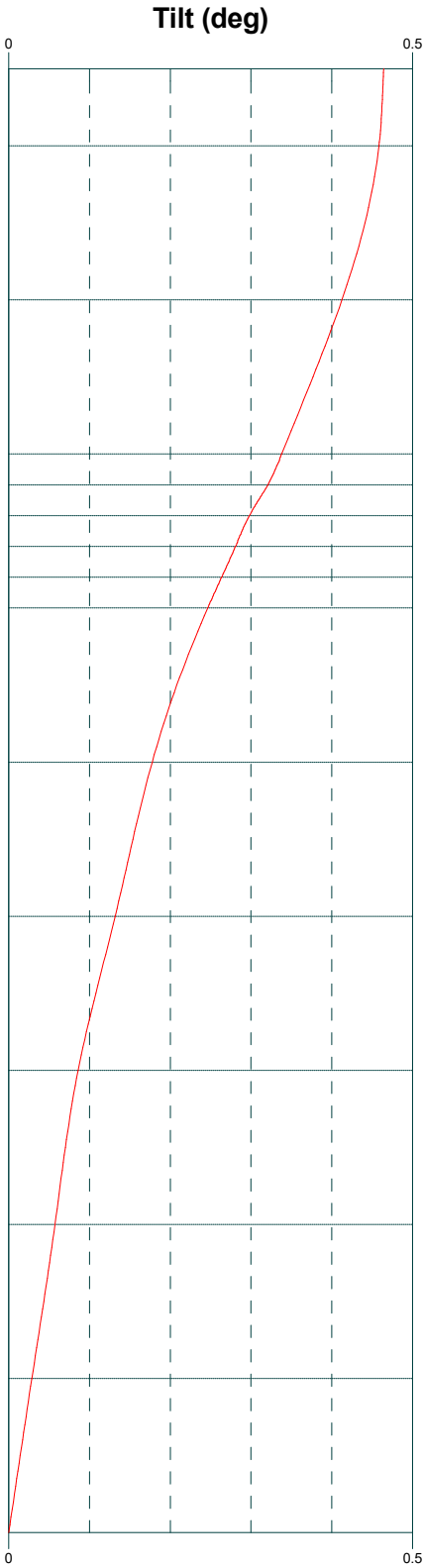
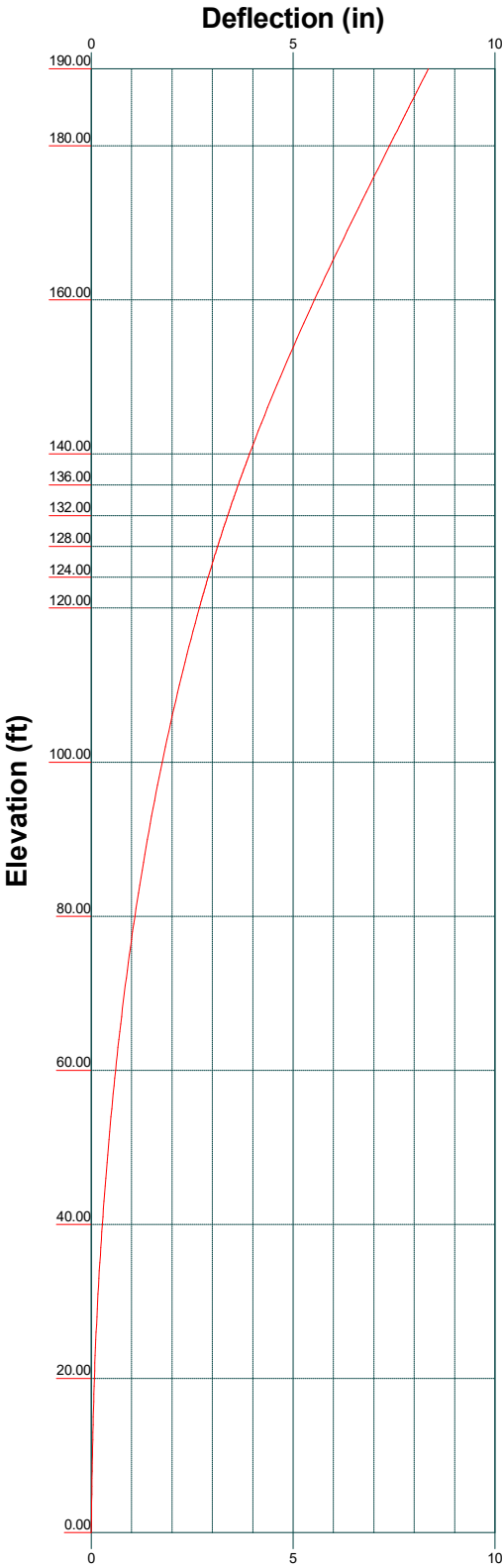
Mx

Mz



Centerline Communications
750 West Center Street, Suite 301
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Phone: (781) 713-4725
FAX:

Job: CTHA616A		
Project: ANCHOR		
Client: T-MOBILE	Drawn by: Joshua Gildert	App'd:
Code: TIA-222-G	Date: 04/28/21	Scale: NTS
Path:		Dwg No. E-4



Round Flat App In Face App Out Face



Job: **CTHA616A**

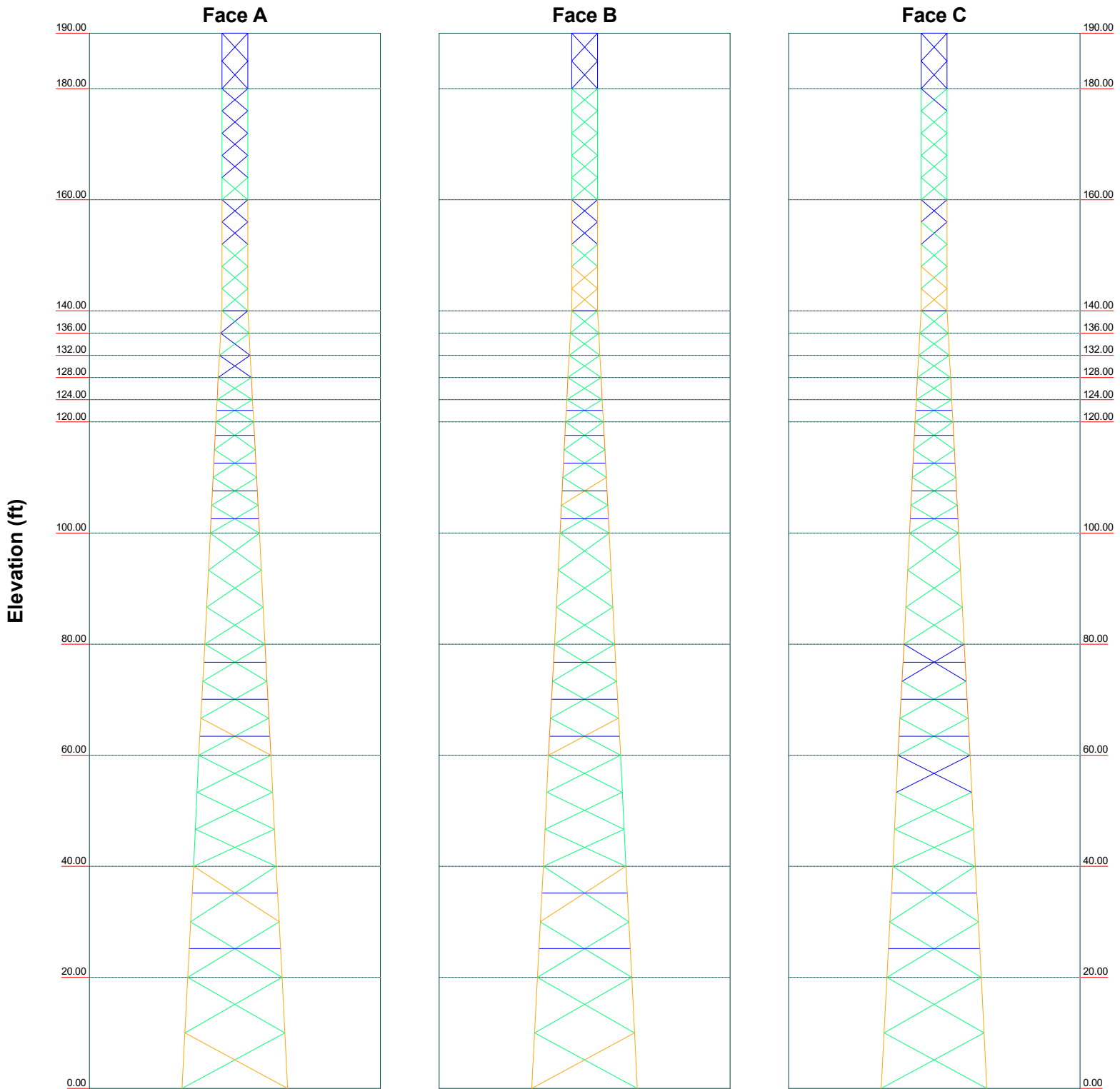
Project: **ANCHOR**

Client: T-MOBILE	Drawn by: Joshua Gildert	App'd:
Code: TIA-222-G	Date: 04/28/21	Scale: NTS
Path:		Dwg No. E-7

Stress Distribution Chart

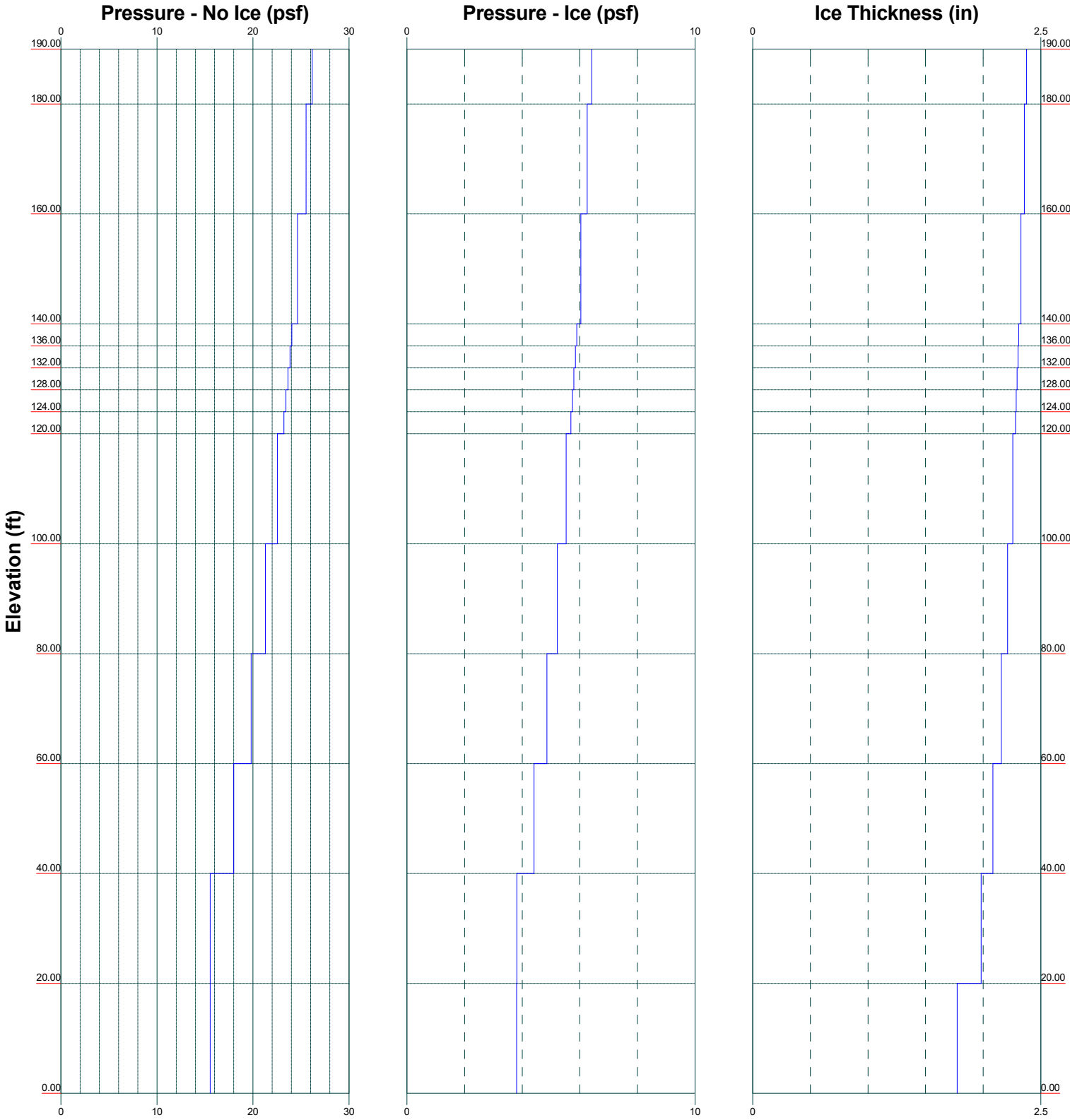
0' - 190'

■ > 100%
 ■ 90%-100%
 ■ 75%-90%
 ■ 50%-75%
 ■ < 50% Overstress



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Client: T-MOBILE		Drawn by: Joshua Gildert		App'd:	
Code: TIA-222-G		Date: 04/28/21		Scale: NTS	
Path:				Dwg No. E-8	

Wind Pressures and Ice Thickness
TIA-222-G - 101 mph/50 mph 1.0000 in Ice Exposure B



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Tower Input Data

The main tower is a 3x free standing tower with an overall height of 190.00 ft above the ground line.

The base of the tower is set at an elevation of 0.00 ft above the ground line.

The face width of the tower is 4.65 ft at the top and 19.00 ft at the base.

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

The following design criteria apply:

Tower is located in Tolland County, Connecticut.

ASCE 7-10 Wind Data is used (wind speeds converted to nominal values).

Basic wind speed of 101 mph.

Structure Class II.

Exposure Category B.

Topographic Category 1.

Crest Height 0.00 ft.

Nominal ice thickness of 1.0000 in.

Ice thickness is considered to increase with height.

Ice density of 56 pcf.

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

Temperature drop of 50 °F.

Deflections calculated using a wind speed of 60 mph.

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

Pressures are calculated at each section.

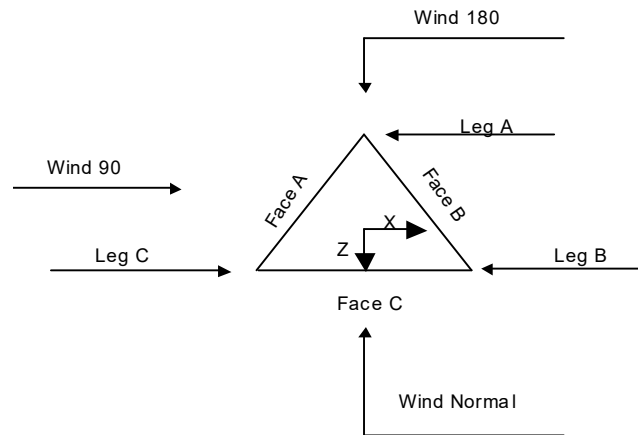
Stress ratio used in tower member design is 1.

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

Options

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

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Triangular Tower

Tower Section Geometry

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Assembly Database</i>	<i>Description</i>	<i>Section Width</i>	<i>Number of Sections</i>	<i>Section Length</i>
	<i>ft</i>			<i>ft</i>		<i>ft</i>
T1	190.00-180.00			4.65	1	10.00
T2	180.00-160.00			4.65	1	20.00
T3	160.00-140.00			4.69	1	20.00
T4	140.00-136.00			4.72	1	4.00
T5	136.00-132.00			5.13	1	4.00
T6	132.00-128.00			5.54	1	4.00
T7	128.00-124.00			5.94	1	4.00
T8	124.00-120.00			6.35	1	4.00
T9	120.00-100.00			6.76	1	20.00
T10	100.00-80.00			8.83	1	20.00
T11	80.00-60.00			10.83	1	20.00
T12	60.00-40.00			12.92	1	20.00
T13	40.00-20.00			14.85	1	20.00
T14	20.00-0.00			16.99	1	20.00

Tower Section Geometry (cont'd)

<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T1	190.00-180.00	5.00	X Brace	No	Yes	0.0000	0.0000

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<i>Tower Section</i>	<i>Tower Elevation</i>	<i>Diagonal Spacing</i>	<i>Bracing Type</i>	<i>Has K Brace End Panels</i>	<i>Has Horizontals</i>	<i>Top Girt Offset</i>	<i>Bottom Girt Offset</i>
	<i>ft</i>	<i>ft</i>				<i>in</i>	<i>in</i>
T2	180.00-160.00	4.00	X Brace	No	No	0.0000	0.0000
T3	160.00-140.00	4.00	X Brace	No	Yes	0.0000	0.0000
T4	140.00-136.00	4.00	X Brace	No	Yes	0.0000	0.0000
T5	136.00-132.00	4.00	X Brace	No	Yes	0.0000	0.0000
T6	132.00-128.00	4.00	X Brace	No	Yes	0.0000	0.0000
T7	128.00-124.00	4.00	X Brace	No	Yes	0.0000	0.0000
T8	124.00-120.00	4.00	X Brace	No	Yes	0.0000	0.0000
T9	120.00-100.00	5.00	X Brace	No	Yes	0.0000	0.0000
T10	100.00-80.00	6.67	X Brace	No	Yes	0.0000	0.0000
T11	80.00-60.00	6.67	X Brace	No	Yes	0.0000	0.0000
T12	60.00-40.00	6.67	X Brace	No	Yes	0.0000	0.0000
T13	40.00-20.00	10.00	X Brace	No	Yes	0.0000	0.0000
T14	20.00-0.00	10.00	X Brace	No	Yes	0.0000	0.0000

Tower Section Geometry (cont'd)

<i>Tower Elevation</i>	<i>Leg Type</i>	<i>Leg Size</i>	<i>Leg Grade</i>	<i>Diagonal Type</i>	<i>Diagonal Size</i>	<i>Diagonal Grade</i>
<i>ft</i>						
T1 190.00-180.00	Pipe	ROHN 2 STD	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T2 180.00-160.00	Pipe	ROHN 2.5 STD	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T3 160.00-140.00	Pipe	ROHN 3 EH	A572-50 (50 ksi)	Single Angle	L2x2x1/4	A36 (36 ksi)
T4 140.00-136.00	Pipe	ROHN 3.5 EH	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T5 136.00-132.00	Pipe	ROHN 3.5 EH	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T6 132.00-128.00	Pipe	ROHN 3.5 EH	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T7 128.00-124.00	Pipe	ROHN 3.5 EH	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T8 124.00-120.00	Pipe	ROHN 3.5 EH	A572-50 (50 ksi)	Single Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)
T9 120.00-100.00	Pipe	ROHN 4 EH	A572-50 (50 ksi)	Single Angle	L2x2x3/16	A36 (36 ksi)
T10 100.00-80.00	Pipe	ROHN 5 EH	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x3/16	A36 (36 ksi)
T11 80.00-60.00	Pipe	ROHN 5 EH	A572-50 (50 ksi)	Single Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)
T12 60.00-40.00	Arbitrary Shape	6.0 EHS + HALF HSS7.625x0.375	A572-50 (50 ksi)	Single Angle	L3x3x1/4	A572-50 (50 ksi)
T13 40.00-20.00	Pipe	ROHN 6 EH	A572-50 (50 ksi)	Single Angle	L3 1/2x3 1/2x1/4	A572-50 (50 ksi)
T14 20.00-0.00	Pipe	ROHN 8 EHS	A572-50 (50 ksi)	Single Angle	L3 1/2x3 1/2x1/4	A572-50 (50 ksi)

Tower Section Geometry (cont'd)

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<i>Tower Elevation</i> <i>ft</i>	<i>Top Girt Type</i>	<i>Top Girt Size</i>	<i>Top Girt Grade</i>	<i>Bottom Girt Type</i>	<i>Bottom Girt Size</i>	<i>Bottom Girt Grade</i>
T1 190.00-180.00	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)	Flat Bar		A36 (36 ksi)
T4 140.00-136.00	Equal Angle	L1 3/4x1 3/4x3/16	A36 (36 ksi)	Flat Bar		A36 (36 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation</i> <i>ft</i>	<i>Secondary Horizontal Type</i>	<i>Secondary Horizontal Size</i>	<i>Secondary Horizontal Grade</i>	<i>Inner Bracing Type</i>	<i>Inner Bracing Size</i>	<i>Inner Bracing Grade</i>
T8 124.00-120.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T9 120.00-100.00	Equal Angle	L2x2x1/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T11 80.00-60.00	Equal Angle	L2 1/2x2 1/2x1/4	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)
T13 40.00-20.00	Equal Angle	L3x3x5/16	A36 (36 ksi)	Solid Round		A572-50 (50 ksi)

Tower Section Geometry (cont'd)

<i>Tower Elevation</i> <i>ft</i>	<i>Gusset Area</i> <i>(per face)</i> <i>ft²</i>	<i>Gusset Thickness</i> <i>in</i>	<i>Gusset Grade</i>	<i>Adjust. Factor</i> <i>A_f</i>	<i>Adjust. Factor</i> <i>A_r</i>	<i>Weight Mult.</i>	<i>Double Angle</i> <i>Stitch Bolt</i> <i>Spacing</i> <i>Diagonals</i> <i>in</i>	<i>Double Angle</i> <i>Stitch Bolt</i> <i>Spacing</i> <i>Horizontals</i> <i>in</i>	<i>Double Angle</i> <i>Stitch Bolt</i> <i>Spacing</i> <i>Redundants</i> <i>in</i>
T1 190.00-180.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	30.0000	30.0000	36.0000
T2 180.00-160.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T3 160.00-140.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T4 140.00-136.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T5 136.00-132.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T6 132.00-128.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T7 128.00-124.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T8 124.00-120.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T9 120.00-100.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T10 100.00-80.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T11 80.00-60.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T12 60.00-40.00	0.00	0.0000	A36 (36 ksi)	1	1	1.05	36.0000	36.0000	36.0000
T13	0.00	0.0000	A36	1	1	1.05	36.0000	36.0000	36.0000

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Tower Elevation	Gusset Area (per face)	Gusset Thickness	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
ft	ft ²	in							
40.00-20.00			(36 ksi)						
T14 20.00-0.00	0.00	0.0000	A36	1	1	1.05	36.0000	36.0000	36.0000
			(36 ksi)						

Tower Section Geometry (cont'd)

Tower Elevation	Calc K Single Angles	Calc K Solid Rounds	Legs	K Factors ¹						
				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
ft										
T1	Yes	Yes	1	1	1	1	1	1	1	1
190.00-180.00				1	1	1	1	1	1	1
T2	Yes	Yes	1	1	1	1	1	1	1	1
180.00-160.00				1	1	1	1	1	1	1
T3	Yes	Yes	1	1	1	1	1	1	1	1
160.00-140.00				1	1	1	1	1	1	1
T4	Yes	Yes	1	1	1	1	1	1	1	1
140.00-136.00				1	1	1	1	1	1	1
T5	Yes	Yes	1	1	1	1	1	1	1	1
136.00-132.00				1	1	1	1	1	1	1
T6	Yes	Yes	1	1	1	1	1	1	1	1
132.00-128.00				1	1	1	1	1	1	1
T7	Yes	Yes	1	1	1	1	1	1	1	1
128.00-124.00				1	1	1	1	1	1	1
T8	Yes	Yes	1	1	1	1	1	1	1	1
124.00-120.00				1	1	1	1	1	1	1
T9	Yes	Yes	1	1	1	1	1	1	1	1
120.00-100.00				1	1	1	1	1	1	1
T10	Yes	Yes	1	1	1	1	1	1	1	1
100.00-80.00				1	1	1	1	1	1	1
T11	Yes	Yes	1	1	1	1	1	1	1	1
80.00-60.00				1	1	1	1	1	1	1
T12	Yes	Yes	1	1	1	1	1	1	1	1
60.00-40.00				1	1	1	1	1	1	1
T13	Yes	Yes	1	1	1	1	1	1	1	1
40.00-20.00				1	1	1	1	1	1	1
T14	Yes	Yes	1	1	1	1	1	1	1	1
20.00-0.00				1	1	1	1	1	1	1

¹Note: K factors are applied to member segment lengths. K-braces without inner supporting members will have the K factor in the out-of-plane direction applied to the overall length.

Tower Section Geometry (cont'd)

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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.
T9 120.00-100.00	Flange	1.0000 A325N	4	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2
T10 100.00-80.00	Flange	1.0000 A325N	4	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0
T11 80.00-60.00	Flange	1.0000 A325N	6	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2
T12 60.00-40.00	Flange	1.0000 A325N	6	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2
T13 40.00-20.00	Flange	1.0000 A325N	8	0.6250 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	2
T14 20.00-0.00	Flange	1.0000 A325N	8	0.7500 A325N	1	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	0	0.6250 A325N	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
LDF7-50A (1-5/8 FOAM) (VZW)	B	No	No	Ar (CaAa)	150.00 - 8.00	-2.0000	-0.3	12	12	1.0000	1.9800		1.04
LDF7-50A (1-5/8 FOAM) (VZW)	A	No	No	Ar (CaAa)	150.00 - 8.00	0.0000	0.28	2	2	1.0000	1.9800		1.04
LDF7-50A (1-5/8 FOAM) (VZW) ***	A	No	No	Ar (CaAa)	150.00 - 8.00	0.0000	0.35	6	6	1.0000	1.9800		1.04
1/2	A	No	No	Ar (CaAa)	50.00 - 8.00	0.0000	0.07	1	1	0.5800	0.5800		0.25
1/2	A	No	No	Ar (CaAa)	70.00 - 8.00	0.0000	0.06	1	1	0.5800	0.5800		0.25
1/2	A	No	No	Ar (CaAa)	94.00 - 8.00	0.0000	0.05	1	1	0.5800	0.5800		0.25
7/8	A	No	No	Ar (CaAa)	156.00 - 8.00	0.0000	0.03	2	2	1.1100	1.1100		0.54
1/2	A	No	No	Ar (CaAa)	185.00 - 8.00	0.0000	-0.02	1	1	0.5800	0.5800		0.25
1/2	A	No	No	Ar (CaAa)	32.00 - 8.00	0.0000	-0.03	1	1	0.5800	0.5800		0.25
1 1/4	A	No	No	Ar (CaAa)	190.00 - 8.00	0.0000	-0.05	1	1	1.5500	1.5500		0.66
1/2	A	No	No	Ar (CaAa)	190.00 - 8.00	0.0000	-0.06	1	1	0.5800	0.5800		0.25
1/2	A	No	No	Ar (CaAa)	17.00 - 8.00	0.0000	-0.07	1	1	0.5800	0.5800		0.25
7/8	B	No	No	Ar (CaAa)	92.00 - 8.00	0.0000	0.08	1	1	1.1100	1.1100		0.54
7/8	B	No	No	Ar (CaAa)	142.00 - 8.00	0.0000	0.07	1	1	1.1100	1.1100		0.54
1/2	B	No	No	Ar (CaAa)	142.00 - 8.00	0.0000	0.06	1	1	0.5800	0.5800		0.25
7/8	B	No	No	Ar (CaAa)	156.00 - 8.00	0.0000	0.05	1	1	1.1100	1.1100		0.54
1/2	B	No	No	Ar (CaAa)	190.00 - 8.00	0.0000	0.04	1	1	0.5800	0.5800		0.25
7/8	B	No	No	Ar (CaAa)	190.00 - 8.00	0.0000	0.025	2	2	1.1100	1.1100		0.54
1/2	B	No	No	Ar (CaAa)	102.00 -	0.0000	-0.02	1	1	0.5800	0.5800		0.25

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	Client	T-MOBILE	Designed by	Joshua Gildert

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
7/8	B	No	No	Ar (CaAa)	8.00 190.00 - 8.00	0.0000	-0.05	1	1	1.1100	1.1100		0.54
7/8	B	No	No	Ar (CaAa)	8.00 109.00 - 8.00	0.0000	-0.06	1	1	1.1100	1.1100		0.54
7/8	C	No	No	Ar (CaAa)	8.00 190.00 - 8.00	0.0000	0.06	1	1	1.1100	1.1100		0.54
7/8	C	No	No	Ar (CaAa)	8.00 119.00 - 8.00	0.0000	0.05	1	1	1.1100	1.1100		0.54
7/8	C	No	No	Ar (CaAa)	8.00 190.00 - 8.00	0.0000	0.04	1	1	1.1100	1.1100		0.54
1/2	C	No	No	Ar (CaAa)	8.00 136.00 - 8.00	0.0000	0.03	1	1	0.5800	0.5800		0.25
1/2	C	No	No	Ar (CaAa)	8.00 113.00 - 8.00	0.0000	0.02	1	1	0.5800	0.5800		0.25
1/2	C	No	No	Ar (CaAa)	8.00 142.00 - 8.00	0.0000	-0.02	1	1	0.5800	0.5800		0.25
7/8	C	No	No	Ar (CaAa)	8.00 142.00 - 8.00	0.0000	-0.03	1	1	1.1100	1.1100		0.54
7/8	C	No	No	Ar (CaAa)	8.00 103.00 - 8.00	0.0000	-0.05	1	1	1.1100	1.1100		0.54
1/2	C	No	No	Ar (CaAa)	8.00 31.00 - 8.00	0.0000	-0.06	1	1	0.5800	0.5800		0.25
1 1/4	C	No	No	Ar (CaAa)	8.00 190.00 - 8.00	0.0000	-0.04	1	1	1.5500	1.5500		0.66
7/8	C	No	No	Ar (CaAa)	8.00 74.00 - 8.00	0.0000	-0.07	1	1	1.1100	1.1100		0.54
1/2	C	No	No	Ar (CaAa)	8.00 50.00 - 8.00	0.0000	-0.08	1	1	0.5800	0.5800		0.25
1 5/8	A	No	No	Ar (CaAa)	8.00 150.00 - 8.00	0.0000	0.28	6	6	1.0000	1.9800		1.90
*** 6x12 (T-Mobile) ***	A	No	No	Ar (CaAa)	8.00 180.00 - 8.00	0.0000	0	3	3	1.0000	1.9800		1.04
Feedline Ladder (Af)	B	No	No	Af (CaAa)	8.00 150.00 - 8.00	0.0000	-0.29	1	1	3.0000	2.5000		8.40
Feedline Ladder (Af)	A	No	No	Af (CaAa)	8.00 150.00 - 8.00	0.0000	0.34	1	1	3.0000	2.5000		8.40
Feedline Ladder (Af)	A	No	No	Af (CaAa)	8.00 180.00 - 8.00	0.0000	0	1	1	3.0000	2.5000		8.40
Feedline Ladder (Af)	C	No	No	Af (CaAa)	8.00 190.00 - 8.00	0.0000	0	1	1	3.0000	2.5000		8.40
Feedline Ladder (Af)	B	No	No	Af (CaAa)	8.00 190.00 - 8.00	0.0000	0	1	1	3.0000	2.5000		8.40

