10 Industrial Ave,
Suite 3
Mahwah NJ 07430

Phone: 201.684.0055
Fax: 201.684.0066

Transcend Wireless

May 24, 2021

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

RE: Notice of Exempt Modification
52 Library Street, Salisbury, CT, 06068
Latitude: 41.980846
Longitude: -73.418426
T-Mobile Site#: CTNH547A – L600

Dear Ms. Bachman:

T-Mobile currently maintains six (6) antennas at the 123-foot level of the existing 150-foot monopole at 52 Library Street, Salisbury, CT, 06068. The 123-foot monopole is owned by the Town of Salisbury and operated by American Tower. T-Mobile now intends to remove three (3) existing antennas and add three (3) new L600/L700 MHz antennas. The new antennas will be installed at the same 123-foot level of the tower. The new antennas support 5G services and would be installed at the 123-foot level of the tower.

Planned Modifications:
Tower:
Remove
(3) RRUS11 B12 RRH
(1) 1 ¼" Hybrid Cables

Remove and Replace:
(3) LNX-6515DS-A1M for (3) APXVAALL24_43-U-NA20

Install New:
(3) Radio 4449 B12+ B71 RRH
(1) 1 ⅝" Hybrid

Existing to Remain:
(3) APX16DWV-16DWVS-E-A20 Antennas

(3) RRUS11 B4 RRH
(3) RRUS11 B2 RRH
(2) 1 ¼" Fiber Cables

Ground:
Install New:
(1) BB 6648

This tower was originally approved by the Connecticut Siting Council on November 17 2005 within Docket No. 306. T-Mobile has been approved for subsequent modifications at their facility. This proposed modification complies with the original approval.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.SA. § 16-SOj-73, a copy of this letter is being sent to First Selectman -Curtis G. Rand, Elected Official, and Abby Conroy, Land Use Administrator, as well as American Tower.

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, 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,

Eric Breun
Transcend Wireless
Cell: 201-658-7728
Email: ebreun@transcendwireless.com

Attachments
cc: Curtis G. Rand - First Selectman Salisbury CT
Abby Conroy - Land Use Administrator
American Tower - Property/Tower Management

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
ABBY CONROY & CURTIS RAND
27 MAIN STREET
SALISBURY CT 06068

CT 067 9-02

UPS GROUND
TRACKING #: 1Z V25 742 43 9741 3559

BILLING: P/P

XOL 21.05.03 NV45 45.0A 04/2021*

ERIC BREUN
2016587728
10 INDUSTRIAL AVE
MAHWAH NJ 07430

1 LBS

1 OF 1

SHIP TO:
AMERICAN TOWER CORPORATION
10 PRESIDENTIAL WAY
WOBURN MA 01801

MA 018 9-04

UPS GROUND
TRACKING #: 1Z V25 742 43 9530 3547

BILLING: P/P

XOL 21.05.03 NV45 45.0A 04/2021*

52 LIBRARY STREET

Sales | Print | Field Card | Map It

Location	52 LIBRARY STREET	**Mblu**	54/ / 89/ /
Acct#	98103071	**Owner**	SALISBURY TOWN OF
PBN		**Assessment**	$526,800
Appraisal	$752,500	**PID**	2652
Building Count	1	**SURVEY**	854

Current Value

Appraisal			
Valuation Year	Improvements	Land	Total
2020	$359,800	$392,700	$752,500
Assessment			
Valuation Year	Improvements	Land	Total
2020	$251,900	$274,900	$526,800

Owner of Record

Owner	SALISBURY TOWN OF	**Sale Price**	$0
Co-Owner		**Certificate**	
Address	27 MAIN ST SALISBURY, CT 06068	**Book & Page**	84/ 121
		Sale Date	10/31/1961
		Instrument	1N

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
SALISBURY TOWN OF	$0		84/ 121	1N	10/31/1961

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost
Less Depreciation: $0

Building Attributes	
Field	Description
Style	Outbuildings
Model	
Grade:	
Stories:	
Occupancy	
Exterior Wall 1	
Exterior Wall 2	
Roof Structure:	
Roof Cover	
Interior Wall 1	
Interior Wall 2	
Interior Flr 1	
Interior Flr 2	
Heat Fuel	
Heat Type:	
AC Type:	
Total Bedrooms:	
Total Bthrms:	
Total Half Baths:	
Total Rooms:	

Building Photo

Building Layout

Building Layout

Building Sub-Areas (sq ft)	Legend
No Data for Building Sub-Areas	

Extra Features

Extra Features	Legend
No Data for Extra Features	

Land

Land Use

Land Line Valuation

Use Code	5-2	**Size (Acres)**	5.13
Description	VACANT COM	**Frontage**	
Zone	C20	**Depth**	
Neighborhood	7	**Assessed Value**	$274,900
Alt Land Appr	No	**Appraised Value**	$392,700
Category			

Outbuildings

Outbuildings						Legend
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
FGR1	Garage			7260 S.F.	$26,100	1
SHP2	Work Shop Gd			400 S.F	$8,700	1
FGR1	Garage			8400 S.F.	$128,500	1
SHD2	Shed aver			2960 S.F.	$14,200	1
SHD2	Shed aver			12420 S.F.	$159,000	1
FGR1	Garage			1160 S.F.	$23,300	1
SHD1	Shed fair			600 S.F.	$0	1

Valuation History

Appraisal			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$359,800	$392,700	$752,500
2019	$360,300	$392,700	$753,000
2015	$360,300	$392,700	$753,000

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2020	$251,900	$274,900	$526,800
2019	$252,100	$274,900	$527,000
2015	$252,100	$274,900	$527,000

REVISED MARCH 2016

NOT TO BE USED FOR CONVEYANCES
FOR ASSESSMENT PURPOSES ONLY
NOT A TRUE SURVEY

LEGEND
PARCEL NUMBERS 1
ADJACENT MAPS 2
MATCH LINE .....