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 lb
T1	190.00-180.00	A	0.000	0.000	2.420	0.000	10.35
		B	0.000	0.000	8.077	0.000	102.70
		C	0.000	0.000	7.937	0.000	101.40
T2	180.00-160.00	A	0.000	0.000	25.633	0.000	253.60
		B	0.000	0.000	16.153	0.000	205.40
		C	0.000	0.000	15.873	0.000	202.80
T3	160.00-140.00	A	0.000	0.000	61.072	0.000	552.08
		B	0.000	0.000	46.194	0.000	424.42

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<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face</i>	<i>A_R</i>	<i>A_F</i>	<i>C_AA_A In Face</i>	<i>C_AA_A Out Face</i>	<i>Weight</i>
			<i>ft²</i>	<i>ft²</i>	<i>ft²</i>	<i>ft²</i>	<i>lb</i>
T4	140.00-136.00	C	0.000	0.000	16.211	0.000	204.38
		A	0.000	0.000	18.769	0.000	167.52
		B	0.000	0.000	15.521	0.000	129.92
T5	136.00-132.00	C	0.000	0.000	3.851	0.000	43.72
		A	0.000	0.000	18.769	0.000	167.52
		B	0.000	0.000	15.521	0.000	129.92
T6	132.00-128.00	C	0.000	0.000	4.083	0.000	44.72
		A	0.000	0.000	18.769	0.000	167.52
		B	0.000	0.000	15.521	0.000	129.92
T7	128.00-124.00	C	0.000	0.000	4.083	0.000	44.72
		A	0.000	0.000	18.769	0.000	167.52
		B	0.000	0.000	15.521	0.000	129.92
T8	124.00-120.00	C	0.000	0.000	4.083	0.000	44.72
		A	0.000	0.000	18.769	0.000	167.52
		B	0.000	0.000	15.521	0.000	129.92
T9	120.00-100.00	C	0.000	0.000	4.083	0.000	44.72
		A	0.000	0.000	93.847	0.000	837.60
		B	0.000	0.000	78.722	0.000	654.96
T10	100.00-80.00	C	0.000	0.000	23.609	0.000	238.73
		A	0.000	0.000	94.659	0.000	841.10
		B	0.000	0.000	82.319	0.000	671.88
T11	80.00-60.00	C	0.000	0.000	26.013	0.000	250.20
		A	0.000	0.000	95.587	0.000	845.10
		B	0.000	0.000	83.207	0.000	676.20
T12	60.00-40.00	C	0.000	0.000	27.567	0.000	257.76
		A	0.000	0.000	96.747	0.000	850.10
		B	0.000	0.000	83.207	0.000	676.20
T13	40.00-20.00	C	0.000	0.000	28.813	0.000	263.50
		A	0.000	0.000	98.023	0.000	855.60
		B	0.000	0.000	83.207	0.000	676.20
T14	20.00-0.00	C	0.000	0.000	30.031	0.000	268.75
		A	0.000	0.000	59.614	0.000	516.81
		B	0.000	0.000	49.924	0.000	405.72
		C	0.000	0.000	18.332	0.000	162.60

Feed Line/Linear Appurtenances Section Areas - With Ice

<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face or Leg</i>	<i>Ice Thickness in</i>	<i>A_R</i>	<i>A_F</i>	<i>C_AA_A In Face</i>	<i>C_AA_A Out Face</i>	<i>Weight</i>
				<i>ft²</i>	<i>ft²</i>	<i>ft²</i>	<i>ft²</i>	<i>lb</i>
T1	190.00-180.00	A	2.376	0.000	0.000	14.301	0.000	253.07
		B		0.000	0.000	32.595	0.000	604.09
		C		0.000	0.000	26.947	0.000	584.10
T2	180.00-160.00	A	2.356	0.000	0.000	87.237	0.000	1657.00
		B		0.000	0.000	64.811	0.000	1195.00
		C		0.000	0.000	53.574	0.000	1155.24
T3	160.00-140.00	A	2.327	0.000	0.000	186.017	0.000	3402.27
		B		0.000	0.000	134.457	0.000	2584.81
		C		0.000	0.000	55.304	0.000	1174.03
T4	140.00-136.00	A	2.308	0.000	0.000	53.933	0.000	988.88
		B		0.000	0.000	42.911	0.000	826.77
		C		0.000	0.000	14.927	0.000	299.08
T5	136.00-132.00	A	2.301	0.000	0.000	53.861	0.000	985.85
		B		0.000	0.000	42.855	0.000	824.16
		C		0.000	0.000	16.967	0.000	331.25
T6	132.00-128.00	A	2.294	0.000	0.000	53.787	0.000	982.74
		B		0.000	0.000	42.799	0.000	821.48
		C		0.000	0.000	16.928	0.000	329.82

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<i>Tower Section</i>	<i>Tower Elevation ft</i>	<i>Face or Leg</i>	<i>Ice Thickness in</i>	<i>A_R ft²</i>	<i>A_F ft²</i>	<i>C_AA_A In Face ft²</i>	<i>C_AA_A Out Face ft²</i>	<i>Weight lb</i>
T7	128.00-124.00	A	2.287	0.000	0.000	53.711	0.000	979.54
		B		0.000	0.000	42.740	0.000	818.72
		C		0.000	0.000	16.888	0.000	328.35
T8	124.00-120.00	A	2.279	0.000	0.000	53.633	0.000	976.27
		B		0.000	0.000	42.680	0.000	815.90
		C		0.000	0.000	16.847	0.000	326.85
T9	120.00-100.00	A	2.256	0.000	0.000	266.915	0.000	4829.27
		B		0.000	0.000	218.523	0.000	4139.06
		C		0.000	0.000	102.565	0.000	1931.20
T10	100.00-80.00	A	2.211	0.000	0.000	271.537	0.000	4839.71
		B		0.000	0.000	238.327	0.000	4409.72
		C		0.000	0.000	114.456	0.000	2101.62
T11	80.00-60.00	A	2.156	0.000	0.000	276.297	0.000	4835.05
		B		0.000	0.000	239.861	0.000	4361.67
		C		0.000	0.000	119.853	0.000	2154.18
T12	60.00-40.00	A	2.085	0.000	0.000	281.584	0.000	4810.32
		B		0.000	0.000	236.101	0.000	4202.99
		C		0.000	0.000	124.717	0.000	2174.25
T13	40.00-20.00	A	1.981	0.000	0.000	285.036	0.000	4704.87
		B		0.000	0.000	230.633	0.000	3977.59
		C		0.000	0.000	129.479	0.000	2155.68
T14	20.00-0.00	A	1.775	0.000	0.000	168.400	0.000	2599.95
		B		0.000	0.000	131.871	0.000	2129.70
		C		0.000	0.000	73.709	0.000	1136.14

Feed Line Center of Pressure

<i>Section</i>	<i>Elevation ft</i>	<i>CP_X in</i>	<i>CP_Z in</i>	<i>CP_X Ice in</i>	<i>CP_Z Ice in</i>
T1	190.00-180.00	1.1597	0.8122	1.0465	0.7832
T2	180.00-160.00	-1.0190	-0.8290	-0.8891	-0.5316
T3	160.00-140.00	-1.2093	-8.1671	-0.9817	-5.7879
T4	140.00-136.00	-1.0115	-11.3865	-0.3939	-7.3277
T5	136.00-132.00	-1.1015	-12.5308	-0.5105	-8.7765
T6	132.00-128.00	-1.1306	-13.3526	-0.5292	-9.4742
T7	128.00-124.00	-1.1588	-14.1574	-0.5470	-10.1583
T8	124.00-120.00	-1.0909	-14.0824	-0.4747	-9.3744
T9	120.00-100.00	-1.0827	-15.7773	-0.4045	-10.8800
T10	100.00-80.00	-0.8496	-19.4487	0.3178	-14.0910
T11	80.00-60.00	-0.7281	-20.6493	0.3691	-15.3815
T12	60.00-40.00	-0.7159	-20.7320	0.0904	-17.0795
T13	40.00-20.00	-0.9802	-24.8563	-0.3442	-19.0583
T14	20.00-0.00	-0.9850	-22.0857	-0.9003	-17.9714

Shielding Factor Ka

<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>
T1	9	1/2	180.00 - 185.00	0.6000	0.4572

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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>
T1	11	1 1/4	180.00 - 190.00	0.6000	0.4572
T1	12	1/2	180.00 - 190.00	0.6000	0.4572
T1	18	1/2	180.00 - 190.00	0.6000	0.4572
T1	19	7/8	180.00 - 190.00	0.6000	0.4572
T1	21	7/8	180.00 - 190.00	0.6000	0.4572
T1	23	7/8	180.00 - 190.00	0.6000	0.4572
T1	25	7/8	180.00 - 190.00	0.6000	0.4572
T1	32	1 1/4	180.00 - 190.00	0.6000	0.4572
T1	46	Feedline Ladder (Af)	180.00 - 190.00	0.6000	0.4572
T1	47	Feedline Ladder (Af)	180.00 - 190.00	0.6000	0.4572
T2	9	1/2	160.00 - 180.00	0.6000	0.4653
T2	11	1 1/4	160.00 - 180.00	0.6000	0.4653
T2	12	1/2	160.00 - 180.00	0.6000	0.4653
T2	18	1/2	160.00 - 180.00	0.6000	0.4653
T2	19	7/8	160.00 - 180.00	0.6000	0.4653
T2	21	7/8	160.00 - 180.00	0.6000	0.4653
T2	23	7/8	160.00 - 180.00	0.6000	0.4653
T2	25	7/8	160.00 - 180.00	0.6000	0.4653
T2	32	1 1/4	160.00 - 180.00	0.6000	0.4653
T2	41	6x12	160.00 - 180.00	0.6000	0.4653
T2	45	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.4653
T2	46	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.4653
T2	47	Feedline Ladder (Af)	160.00 - 180.00	0.6000	0.4653
T3	1	LDF7-50A (1-5/8 FOAM)	140.00 - 150.00	0.6000	0.4493
T3	2	LDF7-50A (1-5/8 FOAM)	140.00 - 150.00	0.6000	0.4493
T3	3	LDF7-50A (1-5/8 FOAM)	140.00 - 150.00	0.6000	0.4493
T3	8	7/8	140.00 - 156.00	0.6000	0.4493
T3	9	1/2	140.00 - 160.00	0.6000	0.4493
T3	11	1 1/4	140.00 - 160.00	0.6000	0.4493
T3	12	1/2	140.00 - 160.00	0.6000	0.4493
T3	15	7/8	140.00 - 142.00	0.6000	0.4493

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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	16	1/2	140.00 - 142.00	0.6000	0.4493
T3	17	7/8	140.00 - 156.00	0.6000	0.4493
T3	18	1/2	140.00 - 160.00	0.6000	0.4493
T3	19	7/8	140.00 - 160.00	0.6000	0.4493
T3	21	7/8	140.00 - 160.00	0.6000	0.4493
T3	23	7/8	140.00 - 160.00	0.6000	0.4493
T3	25	7/8	140.00 - 160.00	0.6000	0.4493
T3	28	1/2	140.00 - 142.00	0.6000	0.4493
T3	29	7/8	140.00 - 142.00	0.6000	0.4493
T3	32	1 1/4	140.00 - 160.00	0.6000	0.4493
T3	35	1 5/8	140.00 - 150.00	0.6000	0.4493
T3	41	6x12	140.00 - 160.00	0.6000	0.4493
T3	43	Feedline Ladder (Af)	140.00 - 150.00	0.6000	0.4493
T3	44	Feedline Ladder (Af)	140.00 - 150.00	0.6000	0.4493
T3	45	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.4493
T3	46	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.4493
T3	47	Feedline Ladder (Af)	140.00 - 160.00	0.6000	0.4493
T4	1	LDF7-50A (1-5/8 FOAM)	136.00 - 140.00	0.6000	0.3640
T4	2	LDF7-50A (1-5/8 FOAM)	136.00 - 140.00	0.6000	0.3640
T4	3	LDF7-50A (1-5/8 FOAM)	136.00 - 140.00	0.6000	0.3640
T4	8	7/8	136.00 - 140.00	0.6000	0.3640
T4	9	1/2	136.00 - 140.00	0.6000	0.3640
T4	11	1 1/4	136.00 - 140.00	0.6000	0.3640
T4	12	1/2	136.00 - 140.00	0.6000	0.3640
T4	15	7/8	136.00 - 140.00	0.6000	0.3640
T4	16	1/2	136.00 - 140.00	0.6000	0.3640
T4	17	7/8	136.00 - 140.00	0.6000	0.3640
T4	18	1/2	136.00 - 140.00	0.6000	0.3640
T4	19	7/8	136.00 - 140.00	0.6000	0.3640
T4	21	7/8	136.00 - 140.00	0.6000	0.3640
T4	23	7/8	136.00 - 140.00	0.6000	0.3640

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	Client	T-MOBILE	Designed by	Joshua Gildert

<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>
T4	25	7/8	136.00 - 140.00	0.6000	0.3640
T4	28	1/2	136.00 - 140.00	0.6000	0.3640
T4	29	7/8	136.00 - 140.00	0.6000	0.3640
T4	32	1 1/4	136.00 - 140.00	0.6000	0.3640
T4	35	1 5/8	136.00 - 140.00	0.6000	0.3640
T4	41	6x12	136.00 - 140.00	0.6000	0.3640
T4	43	Feedline Ladder (Af)	136.00 - 140.00	0.6000	0.3640
T4	44	Feedline Ladder (Af)	136.00 - 140.00	0.6000	0.3640
T4	45	Feedline Ladder (Af)	136.00 - 140.00	0.6000	0.3640
T4	46	Feedline Ladder (Af)	136.00 - 140.00	0.6000	0.3640
T4	47	Feedline Ladder (Af)	136.00 - 140.00	0.6000	0.3640
T5	1	LDF7-50A (1-5/8 FOAM)	132.00 - 136.00	0.6000	0.4893
T5	2	LDF7-50A (1-5/8 FOAM)	132.00 - 136.00	0.6000	0.4893
T5	3	LDF7-50A (1-5/8 FOAM)	132.00 - 136.00	0.6000	0.4893
T5	8	7/8	132.00 - 136.00	0.6000	0.4893
T5	9	1/2	132.00 - 136.00	0.6000	0.4893
T5	11	1 1/4	132.00 - 136.00	0.6000	0.4893
T5	12	1/2	132.00 - 136.00	0.6000	0.4893
T5	15	7/8	132.00 - 136.00	0.6000	0.4893
T5	16	1/2	132.00 - 136.00	0.6000	0.4893
T5	17	7/8	132.00 - 136.00	0.6000	0.4893
T5	18	1/2	132.00 - 136.00	0.6000	0.4893
T5	19	7/8	132.00 - 136.00	0.6000	0.4893
T5	21	7/8	132.00 - 136.00	0.6000	0.4893
T5	23	7/8	132.00 - 136.00	0.6000	0.4893
T5	25	7/8	132.00 - 136.00	0.6000	0.4893
T5	26	1/2	132.00 - 136.00	0.6000	0.4893
T5	28	1/2	132.00 - 136.00	0.6000	0.4893
T5	29	7/8	132.00 - 136.00	0.6000	0.4893
T5	32	1 1/4	132.00 - 136.00	0.6000	0.4893
T5	35	1 5/8	132.00 - 136.00	0.6000	0.4893

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	Client	T-MOBILE	Designed by	Joshua Gildert

<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>
T5	41	6x12	132.00 - 136.00	0.6000	0.4893
T5	43	Feedline Ladder (Af)	132.00 - 136.00	0.6000	0.4893
T5	44	Feedline Ladder (Af)	132.00 - 136.00	0.6000	0.4893
T5	45	Feedline Ladder (Af)	132.00 - 136.00	0.6000	0.4893
T5	46	Feedline Ladder (Af)	132.00 - 136.00	0.6000	0.4893
T5	47	Feedline Ladder (Af)	132.00 - 136.00	0.6000	0.4893
T6	1	LDF7-50A (1-5/8 FOAM)	128.00 - 132.00	0.6000	0.5084
T6	2	LDF7-50A (1-5/8 FOAM)	128.00 - 132.00	0.6000	0.5084
T6	3	LDF7-50A (1-5/8 FOAM)	128.00 - 132.00	0.6000	0.5084
T6	8	7/8	128.00 - 132.00	0.6000	0.5084
T6	9	1/2	128.00 - 132.00	0.6000	0.5084
T6	11	1 1/4	128.00 - 132.00	0.6000	0.5084
T6	12	1/2	128.00 - 132.00	0.6000	0.5084
T6	15	7/8	128.00 - 132.00	0.6000	0.5084
T6	16	1/2	128.00 - 132.00	0.6000	0.5084
T6	17	7/8	128.00 - 132.00	0.6000	0.5084
T6	18	1/2	128.00 - 132.00	0.6000	0.5084
T6	19	7/8	128.00 - 132.00	0.6000	0.5084
T6	21	7/8	128.00 - 132.00	0.6000	0.5084
T6	23	7/8	128.00 - 132.00	0.6000	0.5084
T6	25	7/8	128.00 - 132.00	0.6000	0.5084
T6	26	1/2	128.00 - 132.00	0.6000	0.5084
T6	28	1/2	128.00 - 132.00	0.6000	0.5084
T6	29	7/8	128.00 - 132.00	0.6000	0.5084
T6	32	1 1/4	128.00 - 132.00	0.6000	0.5084
T6	35	1 5/8	128.00 - 132.00	0.6000	0.5084
T6	41	6x12	128.00 - 132.00	0.6000	0.5084
T6	43	Feedline Ladder (Af)	128.00 - 132.00	0.6000	0.5084
T6	44	Feedline Ladder (Af)	128.00 - 132.00	0.6000	0.5084
T6	45	Feedline Ladder (Af)	128.00 - 132.00	0.6000	0.5084
T6	46	Feedline Ladder (Af)	128.00 - 132.00	0.6000	0.5084

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	Client	T-MOBILE	Designed by	Joshua Gildert

<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	47	Feedline Ladder (Af)	128.00 - 132.00	0.6000	0.5084
T7	1	LDF7-50A (1-5/8 FOAM)	124.00 - 128.00	0.6000	0.5250
T7	2	LDF7-50A (1-5/8 FOAM)	124.00 - 128.00	0.6000	0.5250
T7	3	LDF7-50A (1-5/8 FOAM)	124.00 - 128.00	0.6000	0.5250
T7	8	7/8	124.00 - 128.00	0.6000	0.5250
T7	9	1/2	124.00 - 128.00	0.6000	0.5250
T7	11	1 1/4	124.00 - 128.00	0.6000	0.5250
T7	12	1/2	124.00 - 128.00	0.6000	0.5250
T7	15	7/8	124.00 - 128.00	0.6000	0.5250
T7	16	1/2	124.00 - 128.00	0.6000	0.5250
T7	17	7/8	124.00 - 128.00	0.6000	0.5250
T7	18	1/2	124.00 - 128.00	0.6000	0.5250
T7	19	7/8	124.00 - 128.00	0.6000	0.5250
T7	21	7/8	124.00 - 128.00	0.6000	0.5250
T7	23	7/8	124.00 - 128.00	0.6000	0.5250
T7	25	7/8	124.00 - 128.00	0.6000	0.5250
T7	26	1/2	124.00 - 128.00	0.6000	0.5250
T7	28	1/2	124.00 - 128.00	0.6000	0.5250
T7	29	7/8	124.00 - 128.00	0.6000	0.5250
T7	32	1 1/4	124.00 - 128.00	0.6000	0.5250
T7	35	1 5/8	124.00 - 128.00	0.6000	0.5250
T7	41	6x12	124.00 - 128.00	0.6000	0.5250
T7	43	Feedline Ladder (Af)	124.00 - 128.00	0.6000	0.5250
T7	44	Feedline Ladder (Af)	124.00 - 128.00	0.6000	0.5250
T7	45	Feedline Ladder (Af)	124.00 - 128.00	0.6000	0.5250
T7	46	Feedline Ladder (Af)	124.00 - 128.00	0.6000	0.5250
T7	47	Feedline Ladder (Af)	124.00 - 128.00	0.6000	0.5250
T8	1	LDF7-50A (1-5/8 FOAM)	120.00 - 124.00	0.6000	0.4230
T8	2	LDF7-50A (1-5/8 FOAM)	120.00 - 124.00	0.6000	0.4230
T8	3	LDF7-50A (1-5/8 FOAM)	120.00 - 124.00	0.6000	0.4230
T8	8	7/8	120.00 - 124.00	0.6000	0.4230

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	Client	T-MOBILE	Designed by	Joshua Gildert

<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	9	1/2	120.00 - 124.00	0.6000	0.4230
T8	11	1 1/4	120.00 - 124.00	0.6000	0.4230
T8	12	1/2	120.00 - 124.00	0.6000	0.4230
T8	15	7/8	120.00 - 124.00	0.6000	0.4230
T8	16	1/2	120.00 - 124.00	0.6000	0.4230
T8	17	7/8	120.00 - 124.00	0.6000	0.4230
T8	18	1/2	120.00 - 124.00	0.6000	0.4230
T8	19	7/8	120.00 - 124.00	0.6000	0.4230
T8	21	7/8	120.00 - 124.00	0.6000	0.4230
T8	23	7/8	120.00 - 124.00	0.6000	0.4230
T8	25	7/8	120.00 - 124.00	0.6000	0.4230
T8	26	1/2	120.00 - 124.00	0.6000	0.4230
T8	28	1/2	120.00 - 124.00	0.6000	0.4230
T8	29	7/8	120.00 - 124.00	0.6000	0.4230
T8	32	1 1/4	120.00 - 124.00	0.6000	0.4230
T8	35	1 5/8	120.00 - 124.00	0.6000	0.4230
T8	41	6x12	120.00 - 124.00	0.6000	0.4230
T8	43	Feedline Ladder (Af)	120.00 - 124.00	0.6000	0.4230
T8	44	Feedline Ladder (Af)	120.00 - 124.00	0.6000	0.4230
T8	45	Feedline Ladder (Af)	120.00 - 124.00	0.6000	0.4230
T8	46	Feedline Ladder (Af)	120.00 - 124.00	0.6000	0.4230
T8	47	Feedline Ladder (Af)	120.00 - 124.00	0.6000	0.4230
T9	1	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.5058
T9	2	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.5058
T9	3	LDF7-50A (1-5/8 FOAM)	100.00 - 120.00	0.6000	0.5058
T9	8	7/8	100.00 - 120.00	0.6000	0.5058
T9	9	1/2	100.00 - 120.00	0.6000	0.5058
T9	11	1 1/4	100.00 - 120.00	0.6000	0.5058
T9	12	1/2	100.00 - 120.00	0.6000	0.5058
T9	15	7/8	100.00 - 120.00	0.6000	0.5058
T9	16	1/2	100.00 - 120.00	0.6000	0.5058

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	Client	T-MOBILE	Designed by Joshua Gildert

<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>
T9	17	7/8	100.00 - 120.00	0.6000	0.5058
T9	18	1/2	100.00 - 120.00	0.6000	0.5058
T9	19	7/8	100.00 - 120.00	0.6000	0.5058
T9	20	1/2	100.00 - 102.00	0.6000	0.5058
T9	21	7/8	100.00 - 120.00	0.6000	0.5058
T9	22	7/8	100.00 - 109.00	0.6000	0.5058
T9	23	7/8	100.00 - 120.00	0.6000	0.5058
T9	24	7/8	100.00 - 119.00	0.6000	0.5058
T9	25	7/8	100.00 - 120.00	0.6000	0.5058
T9	26	1/2	100.00 - 120.00	0.6000	0.5058
T9	27	1/2	100.00 - 113.00	0.6000	0.5058
T9	28	1/2	100.00 - 120.00	0.6000	0.5058
T9	29	7/8	100.00 - 120.00	0.6000	0.5058
T9	30	7/8	100.00 - 103.00	0.6000	0.5058
T9	32	1 1/4	100.00 - 120.00	0.6000	0.5058
T9	35	1 5/8	100.00 - 120.00	0.6000	0.5058
T9	41	6x12	100.00 - 120.00	0.6000	0.5058
T9	43	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.5058
T9	44	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.5058
T9	45	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.5058
T9	46	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.5058
T9	47	Feedline Ladder (Af)	100.00 - 120.00	0.6000	0.5058
T10	1	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T10	2	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T10	3	LDF7-50A (1-5/8 FOAM)	80.00 - 100.00	0.6000	0.6000
T10	7	1/2	80.00 - 94.00	0.6000	0.6000
T10	8	7/8	80.00 - 100.00	0.6000	0.6000
T10	9	1/2	80.00 - 100.00	0.6000	0.6000
T10	11	1 1/4	80.00 - 100.00	0.6000	0.6000
T10	12	1/2	80.00 - 100.00	0.6000	0.6000
T10	14	7/8	80.00 - 92.00	0.6000	0.6000
T10	15	7/8	80.00 - 100.00	0.6000	0.6000
T10	16	1/2	80.00 - 100.00	0.6000	0.6000
T10	17	7/8	80.00 - 100.00	0.6000	0.6000
T10	18	1/2	80.00 - 100.00	0.6000	0.6000
T10	19	7/8	80.00 - 100.00	0.6000	0.6000
T10	20	1/2	80.00 - 100.00	0.6000	0.6000
T10	21	7/8	80.00 - 100.00	0.6000	0.6000
T10	22	7/8	80.00 - 100.00	0.6000	0.6000
T10	23	7/8	80.00 - 100.00	0.6000	0.6000

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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>
T10	24	7/8	80.00 - 100.00	0.6000	0.6000
T10	25	7/8	80.00 - 100.00	0.6000	0.6000
T10	26	1/2	80.00 - 100.00	0.6000	0.6000
T10	27	1/2	80.00 - 100.00	0.6000	0.6000
T10	28	1/2	80.00 - 100.00	0.6000	0.6000
T10	29	7/8	80.00 - 100.00	0.6000	0.6000
T10	30	7/8	80.00 - 100.00	0.6000	0.6000
T10	32	1 1/4	80.00 - 100.00	0.6000	0.6000
T10	35	1 5/8	80.00 - 100.00	0.6000	0.6000
T10	41	6x12	80.00 - 100.00	0.6000	0.6000
T10	43	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T10	44	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T10	45	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T10	46	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T10	47	Feedline Ladder (Af)	80.00 - 100.00	0.6000	0.6000
T11	1	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T11	2	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T11	3	LDF7-50A (1-5/8 FOAM)	60.00 - 80.00	0.6000	0.6000
T11	6	1/2	60.00 - 70.00	0.6000	0.6000
T11	7	1/2	60.00 - 80.00	0.6000	0.6000
T11	8	7/8	60.00 - 80.00	0.6000	0.6000
T11	9	1/2	60.00 - 80.00	0.6000	0.6000
T11	11	1 1/4	60.00 - 80.00	0.6000	0.6000
T11	12	1/2	60.00 - 80.00	0.6000	0.6000
T11	14	7/8	60.00 - 80.00	0.6000	0.6000
T11	15	7/8	60.00 - 80.00	0.6000	0.6000
T11	16	1/2	60.00 - 80.00	0.6000	0.6000
T11	17	7/8	60.00 - 80.00	0.6000	0.6000
T11	18	1/2	60.00 - 80.00	0.6000	0.6000
T11	19	7/8	60.00 - 80.00	0.6000	0.6000
T11	20	1/2	60.00 - 80.00	0.6000	0.6000
T11	21	7/8	60.00 - 80.00	0.6000	0.6000
T11	22	7/8	60.00 - 80.00	0.6000	0.6000
T11	23	7/8	60.00 - 80.00	0.6000	0.6000
T11	24	7/8	60.00 - 80.00	0.6000	0.6000
T11	25	7/8	60.00 - 80.00	0.6000	0.6000
T11	26	1/2	60.00 - 80.00	0.6000	0.6000
T11	27	1/2	60.00 - 80.00	0.6000	0.6000
T11	28	1/2	60.00 - 80.00	0.6000	0.6000
T11	29	7/8	60.00 - 80.00	0.6000	0.6000
T11	30	7/8	60.00 - 80.00	0.6000	0.6000
T11	32	1 1/4	60.00 - 80.00	0.6000	0.6000
T11	33	7/8	60.00 - 74.00	0.6000	0.6000
T11	35	1 5/8	60.00 - 80.00	0.6000	0.6000
T11	41	6x12	60.00 - 80.00	0.6000	0.6000
T11	43	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T11	44	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T11	45	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T11	46	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T11	47	Feedline Ladder (Af)	60.00 - 80.00	0.6000	0.6000
T12	1	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T12	2	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T12	3	LDF7-50A (1-5/8 FOAM)	40.00 - 60.00	0.6000	0.6000
T12	5	1/2	40.00 - 50.00	0.6000	0.6000
T12	6	1/2	40.00 - 60.00	0.6000	0.6000
T12	7	1/2	40.00 - 60.00	0.6000	0.6000
T12	8	7/8	40.00 - 60.00	0.6000	0.6000
T12	9	1/2	40.00 - 60.00	0.6000	0.6000
T12	11	1 1/4	40.00 - 60.00	0.6000	0.6000
T12	12	1/2	40.00 - 60.00	0.6000	0.6000
T12	14	7/8	40.00 - 60.00	0.6000	0.6000
T12	15	7/8	40.00 - 60.00	0.6000	0.6000