For Assessment Purposes
Not to be used for Conveyances

PROPERTY MAP
TOWN OF SALISBURY
LITCHFIELD COUNTY, CONNECTICUT
PREPARED BY
JAMES W. HEWALL COMPANY OLD TOWN, MAINE
SCALE 1 INCH = 100 = FEET

54

DOCKET NO. 306 – Wireless *EDGE* Fairfield Group LLC application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance, and operation of a cellular telecommunications facility located at 52 Library Street, Salisbury, Connecticut.	}	Connecticut
	}	Siting
	}	Council

November 17, 2005

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate either alone or cumulatively with other effects when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application and therefore directs that a Certificate of Environmental Compatibility and Pubic Need, as provided by General Statutes § 16-50k, be issued to Wireless *EDGE* Fairfield Group LLC for the construction, maintenance and operation of a wireless telecommunications facility to be located at 52 Library Street in Salisbury, Connecticut.

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

1. The tower shall be designed as a monopole and shall be constructed no taller than 150 feet above ground level to provide telecommunications services to both public and private entities. Cingular's antennas to be mounted on the monopole shall be installed using a T-arm configuration.

2. The tower shall be designed and constructed in such a manner as to be able to accommodate a future extension. Any such extension must be approved by the Council as a petition for declaratory ruling, or other administrative procedure as deemed appropriate by the Council.

3. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Salisbury and all parties and intervenors, as listed in the service list, and submitted to and approved by the Council prior to the commencement of facility construction and shall include:

    a) a final site plan(s) of site development to include specifications for the tower, tower foundation, antennas mountings, equipment building, access road, utility line, and landscaping; and

b) construction plans for site clearing, water drainage, and erosion and sedimentation control consistent with the 2002 Connecticut Guidelines for Soil Erosion and Sediment Control, as amended.

4. The Certificate Holder shall, prior to the commencement of operation, provide the Council worst-case modeling of electromagnetic radio frequency power density of all proposed entities' antennas at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Engineering and Technology, Bulletin No. 65, August 1997. The Certificate Holder shall ensure a recalculated report of electromagnetic radio frequency power density is submitted to the Council in the event other carriers locate at this facility or if circumstances in operation cause a change in power density above the levels calculated and provided pursuant to this Decision and Order.

5. Upon the establishment of any new State or federal radio frequency standards applicable to frequencies of this facility, the facility granted herein shall be brought into compliance with such standards.

6. The Certificate Holder shall permit public or private entities to share space on the proposed tower for fair consideration, or shall provide any requesting entity with specific legal, technical, environmental, or economic reasons precluding such tower sharing.

7. The Certificate Holder shall provide reasonable space on the tower for no compensation for any municipal antennas, provided such antennas are compatible with the structural integrity of the tower.

8. If the facility authorized herein is not fully constructed and providing wireless services within eighteen months from the date of the mailing of the Council's Findings of Fact, Opinion, and Decision and Order (collectively called "Final Decision"), this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made. The time between the filing and resolution of any appeals of the Council's Final Decision shall not be counted in calculating this deadline.

9. If the facility ceases to provide wireless services for a period of one year, this Decision and Order shall be void, and the Certificate Holder shall dismantle the tower and remove all associated equipment or reapply for any continued or new use to the Council before any such use is made.

10. Any antenna that becomes obsolete and ceases to function shall be removed within 60 days after such antennas become obsolete and cease to function.

11. Any request for extension of the time periods referred to in Conditions 8 and 9 shall be filed with the Council not later than sixty days prior to the expiration date of this Certificate and shall be served on all parties and intervenors and the Town of Salisbury, as listed in the service list. Any proposed modifications to this Decision and Order shall likewise be so served.

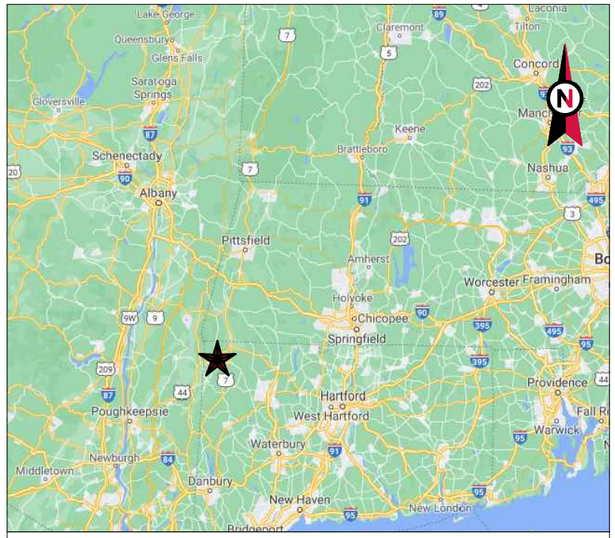
12. In accordance with Section 16-50j-77 of the Regulations of Connecticut State Agencies, the Certificate Holder shall provide the Council with written notice two weeks prior to the commencement of construction activities. In addition, the Certificate Holder shall provide the Council with written notice of the completion of site construction and the commencement of site operation.