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	Client	T-MOBILE	Designed by	Joshua Gildert

<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>
T12	16	1/2	40.00 - 60.00	0.6000	0.6000
T12	17	7/8	40.00 - 60.00	0.6000	0.6000
T12	18	1/2	40.00 - 60.00	0.6000	0.6000
T12	19	7/8	40.00 - 60.00	0.6000	0.6000
T12	20	1/2	40.00 - 60.00	0.6000	0.6000
T12	21	7/8	40.00 - 60.00	0.6000	0.6000
T12	22	7/8	40.00 - 60.00	0.6000	0.6000
T12	23	7/8	40.00 - 60.00	0.6000	0.6000
T12	24	7/8	40.00 - 60.00	0.6000	0.6000
T12	25	7/8	40.00 - 60.00	0.6000	0.6000
T12	26	1/2	40.00 - 60.00	0.6000	0.6000
T12	27	1/2	40.00 - 60.00	0.6000	0.6000
T12	28	1/2	40.00 - 60.00	0.6000	0.6000
T12	29	7/8	40.00 - 60.00	0.6000	0.6000
T12	30	7/8	40.00 - 60.00	0.6000	0.6000
T12	32	1 1/4	40.00 - 60.00	0.6000	0.6000
T12	33	7/8	40.00 - 60.00	0.6000	0.6000
T12	34	1/2	40.00 - 50.00	0.6000	0.6000
T12	35	1 5/8	40.00 - 60.00	0.6000	0.6000
T12	41	6x12	40.00 - 60.00	0.6000	0.6000
T12	43	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T12	44	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T12	45	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T12	46	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T12	47	Feedline Ladder (Af)	40.00 - 60.00	0.6000	0.6000
T13	1	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T13	2	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T13	3	LDF7-50A (1-5/8 FOAM)	20.00 - 40.00	0.6000	0.6000
T13	5	1/2	20.00 - 40.00	0.6000	0.6000
T13	6	1/2	20.00 - 40.00	0.6000	0.6000
T13	7	1/2	20.00 - 40.00	0.6000	0.6000
T13	8	7/8	20.00 - 40.00	0.6000	0.6000
T13	9	1/2	20.00 - 40.00	0.6000	0.6000
T13	10	1/2	20.00 - 32.00	0.6000	0.6000
T13	11	1 1/4	20.00 - 40.00	0.6000	0.6000
T13	12	1/2	20.00 - 40.00	0.6000	0.6000
T13	14	7/8	20.00 - 40.00	0.6000	0.6000
T13	15	7/8	20.00 - 40.00	0.6000	0.6000
T13	16	1/2	20.00 - 40.00	0.6000	0.6000
T13	17	7/8	20.00 - 40.00	0.6000	0.6000
T13	18	1/2	20.00 - 40.00	0.6000	0.6000
T13	19	7/8	20.00 - 40.00	0.6000	0.6000
T13	20	1/2	20.00 - 40.00	0.6000	0.6000
T13	21	7/8	20.00 - 40.00	0.6000	0.6000
T13	22	7/8	20.00 - 40.00	0.6000	0.6000
T13	23	7/8	20.00 - 40.00	0.6000	0.6000
T13	24	7/8	20.00 - 40.00	0.6000	0.6000
T13	25	7/8	20.00 - 40.00	0.6000	0.6000
T13	26	1/2	20.00 - 40.00	0.6000	0.6000
T13	27	1/2	20.00 - 40.00	0.6000	0.6000
T13	28	1/2	20.00 - 40.00	0.6000	0.6000
T13	29	7/8	20.00 - 40.00	0.6000	0.6000
T13	30	7/8	20.00 - 40.00	0.6000	0.6000
T13	31	1/2	20.00 - 31.00	0.6000	0.6000
T13	32	1 1/4	20.00 - 40.00	0.6000	0.6000
T13	33	7/8	20.00 - 40.00	0.6000	0.6000
T13	34	1/2	20.00 - 40.00	0.6000	0.6000
T13	35	1 5/8	20.00 - 40.00	0.6000	0.6000
T13	41	6x12	20.00 - 40.00	0.6000	0.6000
T13	43	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T13	44	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T13	45	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000

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	Client	T-MOBILE	Designed by	Joshua Gildert

<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>
T13	46	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T13	47	Feedline Ladder (Af)	20.00 - 40.00	0.6000	0.6000
T14	1	LDF7-50A (1-5/8 FOAM)	8.00 - 20.00	0.6000	0.6000
T14	2	LDF7-50A (1-5/8 FOAM)	8.00 - 20.00	0.6000	0.6000
T14	3	LDF7-50A (1-5/8 FOAM)	8.00 - 20.00	0.6000	0.6000
T14	5	1/2	8.00 - 20.00	0.6000	0.6000
T14	6	1/2	8.00 - 20.00	0.6000	0.6000
T14	7	1/2	8.00 - 20.00	0.6000	0.6000
T14	8	7/8	8.00 - 20.00	0.6000	0.6000
T14	9	1/2	8.00 - 20.00	0.6000	0.6000
T14	10	1/2	8.00 - 20.00	0.6000	0.6000
T14	11	1 1/4	8.00 - 20.00	0.6000	0.6000
T14	12	1/2	8.00 - 20.00	0.6000	0.6000
T14	13	1/2	8.00 - 17.00	0.6000	0.6000
T14	14	7/8	8.00 - 20.00	0.6000	0.6000
T14	15	7/8	8.00 - 20.00	0.6000	0.6000
T14	16	1/2	8.00 - 20.00	0.6000	0.6000
T14	17	7/8	8.00 - 20.00	0.6000	0.6000
T14	18	1/2	8.00 - 20.00	0.6000	0.6000
T14	19	7/8	8.00 - 20.00	0.6000	0.6000
T14	20	1/2	8.00 - 20.00	0.6000	0.6000
T14	21	7/8	8.00 - 20.00	0.6000	0.6000
T14	22	7/8	8.00 - 20.00	0.6000	0.6000
T14	23	7/8	8.00 - 20.00	0.6000	0.6000
T14	24	7/8	8.00 - 20.00	0.6000	0.6000
T14	25	7/8	8.00 - 20.00	0.6000	0.6000
T14	26	1/2	8.00 - 20.00	0.6000	0.6000
T14	27	1/2	8.00 - 20.00	0.6000	0.6000
T14	28	1/2	8.00 - 20.00	0.6000	0.6000
T14	29	7/8	8.00 - 20.00	0.6000	0.6000
T14	30	7/8	8.00 - 20.00	0.6000	0.6000
T14	31	1/2	8.00 - 20.00	0.6000	0.6000
T14	32	1 1/4	8.00 - 20.00	0.6000	0.6000
T14	33	7/8	8.00 - 20.00	0.6000	0.6000
T14	34	1/2	8.00 - 20.00	0.6000	0.6000
T14	35	1 5/8	8.00 - 20.00	0.6000	0.6000
T14	41	6x12	8.00 - 20.00	0.6000	0.6000
T14	43	Feedline Ladder (Af)	8.00 - 20.00	0.6000	0.6000
T14	44	Feedline Ladder (Af)	8.00 - 20.00	0.6000	0.6000
T14	45	Feedline Ladder (Af)	8.00 - 20.00	0.6000	0.6000
T14	46	Feedline Ladder (Af)	8.00 - 20.00	0.6000	0.6000
T14	47	Feedline Ladder (Af)	8.00 - 20.00	0.6000	0.6000

Discrete Tower Loads

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral</i>	<i>Azimuth Adjustment</i>	<i>Placement</i>	<i>C_AA_A Front</i>	<i>C_AA_A Side</i>	<i>Weight</i>
			<i>Vert</i>	<i>°</i>	<i>ft</i>	<i>ft²</i>	<i>ft²</i>	<i>lb</i>
			<i>ft</i>					
			<i>ft</i>					
Pirol 4' Side Mount Standoff	A	From Leg	2.00	0.0000	188.00	No Ice	2.72	50.00
			0.00			1/2" Ice	4.91	89.00
			0.00			1" Ice	7.10	128.00

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	Client	T-MOBILE	Designed by	Joshua Gildert

<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight lb</i>
Pirot 4' Side Mount Standoff	B	From Leg	2.00 0.00 0.00	0.0000	188.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	50.00 89.00 128.00
Pirot 4' Side Mount Standoff	C	From Leg	2.00 0.00 0.00	0.0000	188.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	50.00 89.00 128.00
(2) Obstruction Lights	C	From Leg	0.00 0.00 0.00	0.0000	192.00	No Ice 1/2" Ice 1" Ice	0.18 0.25 0.32	0.18 0.25 0.32	10.00 10.00 10.00
PD1142-3	C	From Leg	0.00 0.00 4.00	0.0000	192.00	No Ice 1/2" Ice 1" Ice	0.48 0.55 0.62	0.48 0.55 0.62	10.00 10.00 10.00
3' Yagi	C	From Leg	1.00 0.00 0.00	0.0000	190.00	No Ice 1/2" Ice 1" Ice	2.08 3.79 5.50	2.08 3.79 5.50	30.00 50.00 70.00
PD1142-3	C	From Leg	4.00 0.00 8.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	0.48 0.55 0.62	0.48 0.55 0.62	10.00 10.00 10.00
Pirot 4' Side Mount Standoff	C	From Leg	2.00 0.00 0.00	0.0000	156.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	50.00 89.00 128.00
ASP-705	C	From Leg	4.00 0.00 10.00	0.0000	156.00	No Ice 1/2" Ice 1" Ice	5.88 8.01 10.14	5.88 8.01 10.14	30.00 70.00 110.00
DB230-2A	C	From Leg	1.00 0.00 0.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	3.00 5.40 7.80	3.00 5.40 7.80	11.00 15.00 19.00
PD320	C	From Leg	1.00 0.00 0.00	0.0000	110.00	No Ice 1/2" Ice 1" Ice	2.03 4.58 7.13	2.03 4.58 7.13	10.00 30.00 50.00
Pirot 4' Side Mount Standoff	C	From Leg	2.00 0.00 0.00	0.0000	103.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	50.00 89.00 128.00
14'x3" Dia. Omni	C	From Leg	4.00 0.00 7.00	0.0000	103.00	No Ice 1/2" Ice 1" Ice	4.20 5.63 7.06	4.20 5.63 7.06	40.00 70.00 100.00
15' Single Dipole	C	From Leg	1.00 0.00 0.00	0.0000	92.00	No Ice 1/2" Ice 1" Ice	3.00 6.00 9.00	3.00 6.00 9.00	40.00 60.00 80.00
PD320	C	From Leg	1.00 0.00 0.00	0.0000	74.00	No Ice 1/2" Ice 1" Ice	2.03 4.58 7.13	2.03 4.58 7.13	10.00 30.00 50.00
15' Single Dipole	C	From Leg	1.00 0.00 0.00	0.0000	50.00	No Ice 1/2" Ice 1" Ice	3.00 6.00 9.00	3.00 6.00 9.00	40.00 60.00 80.00
15' Single Dipole	C	From Leg	1.00 0.00 0.00	0.0000	31.00	No Ice 1/2" Ice 1" Ice	3.00 6.00 9.00	3.00 6.00 9.00	40.00 60.00 80.00
ASP-705	B	From Leg	1.00 0.00 10.00	0.0000	192.00	No Ice 1/2" Ice 1" Ice	5.88 8.01 10.14	5.88 8.01 10.14	30.00 70.00 110.00
ASP-705	B	From Leg	4.00 0.00 10.00	0.0000	192.00	No Ice 1/2" Ice 1" Ice	5.88 8.01 10.14	5.88 8.01 10.14	30.00 70.00 110.00
Paraflector	B	From Leg	4.00 0.00 0.00	0.0000	144.00	No Ice 1/2" Ice 1" Ice	8.90 10.70 12.50	8.90 10.70 12.50	40.00 60.00 80.00

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight lb</i>
Paraflector	B	From Leg	4.00 0.00 0.00	0.0000	140.00	No Ice 1/2" Ice 1" Ice	8.90 10.70 12.50	8.90 10.70 12.50	40.00 60.00 80.00
Pirot 4' Side Mount Standoff	B	From Leg	2.00 0.00 0.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	50.00 89.00 128.00
Pirot 4' Side Mount Standoff	B	From Leg	2.00 0.00 0.00	0.0000	109.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	50.00 89.00 128.00
14'x3" Dia. Omni	B	From Leg	4.00 0.00 7.00	0.0000	109.00	No Ice 1/2" Ice 1" Ice	4.20 5.63 7.06	4.20 5.63 7.06	40.00 70.00 100.00
GPS	B	From Leg	1.00 0.00 0.00	0.0000	102.00	No Ice 1/2" Ice 1" Ice	1.00 1.50 2.00	1.00 1.50 2.00	10.00 10.00 10.00
1' Standoff Mount	B	From Leg	0.50 0.00 0.00	0.0000	102.00	No Ice 1/2" Ice 1" Ice	0.16 0.23 0.30	0.16 0.23 0.30	10.00 15.00 20.00
DB212 Single Dipole	B	From Leg	1.00 0.00 0.00	0.0000	94.00	No Ice 1/2" Ice 1" Ice	1.60 3.20 4.80	1.60 3.20 4.80	30.00 40.00 50.00
15' Single Dipole	B	From Leg	1.00 0.00 0.00	0.0000	70.00	No Ice 1/2" Ice 1" Ice	3.00 6.00 9.00	3.00 6.00 9.00	40.00 60.00 80.00
DB212 Single Dipole	B	From Leg	1.00 0.00 0.00	0.0000	50.00	No Ice 1/2" Ice 1" Ice	1.60 3.20 4.80	1.60 3.20 4.80	30.00 40.00 50.00
DB212 Single Dipole	B	From Leg	1.00 0.00 0.00	0.0000	32.00	No Ice 1/2" Ice 1" Ice	1.60 3.20 4.80	1.60 3.20 4.80	30.00 40.00 50.00
Pirot 4' Side Mount Standoff	B	From Leg	2.00 0.00 0.00	0.0000	17.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	50.00 89.00 128.00
PD400	B	From Leg	4.00 0.00 6.00	0.0000	17.00	No Ice 1/2" Ice 1" Ice	3.14 4.48 5.82	3.14 4.48 5.82	20.00 40.00 60.00
3' Yagi	B	From Leg	1.00 0.00 0.00	0.0000	17.00	No Ice 1/2" Ice 1" Ice	2.08 3.79 5.50	2.08 3.79 5.50	30.00 50.00 70.00
Paraflector	B	From Leg	4.00 0.00 0.00	0.0000	187.00	No Ice 1/2" Ice 1" Ice	8.90 10.70 12.50	8.90 10.70 12.50	40.00 60.00 80.00
Pirot 4' Side Mount Standoff	B	From Leg	2.00 0.00 0.00	0.0000	156.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	50.00 89.00 128.00
ASP-705	B	From Leg	4.00 0.00 10.00	0.0000	156.00	No Ice 1/2" Ice 1" Ice	5.88 8.01 10.14	5.88 8.01 10.14	30.00 70.00 110.00
DB420	A	From Leg	1.00 0.00 10.00	0.0000	192.00	No Ice 1/2" Ice 1" Ice	3.33 5.99 8.65	3.33 5.99 8.65	30.00 40.00 50.00
4'x3" Dia. Omni	A	From Leg	4.00 0.00 2.00	0.0000	190.00	No Ice 1/2" Ice 1" Ice	1.00 1.25 1.50	1.00 1.25 1.50	20.00 20.00 20.00
Halo	A	From Leg	4.00 0.00 0.00	0.0000	192.00	No Ice 1/2" Ice 1" Ice	4.00 5.60 7.20	4.00 5.60 7.20	10.00 30.00 50.00

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>		<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight lb</i>
3' Yagi	A	From Leg	1.00 0.00 0.00	0.0000	190.00	No Ice 1/2" Ice 1" Ice	2.08 3.79 5.50	2.08 3.79 5.50	30.00 50.00 70.00
Pirot 4' Side Mount Standoff	A	From Leg	2.00 0.00 0.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	50.00 89.00 128.00
DB264-A	A	From Leg	4.00 0.00 0.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	3.16 5.69 8.22	3.16 5.69 8.22	40.00 50.00 60.00
DB436-C	A	From Leg	4.00 0.00 0.00	0.0000	142.00	No Ice 1/2" Ice 1" Ice	0.45 0.81 1.17	0.45 0.81 1.17	10.00 10.00 10.00
Single Dipole	A	From Leg	4.00 0.00 3.00	0.0000	136.00	No Ice 1/2" Ice 1" Ice	1.60 3.20 4.80	1.60 3.20 4.80	30.00 40.00 50.00
Pirot 4' Side Mount Standoff	A	From Leg	2.00 0.00 0.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice	2.72 4.91 7.10	2.72 4.91 7.10	50.00 89.00 128.00
Dipole	A	From Leg	4.00 0.00 3.00	0.0000	113.00	No Ice 1/2" Ice 1" Ice	3.16 5.69 8.22	3.16 5.69 8.22	40.00 50.00 60.00

(3) Sector Frames (Sprint)	C	None		0.0000	179.92	No Ice 1/2" Ice 1" Ice	52.00 61.90 71.80	52.00 61.90 71.80	1750.00 2190.00 2630.00

Pirot 12' T-Frame Sector Mount (VZW)	A	From Leg	0.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	13.60 18.40 23.20	13.60 18.40 23.20	465.00 600.00 735.00
Pirot 12' T-Frame Sector Mount (VZW)	B	From Leg	0.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	13.60 18.40 23.20	13.60 18.40 23.20	465.00 600.00 735.00
Pirot 12' T-Frame Sector Mount (VZW)	C	From Leg	0.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	13.60 18.40 23.20	13.60 18.40 23.20	465.00 600.00 735.00
LNx-6514DS-T4M (VZW)	A	From Leg	4.00 -6.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	8.20 8.66 9.13	5.42 5.88 6.35	31.30 81.94 138.72
HBXX-6517DS-A2M (VZW)	A	From Leg	4.00 -4.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	8.53 9.00 9.48	5.24 5.71 6.18	43.00 93.49 150.23
LNx-6514DS-T4M (VZW)	A	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	8.20 8.66 9.13	5.42 5.88 6.35	31.30 81.94 138.72
HBXX-6517DS-A2M (VZW)	A	From Leg	4.00 4.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	8.53 9.00 9.48	5.24 5.71 6.18	43.00 93.49 150.23
LNx-6514DS-T4M (VZW)	B	From Leg	4.00 -6.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	8.20 8.66 9.13	5.42 5.88 6.35	31.30 81.94 138.72
HBXX-6517DS-A2M (VZW)	B	From Leg	4.00 -4.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	8.53 9.00 9.48	5.24 5.71 6.18	43.00 93.49 150.23
LNx-6514DS-T4M (VZW)	B	From Leg	4.00 0.00 0.00	0.0000	150.00	No Ice 1/2" Ice 1" Ice	8.20 8.66 9.13	5.42 5.88 6.35	31.30 81.94 138.72
HBXX-6517DS-A2M	B	From Leg	4.00	0.0000	150.00	No Ice	8.53	5.24	43.00

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_{AA} Front ft²</i>	<i>C_{AA} Side ft²</i>	<i>Weight lb</i>	
(VZW)			4.00			1/2" Ice	9.00	5.71	93.49
			0.00			1" Ice	9.48	6.18	150.23
LNX-6514DS-T4M	C	From Leg	4.00	0.0000	150.00	No Ice	8.20	5.42	31.30
(VZW)			-6.00			1/2" Ice	8.66	5.88	81.94
			0.00			1" Ice	9.13	6.35	138.72
HBXX-6517DS-A2M	C	From Leg	4.00	0.0000	150.00	No Ice	8.53	5.24	43.00
(VZW)			-4.00			1/2" Ice	9.00	5.71	93.49
			0.00			1" Ice	9.48	6.18	150.23
LNX-6514DS-T4M	C	From Leg	4.00	0.0000	150.00	No Ice	8.20	5.42	31.30
(VZW)			0.00			1/2" Ice	8.66	5.88	81.94
			0.00			1" Ice	9.13	6.35	138.72
HBXX-6517DS-A2M	C	From Leg	4.00	0.0000	150.00	No Ice	8.53	5.24	43.00
(VZW)			4.00			1/2" Ice	9.00	5.71	93.49
			0.00			1" Ice	9.48	6.18	150.23
RRH2x60-AWS	A	From Leg	4.00	0.0000	150.00	No Ice	1.73	1.33	50.00
(VZW)			4.00			1/2" Ice	1.90	1.48	66.28
			0.00			1" Ice	2.07	1.64	85.25
RRH2x60-AWS	B	From Leg	4.00	0.0000	150.00	No Ice	1.73	1.33	50.00
(VZW)			4.00			1/2" Ice	1.90	1.48	66.28
			0.00			1" Ice	2.07	1.64	85.25
RRH2x60-AWS	C	From Leg	4.00	0.0000	150.00	No Ice	1.73	1.33	50.00
(VZW)			4.00			1/2" Ice	1.90	1.48	66.28
			0.00			1" Ice	2.07	1.64	85.25
RRH 2x60-PCS	A	From Leg	4.00	0.0000	150.00	No Ice	1.87	1.18	40.00
(VZW)			-4.00			1/2" Ice	2.05	1.33	55.63
			0.00			1" Ice	2.23	1.48	73.92
RRH 2x60-PCS	B	From Leg	4.00	0.0000	150.00	No Ice	1.87	1.18	40.00
(VZW)			-4.00			1/2" Ice	2.05	1.33	55.63
			0.00			1" Ice	2.23	1.48	73.92
RRH 2x60-PCS	C	From Leg	4.00	0.0000	150.00	No Ice	1.87	1.18	40.00
(VZW)			-4.00			1/2" Ice	2.05	1.33	55.63
			0.00			1" Ice	2.23	1.48	73.92
DB-T1-6Z-8AB-0Z	A	From Leg	2.00	0.0000	150.00	No Ice	5.60	2.33	60.00
(VZW)			0.00			1/2" Ice	5.92	2.56	80.00
			0.00			1" Ice	6.24	2.79	100.00
DB-T1-6Z-8AB-0Z	B	From Leg	2.00	0.0000	150.00	No Ice	5.60	2.33	60.00
(VZW)			0.00			1/2" Ice	5.92	2.56	80.00
			0.00			1" Ice	6.24	2.79	100.00

APX16DWV-16DWV-S-E-A	A	From Leg	3.00	0.0000	180.00	No Ice	6.46	2.15	40.70
20			0.00			1/2" Ice	6.83	2.49	73.65
(T-Mobile)			0.00			1" Ice	7.21	2.84	111.47
APX16DWV-16DWV-S-E-A	B	From Leg	3.00	0.0000	180.00	No Ice	6.46	2.15	40.70
20			0.00			1/2" Ice	6.83	2.49	73.65
(T-Mobile)			0.00			1" Ice	7.21	2.84	111.47
APX16DWV-16DWV-S-E-A	C	From Leg	3.00	0.0000	180.00	No Ice	6.46	2.15	40.70
20			0.00			1/2" Ice	6.83	2.49	73.65
(T-Mobile)			0.00			1" Ice	7.21	2.84	111.47
APXVAALL24_43-U-NA20	A	From Leg	3.00	0.0000	180.00	No Ice	20.24	8.89	153.30
(T-Mobile)			0.00			1/2" Ice	20.89	9.49	265.89
			0.00			1" Ice	21.54	10.09	387.02
APXVAALL24_43-U-NA20	B	From Leg	3.00	0.0000	180.00	No Ice	20.24	8.89	153.30
(T-Mobile)			0.00			1/2" Ice	20.89	9.49	265.89
			0.00			1" Ice	21.54	10.09	387.02
APXVAALL24_43-U-NA20	C	From Leg	3.00	0.0000	180.00	No Ice	20.24	8.89	153.30
(T-Mobile)			0.00			1/2" Ice	20.89	9.49	265.89
			0.00			1" Ice	21.54	10.09	387.02

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<i>Description</i>	<i>Face or Leg</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft ft ft</i>	<i>Azimuth Adjustment °</i>	<i>Placement ft</i>	<i>C_AA_A Front ft²</i>	<i>C_AA_A Side ft²</i>	<i>Weight lb</i>
AIR 6449 B41 (T-Mobile)	A	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 5.68 1/2" Ice 5.98 1" Ice 6.29	2.49 2.72 2.95	104.00 143.12 186.46
AIR 6449 B41 (T-Mobile)	B	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 5.68 1/2" Ice 5.98 1" Ice 6.29	2.49 2.72 2.95	104.00 143.12 186.46
AIR 6449 B41 (T-Mobile)	C	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 5.68 1/2" Ice 5.98 1" Ice 6.29	2.49 2.72 2.95	104.00 143.12 186.46
4415 B66A (T-Mobile)	A	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 1.84 1/2" Ice 2.01 1" Ice 2.19	0.82 0.94 1.07	46.00 60.07 76.66
4415 B66A (T-Mobile)	B	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 1.84 1/2" Ice 2.01 1" Ice 2.19	0.82 0.94 1.07	46.00 60.07 76.66
4415 B66A (T-Mobile)	C	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 1.84 1/2" Ice 2.01 1" Ice 2.19	0.82 0.94 1.07	46.00 60.07 76.66
RADIO 4449 B71+B85 (T-Mobile)	A	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 1.63 1/2" Ice 1.79 1" Ice 1.95	1.00 1.13 1.27	74.00 89.91 108.43
RADIO 4449 B71+B85 (T-Mobile)	B	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 1.63 1/2" Ice 1.79 1" Ice 1.95	1.00 1.13 1.27	74.00 89.91 108.43
RADIO 4449 B71+B85 (T-Mobile)	C	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 1.63 1/2" Ice 1.79 1" Ice 1.95	1.00 1.13 1.27	74.00 89.91 108.43
4424 B25 (T-Mobile)	A	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 2.05 1/2" Ice 2.23 1" Ice 2.42	1.61 1.77 1.94	86.00 106.93 130.84
4424 B25 (T-Mobile)	B	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 2.05 1/2" Ice 2.23 1" Ice 2.42	1.61 1.77 1.94	86.00 106.93 130.84
4424 B25 (T-Mobile)	C	From Leg	3.00 0.00 0.00	0.0000	180.00	No Ice 2.05 1/2" Ice 2.23 1" Ice 2.42	1.61 1.77 1.94	86.00 106.93 130.84

Dishes

<i>Description</i>	<i>Face or Leg</i>	<i>Dish Type</i>	<i>Offset Type</i>	<i>Offsets: Horz Lateral Vert ft</i>	<i>Azimuth Adjustment °</i>	<i>3 dB Beam Width °</i>	<i>Elevation ft</i>	<i>Outside Diameter ft</i>	<i>Aperture Area ft²</i>	<i>Weight lb</i>
3' Dish	C	Paraboloid w/o Radome	From Leg	4.00 0.00 0.00	0.0000		156.00	3.00	No Ice 3.14 1/2" Ice 3.41 1" Ice 3.68	80.00 100.00 120.00

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Load Combinations

<i>Comb. No.</i>	<i>Description</i>
1	Dead Only
2	1.2 Dead+1.6 Wind 0 deg - No Ice
3	1.2D+1.6W (pattern 1) 0 deg - No Ice
4	1.2D+1.6W (pattern 2) 0 deg - No Ice
5	0.9 Dead+1.6 Wind 0 deg - No Ice
6	1.2 Dead+1.6 Wind 30 deg - No Ice
7	1.2D+1.6W (pattern 1) 30 deg - No Ice
8	1.2D+1.6W (pattern 2) 30 deg - No Ice
9	0.9 Dead+1.6 Wind 30 deg - No Ice
10	1.2 Dead+1.6 Wind 60 deg - No Ice
11	1.2D+1.6W (pattern 1) 60 deg - No Ice
12	1.2D+1.6W (pattern 2) 60 deg - No Ice
13	0.9 Dead+1.6 Wind 60 deg - No Ice
14	1.2 Dead+1.6 Wind 90 deg - No Ice
15	1.2D+1.6W (pattern 1) 90 deg - No Ice
16	1.2D+1.6W (pattern 2) 90 deg - No Ice
17	0.9 Dead+1.6 Wind 90 deg - No Ice
18	1.2 Dead+1.6 Wind 120 deg - No Ice
19	1.2D+1.6W (pattern 1) 120 deg - No Ice
20	1.2D+1.6W (pattern 2) 120 deg - No Ice
21	0.9 Dead+1.6 Wind 120 deg - No Ice
22	1.2 Dead+1.6 Wind 150 deg - No Ice
23	1.2D+1.6W (pattern 1) 150 deg - No Ice
24	1.2D+1.6W (pattern 2) 150 deg - No Ice
25	0.9 Dead+1.6 Wind 150 deg - No Ice
26	1.2 Dead+1.6 Wind 180 deg - No Ice
27	1.2D+1.6W (pattern 1) 180 deg - No Ice
28	1.2D+1.6W (pattern 2) 180 deg - No Ice
29	0.9 Dead+1.6 Wind 180 deg - No Ice
30	1.2 Dead+1.6 Wind 210 deg - No Ice
31	1.2D+1.6W (pattern 1) 210 deg - No Ice
32	1.2D+1.6W (pattern 2) 210 deg - No Ice
33	0.9 Dead+1.6 Wind 210 deg - No Ice
34	1.2 Dead+1.6 Wind 240 deg - No Ice
35	1.2D+1.6W (pattern 1) 240 deg - No Ice
36	1.2D+1.6W (pattern 2) 240 deg - No Ice
37	0.9 Dead+1.6 Wind 240 deg - No Ice
38	1.2 Dead+1.6 Wind 270 deg - No Ice
39	1.2D+1.6W (pattern 1) 270 deg - No Ice
40	1.2D+1.6W (pattern 2) 270 deg - No Ice
41	0.9 Dead+1.6 Wind 270 deg - No Ice
42	1.2 Dead+1.6 Wind 300 deg - No Ice
43	1.2D+1.6W (pattern 1) 300 deg - No Ice
44	1.2D+1.6W (pattern 2) 300 deg - No Ice
45	0.9 Dead+1.6 Wind 300 deg - No Ice
46	1.2 Dead+1.6 Wind 330 deg - No Ice
47	1.2D+1.6W (pattern 1) 330 deg - No Ice
48	1.2D+1.6W (pattern 2) 330 deg - No Ice
49	0.9 Dead+1.6 Wind 330 deg - No Ice
50	1.2 Dead+1.0 Ice+1.0 Temp
51	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
52	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp
53	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
54	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
55	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
56	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
57	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
58	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
59	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp

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Comb. No.	Description
60	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
61	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
62	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
63	Dead+Wind 0 deg - Service
64	Dead+Wind 30 deg - Service
65	Dead+Wind 60 deg - Service
66	Dead+Wind 90 deg - Service
67	Dead+Wind 120 deg - Service
68	Dead+Wind 150 deg - Service
69	Dead+Wind 180 deg - Service
70	Dead+Wind 210 deg - Service
71	Dead+Wind 240 deg - Service
72	Dead+Wind 270 deg - Service
73	Dead+Wind 300 deg - Service
74	Dead+Wind 330 deg - Service

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical lb	Horizontal, X lb	Horizontal, Z lb
Leg C	Max. Vert	34	342056.96	27988.51	-17234.85
	Max. H _x	34	342056.96	27988.51	-17234.85
	Max. H _z	13	-301564.11	-24956.92	15468.19
	Min. Vert	13	-301564.11	-24956.92	15468.19
	Min. H _x	13	-301564.11	-24956.92	15468.19
	Min. H _z	34	342056.96	27988.51	-17234.85
Leg B	Max. Vert	18	344137.45	-28069.85	-17451.72
	Max. H _x	45	-302758.26	24984.22	15654.71
	Max. H _z	45	-302758.26	24984.22	15654.71
	Min. Vert	45	-302758.26	24984.22	15654.71
	Min. H _x	18	344137.45	-28069.85	-17451.72
	Min. H _z	18	344137.45	-28069.85	-17451.72
Leg A	Max. Vert	2	331618.90	156.71	31354.15
	Max. H _x	39	19292.35	4303.60	1173.79
	Max. H _z	2	331618.90	156.71	31354.15
	Min. Vert	29	-284573.25	-157.40	-27651.50
	Min. H _x	15	19462.80	-4314.40	1183.53
	Min. H _z	29	-284573.25	-157.40	-27651.50

Tower Mast Reaction Summary

Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
Dead Only	42047.89	-0.04	0.56	-29432.58	174.88	0.00
1.2 Dead+1.6 Wind 0 deg - No Ice	50457.43	101.02	-48968.36	-5179867.20	-15990.96	5277.71
1.2D+1.6W (pattern 1) 0 deg - No Ice	50457.43	101.02	-48707.43	-5130366.72	-15973.49	4450.76
1.2D+1.6W (pattern 2) 0 deg - No Ice	50457.45	55.56	-27610.48	-2998200.17	-8682.67	3186.98
0.9 Dead+1.6 Wind 0 deg - No Ice	37843.08	101.02	-48968.91	-5160532.16	-16003.74	5276.46
1.2 Dead+1.6 Wind 30 deg - No Ice	50457.43	23292.91	-40249.38	-4307888.36	-2475386.67	-3159.13

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<i>Load Combination</i>	<i>Vertical lb</i>	<i>Shear_x lb</i>	<i>Shear_z lb</i>	<i>Overturning Moment, M_x lb-ft</i>	<i>Overturning Moment, M_z lb-ft</i>	<i>Torque lb-ft</i>
Ice						
1.2D+1.6W (pattern 1) 30 deg - No Ice	50457.44	23162.45	-40023.41	-4265027.57	-2450619.42	-4112.56
1.2D+1.6W (pattern 2) 30 deg - No Ice	50457.46	13150.06	-22724.23	-2500749.31	-1427967.96	-6358.16
0.9 Dead+1.6 Wind 30 deg - No Ice	37843.08	23293.18	-40249.84	-4290243.14	-2470388.64	-3121.43
1.2 Dead+1.6 Wind 60 deg - No Ice	50457.43	42440.06	-24502.77	-2619069.48	-4474416.09	-30377.40
1.2D+1.6W (pattern 1) 60 deg - No Ice	50457.43	42214.10	-24372.31	-2594332.31	-4431538.37	-31200.32
1.2D+1.6W (pattern 2) 60 deg - No Ice	50457.45	23929.13	-13815.48	-1523137.34	-2576226.07	-33714.05
0.9 Dead+1.6 Wind 60 deg - No Ice	37843.07	42440.53	-24503.05	-2604919.02	-4465440.12	-30311.92
1.2 Dead+1.6 Wind 90 deg - No Ice	50457.43	52544.02	-47.54	-43491.90	-5472883.93	-51048.31
1.2D+1.6W (pattern 1) 90 deg - No Ice	50457.43	52283.10	-47.54	-43500.01	-5423384.48	-51520.49
1.2D+1.6W (pattern 2) 90 deg - No Ice	50457.45	29577.11	-26.15	-39941.86	-3143278.00	-53611.86
0.9 Dead+1.6 Wind 90 deg - No Ice	37842.48	52544.26	-47.79	-34531.32	-5462036.45	-50973.99
1.2 Dead+1.6 Wind 120 deg - No Ice	50457.43	45005.59	25867.36	2652221.64	-4687787.00	-35343.80
1.2D+1.6W (pattern 1) 120 deg - No Ice	50457.43	44779.62	25736.89	2627473.72	-4644918.52	-35340.19
1.2D+1.6W (pattern 2) 120 deg - No Ice	50457.45	25340.14	14566.00	1509342.53	-2693624.46	-36590.38
0.9 Dead+1.6 Wind 120 deg - No Ice	37843.07	45006.07	25867.63	2655803.50	-4678463.44	-35279.91
1.2 Dead+1.6 Wind 150 deg - No Ice	50457.43	23591.20	40863.54	4297844.58	-2501556.44	-13515.22
1.2D+1.6W (pattern 1) 150 deg - No Ice	50457.44	23460.74	40637.57	4254979.00	-2476794.46	-13036.61
1.2D+1.6W (pattern 2) 150 deg - No Ice	50457.46	13314.10	23062.04	2463185.04	-1442381.53	-13093.21
0.9 Dead+1.6 Wind 150 deg - No Ice	37843.08	23591.46	40863.99	4297964.92	-2496516.41	-13479.19
1.2 Dead+1.6 Wind 180 deg - No Ice	50457.43	20.15	46252.98	4891182.83	-2806.32	-5052.31
1.2D+1.6W (pattern 1) 180 deg - No Ice	50457.44	20.15	45992.06	4841677.94	-2786.59	-4225.89
1.2D+1.6W (pattern 2) 180 deg - No Ice	50457.46	11.08	26117.06	2807356.73	-1435.62	-3063.59
0.9 Dead+1.6 Wind 180 deg - No Ice	37843.08	20.15	46253.50	4890068.34	-2847.19	-5050.93
1.2 Dead+1.6 Wind 210 deg - No Ice	50457.44	-23198.62	40246.66	4236351.09	2460851.45	3506.87
1.2D+1.6W (pattern 1) 210 deg - No Ice	50457.44	-23068.15	40020.69	4193469.29	2436119.41	4460.39
1.2D+1.6W (pattern 2) 210 deg - No Ice	50457.46	-13098.18	22722.76	2429347.57	1420198.87	6549.52
0.9 Dead+1.6 Wind 210 deg - No Ice	37843.08	-23198.88	40247.11	4236587.61	2455793.34	3469.46
1.2 Dead+1.6 Wind 240 deg - No Ice	50457.43	-44708.25	25812.33	2648971.77	4650134.02	30379.15
1.2D+1.6W (pattern 1) 240 deg - No Ice	50457.43	-44482.28	25681.87	2624206.09	4607276.87	31202.86
1.2D+1.6W (pattern 2) 240 deg - No Ice	50457.45	-25176.61	14535.73	1507536.16	2673103.63	33722.31

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Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
0.9 Dead+1.6 Wind 240 deg - No Ice	37843.08	-44708.73	25812.60	2652553.38	4640795.01	30316.68
1.2 Dead+1.6 Wind 270 deg - No Ice	50457.43	-52494.50	-32.71	-40686.95	5465493.98	50699.26
1.2D+1.6W (pattern 1) 270 deg - No Ice	50457.43	-52233.57	-32.72	-40695.37	5415994.41	51171.43
1.2D+1.6W (pattern 2) 270 deg - No Ice	50457.45	-29549.88	-18.00	-38400.13	3139396.20	53419.75
0.9 Dead+1.6 Wind 270 deg - No Ice	37842.48	-52494.73	-32.97	-31734.80	5454564.57	50625.04
1.2 Dead+1.6 Wind 300 deg - No Ice	50457.43	-42593.39	-24614.57	-2631374.15	4490145.29	35113.59
1.2D+1.6W (pattern 1) 300 deg - No Ice	50457.43	-42367.43	-24484.11	-2606620.82	4447275.39	35109.90
1.2D+1.6W (pattern 2) 300 deg - No Ice	50457.45	-24013.46	-13876.97	-1529889.65	2585073.07	36456.29
0.9 Dead+1.6 Wind 300 deg - No Ice	37843.07	-42593.86	-24614.84	-2617200.31	4481038.53	35046.60
1.2 Dead+1.6 Wind 330 deg - No Ice	50457.43	-23593.25	-40862.33	-4368864.79	2502192.67	13519.08
1.2D+1.6W (pattern 1) 330 deg - No Ice	50457.43	-23462.79	-40636.36	-4325988.61	2477449.93	13040.53
1.2D+1.6W (pattern 2) 330 deg - No Ice	50457.45	-13315.25	-23061.35	-2534274.43	1442928.83	13092.86
0.9 Dead+1.6 Wind 330 deg - No Ice	37843.08	-23593.52	-40862.79	-4351112.20	2497048.89	13478.83
1.2 Dead+1.0 Ice+1.0 Temp	186973.80	-0.02	0.55	-154757.26	635.01	0.05
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	186973.79	23.28	-17175.57	-1994196.24	-3164.87	2183.72
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	186973.79	8609.27	-14888.03	-1749286.79	-922126.28	-704.49
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	186973.79	15437.01	-8912.52	-1100947.93	-1637918.54	-7640.33
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	186973.79	18254.80	-11.77	-156908.46	-1921454.18	-12487.50
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	186973.79	15828.34	9111.66	803278.32	-1666714.16	-9921.36
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	186973.80	8684.83	15043.15	1452531.99	-927401.81	-4589.81
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	186973.80	2.73	16839.31	1659135.74	211.62	-2135.34
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	186973.80	-8589.01	14887.53	1439343.32	920095.99	778.95
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	186973.80	-15680.22	9053.02	800005.29	1654658.36	7594.86
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	186973.79	-18244.17	-5.40	-155791.80	1920999.00	12412.13
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	186973.79	-15559.78	-8986.56	-1106686.86	1648336.29	9917.53
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	186973.79	-8685.30	-15042.80	-1762344.48	928749.08	4589.85
Dead+Wind 0 deg - Service	42047.89	22.28	-10800.85	-1162850.92	-3384.52	1165.11
Dead+Wind 30 deg - Service	42047.89	5137.68	-8877.72	-970751.16	-545156.17	-696.45
Dead+Wind 60 deg - Service	42047.89	9360.94	-5404.53	-598723.61	-985537.42	-6691.71
Dead+Wind 90 deg - Service	42047.89	11589.54	-10.49	-31334.18	-1205513.44	-11242.52
Dead+Wind 120 deg - Service	42047.89	9926.79	5705.51	562504.45	-1032548.83	-7788.45
Dead+Wind 150 deg - Service	42047.89	5203.46	9013.21	924974.78	-550921.68	-2982.77
Dead+Wind 180 deg - Service	42047.89	4.44	10201.95	1055663.20	-481.28	-1115.10
Dead+Wind 210 deg - Service	42047.89	-5116.87	8877.14	911416.37	542222.26	773.39
Dead+Wind 240 deg - Service	42047.89	-9861.21	5693.38	561775.98	1024511.31	6693.59
Dead+Wind 270 deg - Service	42047.89	-11578.61	-7.22	-30717.37	1204136.72	11165.40

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Load Combination	Vertical lb	Shear _x lb	Shear _z lb	Overturning Moment, M _x lb-ft	Overturning Moment, M _z lb-ft	Torque lb-ft
Dead+Wind 300 deg - Service	42047.89	-9394.76	-5429.19	-601424.80	989260.09	7736.03
Dead+Wind 330 deg - Service	42047.89	-5203.93	-9012.92	-984177.04	551332.04	2982.59

Solution Summary

Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
1	0.00	-42047.89	-0.00	0.04	42047.89	-0.56	0.001%
2	101.02	-50457.47	-48970.32	-101.02	50457.43	48968.36	0.003%
3	101.02	-50457.47	-48709.36	-101.02	50457.43	48707.43	0.003%
4	55.56	-50457.47	-27611.68	-55.56	50457.45	27610.48	0.002%
5	101.02	-37843.10	-48970.32	-101.02	37843.08	48968.91	0.002%
6	23293.94	-50457.47	-40251.05	-23292.91	50457.43	40249.38	0.003%
7	23163.46	-50457.47	-40025.05	-23162.45	50457.44	40023.41	0.003%
8	13150.67	-50457.47	-22725.25	-13150.06	50457.46	22724.23	0.002%
9	23293.94	-37843.10	-40251.05	-23293.18	37843.08	40249.84	0.002%
10	42441.86	-50457.47	-24503.82	-42440.06	50457.43	24502.77	0.003%
11	42215.86	-50457.47	-24373.34	-42214.10	50457.43	24372.31	0.003%
12	23930.20	-50457.47	-13816.10	-23929.13	50457.45	13815.48	0.002%
13	42441.86	-37843.10	-24503.82	-42440.53	37843.07	24503.05	0.002%
14	52546.11	-50457.47	-47.62	-52544.02	50457.43	47.54	0.003%
15	52285.15	-50457.47	-47.62	-52283.10	50457.43	47.54	0.003%
16	29578.37	-50457.47	-26.19	-29577.11	50457.45	26.15	0.002%
17	52546.11	-37843.10	-47.62	-52544.26	37842.48	47.79	0.003%
18	45007.33	-50457.47	25868.34	-45005.59	50457.43	-25867.36	0.003%
19	44781.34	-50457.47	25737.86	-44779.62	50457.43	-25736.89	0.003%
20	25341.21	-50457.47	14566.59	-25340.14	50457.45	-14566.00	0.002%
21	45007.33	-37843.10	25868.34	-45006.07	37843.07	-25867.63	0.002%
22	23592.13	-50457.47	40865.26	-23591.20	50457.43	-40863.54	0.003%
23	23461.65	-50457.47	40639.26	-23460.74	50457.44	-40637.57	0.003%
24	13314.68	-50457.47	23063.07	-13314.10	50457.46	-23062.04	0.002%
25	23592.13	-37843.10	40865.26	-23591.46	37843.08	-40863.99	0.002%
26	20.15	-50457.47	46254.98	-20.15	50457.43	-46252.98	0.003%
27	20.15	-50457.47	45994.02	-20.15	50457.44	-45992.06	0.003%
28	11.08	-50457.47	26118.25	-11.08	50457.46	-26117.06	0.002%
29	20.15	-37843.10	46254.98	-20.15	37843.08	-46253.50	0.002%
30	-23199.54	-50457.47	40248.36	23198.62	50457.44	-40246.66	0.003%
31	-23069.06	-50457.47	40022.37	23068.15	50457.44	-40020.69	0.003%
32	-13098.75	-50457.47	22723.77	13098.18	50457.46	-22722.76	0.002%
33	-23199.54	-37843.10	40248.36	23198.88	37843.08	-40247.11	0.002%
34	-44709.98	-50457.47	25813.32	44708.25	50457.43	-25812.33	0.003%
35	-44483.98	-50457.47	25682.84	44482.28	50457.43	-25681.87	0.003%
36	-25177.66	-50457.47	14536.33	25176.61	50457.45	-14535.73	0.002%
37	-44709.98	-37843.10	25813.32	44708.73	37843.08	-25812.60	0.002%
38	-52496.58	-50457.47	-32.79	52494.50	50457.43	32.71	0.003%
39	-52235.62	-50457.47	-32.79	52233.57	50457.43	32.72	0.003%
40	-29551.13	-50457.47	-18.04	29549.88	50457.45	18.00	0.002%
41	-52496.58	-37843.10	-32.79	52494.73	37842.48	32.97	0.003%
42	-42595.19	-50457.47	-24615.61	42593.39	50457.43	24614.57	0.003%
43	-42369.19	-50457.47	-24485.13	42367.43	50457.43	24484.11	0.003%
44	-24014.53	-50457.47	-13877.59	24013.46	50457.45	13876.97	0.002%
45	-42595.19	-37843.10	-24615.61	42593.86	37843.07	24614.84	0.002%
46	-23594.29	-50457.47	-40864.01	23593.25	50457.43	40862.33	0.003%
47	-23463.81	-50457.47	-40638.02	23462.79	50457.43	40636.36	0.003%
48	-13315.86	-50457.47	-23062.38	13315.25	50457.45	23061.35	0.002%
49	-23594.29	-37843.10	-40864.01	23593.52	37843.08	40862.79	0.002%
50	0.00	-186973.80	-0.00	0.02	186973.80	-0.55	0.000%

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Load Comb.	Sum of Applied Forces			Sum of Reactions			% Error
	PX lb	PY lb	PZ lb	PX lb	PY lb	PZ lb	
51	23.28	-186973.80	-17176.22	-23.28	186973.79	17175.57	0.000%
52	8609.57	-186973.80	-14888.59	-8609.27	186973.79	14888.03	0.000%
53	15437.54	-186973.80	-8912.87	-15437.01	186973.79	8912.52	0.000%
54	18255.42	-186973.80	-11.81	-18254.80	186973.79	11.77	0.000%
55	15828.88	-186973.80	9111.93	-15828.34	186973.79	-9111.66	0.000%
56	8685.14	-186973.80	15043.63	-8684.83	186973.80	-15043.15	0.000%
57	2.74	-186973.80	16839.87	-2.73	186973.80	-16839.31	0.000%
58	-8589.30	-186973.80	14888.01	8589.01	186973.80	-14887.53	0.000%
59	-15680.75	-186973.80	9053.28	15680.22	186973.80	-9053.02	0.000%
60	-18244.79	-186973.80	-5.45	18244.17	186973.79	5.40	0.000%
61	-15560.31	-186973.80	-8986.91	15559.78	186973.79	8986.56	0.000%
62	-8685.60	-186973.80	-15043.36	8685.30	186973.79	15042.80	0.000%
63	22.28	-42047.89	-10801.22	-22.28	42047.89	10800.85	0.001%
64	5137.87	-42047.89	-8878.04	-5137.68	42047.89	8877.72	0.001%
65	9361.26	-42047.89	-5404.72	-9360.94	42047.89	5404.53	0.001%
66	11589.92	-42047.89	-10.50	-11589.54	42047.89	10.49	0.001%
67	9927.11	-42047.89	5705.69	-9926.79	42047.89	-5705.51	0.001%
68	5203.64	-42047.89	9013.51	-5203.46	42047.89	-9013.21	0.001%
69	4.44	-42047.89	10202.30	-4.44	42047.89	-10201.95	0.001%
70	-5117.04	-42047.89	8877.44	5116.87	42047.89	-8877.14	0.001%
71	-9861.53	-42047.89	5693.56	9861.21	42047.89	-5693.38	0.001%
72	-11578.99	-42047.89	-7.23	11578.61	42047.89	7.22	0.001%
73	-9395.08	-42047.89	-5429.38	9394.76	42047.89	5429.19	0.001%
74	-5204.11	-42047.89	-9013.24	5203.93	42047.89	9012.92	0.001%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	6	0.00000001	0.00012694
2	Yes	13	0.00004271	0.00009807
3	Yes	13	0.00004269	0.00009791
4	Yes	13	0.00000001	0.00010104
5	Yes	13	0.00000001	0.00007124
6	Yes	13	0.00004446	0.00010200
7	Yes	13	0.00004440	0.00010175
8	Yes	13	0.00000001	0.00010346
9	Yes	13	0.00000001	0.00007496
10	Yes	13	0.00004591	0.00010507
11	Yes	13	0.00004583	0.00010475
12	Yes	13	0.00000001	0.00010526
13	Yes	13	0.00000001	0.00007795
14	Yes	13	0.00004421	0.00010112
15	Yes	13	0.00004415	0.00010087
16	Yes	13	0.00000001	0.00010278
17	Yes	13	0.00000001	0.00007429
18	Yes	13	0.00004254	0.00009759
19	Yes	13	0.00004252	0.00009742
20	Yes	13	0.00000001	0.00010077
21	Yes	13	0.00000001	0.00007083
22	Yes	13	0.00004445	0.00010201
23	Yes	13	0.00004439	0.00010176
24	Yes	13	0.00000001	0.00010358
25	Yes	13	0.00000001	0.00007494
26	Yes	13	0.00004604	0.00010559
27	Yes	13	0.00004595	0.00010526

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28	Yes	13	0.00000001	0.00010579
29	Yes	13	0.00000001	0.00007831
30	Yes	13	0.00004447	0.00010210
31	Yes	13	0.00004442	0.00010185
32	Yes	13	0.00000001	0.00010363
33	Yes	13	0.00000001	0.00007501
34	Yes	13	0.00004254	0.00009759
35	Yes	13	0.00004252	0.00009742
36	Yes	13	0.00000001	0.00010073
37	Yes	13	0.00000001	0.00007085
38	Yes	13	0.00004419	0.00010107
39	Yes	13	0.00004414	0.00010082
40	Yes	13	0.00000001	0.00010272
41	Yes	13	0.00000001	0.00007427
42	Yes	13	0.00004591	0.00010504
43	Yes	13	0.00004582	0.00010472
44	Yes	13	0.00000001	0.00010522
45	Yes	13	0.00000001	0.00007794
46	Yes	13	0.00004442	0.00010187
47	Yes	13	0.00004437	0.00010162
48	Yes	13	0.00000001	0.00010336
49	Yes	13	0.00000001	0.00007486
50	Yes	12	0.00000001	0.00010003
51	Yes	15	0.00000001	0.00007789
52	Yes	15	0.00000001	0.00007812
53	Yes	15	0.00000001	0.00007836
54	Yes	15	0.00000001	0.00007759
55	Yes	15	0.00000001	0.00007646
56	Yes	15	0.00000001	0.00007561
57	Yes	15	0.00000001	0.00007531
58	Yes	15	0.00000001	0.00007525
59	Yes	15	0.00000001	0.00007596
60	Yes	15	0.00000001	0.00007717
61	Yes	15	0.00000001	0.00007812
62	Yes	15	0.00000001	0.00007802
63	Yes	13	0.00000001	0.00008122
64	Yes	13	0.00000001	0.00008200
65	Yes	13	0.00000001	0.00008255
66	Yes	13	0.00000001	0.00008168
67	Yes	13	0.00000001	0.00008114
68	Yes	13	0.00000001	0.00008213
69	Yes	13	0.00000001	0.00008286
70	Yes	13	0.00000001	0.00008207
71	Yes	13	0.00000001	0.00008102
72	Yes	13	0.00000001	0.00008156
73	Yes	13	0.00000001	0.00008247
74	Yes	13	0.00000001	0.00008197

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	190 - 180	8.351	66	0.4621	0.0520
T2	180 - 160	7.387	66	0.4561	0.0464
T3	160 - 140	5.528	66	0.4108	0.0399
T4	140 - 136	3.920	66	0.3362	0.0414
T5	136 - 132	3.641	66	0.3180	0.0415
T6	132 - 128	3.378	66	0.3002	0.0409
T7	128 - 124	3.129	66	0.2826	0.0400

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T8	124 - 120	2.895	66	0.2652	0.0388
T9	120 - 100	2.676	66	0.2481	0.0373
T10	100 - 80	1.757	66	0.1796	0.0284
T11	80 - 60	1.080	66	0.1322	0.0207
T12	60 - 40	0.602	66	0.0864	0.0142
T13	40 - 20	0.274	66	0.0588	0.0085
T14	20 - 0	0.076	66	0.0269	0.0041

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
192.00	(2) Obstruction Lights	66	8.351	0.4621	0.0520	192417
190.00	3' Yagi	66	8.351	0.4621	0.0520	192417
188.00	Pirot 4' Side Mount Standoff	66	8.158	0.4614	0.0509	192417
187.00	PD1142-3	66	8.061	0.4610	0.0504	192417
180.00	APX16DWV-16DWV-S-E-A20	66	7.387	0.4561	0.0464	87397
179.92	(3) Sector Frames	66	7.379	0.4560	0.0464	86384
156.00	3' Dish	66	5.181	0.3980	0.0403	16250
150.00	Pirot 12' T-Frame Sector Mount	66	4.684	0.3769	0.0408	14689
144.00	Paraflector	66	4.215	0.3533	0.0413	13400
142.00	DB230-2A	66	4.066	0.3449	0.0414	12923
140.00	Paraflector	66	3.920	0.3362	0.0414	12249
136.00	Single Dipole	66	3.641	0.3180	0.0415	11559
113.00	Pirot 4' Side Mount Standoff	66	2.322	0.2208	0.0343	16431
110.00	PD320	66	2.182	0.2102	0.0329	17285
109.00	Pirot 4' Side Mount Standoff	66	2.136	0.2068	0.0325	17583
103.00	Pirot 4' Side Mount Standoff	66	1.878	0.1880	0.0297	19594
102.00	GPS	66	1.837	0.1851	0.0293	19941
94.00	DB212 Single Dipole	66	1.531	0.1644	0.0259	21549
92.00	15' Single Dipole	66	1.460	0.1596	0.0251	21808
74.00	PD320	66	0.918	0.1177	0.0187	25783
70.00	15' Single Dipole	66	0.819	0.1080	0.0174	27563
50.00	15' Single Dipole	66	0.421	0.0715	0.0113	36196
32.00	DB212 Single Dipole	66	0.179	0.0465	0.0067	35961
31.00	15' Single Dipole	66	0.168	0.0449	0.0064	35550
17.00	Pirot 4' Side Mount Standoff	66	0.059	0.0224	0.0035	37293

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T1	190 - 180	37.912	14	2.0947	0.2356
T2	180 - 160	33.539	14	2.0691	0.2104
T3	160 - 140	25.103	14	1.8657	0.2126
T4	140 - 136	17.803	14	1.5262	0.2129
T5	136 - 132	16.534	14	1.4440	0.2096
T6	132 - 128	15.341	14	1.3632	0.2048
T7	128 - 124	14.212	14	1.2832	0.1984
T8	124 - 120	13.150	14	1.2043	0.1909

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Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
T9	120 - 100	12.152	14	1.1268	0.1824
T10	100 - 80	7.979	14	0.8157	0.1378
T11	80 - 60	4.905	14	0.6006	0.0994
T12	60 - 40	2.733	14	0.3924	0.0681
T13	40 - 20	1.244	14	0.2670	0.0408
T14	20 - 0	0.346	14	0.1220	0.0198

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
192.00	(2) Obstruction Lights	14	37.912	2.0947	0.2356	39974
190.00	3' Yagi	14	37.912	2.0947	0.2356	39974
188.00	Pirot 4' Side Mount Standoff	14	37.036	2.0917	0.2308	39974
187.00	PD1142-3	14	36.598	2.0901	0.2284	39974
180.00	APX16DWV-16DWV-S-E-A20	14	33.539	2.0691	0.2104	19569
179.92	(3) Sector Frames	14	33.504	2.0687	0.2102	19398
156.00	3' Dish	14	23.530	1.8072	0.2140	3589
150.00	Pirot 12' T-Frame Sector Mount	14	21.270	1.7112	0.2153	3235
144.00	Paraflector	14	19.142	1.6042	0.2147	2944
142.00	DB230-2A	14	18.464	1.5659	0.2140	2840
140.00	Paraflector	14	17.803	1.5262	0.2129	2697
136.00	Single Dipole	14	16.534	1.4440	0.2096	2561
113.00	Pirot 4' Side Mount Standoff	14	10.546	1.0028	0.1668	3625
110.00	PD320	14	9.908	0.9548	0.1600	3809
109.00	Pirot 4' Side Mount Standoff	14	9.702	0.9394	0.1578	3874
103.00	Pirot 4' Side Mount Standoff	14	8.528	0.8541	0.1443	4316
102.00	GPS	14	8.342	0.8410	0.1421	4393
94.00	DB212 Single Dipole	14	6.952	0.7466	0.1254	4745
92.00	15' Single Dipole	14	6.630	0.7252	0.1214	4802
74.00	PD320	14	4.168	0.5345	0.0895	5674
70.00	15' Single Dipole	14	3.720	0.4903	0.0832	6067
50.00	15' Single Dipole	14	1.913	0.3249	0.0538	7968
32.00	DB212 Single Dipole	14	0.811	0.2112	0.0318	7917
31.00	15' Single Dipole	14	0.764	0.2038	0.0308	7827
17.00	Pirot 4' Side Mount Standoff	14	0.267	0.1015	0.0168	8213