Pursuant to General Statutes § 16-50p, we hereby direct that a copy of the Findings of Fact, Opinion, and Decision and Order be served on each person listed below, and notice of issuance shall be published in the Litchfield County Times and in the Lakeville Journal.

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

The parties and intervenors to this proceeding are:

Status Granted	**Status Holder (name, address & phone number)**	**Representative (name, address & phone number)**
Applicant	Wireless Edge Fairfield Group, LLC 270 North Avenue New Rochelle, NY 10801	Julie Donaldson Kohler, Esq. Cohen & Wolf, P.C. 1115 Broad Street Bridgeport, CT 06604 (203) 368-0211 (203) 394-9901 - fax jkohler@cohenandwolf.com
Intervenor (approved 7/20/05)	New Cingular Wireless PCS, LLC	Christopher B. Fisher, Esq. Cuddy & Feder LLP 90 Maple Avenue White Plains, NY 10601 (914) 761-1300 (914) 761-6405 Fax
Intervenor (approved 8/24/05)	Berkshire-Litchfield Environmental Council (BLEC) P.O. Box 552 Lakeville, CT 06039	Send correspondence to: B. Blake Levitt, Trustee 355 Lake Road New Preston, CT 06777 (860) 868-7437 (860) 868-6010 blakelevit.com



VICINITY MAP

AMERICAN TOWER®

ATC SITE NAME: SALISBURY CT
ATC SITE NUMBER: 370630
T-MOBILE SITE NAME: CTNH547A
T-MOBILE SITE NUMBER: CTNH547A
SITE ADDRESS: 52 LIBRARY ST. SALISBURY, CT 06068

LOCATION MAP

T-MOBILE L600 ANTENNA AMENDMENT PLAN
67D07C 6102 MUAC CONFIGURATION

COMPLIANCE CODE

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

1. 2015 INTERNATIONAL BUILDING CODE (IBC)
2. 2017 NATIONAL ELECTRIC CODE (NEC)
3. LOCAL BUILDING CODE
4. CITY/COUNTY ORDINANCES

UTILITY COMPANIES

POWER COMPANY: DEMAND
PHONE: N/A

TELEPHONE COMPANY: AT&T
PHONE: (888) 944-0447

CBYD.COM 811 Call Before You Dig, Inc.

PROJECT SUMMARY

SITE ADDRESS:

52 LIBRARY ST.

SALISBURY, CONNECTICUT, 06068

COUNTY: LITCHFIELD

GEOGRAPHIC COORDINATES:

LATITUDE: 41.98086111

LONGITUDE: -73.41844444

GROUND ELEVATION: 668' AMSL

PROJECT TEAM

TOWER OWNER:

AMERICAN TOWER
10 PRESIDENTIAL WAY
WOBURN, MA 01801

ENGINEER:

KIMLEY-HORN
& ASSOCIATES, INC.
421 FAYETTEVILLE ST, STE 600
RALEIGH, NC 27601
COA: PEC.0000738

PROPERTY OWNER:

TOWN OF SALISBURY CT
TREASURERS OFFICE
PO BOX 548
SALISBURY, CT 06068

APPLICANT:

T-MOBILE
DAN REID
DREID@
TRANSCENDWIRELESS.COM

PROJECT DESCRIPTION

THE PROPOSED PROJECT INCLUDES MODIFYING GROUND BASED AND TOWER MOUNTED EQUIPMENT AS INDICATED PER BELOW:

TOWER WORK:

REMOVE (3) LNX-6515DS-A1M ANTENNA(s), (3) RRUS11 B12 RRH(s), AND (1) 1-1/4" HYBRID CABLE

INSTALL (3) APXVAALL24_43-U-NA20 ANTENNA(s), (3) RADIO 4449 B12, B71 RRH(s), AND (1) 1 5/8" HYBRIFLEX CABLE(s)

EXISTING (3) APX16DWV-16DWVS-E-A20 ANTENNA(s), (3) RRUS11 B4 RRH(s), (3) RRUS11 B2 RRH(s), (2) 1 1/4" FIBER CABLE(s) TO REMAIN

GROUND WORK:

INSTALL (1) BB6648

EXISTING (1) RBS 6102 MU AC, (1) DUW30, (1) BB6630 TO REMAIN

THE PROPOSED PROJECT DOES NOT INCLUDE ELECTRICAL SCOPE

PROJECT NOTES

1. THE FACILITY IS UNMANNED.
2. A TECHNICIAN WILL VISIT THE SITE APPROXIMATELY ONCE A MONTH FOR ROUTINE INSPECTION AND MAINTENANCE.
3. THE PROJECT WILL NOT RESULT IN ANY SIGNIFICANT LAND DISTURBANCE OR EFFECT OF STORM WATER DRAINAGE.
4. NO SANITARY SEWER, POTABLE WATER OR TRASH DISPOSAL IS REQUIRED.
5. HANDICAP ACCESS IS NOT REQUIRED.

PROJECT LOCATION DIRECTIONS

FROM SALISBURY:

PROCEED FROM LAKEVILLE HEAD NORTHWEST ON CT-41 / SHARON RD TOWARD US-44 E / MILLERTON RD 39 FT TURN RIGHT ONTO US-44 E / CT-41 / MAIN ST 1.7 MI ARRIVE AT US-44 E / CT-41 / MAIN ST

SHEET INDEX

SHEET NO:	DESCRIPTION:	REV:	DATE:	BY:
G-001	TITLE SHEET	0	05/20/21	KC
G-002	GENERAL NOTES	0	05/20/21	KC
C-101	DETAILED SITE PLAN	0	05/20/21	KC
C-102	DETAILED GROUND PLAN	0	05/20/21	KC
C-201	TOWER ELEVATION	0	05/20/21	KC
C-401	ANTENNA INFORMATION & SCHEDULE	0	05/20/21	KC
C-501	CONSTRUCTION DETAILS	0	05/20/21	KC
E-501	GROUNDING DETAILS	0	05/20/21	KC
R-601	SUPPLEMENTAL			
R-602	SUPPLEMENTAL			
R-603	SUPPLEMENTAL			

AMERICAN TOWER®

Kimley»Horn

COA: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

REV.	DESCRIPTION	BY	DATE
A	PRELIM	SM	04/15/21
0	ISSUED FOR CONSTRUCTION	KC	05/20/21

ATC SITE NUMBER:
370630
ATC SITE NAME:
SALISBURY CT
T-MOBILE SITE NAME:
CTNH547A
SITE ADDRESS:
52 LIBRARY ST.
SALISBURY, CONNECTICUT, 06068

SEAL:

T-Mobile

DATE DRAWN:	05/20/21
ATC JOB NO:	13657492
CUSTOMER ID:	CTNH547A
CUSTOMER #:	CTNH547A

TITLE SHEET

SHEET NUMBER: G-001

REVISION: 0

GENERAL CONSTRUCTION NOTES:

1. OWNER FURNISHED MATERIALS, T-MOBILE "THE COMPANY" WILL PROVIDE AND THE CONTRACTOR WILL INSTALL
   - A. BTS EQUIPMENT FRAME (PLATFORM) AND ICEBRIDGE SHELTER (GROUND BUILD/CO-LOCATE ONLY)
   - B. AC/TELCO INTERFACE BOX (PPC)
   - C. ICE BRIDGE (CABLE TRAY WITH COVER) (GROUND BUILD/CO-LOCATE ONLY, GC TO FURNISH AND INSTALL FOR ROOFTOP INSTALLATION)
   - D. TOWERS, MONOPOLES
   - E. TOWER LIGHTING
   - F. GENERATORS & LIQUID PROPANE TANK
   - G. ANTENNA STANDARD BRACKETS, FRAMES AND PIPES FOR MOUNTING
   - H. ANTENNAS (INSTALLED BY OTHERS)
   - I. TRANSMISSION LINE
   - J. TRANSMISSION LINE JUMPERS
   - K. TRANSMISSION LINE CONNECTORS WITH WEATHERPROOFING KITS
   - L. TRANSMISSION LINE GROUND KITS
   - M. HANGERS
   - N. HOISTING GRIPS
   - O. BTS EQUIPMENT
2. THE CONTRACTOR IS RESPONSIBLE TO PROVIDE ALL OTHER MATERIALS FOR THE COMPLETE INSTALLATION OF THE SITE INCLUDING, BUT NOT LIMITED TO, SUCH MATERIALS AS FENCING, STRUCTURAL STEEL SUPPORTING SUB-FRAME FOR PLATFORM, ROOFING LABOR AND MATERIALS, GROUNDING RINGS, GROUNDING WIRES, COPPER-CLAD OR XIT CHEMICAL GROUND ROD(S), BUSS BARS, TRANSFORMERS AND DISCONNECT SWITCHES WHERE APPLICABLE, TEMPORARY ELECTRICAL POWER, CONDUIT, LANDSCAPING COMPOUND STONE, CRANES, CORE DRILLING, SLEEPERS AND RUBBER MATTING, REBAR, CONCRETE CAISSONS, PADS AND/OR AUGER MOUNTS, MISCELLANEOUS FASTENERS, CABLE TRAYS, NON-STANDARD ANTENNA FRAMES AND ALL OTHER MATERIAL AND LABOR REQUIRED TO COMPLETE THE JOB ACCORDING TO THE DRAWINGS AND SPECIFICATIONS. IT IS THE POSITION OF T-MOBILE TO APPLY FOR PERMITTING AND CONTRACTOR RESPONSIBLE FOR PICKUP AND PAYMENT OF REQUIRED PERMITS.
3. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, INCLUDING ANSI/EIA/TIA-222, AND COMPLY WITH ATC CONSTRUCTION SPECIFICATIONS.
4. CONTRACTOR SHALL CONTACT LOCAL 811 FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
5. CONTRACTOR SHALL BE RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
6. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
7. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
8. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
9. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH SHALL BE THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
10. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
11. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, GROUNDS DRAINS, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
12. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE T-MOBILE REP PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE T-MOBILE REP PRIOR TO PROCEEDING.
13. EACH CONTRACTOR SHALL COOPERATE WITH THE T-MOBILE REP, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
14. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE T-MOBILE CONSTRUCTION MANAGER.
15. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
16. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR SHALL NOTIFY THE T-MOBILE REP AND ENGINEER OF RECORD IMMEDIATELY.
17. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A COMPLETE AND CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
18. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
19. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH AMERICAN TOWER CORPORATION (ATC) AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
20. CONTRACTOR SHALL FURNISH T-MOBILE AND AMERICAN TOWER CORPORATION (ATC) WITH A PDF MARKED UP AS-BUILT SET OF DRAWINGS UPON COMPLETION OF WORK.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED. ALL ITEMS NOT PROVIDED SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED.
22. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH T-MOBILE REP TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY CONTRACTOR. ALL REQUIRED PERMITS NOT OBTAINED BY T-MOBILE MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH T-MOBILE SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO T-MOBILE FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO T-MOBILE SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
26. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
27. CONTRACTOR SHALL NOTIFY T-MOBILE REP A MINIMUM OF 48 HOURS IN ADVANCE OF POURING CONCRETE OR BACKFILLING ANY UNDERGROUND UTILITIES, FOUNDATIONS OR SEALING ANY WALL, FLOOR OR ROOF PENETRATIONS FOR ENGINEERING REVIEW AND APPROVAL.
28. CONTRACTOR SHALL BE RESPONSIBLE FOR SITE SAFETY INCLUDING COMPLIANCE WITH ALL APPLICABLE OSHA STANDARDS AND RECOMMENDATIONS AND SHALL PROVIDE ALL NECESSARY SAFETY DEVICES INCLUDING PPE AND PPM AND CONSTRUCTION DEVICES SUCH AS WELDING AND FIRE PREVENTION, TEMPORARY SHORING, SCAFFOLDING, TRENCH BOXES/SLOPING, BARRIERS, ETC.
29. THE CONTRACTOR SHALL PROTECT AT HIS OWN EXPENSE, ALL EXISTING FACILITIES AND SUCH OF HIS NEW WORK LIABLE TO INJURY DURING THE CONSTRUCTION PERIOD. ANY DAMAGE CAUSED BY NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, OR BY THE ELEMENTS DUE TO NEGLECT ON THE PART OF THIS CONTRACTOR OR HIS REPRESENTATIVES, EITHER TO THE EXISTING WORK, OR TO HIS WORK OR THE WORK OF ANY OTHER CONTRACTOR, SHALL BE REPAIRED AT HIS EXPENSE TO THE OWNER'S SATISFACTION.
30. ALL WORK SHALL BE INSTALLED IN A FIRST CLASS, NEAT AND WORKMANLIKE MANNER BY MECHANICS SKILLED IN THE TRADE INVOLVED. THE QUALITY OF WORKMANSHIP SHALL BE SUBJECT TO THE APPROVAL OF THE T-MOBILE REP. ANY WORK FOUND BY THE T-MOBILE REP TO BE OF INFERIOR QUALITY AND/OR WORKMANSHIP SHALL BE REPLACED AND/OR REWORKED AT CONTRACTOR EXPENSE UNTIL APPROVAL IS OBTAINED.
31. IN ORDER TO ESTABLISH STANDARDS OF QUALITY AND PERFORMANCE, ALL TYPES OF MATERIALS LISTED HEREINAFTER BY MANUFACTURER'S NAMES AND/OR MANUFACTURER'S CATALOG NUMBER SHALL BE PROVIDED BY THESE MANUFACTURERS AS SPECIFIED.
32. T-MOBILE FURNISHED EQUIPMENT SHALL BE PICKED-UP AT THE T-MOBILE WAREHOUSE, NO LATER THAN 48HR AFTER BEING NOTIFIED INSURED, STORED, UNCRATE, PROTECTED AND INSTALLED BY THE CONTRACTOR WITH ALL APPURTENANCES REQUIRED TO PLACE THE EQUIPMENT IN OPERATION, READY FOR USE. THE CONTRACTOR SHALL BE RESPONSIBLE FOR THE EQUIPMENT AFTER PICKING IT UP.
33. T-MOBILE OR HIS ARCHITECT/ENGINEER RESERVES THE RIGHT TO REJECT ANY EQUIPMENT OR MATERIALS WHICH, IN HIS OWN OPINION ARE NOT IN COMPLIANCE WITH THE CONTRACT DOCUMENTS, EITHER BEFORE OR AFTER INSTALLATION AND THE EQUIPMENT SHALL BE REPLACED WITH EQUIPMENT CONFORMING TO THE REQUIREMENTS OF THE CONTRACT DOCUMENTS BY THE CONTRACTOR AT NO COST TO T-MOBILE OR THEIR ARCHITECT/ENGINEER.