Bolt Design Data

Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load Allowable	Allowable Ratio	Criteria
T1	190	Leg	A325N	0.6250	4	1084.95	20708.70	0.052	1	Bolt Tension
		Diagonal	A325N	0.6250	1	1946.68	5811.33	0.335	1	Member Block Shear
		Top Girt	A325N	0.6250	1	414.77	5811.33	0.071	1	Member Block Shear
T2	180	Leg	A325N	0.7500	4	9114.85	29820.60	0.306	1	Bolt Tension
		Diagonal	A325N	0.6250	1	3925.89	5811.33	0.676	1	Member Block Shear

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Section No.	Elevation ft	Component Type	Bolt Grade	Bolt Size in	Number Of Bolts	Maximum Load per Bolt lb	Allowable Load per Bolt lb	Ratio Load Allowable	Allowable Ratio	Criteria
T3	160	Leg	A325N	0.8750	4	23126.00	40589.10	0.570	1	Bolt Tension
		Diagonal	A325N	0.6250	1	7334.04	9107.81	0.805	1	Member Block Shear
T4	140	Diagonal	A325N	0.6250	1	4261.46	5811.33	0.733	1	Member Block Shear
		Top Girt	A325N	0.6250	1	436.11	5811.33	0.075	1	Member Block Shear
T5	136	Diagonal	A325N	0.6250	1	4026.23	5811.33	0.693	1	Member Block Shear
T6	132	Diagonal	A325N	0.6250	1	3901.45	5811.33	0.671	1	Member Block Shear
T7	128	Diagonal	A325N	0.6250	1	3921.89	5811.33	0.675	1	Member Block Shear
T8	124	Leg	A325N	1.0000	4	32877.60	53014.40	0.620	1	Bolt Tension
		Diagonal	A325N	0.6250	1	4257.32	5811.33	0.733	1	Member Block Shear
T9	120	Leg	A325N	1.0000	4	40224.00	53014.40	0.759	1	Bolt Tension
		Diagonal	A325N	0.6250	1	5353.39	6830.86	0.784	1	Member Block Shear
T10	100	Secondary Horizontal	A325N	0.6250	2	995.18	8224.22	0.121	1	Member Block Shear
		Leg	A325N	1.0000	4	47544.70	53014.40	0.897	1	Bolt Tension
T11	80	Diagonal	A325N	0.6250	1	5675.77	7830.00	0.725	1	Member Bearing
		Leg	A325N	1.0000	6	36183.40	53014.40	0.683	1	Bolt Tension
T12	60	Diagonal	A325N	0.6250	1	6679.63	10440.00	0.640	1	Member Bearing
		Secondary Horizontal	A325N	0.6250	2	1017.73	9583.59	0.106	1	Member Block Shear
T13	40	Leg	A325N	1.0000	6	41158.20	53014.40	0.776	1	Bolt Tension
		Diagonal	A325N	0.6250	1	7817.10	11700.00	0.668	1	Member Bearing
T14	20	Leg	A325N	1.0000	8	33753.40	53014.40	0.637	1	Bolt Tension
		Diagonal	A325N	0.6250	1	9643.24	12425.20	0.776	1	Bolt Shear
		Secondary Horizontal	A325N	0.6250	2	918.63	12425.20	0.074	1	Bolt Shear
		Leg	A325N	1.0000	8	37024.30	53014.40	0.698	1	Bolt Tension
		Diagonal	A325N	0.7500	1	9145.29	14137.50	0.647	1	Member Bearing

Compression Checks

Leg Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	ROHN 2 STD	10.00	5.00	76.2 K=1.00	1.0745	-5001.40	31617.20	0.158 ¹
T2	180 - 160	ROHN 2.5 STD	20.00	4.00	50.7 K=1.00	1.7040	-41175.80	63560.30	0.648 ¹
T3	160 - 140	ROHN 3 EH	20.00	4.00	42.2 K=1.00	3.0159	-102224.00	119117.00	0.858 ¹
T4	140 - 136	ROHN 3.5 EH	4.01	4.01	36.8 K=1.00	3.6784	-114843.00	149924.00	0.766 ¹
T5	136 - 132	ROHN 3.5 EH	4.01	4.01	36.8	3.6784	-123691.00	149924.00	0.825 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T6	132 - 128	ROHN 3.5 EH	4.01	4.01	K=1.00 36.8	3.6784	-130879.00	149926.00	0.873 ¹
T7	128 - 124	ROHN 3.5 EH	4.01	4.01	K=1.00 36.8	3.6784	-138161.00	149924.00	0.922 ¹
T8	124 - 120	ROHN 3.5 EH	4.01	2.07	K=1.00 19.0	3.6784	-144551.00	161228.00	0.897 ¹
T9	120 - 100	ROHN 4 EH	20.04	2.58	K=1.00 21.0	4.4074	-177379.00	192061.00	0.924 ¹
T10	100 - 80	ROHN 5 EH	20.03	6.68	K=1.00 43.6	6.1120	-210036.00	239388.00	0.877 ¹
T11	80 - 60	ROHN 5 EH	20.04	3.43	K=1.00 22.4	6.1120	-241316.00	265136.00	0.910 ¹
T12	60 - 40	6.0 EHS + HALF HSS7.625x0.375	20.03	6.68	K=1.00 37.5	9.8520	-276335.00	400079.00	0.691 ¹
T13	40 - 20	ROHN 6 EH	20.04	5.17	K=1.00 28.3	8.4049	-304630.00	356741.00	0.854 ¹
T14	20 - 0	ROHN 8 EHS	20.03	10.02	K=1.00 41.2	9.7193	-335912.00	386395.00	0.869 ¹
					K=1.00				

¹ P_u / φP_n controls

Diagonal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	L1 3/4x1 3/4x3/16	6.83	3.15	112.5	0.6211	-1962.67	10333.60	0.190 ¹
T2	180 - 160	L1 3/4x1 3/4x3/16	6.16	2.81	K=1.02 103.5	0.6211	-4018.07	11446.10	0.351 ¹
T3	160 - 140	L2x2x1/4	6.18	2.78	K=1.06 94.1	0.9380	-7835.10	19074.20	0.411 ¹
T4	140 - 136	L1 3/4x1 3/4x3/16	6.35	2.97	K=1.10 107.8	0.6211	-4603.01	10909.60	0.422 ¹
T5	136 - 132	L1 3/4x1 3/4x3/16	6.67	3.13	K=1.04 112.1	0.6211	-4142.98	10379.70	0.399 ¹
T6	132 - 128	L1 3/4x1 3/4x3/16	7.00	3.30	K=1.02 116.4	0.6211	-4112.45	9859.69	0.417 ¹
T7	128 - 124	L1 3/4x1 3/4x3/16	7.33	3.47	K=1.01 121.2	0.6211	-4107.76	9280.71	0.443 ¹
T8	124 - 120	L1 3/4x1 3/4x3/16	7.68	3.65	K=1.00 127.4	0.6211	-4541.07	8567.74	0.530 ¹
T9	120 - 100	L2x2x3/16	9.48	4.56	K=1.00 138.8	0.7150	-5804.58	8389.57	0.692 ¹
T10	100 - 80	L2 1/2x2 1/2x3/16	12.44	6.02	K=1.00 146.0	0.9020	-6159.41	9563.61	0.644 ¹
T11	80 - 60	L2 1/2x2 1/2x1/4	14.23	6.93	K=1.00 169.4	1.1900	-7310.48	9369.88	0.780 ¹
T12	60 - 40	L3x3x1/4	15.99	7.73	K=1.00 156.7	1.4400	-7846.91	13252.80	0.592 ¹
T13	40 - 20	L3 1/2x3 1/2x1/4	19.26	9.50	K=1.00 164.3	1.6900	-9243.54	14151.80	0.653 ¹
T14	20 - 0	L3 1/2x3 1/2x1/4	21.03	10.26	K=1.00 177.3	1.6900	-10310.00	12139.10	0.849 ¹
					K=1.00				

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¹ $P_u / \phi P_n$ controls

Secondary Horizontal Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T8	124 - 120	L2x2x1/4	6.55	6.22	121.5 K=0.99	0.9380	-1419.66	13968.10	0.102 ¹
T9	120 - 100	L2x2x1/4	7.53	6.76	128.1 K=0.96	0.9380	-1870.27	12814.60	0.146 ¹
T11	80 - 60	L2 1/2x2 1/2x1/4	11.86	11.01	151.8 K=0.88	1.1900	-1937.64	11663.90	0.166 ¹
T13	40 - 20	L3x3x5/16	16.44	15.49	170.2 K=0.84	1.7800	-1837.27	13884.10	0.132 ¹

¹ $P_u / \phi P_n$ controls

Top Girt Design Data (Compression)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	L1 3/4x1 3/4x3/16	4.65	4.21	147.2 K=1.00	0.6211	-447.98	6477.07	0.069 ¹
T4	140 - 136	L1 3/4x1 3/4x3/16	4.72	4.15	144.9 K=1.00	0.6211	-560.33	6683.02	0.084 ¹

¹ $P_u / \phi P_n$ controls

Tension Checks

Leg Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	ROHN 2 STD	10.00	5.00	76.2	1.0745	4339.79	48353.90	0.090 ¹
T2	180 - 160	ROHN 2.5 STD	20.00	4.00	50.7	1.7040	36459.40	76682.30	0.475 ¹
T3	160 - 140	ROHN 3 EH	20.00	4.00	42.2	3.0159	92504.10	135717.00	0.682 ¹
T4	140 - 136	ROHN 3.5 EH	4.01	4.01	36.8	3.6784	104239.00	165529.00	0.630 ¹
T5	136 - 132	ROHN 3.5 EH	4.01	4.01	36.8	3.6784	112335.00	165529.00	0.679 ¹
T6	132 - 128	ROHN 3.5 EH	4.01	4.01	36.8	3.6784	119056.00	165529.00	0.719 ¹
T7	128 - 124	ROHN 3.5 EH	4.01	4.01	36.8	3.6784	125735.00	165529.00	0.760 ¹
T8	124 - 120	ROHN 3.5 EH	4.01	1.94	17.8	3.6784	131639.00	165529.00	0.795 ¹
T9	120 - 100	ROHN 4 EH	20.04	2.43	19.7	4.4074	161030.00	198335.00	0.812 ¹
T10	100 - 80	ROHN 5 EH	20.03	6.68	43.6	6.1120	190179.00	275039.00	0.691 ¹
T11	80 - 60	ROHN 5 EH	20.04	3.25	21.2	6.1120	217289.00	275039.00	0.790 ¹

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Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T12	60 - 40	6.0 EHS + HALF HSS7.625x0.375	20.03	6.68	37.5	9.8520	246949.00	443340.00	0.557 ¹
T13	40 - 20	ROHN 6 EH	20.04	4.85	26.5	8.4049	270294.00	378222.00	0.715 ¹
T14	20 - 0	ROHN 8 EHS	20.03	10.02	41.2	9.7193	296194.00	437369.00	0.677 ¹

¹ P_u / φP_n controls

Diagonal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	L1 3/4x1 3/4x3/16	6.83	3.15	73.1	0.3604	1946.68	15675.30	0.124 ¹
T2	180 - 160	L1 3/4x1 3/4x3/16	6.16	2.81	65.4	0.3604	3925.89	15675.30	0.250 ¹
T3	160 - 140	L2x2x1/4	6.18	2.78	57.2	0.5629	7334.04	24485.10	0.300 ¹
T4	140 - 136	L1 3/4x1 3/4x3/16	6.35	2.97	69.1	0.3604	4261.46	15675.30	0.272 ¹
T5	136 - 132	L1 3/4x1 3/4x3/16	6.67	3.13	72.7	0.3604	4026.23	15675.30	0.257 ¹
T6	132 - 128	L1 3/4x1 3/4x3/16	7.00	3.30	76.4	0.3604	3901.45	15675.30	0.249 ¹
T7	128 - 124	L1 3/4x1 3/4x3/16	7.33	3.47	80.2	0.3604	3921.89	15675.30	0.250 ¹
T8	124 - 120	L1 3/4x1 3/4x3/16	7.68	3.65	84.1	0.3604	4257.32	15675.30	0.272 ¹
T9	120 - 100	L2x2x3/16	9.48	4.56	90.9	0.4308	5353.39	18739.00	0.286 ¹
T10	100 - 80	L2 1/2x2 1/2x3/16	11.88	5.75	90.5	0.5710	5675.77	24839.90	0.228 ¹
T11	80 - 60	L2 1/2x2 1/2x1/4	13.62	6.63	105.3	0.7519	6679.63	32706.60	0.204 ¹
T12	60 - 40	L3x3x1/4	15.99	7.73	101.3	0.9394	7817.10	45794.50	0.171 ¹
T13	40 - 20	L3 1/2x3 1/2x1/4	18.35	9.05	101.0	1.1269	8537.11	54935.20	0.155 ¹
T14	20 - 0	L3 1/2x3 1/2x1/4	21.03	10.26	114.4	1.1034	9145.29	53792.60	0.170 ¹

¹ P_u / φP_n controls

Secondary Horizontal Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T8	124 - 120	L2x2x1/4	6.55	6.22	122.5	0.9380	1467.09	30391.20	0.048 ¹
T9	120 - 100	L2x2x1/4	7.53	6.76	140.9	0.5629	1990.36	24485.10	0.081 ¹
T11	80 - 60	L2 1/2x2 1/2x1/4	11.86	11.01	177.9	0.7519	2035.46	32706.60	0.062 ¹
T13	40 - 20	L3x3x5/16	15.37	14.42	192.8	1.1592	1811.18	50426.00	0.036 ¹

¹ P_u / φP_n controls

Top Girt Design Data (Tension)

Section No.	Elevation ft	Size	L ft	L _u ft	Kl/r	A in ²	P _u lb	φP _n lb	Ratio $\frac{P_u}{\phi P_n}$
T1	190 - 180	L1 3/4x1 3/4x3/16	4.65	4.21	99.5	0.3604	414.77	15675.30	0.026 ¹

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<i>Section No.</i>	<i>Elevation ft</i>	<i>Component Type</i>	<i>Size</i>	<i>Critical Element</i>	<i>P lb</i>	<i>ϕP_{allow} lb</i>	<i>% Capacity</i>	<i>Pass Fail</i>
T4	140 - 136	Top Girt	L1 3/4x1 3/4x3/16	90	-560.33	6683.02	8.4	Pass
							Summary	
						Leg (T9)	92.4	Pass
						Diagonal (T14)	84.9	Pass
						Secondary Horizontal (T11)	16.6	Pass
						Top Girt (T4)	8.4	Pass
						Bolt Checks	89.7	Pass
						RATING =	92.4	Pass

Program Version 8.0.7.5 - 8/3/2020 File:C:/Users/Joshua Gildert/Box/Projects/New England
Projects/T-Mobile/SITES/CT/CTHA616A-CT03XC206/Anchor/Structural/Working Files/Structural Analysis/Analysis/tnx/CTHA616A.eri

SST Unit Base Foundation

BU # :

Site Name: CTHA616A

App. Number:

TIA-222 Revision:

Top & Bot. Pad Rein. Different?:	☐
Tower Centroid Offset?:	☐
Block Foundation?:	☒

Superstructure Analysis Reactions		
Global Moment, M :	5473.057	ft-kips
Global Axial, P :	50.457	kips
Global Shear, V :	52.544	kips
Leg Compression, P_{comp} :	344.137	kips
Leg Comp. Shear, V_{u_comp} :	33.053	kips
Leg Uplift, P_{uplift} :	302.758	kips
Leg Uplift. Shear, V_{u_uplift} :	29.484	kips
Tower Height, H :	190	ft
Base Face Width, BW :	19	ft
BP Dist. Above Fdn, bp_{dist} :	0	in
Anchor Bolt Circle, BC :		in

Foundation Analysis Checks				
	Capacity	Demand	Rating	Check
<i>Lateral (Sliding) (kips)</i>	235.96	52.54	22.3%	Pass
<i>Bearing Pressure (ksf)</i>	6.00	2.47	41.2%	Pass
<i>Overturning (kip*ft)</i>	8997.76	5709.51	63.5%	Pass

Soil Rating:	63.5%

Pad Properties		
Depth, D :	4.50	ft
Pad Width, W :	32.00	ft
Pad Thickness, T :	4.50	ft
Pad Rebar Size (Bottom), Sp :		
Pad Rebar Quantity (Bottom), mp :		
Pad Clear Cover, cc_{pad} :		in

Material Properties		
Rebar Grade, Fy :	60	ksi
Concrete Compressive Strength, F'c :	3	ksi
Dry Concrete Density, δc :	150	pcf

Soil Properties		
Total Soil Unit Weight, γ :	120	pcf
Ultimate Gross Bearing, Qult :	8.000	ksf
Cohesion, Cu :		ksf
Friction Angle, φ :	30	degrees
SPT Blow Count, N_{blows} :		
Base Friction, μ :	0.3	
Neglected Depth, N :	0.0	ft
Foundation Bearing on Rock?		
Groundwater Depth, gw :	N/A	ft

<-- Toggle between Gross and Net

Exhibit E

Mount Analysis

Revised Mount Analysis Report

Site Address	1712 Main Street Coventry, CT 06238
Site Name	CT03XC206
Site ID	CTHA616A
Project Name	Sprint Retain
Design Codes	2015 International Building Code ASCE 7-10 TIA-222-G Standards 2018 CT State Building Code

	Stress Ratio	Overall Result
Existing Mount	98%	PASS

Client:

T - Mobile
NORTHEAST, LLC
15 Commerce Way, Suite B
Norton, MA 02766

Date: 4/29/2021 (Rev. 1)
4/28/2021

Scope of Work:

Centerline Communications was authorized by T-Mobile Northeast LLC to perform an analysis of the existing antenna mounts to determine their capacity to support the proposed T-Mobile equipment listed in this report. These mounts were analyzed using RISA 3D v17.0.4.

Final Appurtenances Configuration:

Elevation (ft)	Position ¹	Azimuth (degrees)	Quantity	Appurtenance	Sector
180	MP1	30	1	APX16DWV-16DWV-S-E-A20 Antenna	Sector 1
180	MP2	30	1	APXVAALL24_43-U-NA20 Antenna	
180	MP3	30	1	AIR6449 B41 RRH	
180	MP1	30	1	4415 B66A RRH	
180	MP4	30	1	4449 B71+B85 RRH	
180	MP4	30	1	4424 B25 RRH	
180	-	135	1	APX16DWV-16DWV-S-E-A20 Antenna	Sector 2
180	-	135	1	APXVAALL24_43-U-NA20 Antenna	
180	-	135	1	AIR6449 B41 RRH	
180	-	135	1	4415 B66A RRH	
180	-	135	1	4449 B71+B85 RRH	
180	-	135	1	4424 B25 RRH	
180	-	270	1	APX16DWV-16DWV-S-E-A20 Antenna	Sector 3
180	-	270	1	APXVAALL24_43-U-NA20 Antenna	
180	-	270	1	AIR6449 B41 RRH	
180	-	270	1	4415 B66A RRH	
180	-	270	1	4449 B71+B85 RRH	
180	-	270	1	4424 B25 RRH	

Notes:

1. MP represent Mount Pipe.
2. Existing Appurtenance
3. **Proposed Appurtenance**

Design Criteria:

Design Codes:

2015 International Building Code
 ASCE 7-10
 TIA-222-G Standards
 2018 CT State Building Code

Ultimate Wind Speed	130 mph
Nominal Wind Speed	101 mph
Wind Speed with Ice	50 mph
Ice Thickness	1.0 in.
Exposure Category	B
Topographic Category	1
Structure Class	II
Site Soil Class (Assumed)	D-Stiff Soil
Seismic Design Category	B
Spectral Response Acceleration Parameter at a Short Periods, S_s	0.176 g
Spectral Response Acceleration Parameter at a Period of 1 Second, S_1	0.063 g
Short Period Site Coefficient, F_a	1.6
Long Period Site Coefficient, F_v	2.4

*Refer to calculations for additional design criteria.

Conclusion:

The results of the analysis concluded that the existing T-Mobile mounts are adequate to support the proposed T-Mobile equipment loading upon completion of the following modifications. Centerline recommends the following:

Alpha, Beta & Gamma:

- Install (1) 2" STD. x 8.0 ft long mount pipes using (2) Site Pro 1 UB1212 U-bolts at Position 2.

	Stress Ratio	Overall Result
Existing Mount	98%	PASS

Reference Documents:

- T-Mobile RFDS CTHA616A_Sprint Retain_1_draft, dated 01/15/2021
- Structural Analysis by Maser, dated 07/23/2018
- Construction Drawings by Maser, dated 07/27/2018
- Mount Analysis by Maser, dated 07/23/2018
- Site Photos and Notes by Centerline Communications, dated 04/22/2021

Assumptions and Limitations:

- The calculations performed by Centerline Communications are limited to the structural members in these calculations only.
- Structural calculations in this report do not check the adequacy of the supporting structure, other mounts, or coax mounting attachments.
- The calculation assumes all structural members to be in good condition i.e. no damage, rust, or other defects.

Photos:



Existing Alpha Sector



Existing Beta Sector



Existing Gamma Sector



Overall

Design Calculations

Site Details		
Site Name	CT03XC206	
Carrier	T-Mobile	
City, State	Coventry, CT	
Project	Sprint Retain	

Mount Details		
Mount Type	Sector Frame	
Mount Height, z	180	ft
Number of Sectors	3	
Tower Type	SST	
Tower Height, h	190	ft

Topographic Factors		
Topographic Category	1	
Feature	Flat	
Crest Height, H	N/A	ft
Distance from Crest, x	N/A	ft
Slope (H/L)	N/A	
Topographic Factor, K_{zt}	1.00	

Seismic Factors		
Importance Factor, I_E	1	
Short Period Spectral Acceleration, S_s	0.176	g
1 Second Period Spectral Acceleration, S_1	0.063	g
Long-Period Transition Period, T_L	6	
Design Category	B	
Short Period Site Coefficient, F_a	1.60	
Long-Period Site Coefficient, F_v	2.4	

Site Parameters		
Ultimate Wind Speed, V_{ULT}	130	mph
Nominal Wind Speed, V	101	mph
Wind Speed with Ice, V_i	50	mph
Design Ice Thickness, t_i	1	in
Structural Class	II	
Exposure Category	B	
Site Soil Class	D-Stiff Soil (Assumed)	

Code	
Building Code	2015 IBC
TIA Code	TIA-222-G
ASCE Code	7-10

Site Constants		
Importance Factor, I (Wind no Ice)	1.00	
Importance Factor, I (Ice Thickness)	1.00	
Importance Factor, I (wind with Ice)	1.00	
Wind Direction Prob. Factor, K_d	0.95	
Velocity Pressure Coefficient, K_z	1.17	
Gust Effect Factor, G_h	1.00	
Design Ice Thickness, t_{iz}	2.37	in
Velocity Pressure, q_z	29.00	psf
Velocity Pressure with Ice, q_{zi}	7.11	psf
Shielding Factor, K_a	1.00	
Flat Velocity Pressure ($Ca = 2.0$)	58.00	psf
Round Velocity Pressure ($Ca = 1.2$)	34.80	psf
Round Velocity Pressure with Ice ($Ca = 1.2$)	8.53	psf
Engineer Initials	AP	

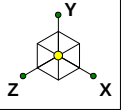
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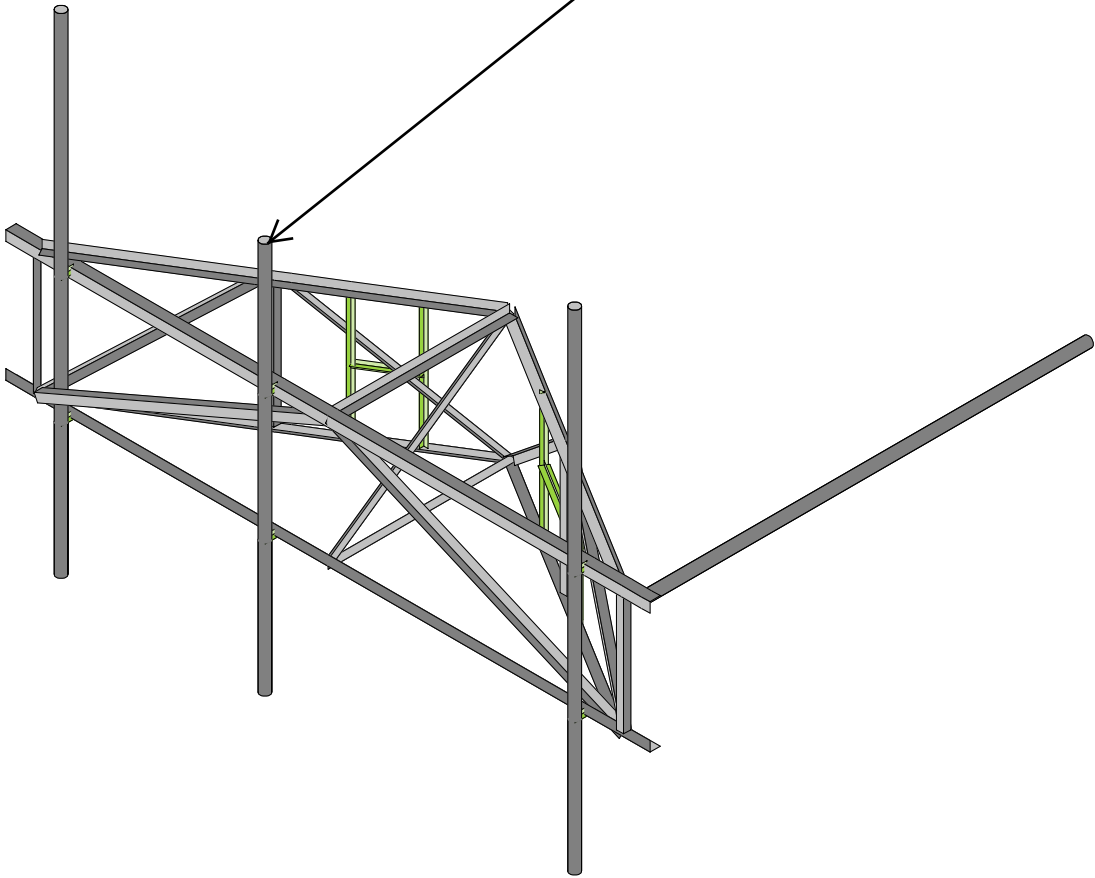
*Dish force coefficient is calculated per Annex C.2 of TIA-222-G, if available.

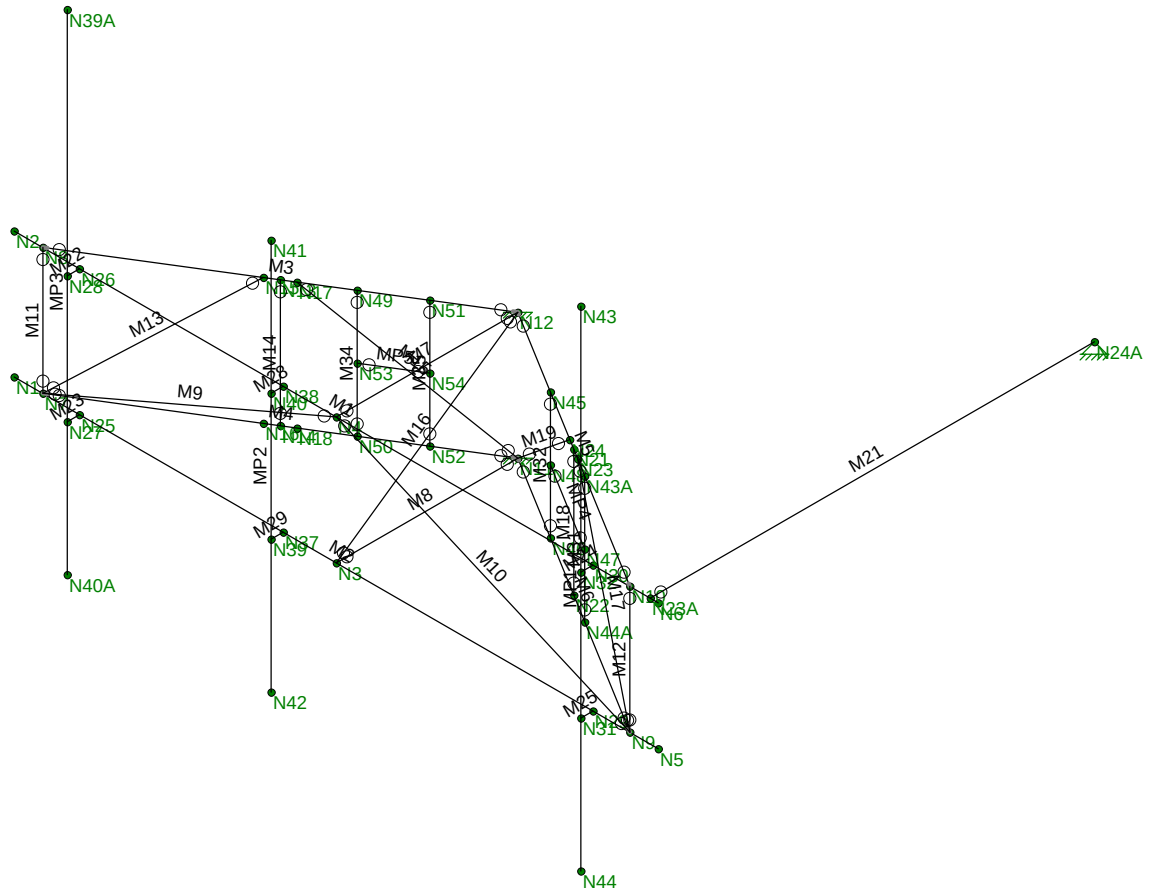
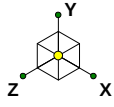
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Existing Mount Results



Install (1) 2" STD. x 8.0 ft long mount pipes using
(2) Site Pro 1 UB1212 U-bolts at Position 2.





Centerline Communcation...