SPECIAL CONSTRUCTION ANTENNA INSTALLATION NOTES:

1. WORK INCLUDED:
   - A. ANTENNA AND COAXIAL CABLES ARE FURNISHED BY T-MOBILE UNDER A SEPARATE CONTRACT. THE CONTRACTOR SHALL ASSIST ANTENNA INSTALLATION CONTRACTOR IN TERMS OF COORDINATION AND SITE ACCESS. ERECTION SUBCONTRACTOR SHALL BE RESPONSIBLE FOR THE PROTECTION OF PERSONNEL.
   - B. INSTALL ANTENNA AS INDICATED ON DRAWINGS AND T-MOBILE SPECIFICATIONS.
   - C. INSTALL GALVANIZED STEEL ANTENNA MOUNTS AS INDICATED ON DRAWINGS.
   - D. INSTALL FURNISHED GALVANIZED STEEL OR ALUMINUM WAVEGUIDE.
   - E. CONTRACTOR SHALL PROVIDE FOUR (4) SETS OF SWEEP TESTS USING ANRITZU-PACKARD 8713B RF SCALAR NETWORK ANALYZER. SUBMIT FREQUENCY DOMAIN REFLECTOMETER(FDR) TESTS RESULTS TO THE PROJECT MANAGER. SWEEP TESTS SHALL BE AS PER ATTACHED RFS "MINIMUM FIELD TESTING RECOMMENDED FOR ANTENNA AND HELIAX COAXIAL CABLE SYSTEMS" DATED 10/5/93. TESTING SHALL BE PERFORMED BY AN INDEPENDENT TESTING SERVICE AND BE BOUND AND SUBMITTED WITHIN ONE WEEK OF WORK COMPLETION.
   - F. INSTALL COAXIAL CABLES AND TERMINATING BETWEEN ANTENNAS AND EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. WEATHERPROOF ALL CONNECTIONS BETWEEN THE ANTENNA AND EQUIPMENT PER MANUFACTURER'S REQUIREMENTS. TERMINATE ALL COAXIAL CABLE THREE (3) FEET IN EXCESS OF ENTRY PORT LOCATION UNLESS OTHERWISE STATED.
   - G. ANTENNA AND COAXIAL CABLE GROUNDING:

i. ALL EXTERIOR #6 GREEN GROUND WIRE "DAISY CHAIN" CONNECTIONS ARE TO BE WEATHER SEALED WITH RFS CONNECTORS/SPLICE WEATHERPROOFING KIT #221213 OR EQUAL.

ii. ALL COAXIAL CABLE GROUNDING KITS ARE TO BE INSTALLED ON STRAIGHT RUNS OF COAXIAL CABLE (NOT WITHIN BENDS).

ALL DISCREPANCIES FROM WHAT IS SHOWN ON THESE CONSTRUCTION DRAWINGS SHALL BE COMMUNICATED TO ATC ENGINEERING IMMEDIATELY FOR CORRECTION OR RE-DESIGN. FAILURE TO COMMUNICATE DIRECTLY WITH ATC ENGINEERING OR ANY CHANGES FROM THE DESIGN CONDUCTED WITHOUT PRIOR APPROVAL FROM ATC ENGINEERING SHALL BE THE SOLE RESPONSIBILITY OF THE GENERAL CONTRACTOR.

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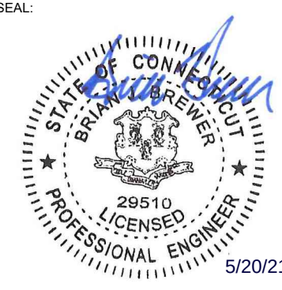
RALEIGH, NC 27601

REV.	DESCRIPTION	BY	DATE
A	PRELIM	SM	04/15/21
0	ISSUED FOR CONSTRUCTION	KC	05/20/21

ATC SITE NUMBER:
370630
ATC SITE NAME:
SALISBURY CT
T-MOBILE SITE NAME:
CTNH547A
SITE ADDRESS:
52 LIBRARY ST.
SALISBURY, CONNECTICUT, 06068

SEAL:



T-Mobile

DATE DRAWN:	05/20/21
ATC JOB NO:	13657492
CUSTOMER ID:	CTNH547A
CUSTOMER #:	CTNH547A

GENERAL NOTES

SHEET NUMBER:	REVISION:
G-002	0

SITE PLAN NOTES:

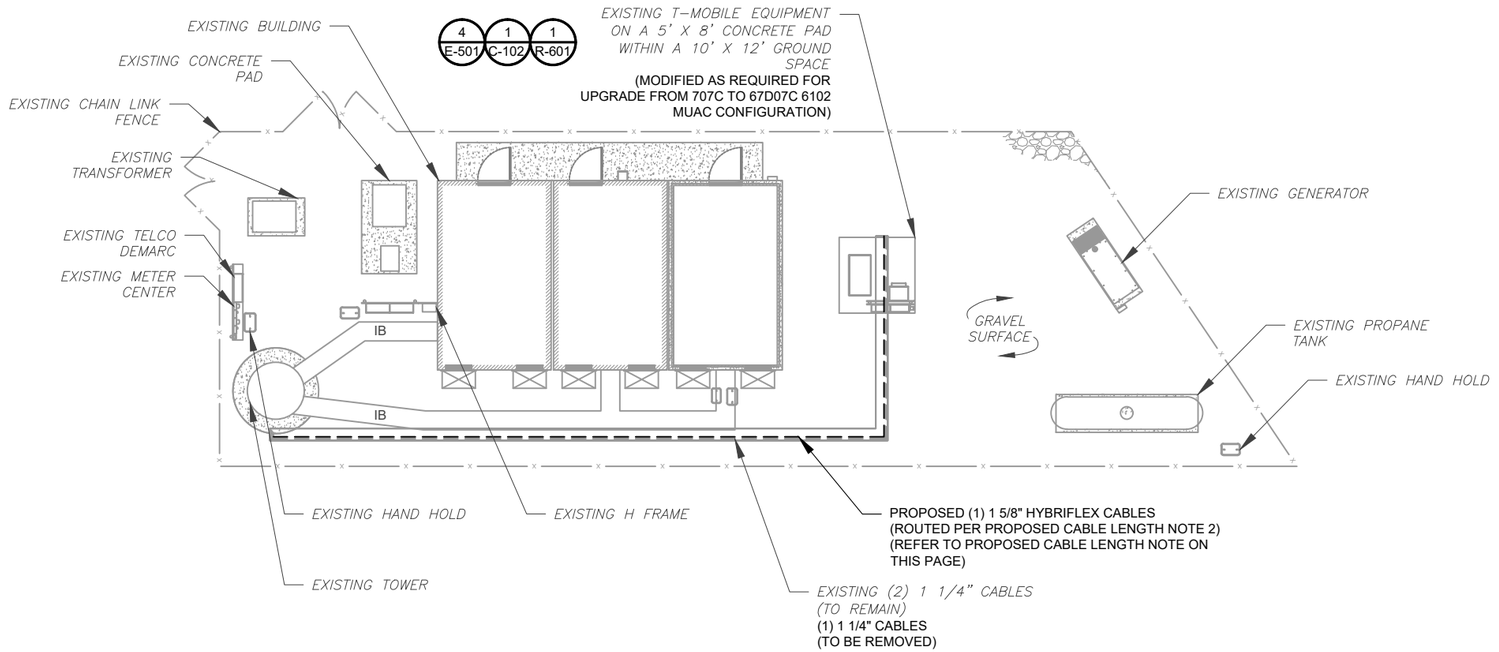
1. THIS SITE PLAN REPRESENTS THE BEST PRESENT KNOWLEDGE AVAILABLE TO THE ENGINEER AT THE TIME OF THIS DESIGN. THE CONTRACTOR SHALL VISIT THE SITE PRIOR TO CONSTRUCTION AND VERIFY ALL EXISTING CONDITIONS RELATED TO THE SCOPE OF WORK FOR THIS PROJECT.