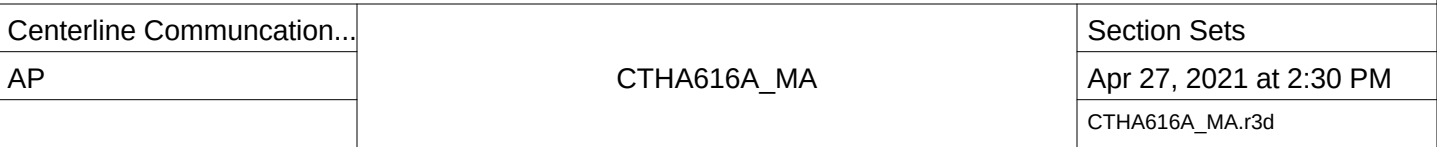
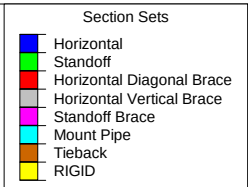
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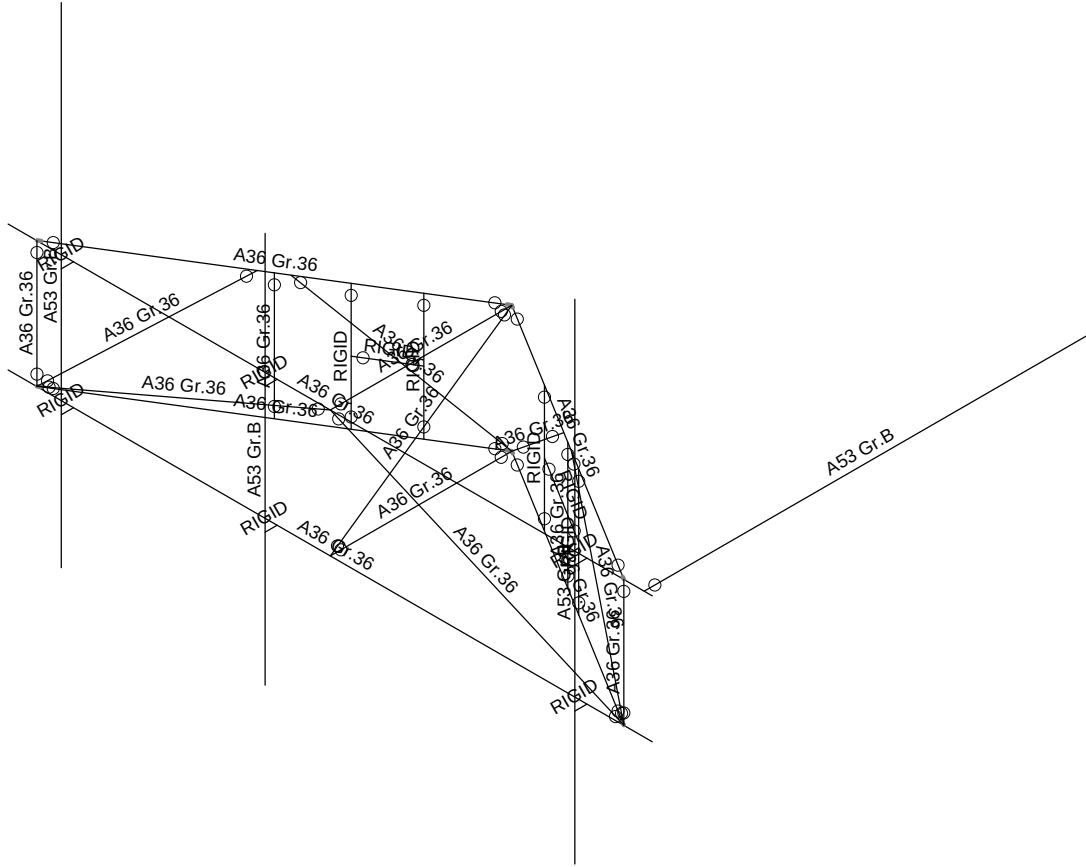
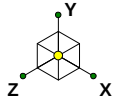
CTHA616A_MA

Wireframe

Apr 27, 2021 at 2:29 PM

CTHA616A_MA.r3d





Centerline Communcation...

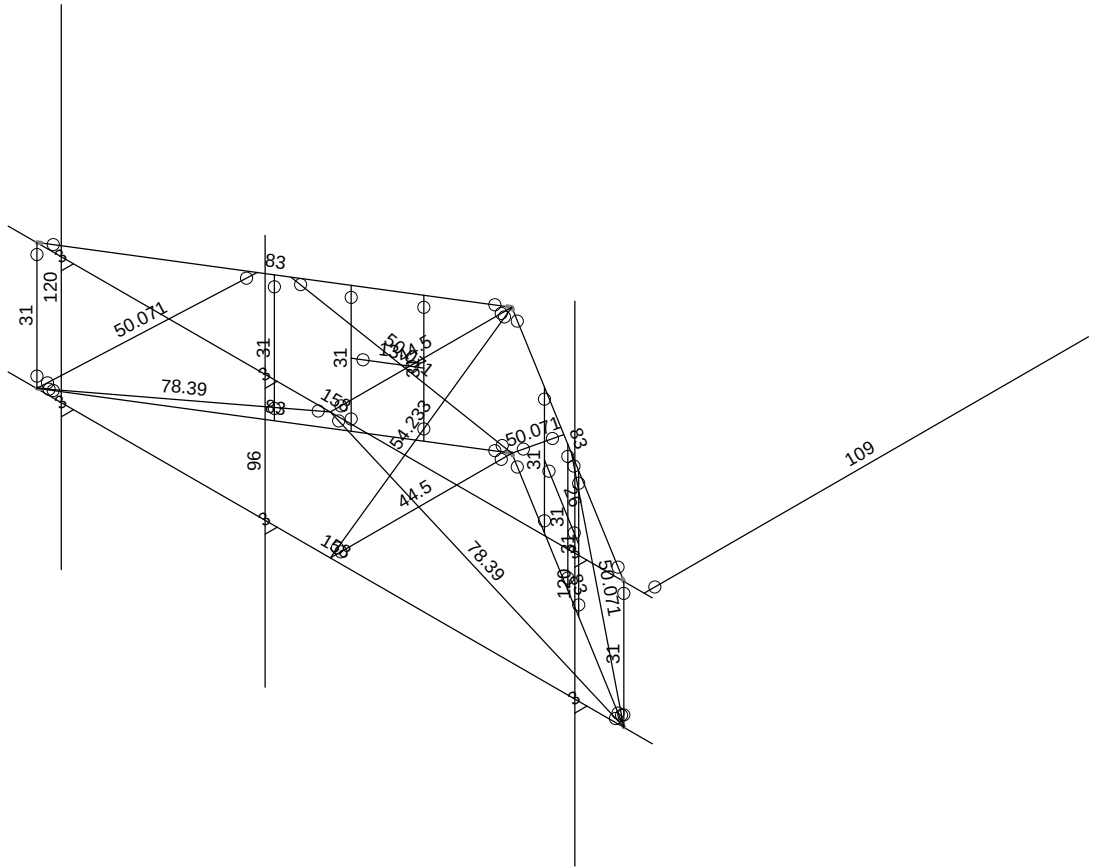
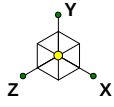
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CTHA616A_MA

Material Sets

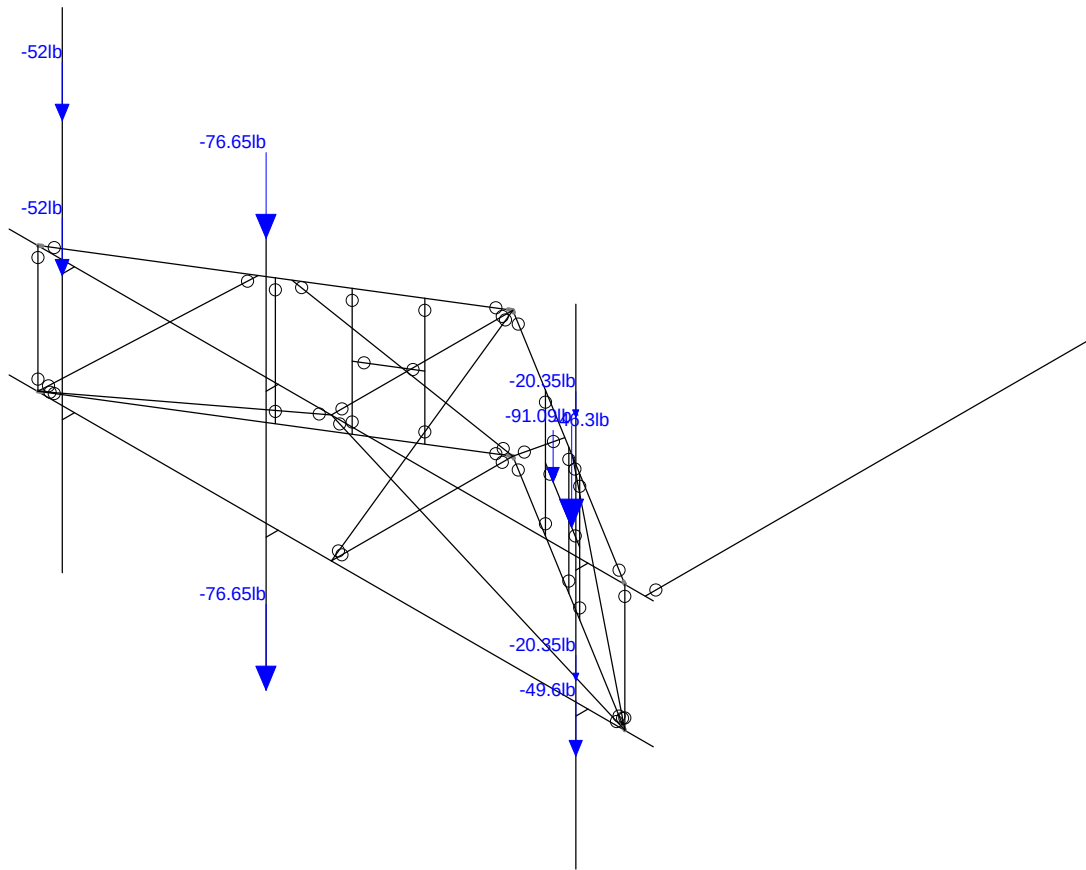
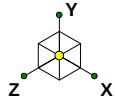
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CTHA616A_MA.r3d



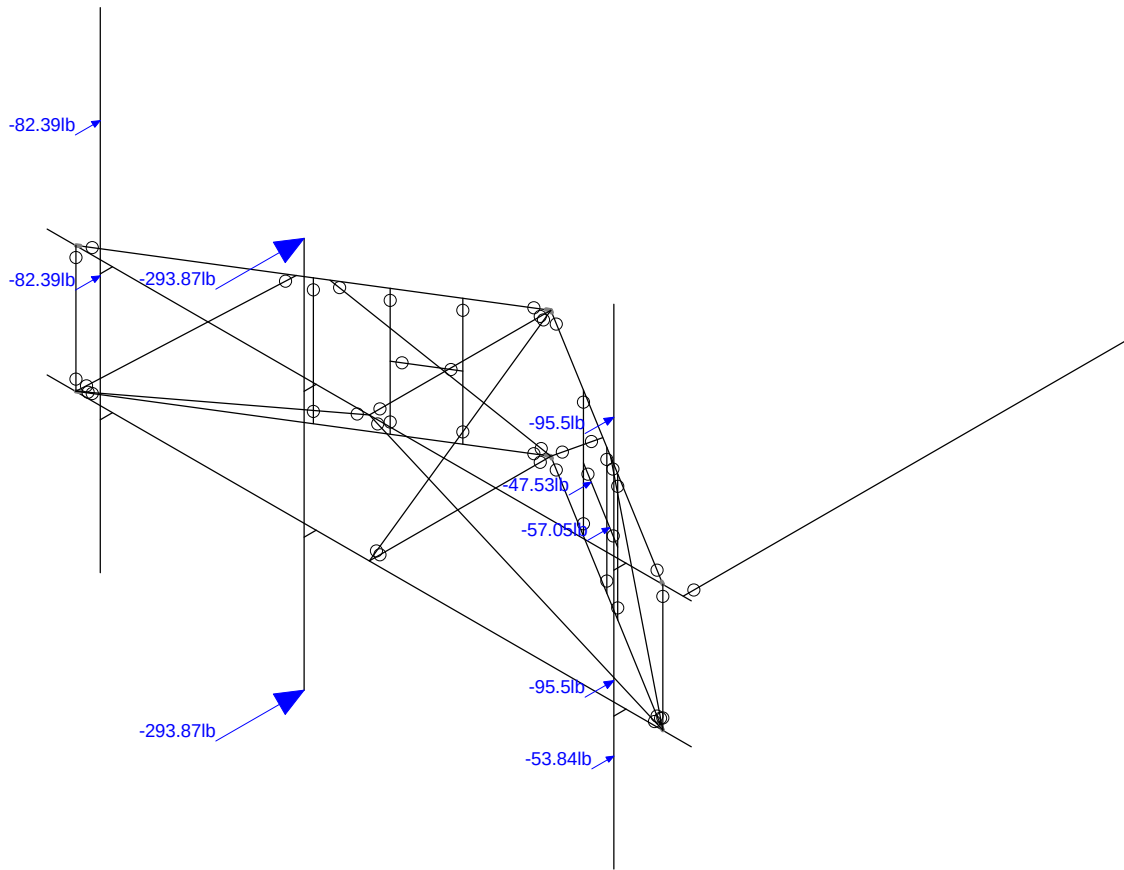
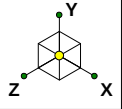
Member Length (in) Displayed

Centerline Communcation...	CTHA616A_MA	Member Length
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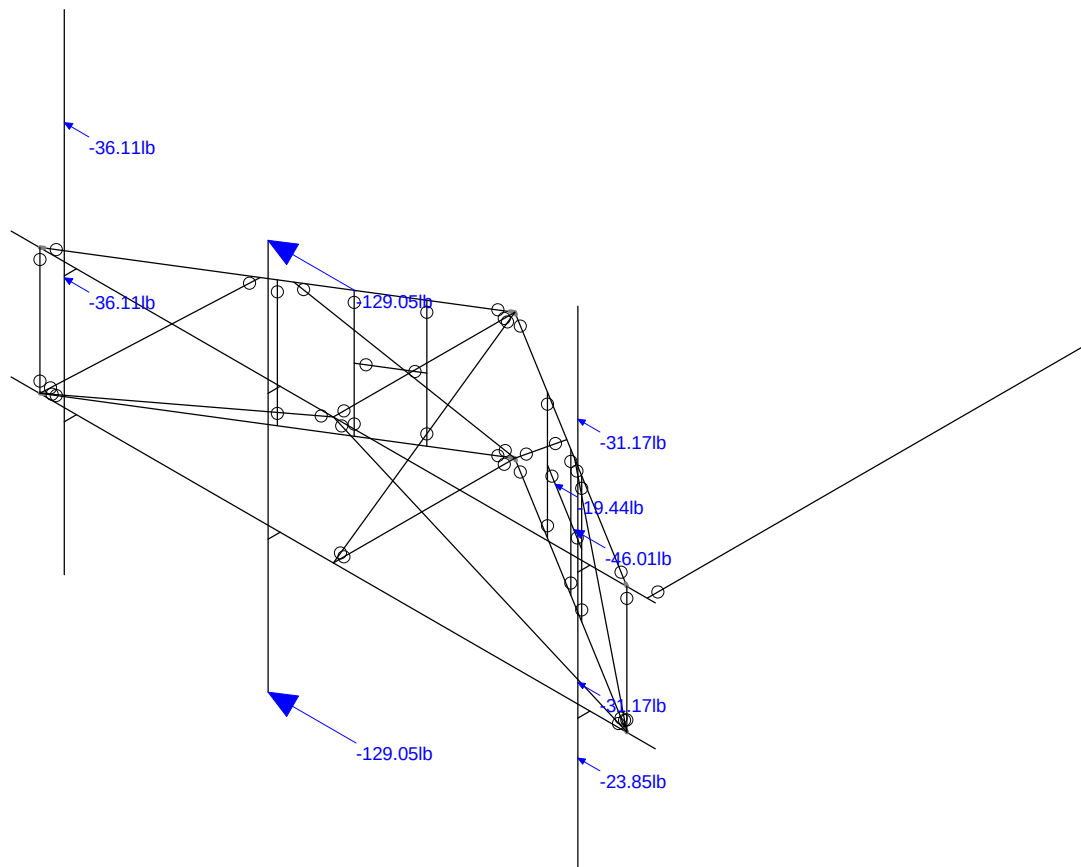
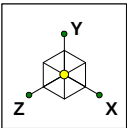
Loads: BLC 1, Dead Load

Centerline Communcation...	CTHA616A_MA	Dead Load
AP		Apr 27, 2021 at 2:30 PM
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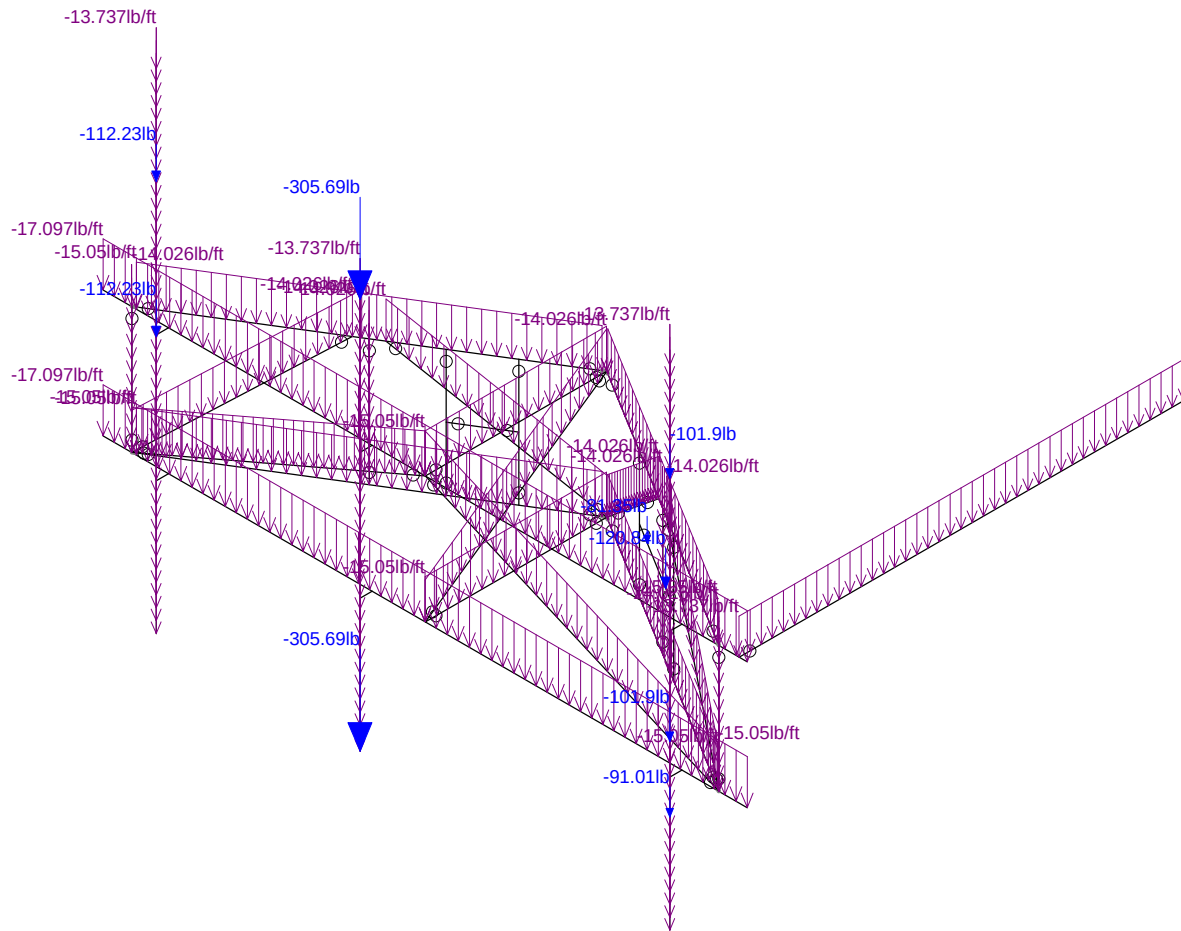
Loads: BLC 2, Wind 0

Centerline Communcation...	CTHA616A_MA	Wind 0
AP		Apr 27, 2021 at 2:30 PM
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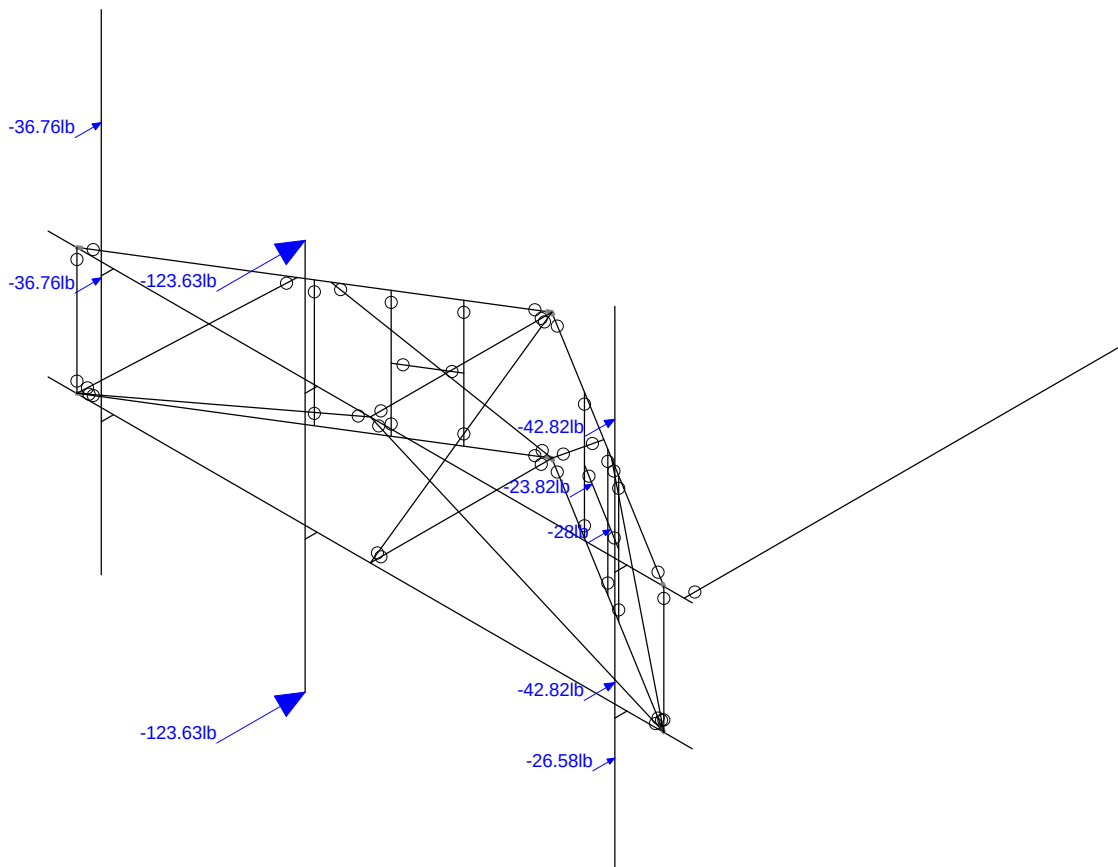
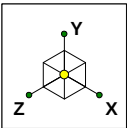


Loads: BLC 5, Wind 90

Centerline Communcation...	CTHA616A_MA	Wind 90
AP		Apr 27, 2021 at 2:31 PM
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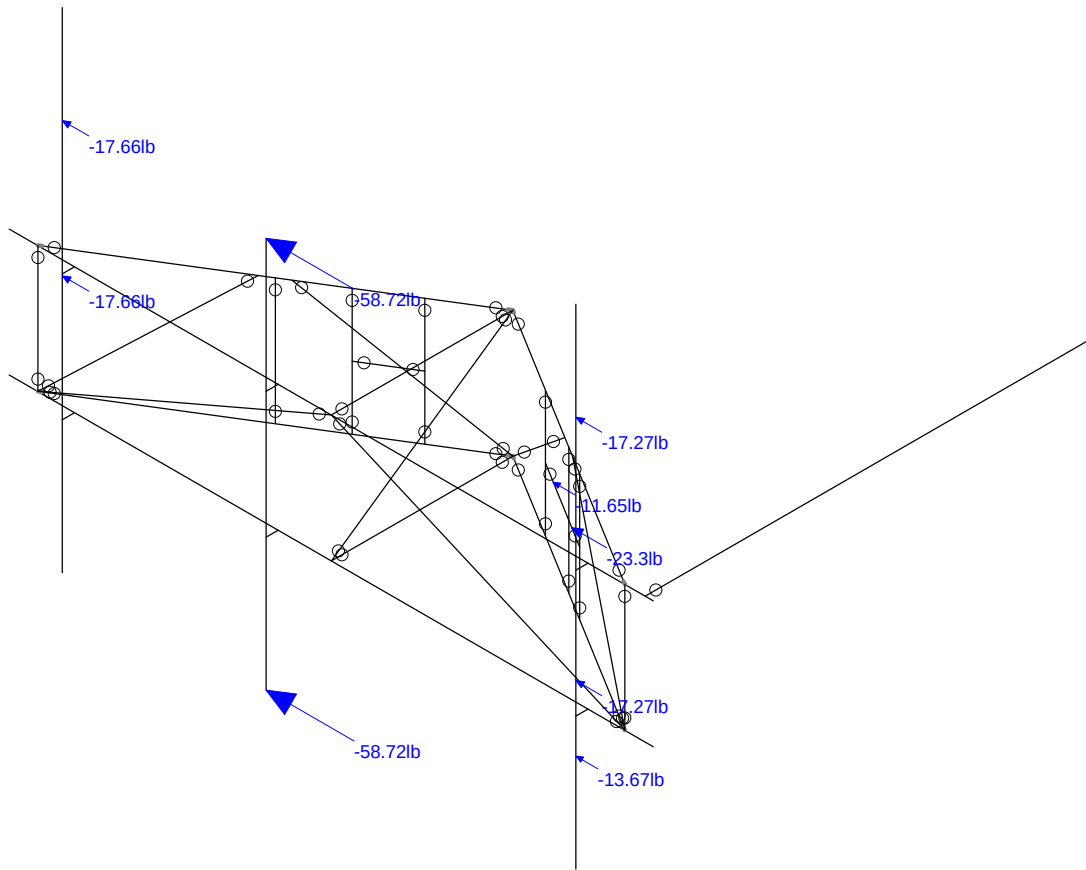
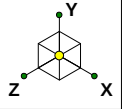


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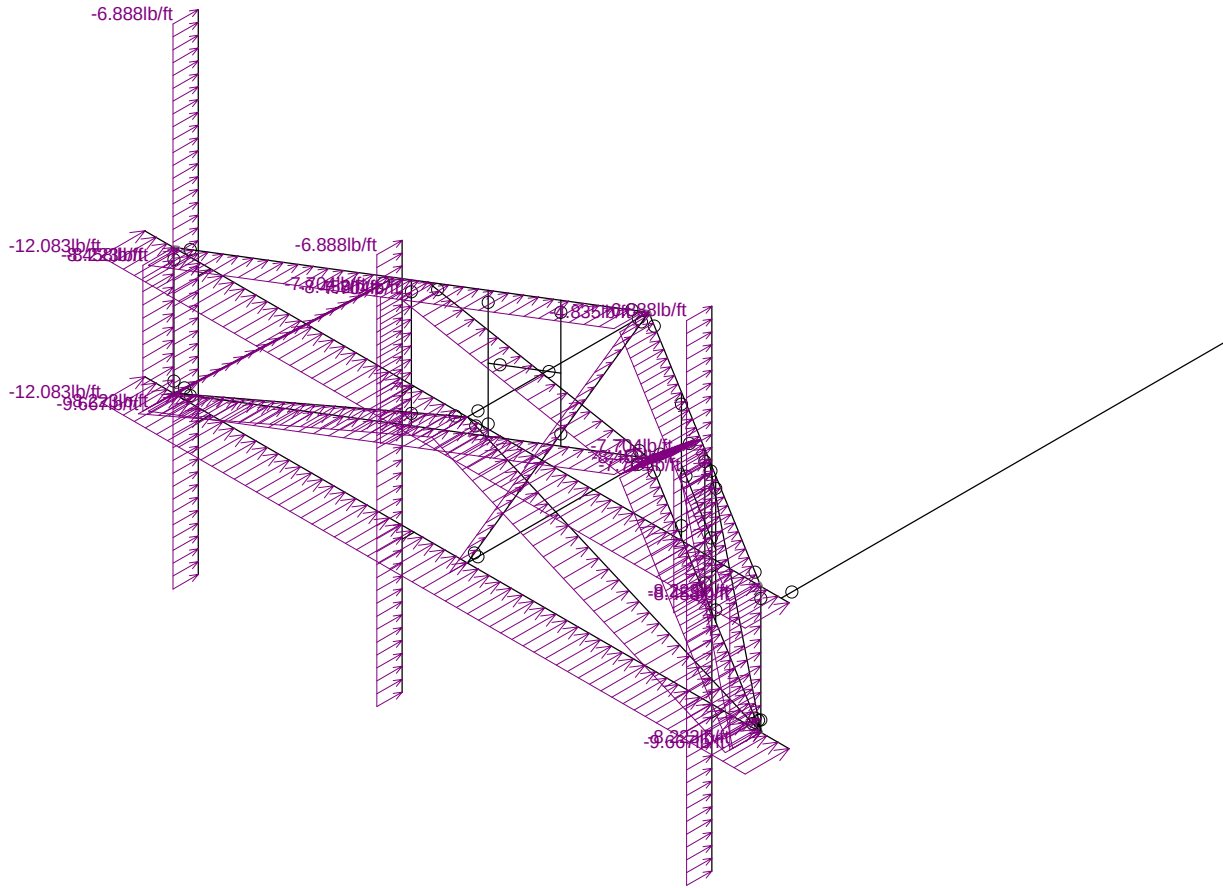
Loads: BLC 10, Ice + Wind 0