2. ICE BRIDGE, CABLE LADDER, COAX PORT, AND COAX CABLE ARE SHOWN FOR REFERENCE ONLY. CONTRACTOR SHALL CONFIRM THE EXACT LOCATION OF ALL PROPOSED AND EXISTING EQUIPMENT AND STRUCTURES DEPICTED ON THIS PLAN. BEFORE UTILIZING EXISTING CABLE SUPPORTS, COAX PORTS, INSTALLING NEW PORTS OR ANY OTHER EQUIPMENT, CONTRACTOR SHALL VERIFY ALL ASPECTS OF THE COMPONENTS MEET THE ATC SPECIFICATIONS.

3. NO ELECTRICAL SCOPE IS INCLUDED IN THIS PROJECT.

LEGEND

⊗	GROUNDING TEST WELL
ATS	AUTOMATIC TRANSFER SWITCH
B	BOLLARD
CSC	CELL SITE CABINET
D	DISCONNECT
E	ELECTRICAL
F	FIBER
GEN	GENERATOR
G	GENERATOR RECEPTACAL
HH, V	HAND HOLE, VAULT
IB	ICE BRIDGE
K	KENTROX BOX
LC	LIGHTING CONTROL
M	METER
PB	PULL BOX
PP	POWER POLE
T	TELCO
TRN	TRANSFORMER
——x——	CHAINLINK FENCE



PROPOSED CABLE LENGTH:

1. ESTIMATED LENGTH OF PROPOSED CABLE IS **203'**. ESTIMATED LENGTH OF CABLE WAS PROVIDED BY CUSTOMER OR CALCULATED BY ADDING THE RAD CENTER AND THE DISTANCE FROM THE SHELTER ENTRY PLATE TO THE TOWER (ALONG THE ICE BRIDGE) AND A SAFETY FACTOR MEASUREMENT OF 15% (OF THE TWO PREVIOUS VALUES), CDS DEFER TO GREATEST CABLE LENGTH.
2. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.

1 DETAILED SITE PLAN

0 10' 20'

SCALE: 1"=10' (11X17)
1"=5' (22X34)

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370630
ATC SITE NAME:
SALISBURY CT
T-MOBILE SITE NAME:
CTNH547A
SITE ADDRESS:
52 LIBRARY ST.
SALISBURY, CONNECTICUT, 06068

SEAL:

T-Mobile

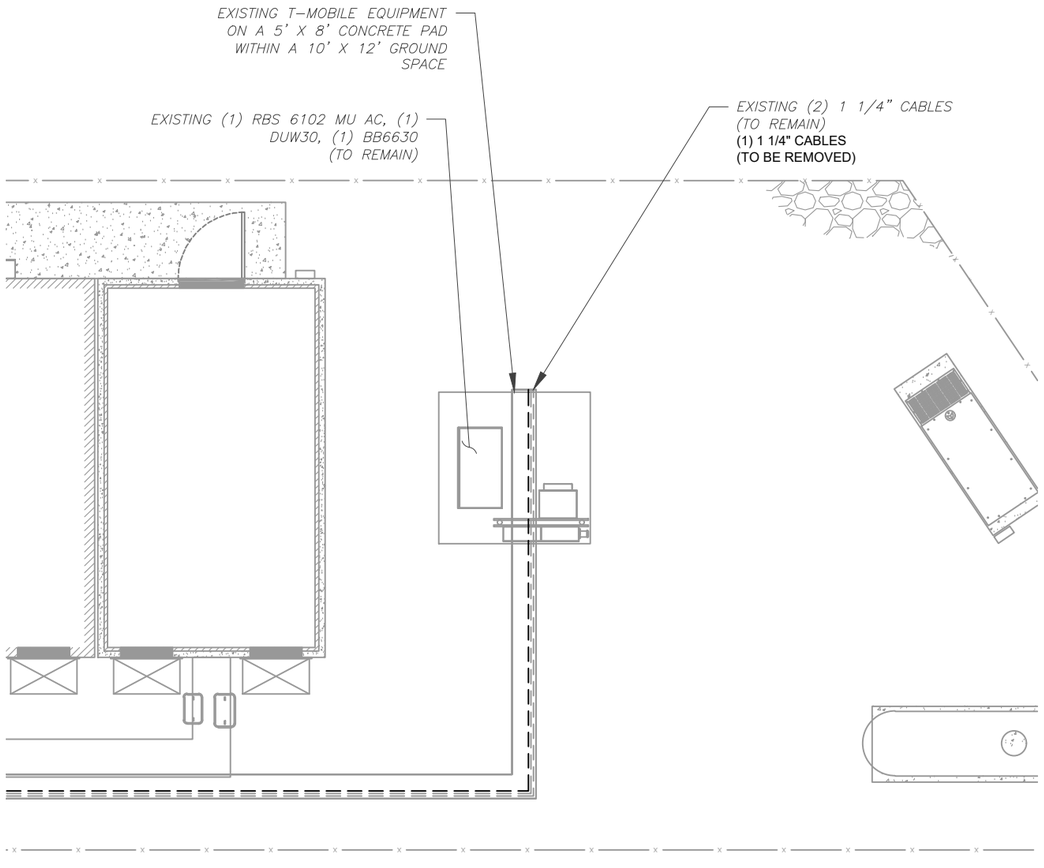
DATE DRAWN:	05/20/21
ATC JOB NO:	13657492
CUSTOMER ID:	CTNH547A
CUSTOMER #:	CTNH547A