Centerline Communcation...	CTHA616A_MA	Ice + Wind 0
AP		Apr 27, 2021 at 2:31 PM
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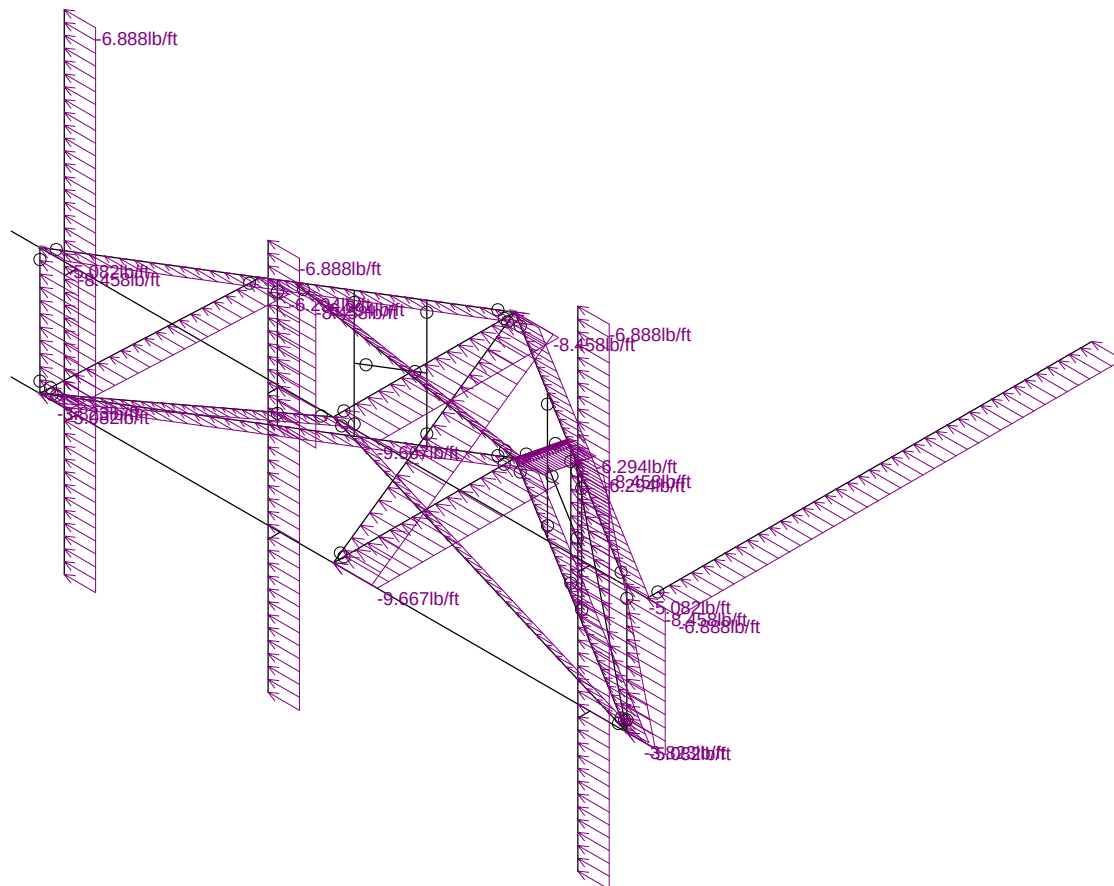
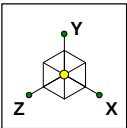


Loads: BLC 13, Ice + Wind 90

Centerline Communcation...	CTHA616A_MA	Ice + Wind 90
AP		Apr 27, 2021 at 2:31 PM
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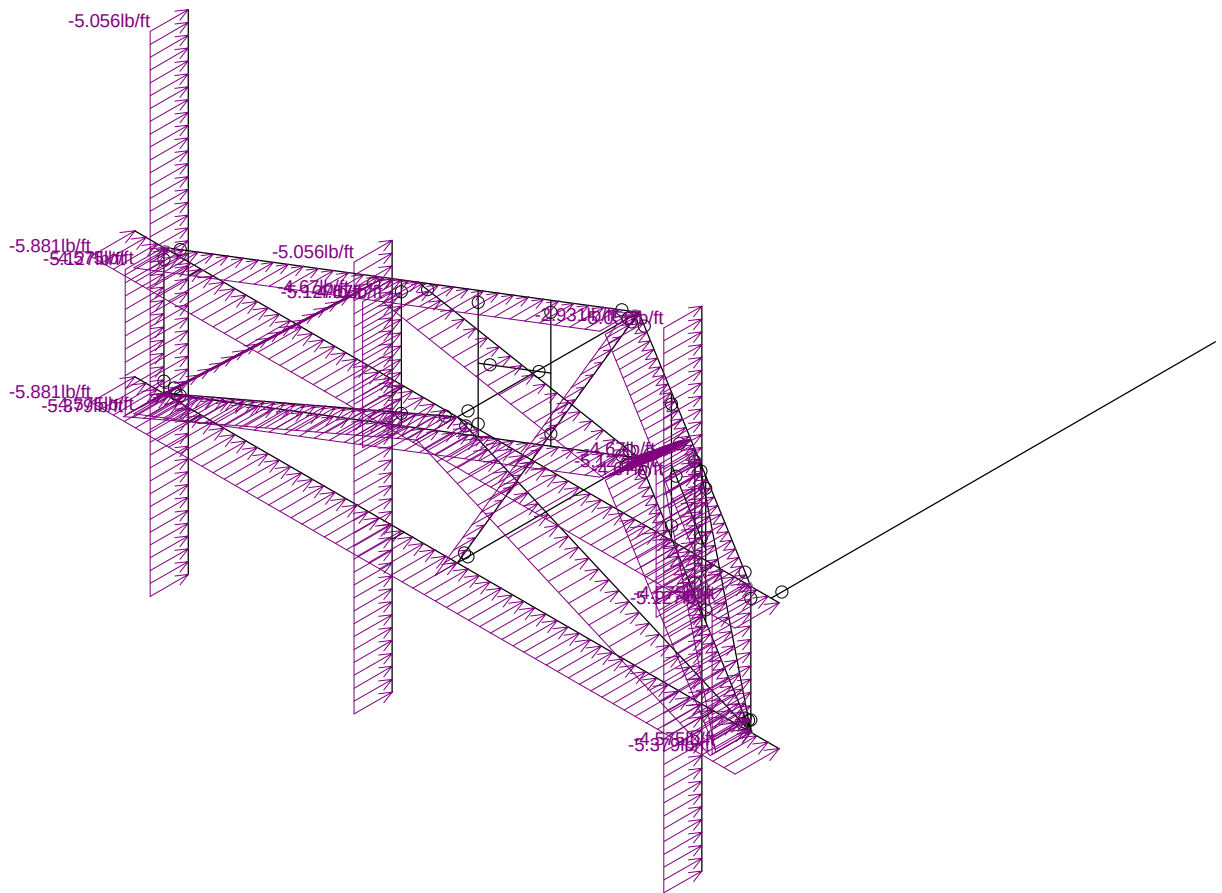
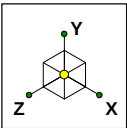


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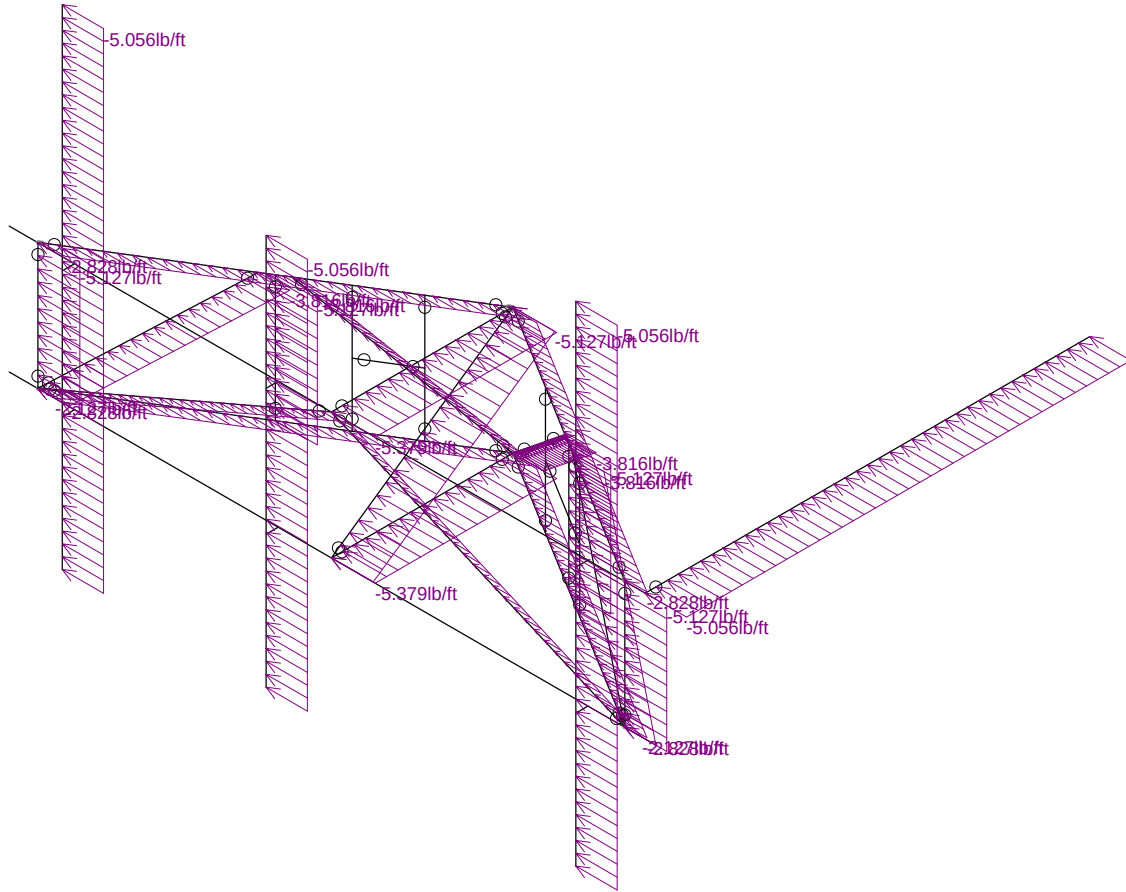
Loads: BLC 18, Distri. Wind X

Centerline Communcation...	CTHA616A_MA	Distr. Wind 90
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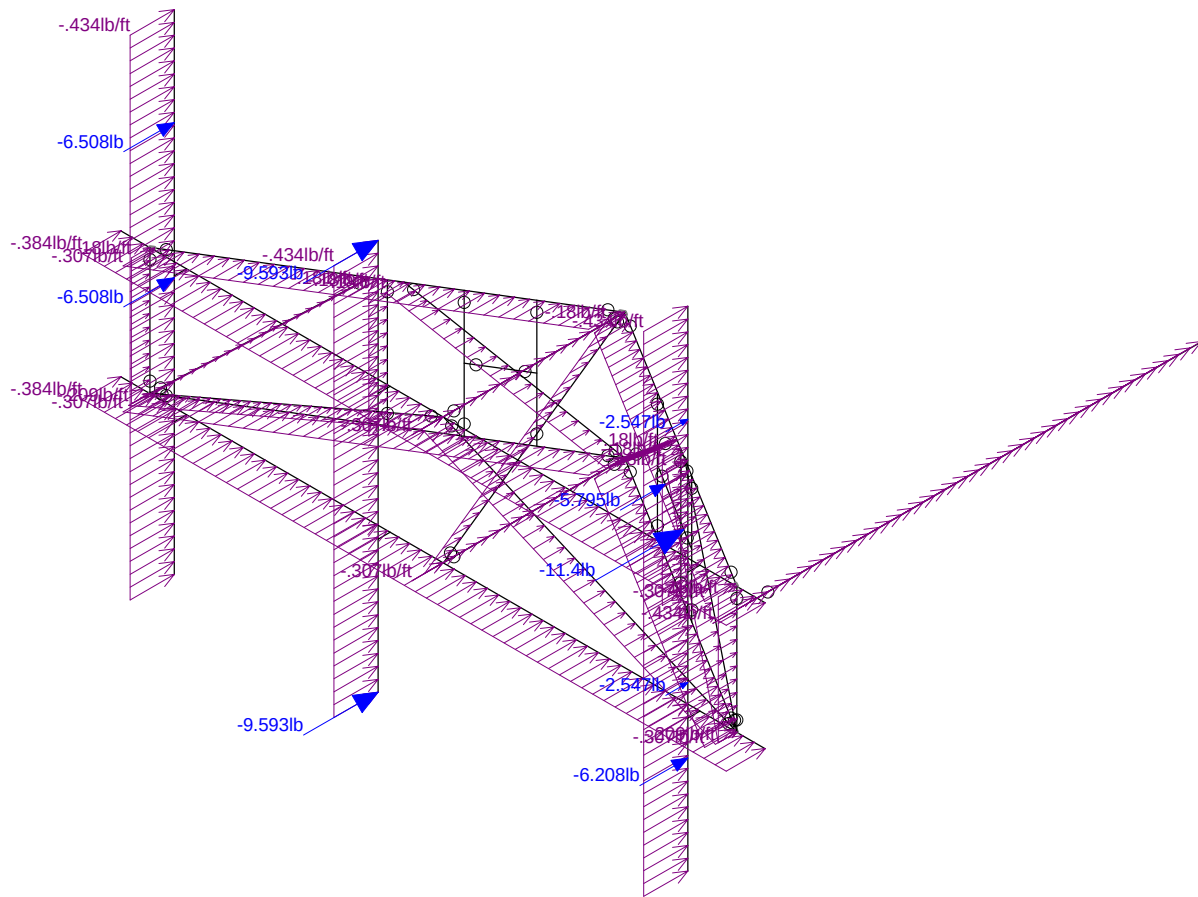
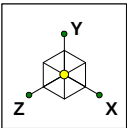


Loads: BLC 19, Distri. Ice + Wind Z

Centerline Communcation...	CTHA616A_MA	Distr. Ice + Wind 0
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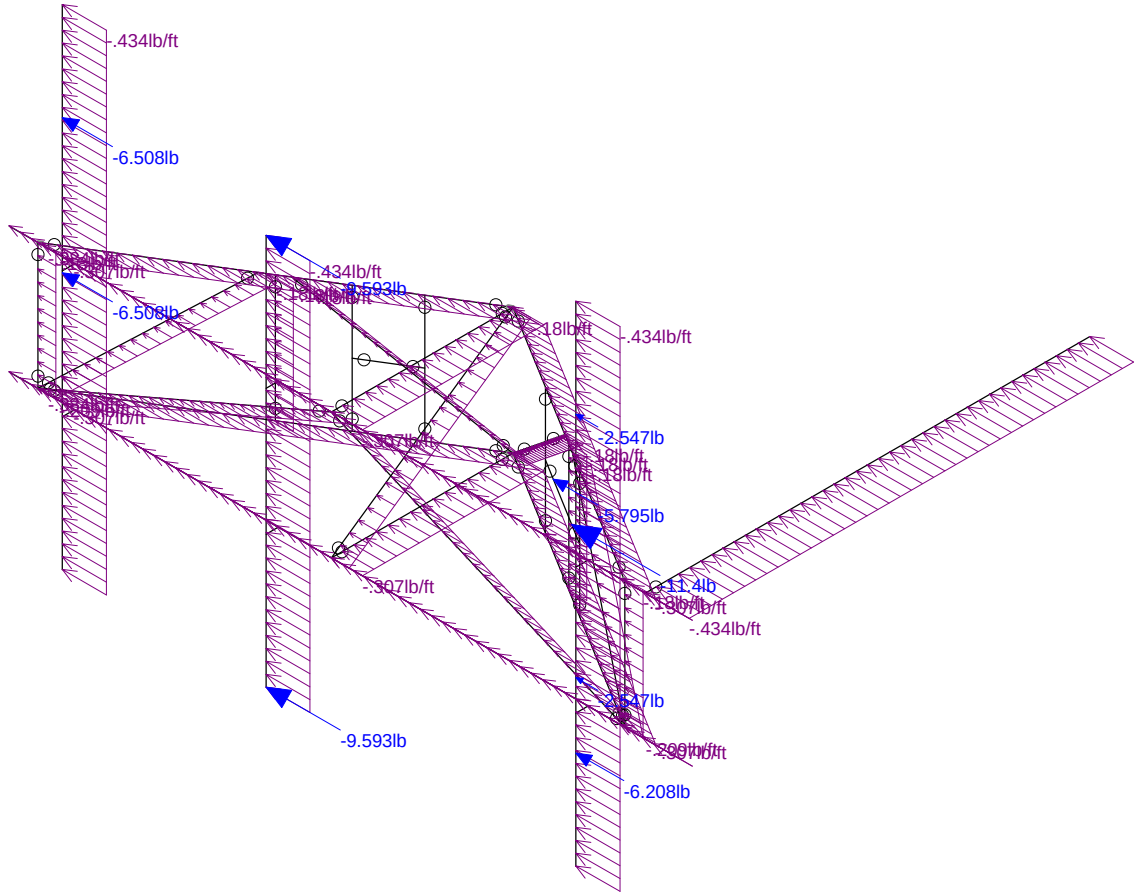


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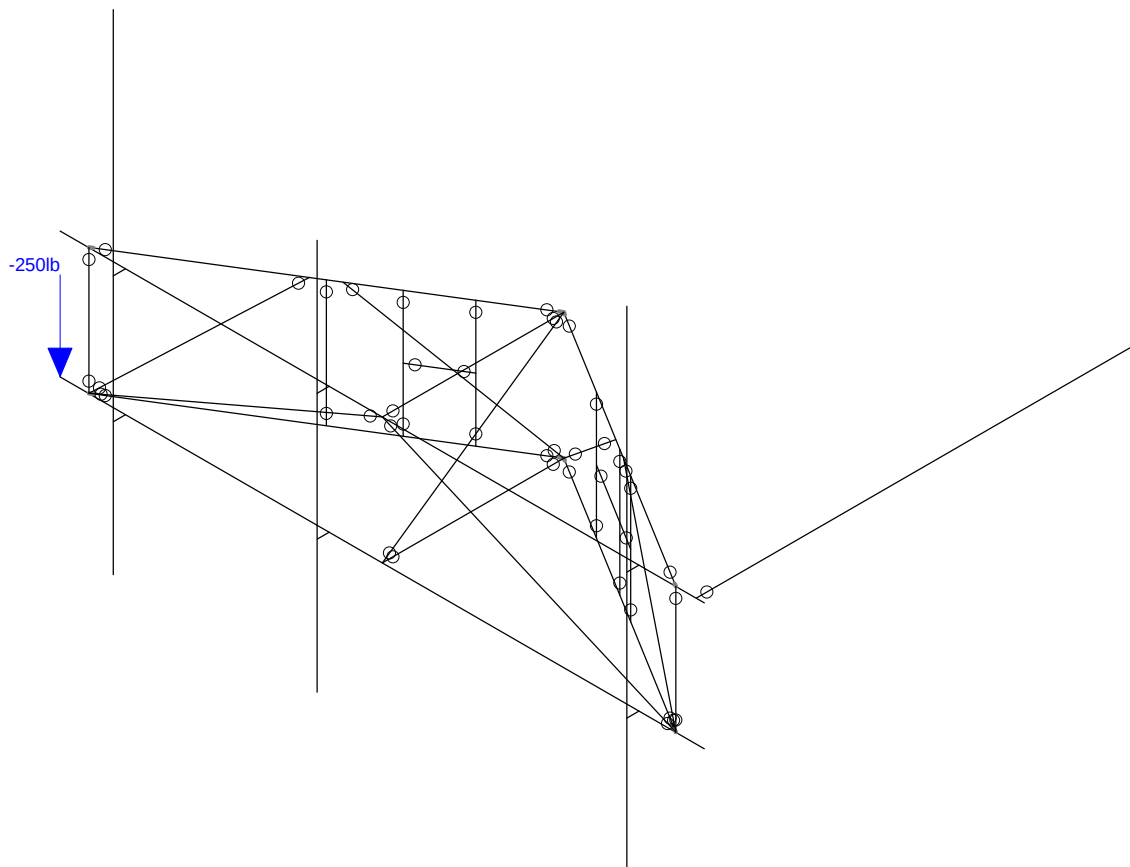
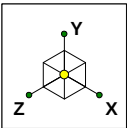


Loads: BLC 21, Seismic Load Z

Centerline Communcation...	CTHA616A_MA	Seismic Z
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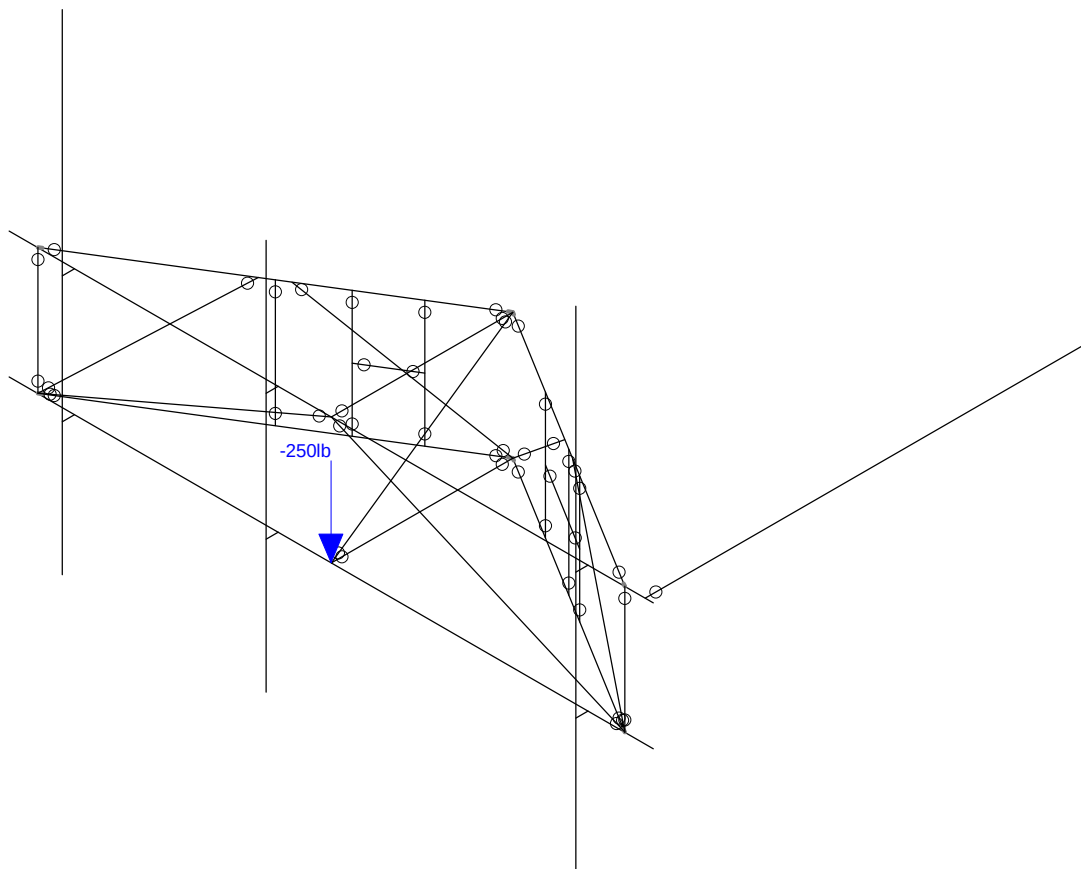
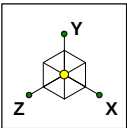


CTHA616A_MA.r3d



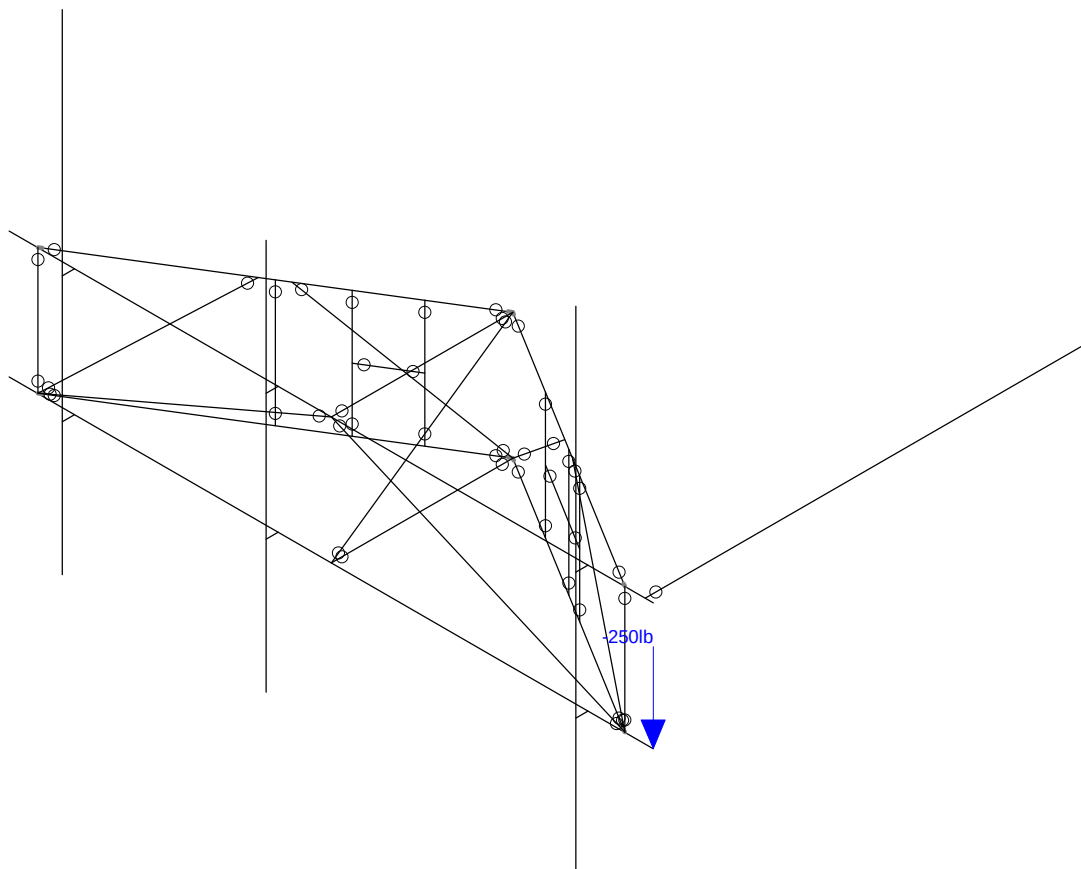
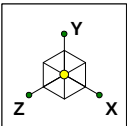
Loads: BLC 23, Live Load 1

Centerline Communcation...	CTHA616A_MA	Live Load 1
AP		Apr 27, 2021 at 2:32 PM
		CTHA616A_MA.r3d



Loads: BLC 24, Live Load 2

Centerline Communcation...	CTHA616A_MA	Live Load 2
AP		Apr 27, 2021 at 2:32 PM
		CTHA616A_MA.r3d



Loads: BLC 25, Live Load 3

Centerline Communcation...	CTHA616A_MA	Live Load 3
AP		Apr 27, 2021 at 2:32 PM
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Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm (/...	Density[lb/ft^3]	Yield[ksi]	Ry	Fu[ksi]	Rt
1	A992	29000	11154	.3	.65	490	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	.3	.65	490	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	.3	.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	.3	.65	527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	.3	.65	527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	.3	.65	490	35	1.6	60	1.2
7	A1085	29000	11154	.3	.65	490	50	1.25	65	1.15
8	A913 Gr.65	29000	11154	.3	.65	490	65	1.1	80	1.1

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design ...	A [in2]	Iyy [in4]	Izz [in4]	J [in4]
1	Horizontal	L2.5x2.5x3	Beam	Single Angle	A36 Gr.36	Typical	.901	.535	.535	.011
2	Standoff	L2x2x3	Beam	Single Angle	A36 Gr.36	Typical	.722	.271	.271	.009
3	Horizontal Diagon...	L2x2x2	Beam	Single Angle	A36 Gr.36	Typical	.491	.189	.189	.003
4	Horizontal Vertical...	L1.75x1.75x2	Beam	Single Angle	A36 Gr.36	Typical	.422	.126	.126	.002
5	Standoff Brace	L1.75x1.75x2	Beam	Single Angle	A36 Gr.36	Typical	.422	.126	.126	.002
6	Mount Pipe	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25
7	Tieback	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	.627	.627	1.25

Joint Coordinates and Temperatures

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
1	N1	0	0	0	0	
2	N2	0	31	0	0	
3	N3	79	0	0	0	
4	N4	79	31	0	0	
5	N5	158	0	0	0	
6	N6	158	31	0	0	
7	N7	7	0	0	0	
8	N8	7	31	0	0	
9	N9	151	0	0	0	
10	N10	151	31	0	0	
11	N11	79	0	-44.5	0	
12	N12	79	31	-44.5	0	
13	N13	43	31	-22.25	0	
14	N14	43	0	-22.25	0	
15	N15	40.448033	31	-20.672742	0	

Joint Coordinates and Temperatures (Continued)

	Label	X [in]	Y [in]	Z [in]	Temp [F]	Detach From Diap...
16	N16	40.448033	0	-20.672742	0	
17	N17	45.551888	31	-23.827209	0	
18	N18	45.551888	0	-23.827209	0	
19	N21	115	31	-22.25	0	
20	N22	115	0	-22.25	0	
21	N23	117.551967	31	-20.672742	0	
22	N24	112.448112	31	-23.827209	0	
23	N23A	156	31	0	0	
24	N24A	156	31	-109	0	
25	N25	16	0	0	0	
26	N26	16	31	0	0	
27	N27	16	0	3	0	
28	N28	16	31	3	0	
29	N29	142	0	0	0	
30	N30	142	31	0	0	
31	N31	142	0	3	0	
32	N32	142	31	3	0	
33	N37	66	0	0	0	
34	N38	66	31	0	0	
35	N39	66	0	3	0	
36	N40	66	31	3	0	
37	N41	66	63.5	3	0	
38	N42	66	-32.5	3	0	
39	N39A	16	87.5	3	0	
40	N40A	16	-32.5	3	0	
41	N43	142	87.5	3	0	
42	N44	142	-32.5	3	0	
43	N43A	122.078151	31	-17.875309	0	
44	N44A	122.078151	0	-17.875309	0	
45	N45	99.961444	31	-31.544663	0	
46	N46	99.961444	0	-31.544663	0	
47	N47	122.078151	15.5	-17.875309	0	
48	N48	99.961444	15.5	-31.544663	0	
49	N49	54.635986	31	-29.441686	0	
50	N50	54.635986	0	-29.441686	0	
51	N51	65.69434	31	-36.276363	0	
52	N52	65.69434	0	-36.276363	0	
53	N53	54.635986	15.5	-29.441686	0	
54	N54	65.69434	15.5	-36.276363	0	

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
1	N12	max	1146.938	12	1357.249	20	1474.614	10	4.257	2	6.037	13	3.165	6
2		min	-1042.134	51	-5.812	9	-6187.101	22	-3.247	15	-2.977	2	-1.307	9
3	N11	max	1178.89	54	3214.827	16	5880.093	16	2.812	8	4.996	6	1.797	9
4		min	-870.271	43	291.875	13	-336.335	15	-2.615	9	-2.78	9	-3.303	6
5	N24A	max	50.35	12	81.717	20	6.233	23	0	78	0	78	0	78
6		min	0	22	14.186	30	-929.435	5	0	1	0	1	0	1
7	Totals:	max	1968.487	5	4476.831	22	3527.368	2						
8		min	0	9	762.963	9	-3527.365	15						

Joint Boundary Conditions

	Joint Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot.[k-ft/rad]	Y Rot.[k-ft/rad]	Z Rot.[k-ft/rad]
1	N12	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N11	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
3	N24A	Reaction	Reaction	Reaction			

Hot Rolled Steel Design Parameters

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torq...	Kyy	Kzz	Cb	Function
1	M1	Horizontal	158	79		Lbyy						Lateral
2	M2	Horizontal	158	79		Lbyy						Lateral
3	M3	Standoff	84.642			Lbyy						Lateral
4	M4	Standoff	84.642			Lbyy						Lateral
5	M5	Standoff	84.642			Lbyy						Lateral
6	M6	Standoff	84.642			Lbyy						Lateral
7	M7	Standoff	44.5			Lbyy						Lateral
8	M8	Standoff	44.5			Lbyy						Lateral
9	M9	Horizontal ...	78.39			Lbyy						Lateral
10	M10	Horizontal ...	78.39			Lbyy						Lateral
11	M11	Horizontal V...	31			Lbyy						Lateral
12	M12	Horizontal V...	31			Lbyy						Lateral
13	M13	Standoff Br...	50.071			Lbyy						Lateral
14	M14	Standoff Br...	31			Lbyy						Lateral
15	M15	Standoff Br...	50.071			Lbyy						Lateral
16	M16	Standoff Br...	54.233			Lbyy						Lateral
17	M17	Standoff Br...	50.071			Lbyy						Lateral
18	M18	Standoff Br...	31			Lbyy						Lateral
19	M19	Standoff Br...	50.071			Lbyy						Lateral

Hot Rolled Steel Design Parameters (Continued)

	Label	Shape	Length[in]	Lbyy[in]	Lbzz[in]	Lcomp top[in]	Lcomp bot[in]	L-torg...	Kyy	Kzz	Cb	Function
20	M21	Tieback	109			Lbyy						Lateral
21	MP2	Mount Pipe	96			Lbyy						Lateral
22	MP3	Mount Pipe	120			Lbyy						Lateral
23	MP1	Mount Pipe	120			Lbyy						Lateral

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N2	N6		180	Horizontal	Beam	Single Angle	A36 Gr.36	Typical
2	M2	N1	N5		270	Horizontal	Beam	Single Angle	A36 Gr.36	Typical
3	M3	N8	N12			Standoff	Beam	Single Angle	A36 Gr.36	Typical
4	M4	N7	N11		90	Standoff	Beam	Single Angle	A36 Gr.36	Typical
5	M5	N10	N12		270	Standoff	Beam	Single Angle	A36 Gr.36	Typical
6	M6	N9	N11		180	Standoff	Beam	Single Angle	A36 Gr.36	Typical
7	M7	N4	N12			Standoff	Beam	Single Angle	A36 Gr.36	Typical
8	M8	N3	N11		90	Standoff	Beam	Single Angle	A36 Gr.36	Typical
9	M9	N7	N4		180	Horizontal Dia...	Beam	Single Angle	A36 Gr.36	Typical
10	M10	N9	N4		90	Horizontal Dia...	Beam	Single Angle	A36 Gr.36	Typical
11	M11	N8	N7		90	Horizontal Vert...	Beam	Single Angle	A36 Gr.36	Typical
12	M12	N10	N9			Horizontal Vert...	Beam	Single Angle	A36 Gr.36	Typical
13	M13	N15	N7		90	Standoff Brace	Beam	Single Angle	A36 Gr.36	Typical
14	M14	N13	N14			Standoff Brace	Beam	Single Angle	A36 Gr.36	Typical
15	M15	N17	N11		90	Standoff Brace	Beam	Single Angle	A36 Gr.36	Typical
16	M16	N12	N3			Standoff Brace	Beam	Single Angle	A36 Gr.36	Typical
17	M17	N23	N9		180	Standoff Brace	Beam	Single Angle	A36 Gr.36	Typical
18	M18	N21	N22			Standoff Brace	Beam	Single Angle	A36 Gr.36	Typical
19	M19	N24	N11		180	Standoff Brace	Beam	Single Angle	A36 Gr.36	Typical
20	M21	N23A	N24A			Tieback	Beam	Pipe	A53 Gr.B	Typical
21	M22	N28	N26			RIGID	None	None	RIGID	Typical
22	M23	N27	N25			RIGID	None	None	RIGID	Typical
23	M24	N32	N30			RIGID	None	None	RIGID	Typical
24	M25	N31	N29			RIGID	None	None	RIGID	Typical
25	M28	N40	N38			RIGID	None	None	RIGID	Typical
26	M29	N39	N37			RIGID	None	None	RIGID	Typical
27	MP2	N41	N42			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
28	MP3	N39A	N40A			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
29	MP1	N43	N44			Mount Pipe	Beam	Pipe	A53 Gr.B	Typical
30	M31	N43A	N44A			RIGID	None	None	RIGID	Typical
31	M32	N45	N46			RIGID	None	None	RIGID	Typical
32	MP4	N47	N48			RIGID	None	None	RIGID	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
33	M34	N49	N50			RIGID	None	None	RIGID	Typical
34	M35	N51	N52			RIGID	None	None	RIGID	Typical
35	MP5	N53	N54			RIGID	None	None	RIGID	Typical

Member Advanced Data

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
1	M1						Yes				None
2	M2						Yes				None
3	M3	BenPIN	BenPIN	.821	.821		Yes				None
4	M4	BenPIN	BenPIN	.821	.821		Yes				None
5	M5	BenPIN	BenPIN	.821	.821		Yes				None
6	M6	BenPIN	BenPIN	.821	.821		Yes				None
7	M7	BenPIN	BenPIN				Yes				None
8	M8	BenPIN	BenPIN				Yes				None
9	M9	BenPIN	BenPIN				Yes				None
10	M10	BenPIN	BenPIN				Yes				None
11	M11	BenPIN	BenPIN				Yes				None
12	M12	BenPIN	BenPIN				Yes				None
13	M13	BenPIN	BenPIN				Yes				None
14	M14	BenPIN	BenPIN				Yes				None
15	M15	BenPIN	BenPIN				Yes				None
16	M16	BenPIN	BenPIN				Yes				None
17	M17	BenPIN	BenPIN				Yes				None
18	M18	BenPIN	BenPIN				Yes				None
19	M19	BenPIN	BenPIN				Yes				None
20	M21	BenPIN					Yes	Default			None
21	M22						Yes	** NA **			None
22	M23						Yes	** NA **			None
23	M24						Yes	** NA **			None
24	M25						Yes	** NA **			None
25	M28						Yes	** NA **			None
26	M29						Yes	** NA **			None
27	MP2						Yes				None
28	MP3						Yes				None
29	MP1						Yes	Default			None
30	M31	BenPIN	BenPIN				Yes	** NA **			None
31	M32	BenPIN	BenPIN				Yes	** NA **			None
32	MP4	BenPIN	BenPIN				Yes	** NA **			None
33	M34	BenPIN	BenPIN				Yes	** NA **			None

Member Advanced Data (Continued)

	Label	I Release	J Release	I Offset[in]	J Offset[in]	T/C Only	Physical	Defl Rat...	Analysis ...	Inactive	Seismic...
34	M35	BenPIN	BenPIN				Yes	** NA **			None
35	MP5	BenPIN	BenPIN				Yes	** NA **			None

Basic Load Cases

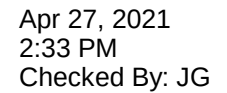
	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distributed Area(Me...	Surface(P...
1	Dead Load	DL		-1			9		
2	Wind 0	WLZ					18		
3	Wind 30	None					18		
4	Wind 60	None					18		
5	Wind 90	WLX					18		
6	Wind 120	None					18		
7	Wind 150	None					18		
8	Wind 180	WLZ					18		
9	Ice Weight	DL					9	35	
10	Ice + Wind 0	WLZ					18		
11	Ice + Wind 30	None					18		
12	Ice + Wind 60	None					18		
13	Ice + Wind 90	WLX					18		
14	Ice + Wind 120	None					18		
15	Ice + Wind 150	None					18		
16	Ice + Wind 180	WLZ					18		
17	Distri. Wind Z	WLZ						35	
18	Distri. Wind X	WLX						35	
19	Distri. Ice + Wind Z	WLZ						35	
20	Distri. Ice + Wind X	WLX						35	
21	Seismic Load Z	ELZ					9	35	
22	Seismic Load X	ELX					9	35	
23	Live Load 1	LL					1		
24	Live Load 2	LL					1		
25	Live Load 3	LL					1		

Load Combinations

	Description	Solve	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4D	Yes	Y		1	1.4																
2	1.2D + 1.6W 0°	Yes	Y		1	1.2	2	1.6	17	1.6	18											
3	1.2D + 1.6W 30°	Yes	Y		1	1.2	3	1.6	17	1.3...	18	.8										
4	1.2D + 1.6W 60°	Yes	Y		1	1.2	4	1.6	17	.8	18	1.3...										

Load Combinations (Continued)

	Description	Solve	P...	S...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
5	1.2D + 1.6W 90°	Yes	Y		1	1.2	5	1.6	17		18	1.6												
6	1.2D + 1.6W 120°	Yes	Y		1	1.2	6	1.6	17	-.8	18	1.3...												
7	1.2D + 1.6W 150°	Yes	Y		1	1.2	7	1.6	17	-1...	18	.8												
8	1.2D + 1.6W 180°	Yes	Y		1	1.2	8	1.6	17	-1.6	18													
9	0.9D + 1.6W 0°	Yes	Y		1	.9	2	1.6	17	1.6	18													
10	0.9D + 1.6W 30°	Yes	Y		1	.9	3	1.6	17	1.3...	18	.8												
11	0.9D + 1.6W 60°	Yes	Y		1	.9	4	1.6	17	.8	18	1.3...												
12	0.9D + 1.6W 90°	Yes	Y		1	.9	5	1.6	17		18	1.6												
13	0.9D + 1.6W 120°	Yes	Y		1	.9	6	1.6	17	-.8	18	1.3...												
14	0.9D + 1.6W 150°	Yes	Y		1	.9	7	1.6	17	-1...	18	.8												
15	0.9D + 1.6W 180°	Yes	Y		1	.9	8	1.6	17	-1.6	18													
16	1.2D + 1.0Di + 1.0Wi 0°	Yes	Y		1	1.2	9	1	10	1	19	1	20											
17	1.2D + 1.0Di + 1.0Wi 3...	Yes	Y		1	1.2	9	1	11	1	19	.866	20	.5										
18	1.2D + 1.0Di + 1.0Wi 6...	Yes	Y		1	1.2	9	1	12	1	19	.5	20	.866										
19	1.2D + 1.0Di + 1.0Wi 9...	Yes	Y		1	1.2	9	1	13	1	19		20	1										
20	1.2D + 1.0Di + 1.0Wi 1...	Yes	Y		1	1.2	9	1	14	1	19	-.5	20	.866										
21	1.2D + 1.0Di + 1.0Wi 1...	Yes	Y		1	1.2	9	1	15	1	19	-.866	20	.5										
22	1.2D + 1.0Di + 1.0Wi 1...	Yes	Y		1	1.2	9	1	16	1	19	-1	20											
23	1.2D + 1.0Eh 0°	Yes	Y		1	1.2	21	1	22															
24	1.2D + 1.0Eh 30°	Yes	Y		1	1.2	21	.866	22	.5														
25	1.2D + 1.0Eh 60°	Yes	Y		1	1.2	21	.5	22	.866														
26	1.2D + 1.0Eh 90°	Yes	Y		1	1.2	21		22	1														
27	1.2D + 1.0Eh 120°	Yes	Y		1	1.2	21	-.5	22	.866														
28	1.2D + 1.0Eh 150°	Yes	Y		1	1.2	21	-.866	22	.5														
29	1.2D + 1.0Eh 180°	Yes	Y		1	1.2	21	-1	22															
30	0.9D + 1.0Eh 0°	Yes	Y		1	.9	21	1	22															
31	0.9D + 1.0Eh 30°	Yes	Y		1	.9	21	.866	22	.5														
32	0.9D + 1.0Eh 60°	Yes	Y		1	.9	21	.5	22	.866														
33	0.9D + 1.0Eh 90°	Yes	Y		1	.9	21		22	1														
34	0.9D + 1.0Eh 120°	Yes	Y		1	.9	21	-.5	22	.866														
35	0.9D + 1.0Eh 150°	Yes	Y		1	.9	21	-.866	22	.5														
36	0.9D + 1.0Eh 180°	Yes	Y		1	.9	21	-1	22															
37	1.0D + 1.5Lv + 1.0W (6...	Yes	Y		1	1	23	1.5	2	.316	17	.316	18											
38	1.0D + 1.5Lv + 1.0W (6...	Yes	Y		1	1	23	1.5	3	.316	17	.273	18	.158										
39	1.0D + 1.5Lv + 1.0W (6...	Yes	Y		1	1	23	1.5	4	.316	17	.158	18	.273										
40	1.0D + 1.5Lv + 1.0W (6...	Yes	Y		1	1	23	1.5	5	.316	17		18	.316										
41	1.0D + 1.5Lv + 1.0W (6...	Yes	Y		1	1	23	1.5	6	.316	17	-.158	18	.273										
42	1.0D + 1.5Lv + 1.0W (6...	Yes	Y		1	1	23	1.5	7	.316	17	-.273	18	.158										
43	1.0D + 1.5Lv + 1.0W (6...	Yes	Y		1	1	23	1.5	8	.316	17	-.316	18											
44	1.0D + 1.5Lv + 1.0W (6...	Yes	Y		1	1	24	1.5	2	.316	17	.316	18											



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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*P...	phi*P...	phi*M...	phi*M....	Eqn
1	M4	L2x2x3	.979	55.333	22	.029	54.4...	z	16	3582....	23392..	557.7...	1156....	H2-1
2	M6	L2x2x3	.856	41.5	22	.058	41.5	y	19	3582....	23392..	557.7...	1021....	H2-1
3	M3	L2x2x3	.815	44.958	16	.160	41.5	y	16	3582....	23392..	557.7...	1128....	H2-1
4	M1	L2.5x2.5...	.787	79	8	.102	151....	z	5	7577....	29192..	872.5...	1032....	1 H2-1
5	M5	L2x2x3	.758	44.958	16	.195	44.0...	z	19	3582....	23392..	557.7...	1167....	H2-1
6	M2	L2.5x2.5...	.741	67.479	20	.119	79	z	20	7577....	29192..	872.5...	1803....	H2-1
7	M19	L1.75x1....	.721	25.557	22	.007	0	y	22	4572....	13668..	300.3...	515.17	H2-1
8	MP2	PIPE_2.0	.706	63	2	.052	32		2	14916..	32130	1871....	1871....	H1-1b
9	M15	L1.75x1....	.610	25.557	22	.010	50.0...	z	20	4572....	13668..	300.3...	515.17	H2-1
10	M9	L2x2x2	.486	38.378	16	.023	0	z	8	2759....	15908..	402.5...	569.9...	H2-1
11	M10	L2x2x2	.404	38.378	19	.018	0	y	8	2759....	15908..	402.5...	569.9...	H2-1
12	M16	L1.75x1....	.291	27.117	16	.011	54.2...	y	17	3897....	13668..	300.3...	501.9...	H2-1
13	MP1	PIPE_2.0	.287	56.25	8	.078	57.5		13	9836....	32130	1871....	1871....	H1-1b
14	MP3	PIPE_2.0	.286	57.5	8	.086	57.5		2	9836....	32130	1871....	1871....	H1-1b
15	M13	L1.75x1....	.258	25.036	16	.010	0	z	16	4572....	13668..	300.3...	515.17	H2-1
16	M17	L1.75x1....	.255	25.036	17	.007	50.0...	y	18	4572....	13668..	300.3...	515.17	H2-1
17	M8	L2x2x3	.230	22.25	16	.018	0	z	22	11745..	23392..	557.7...	1123....	H2-1
18	M21	PIPE_2.0	.108	54.5	20	.009	109		19	11922..	32130	1871....	1871....	H1-1b
19	M7	L2x2x3	.088	22.25	3	.008	0	z	7	11745..	23392..	557.7...	1123....	H2-1
20	M11	L1.75x1....	.072	16.792	21	.016	31	y	2	8790....	13668..	300.3...	584.4...	H2-1
21	M12	L1.75x1....	.064	16.792	18	.019	31	y	13	8790....	13668..	300.3...	584.4...	H2-1
22	M14	L1.75x1....	.052	15.5	2	.013	31	z	16	8790....	13668..	300.3...	584.4...	H2-1
23	M18	L1.75x1....	.052	15.5	4	.005	31	y	19	8790....	13668..	300.3...	584.4...	H2-1

Exhibit F

Power Density/RF Emissions Report



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

T-Mobile Existing Facility

Site ID: CTHA616A

CT03XC206

1660 Main Street

Coventry, Connecticut 06238

April 29, 2021

EBI Project Number: 6221002087

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	12.54%



April 29, 2021

T-Mobile

Attn: Jason Overbey, RF Manager

35 Griffin Road South

Bloomfield, Connecticut 06002

Emissions Analysis for Site: CTHA616A - CT03XC206

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **1660 Main Street in Coventry, Connecticut** for the purpose of determining whether the emissions from the Proposed T-Mobile Antenna Installation located on this property are within specified federal limits.

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

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

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

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



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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were done for the proposed T-Mobile Wireless antenna facility located at 1660 Main Street in Coventry, Connecticut using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65. Since T-Mobile is proposing highly focused directional panel antennas, which project most of the emitted energy out toward the horizon, all calculations were performed assuming a lobe representing the maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was focused at the base of the tower. For this report, the sample point is the top of a 6-foot person standing at the base of the tower. For power density calculations, the broadcast footprint of the AIR6449 antenna has been considered. Due to the beamforming nature of this antenna, the actual beam locations vary depending on demand and are narrow in nature. Using the broadcast footprint accounts for the potential location of beams at any given time.

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

- 1) 2 LTE channels (600 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 2) 1 NR channel (600 MHz Band) was considered for each sector of the proposed installation. This Channel has a transmit power of 80 Watts.
- 3) 2 LTE channels (700 MHz Band) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 4) 4 GSM channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 30 Watts per Channel.
- 5) 2 LTE channels (PCS Band - 1900 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.



- 6) 2 LTE channels (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.
- 7) 1 LTE channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 8) 1 NR channel (BRS Band - 2500 MHz) was considered for each sector of the proposed installation. This Channel has a transmit power of 120 Watts.
- 9) All radios at the proposed installation were considered to be running at full power and were uncombined in their RF transmissions paths per carrier prescribed configuration. Per FCC OET Bulletin No. 65 - Edition 97-01 recommendations to achieve the maximum anticipated value at each sample point, all power levels emitting from the proposed antenna installation are increased by a factor of 2.56 to account for possible in-phase reflections from the surrounding environment. This is rarely the case, and if so, is never continuous.
- 10) For the following calculations, the sample point was the top of a 6-foot person standing at the base of the tower. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used in this direction. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.
- 11) The antennas used in this modeling are the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector A, the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector B, the RFS APX16DWV-16DWV-S-E-A20 for the 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz channel(s), the Ericsson AIR 6449 for the 2500 MHz / 2500 MHz channel(s) in Sector C. This is based on feedback from the carrier with regard to anticipated antenna selection. All Antenna gain values and associated transmit power levels are shown in the Site Inventory and Power Data table below. The maximum gain of the antenna per the antenna manufacturer's supplied specifications, minus 10 dB for directional panel antennas and 20 dB for highly focused parabolic microwave dishes, was used for all calculations. This value is a very conservative estimate as gain reductions for these particular antennas are typically much higher in this direction.



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- 12) The antenna mounting height centerline of the proposed antennas is 180 feet above ground level (AGL).
- 13) Emissions values for additional carriers were taken from the Connecticut Siting Council active database. Values in this database are provided by the individual carriers themselves.
- 14) All calculations were done with respect to uncontrolled / general population threshold limits.



T-Mobile Site Inventory and Power Data

Sector:	A	Sector:	B	Sector:	C
Antenna #:	1	Antenna #:	1	Antenna #:	1
Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20	Make / Model:	RFS APX16DWV-16DWV-S-E-A20
Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz	Frequency Bands:	2100 MHz
Gain:	15.9 dBd	Gain:	15.9 dBd	Gain:	15.9 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts	Total TX Power (W):	120 Watts
ERP (W):	4,668.54	ERP (W):	4,668.54	ERP (W):	4,668.54
Antenna AI MPE %:	0.55%	Antenna BI MPE %:	0.55%	Antenna CI MPE %:	0.55%
Antenna #:	2	Antenna #:	2	Antenna #:	2
Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20	Make / Model:	RFS APXVAALL24_43-U-NA20
Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz / 1900 MHz / 1900 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd / 15.45 dBd / 15.45 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Channel Count:	11	Channel Count:	11	Channel Count:	11
Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts	Total TX Power (W):	440 Watts
ERP (W):	12,569.87	ERP (W):	12,569.87	ERP (W):	12,569.87
Antenna A2 MPE %:	2.17%	Antenna B2 MPE %:	2.17%	Antenna C2 MPE %:	2.17%
Antenna #:	3	Antenna #:	3	Antenna #:	3
Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449	Make / Model:	Ericsson AIR 6449
Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz	Frequency Bands:	2500 MHz / 2500 MHz
Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd	Gain:	17.3 dBd / 17.3 dBd
Height (AGL):	180 feet	Height (AGL):	180 feet	Height (AGL):	180 feet
Channel Count:	2	Channel Count:	2	Channel Count:	2
Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts	Total TX Power (W):	240 Watts
ERP (W):	12,888.76	ERP (W):	12,888.76	ERP (W):	12,888.76
Antenna A3 MPE %:	1.53%	Antenna B3 MPE %:	1.53%	Antenna C3 MPE %:	1.53%



Site Composite MPE %	
Carrier	MPE %
T-Mobile (Max at Sector A):	4.26%
Sprint	1.82%
Unknown	3.11%
Verizon	2.49%
Metro PCS	0.86%
Site Total MPE % :	12.54%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	4.26%
T-Mobile Sector B Total:	4.26%
T-Mobile Sector C Total:	4.26%
Site Total MPE % :	12.54%

T-Mobile Maximum MPE Power Values (Sector A)

T-Mobile Frequency Band / Technology (Sector A)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu\text{W}/\text{cm}^2$)	Frequency (MHz)	Allowable MPE ($\mu\text{W}/\text{cm}^2$)	Calculated % MPE
T-Mobile 2100 MHz LTE	2	2334.27	180.0	5.54	2100 MHz LTE	1000	0.55%
T-Mobile 600 MHz LTE	2	591.73	180.0	1.41	600 MHz LTE	400	0.35%
T-Mobile 600 MHz NR	1	1577.94	180.0	1.87	600 MHz NR	400	0.47%
T-Mobile 700 MHz LTE	2	695.22	180.0	1.65	700 MHz LTE	467	0.35%
T-Mobile 1900 MHz GSM	4	1052.26	180.0	5.00	1900 MHz GSM	1000	0.50%
T-Mobile 1900 MHz LTE	2	2104.51	180.0	5.00	1900 MHz LTE	1000	0.50%
T-Mobile 2500 MHz LTE	1	6444.38	180.0	7.65	2500 MHz LTE	1000	0.77%
T-Mobile 2500 MHz NR	1	6444.38	180.0	7.65	2500 MHz NR	1000	0.77%
Total:							4.26%

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



Summary

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

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

T-Mobile Sector	Power Density Value (%)
Sector A:	4.26%
Sector B:	4.26%
Sector C:	4.26%
T-Mobile Maximum MPE % (Sector A):	4.26%
Site Total:	12.54%
Site Compliance Status:	COMPLIANT

The anticipated composite MPE value for this site assuming all carriers present is **12.54%** of the allowable FCC established general population limit sampled at the ground level. This is based upon values listed in the Connecticut Siting Council database for existing carrier emissions.

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

Exhibit G

Mailing Receipts/Proof of Notice

UPS CampusShip: View/Print Label

- 1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
- 2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.
- 3. **GETTING YOUR SHIPMENT TO UPS**
Customers with a Daily Pickup
Your driver will pickup your shipment(s) as usual.

Customers without a Daily Pickup
Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
Schedule a same day or future day Pickup to have a UPS driver pickup all your CampusShip packages.
Hand the package to any UPS driver in your area.

UPS Access Point™
TIENDA ECUADOR
72 LAKE AVE
DANBURY ,CT 06810

UPS Access Point™
THE UPS STORE
42 LAKE AVENUE EXT
DANBURY ,CT 06811

UPS Access Point™
CVS STORE # 1109
7 DURANT AVE
BETHEL ,CT 06801

FOLD HERE

1 OF 1

1 LBS

DWT: 12.9,1

CENTERLINE COMMUNICATIONS
2033007310
117 CAROL STREET
DANBURY CT 06810

SHIP TO:
TOWN MANAGER- PROPERTY OWNER
TOWN OF COVENTRY
1712 MAIN STREET
COVENTRY CT 06238-3615

CT 061 9-01

UPS GROUND

TRACKING #: 1Z 9Y4 503 03 1615 8690

BILLING: P/P

CS 22.0.13. WNTNV50 45.0A 04/2021*

UPS CampusShip: View/Print Label

- 1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
- 2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.
- 3. **GETTING YOUR SHIPMENT TO UPS**
Customers with a Daily Pickup
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Customers without a Daily Pickup
Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
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42 LAKE AVENUE EXT
DANBURY ,CT 06811

UPS Access Point™
CVS STORE # 1109
7 DURANT AVE
BETHEL ,CT 06801

FOLD HERE

SHIP TO:
TOWN MANAGER
TOWN OF COVENTRY
1712 MAIN STREET
COVENTRY CT 06238-3615

CT 061 9-01

UPS GROUND

TRACKING #: 1Z 9Y4 503 03 1568 2679

BILLING: P/P

1 OF 1

1 LBS

DWT: 12.9,1

SHIP TO:
TOWN MANAGER
TOWN OF COVENTRY
1712 MAIN STREET
COVENTRY CT 06238-3615

CT 061 9-01

UPS GROUND

TRACKING #: 1Z 9Y4 503 03 1568 2679

BILLING: P/P

CS 22.0.13. WNTNV50 45.0A 04/2021*

TM

UPS CampusShip: View/Print Label

- 1. **Ensure there are no other shipping or tracking labels attached to your package.** Select the Print button on the print dialog box that appears. Note: If your browser does not support this function select Print from the File menu to print the label.
- 2. **Fold the printed label at the solid line below.** Place the label in a UPS Shipping Pouch. If you do not have a pouch, affix the folded label using clear plastic shipping tape over the entire label.
- 3. **GETTING YOUR SHIPMENT TO UPS**
Customers with a Daily Pickup
Your driver will pickup your shipment(s) as usual.

Customers without a Daily Pickup
Take your package to any location of The UPS Store®, UPS Access Point(TM) location, UPS Drop Box, UPS Customer Center, Staples® or Authorized Shipping Outlet near you. Items sent via UPS Return Services(SM) (including via Ground) are also accepted at Drop Boxes. To find the location nearest you, please visit the Resources area of CampusShip and select UPS Locations.
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DANBURY ,CT 06811

UPS Access Point™
CVS STORE # 1109
7 DURANT AVE
BETHEL ,CT 06801

FOLD HERE

1 OF 1

1 LBS

DWT: 12.9,1

CENTERLINE COMMUNICATIONS
2033007310
117 CAROL STREET
DANBURY CT 06810

SHIP TO:
DIRECTOR OF LAND USE
TOWN OF COVENTRY
1712 MAIN STREET
COVENTRY CT 06238-3615

CT 061 9-01

UPS GROUND

TRACKING #: 1Z 9Y4 503 03 1221 9685

BILLING: P/P

CS 22.0.13. WNTNV50 45.0A 04/2021*