DETAILED SITE PLAN

SHEET NUMBER:	REVISION:
C-101	0

SITE PLAN NOTES:

1. CONTRACTOR TO VERIFY THERE IS NO LIVE AAV FIBER RUNNING THROUGH EXISTING DEAD EQUIPMENT. IF SO, THIS WILL NEED TO BE RERUN THROUGH CONDUIT PRIOR TO REMOVING DEAD 2G (6201 CABS) EQUIPMENT.
2. REMOVE EXISTING 2G CABINETS, AND POWER / TELCO WHIPS ASSOCIATED WITH THE DEAD EQUIPMENT IF APPLICABLE.
3. ALL OPEN PORTS NEED TO BE SEALED / WEATHERPROOFED PROPERLY
4. ALL UNNEEDED / EXCESS EQUIPMENT AND GARBAGE TO BE REMOVED FROM EQUIPMENT AREA. DISPOSE OF MATERIALS PROPERLY OFF SITE.

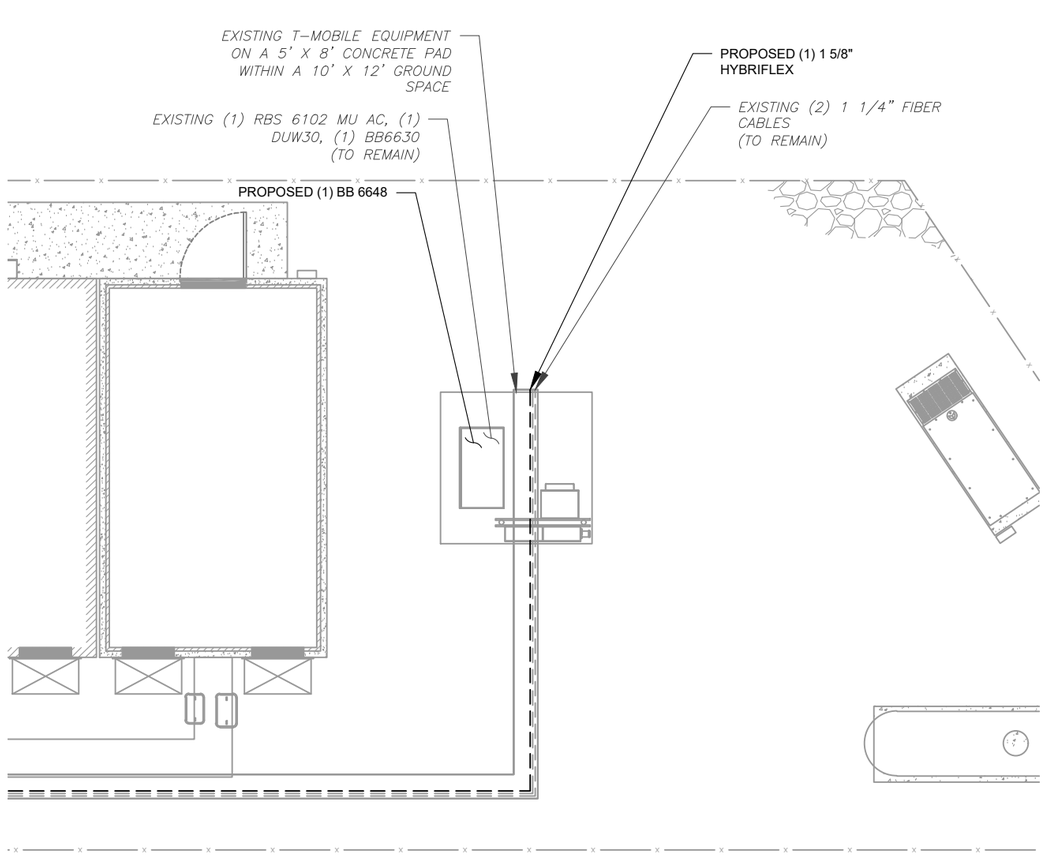


1 EXISTING GROUND EQUIPMENT LAYOUT

0 5' 10'

SCALE: 1"=5' (11X17)
1"=2.5' (22X34)

T-MOBILE CM APPROVAL REQUIRED BEFORE INSTALLING CABINETS



2 PROPOSED GROUND EQUIPMENT LAYOUT

0 5' 10'

SCALE: 1"=5' (11X17)
1"=2.5' (22X34)

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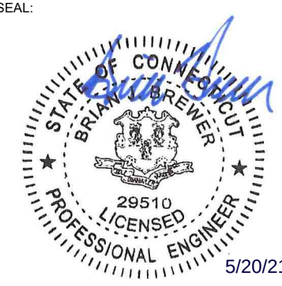
SALISBURY, CONNECTICUT, 06068

SEAL:

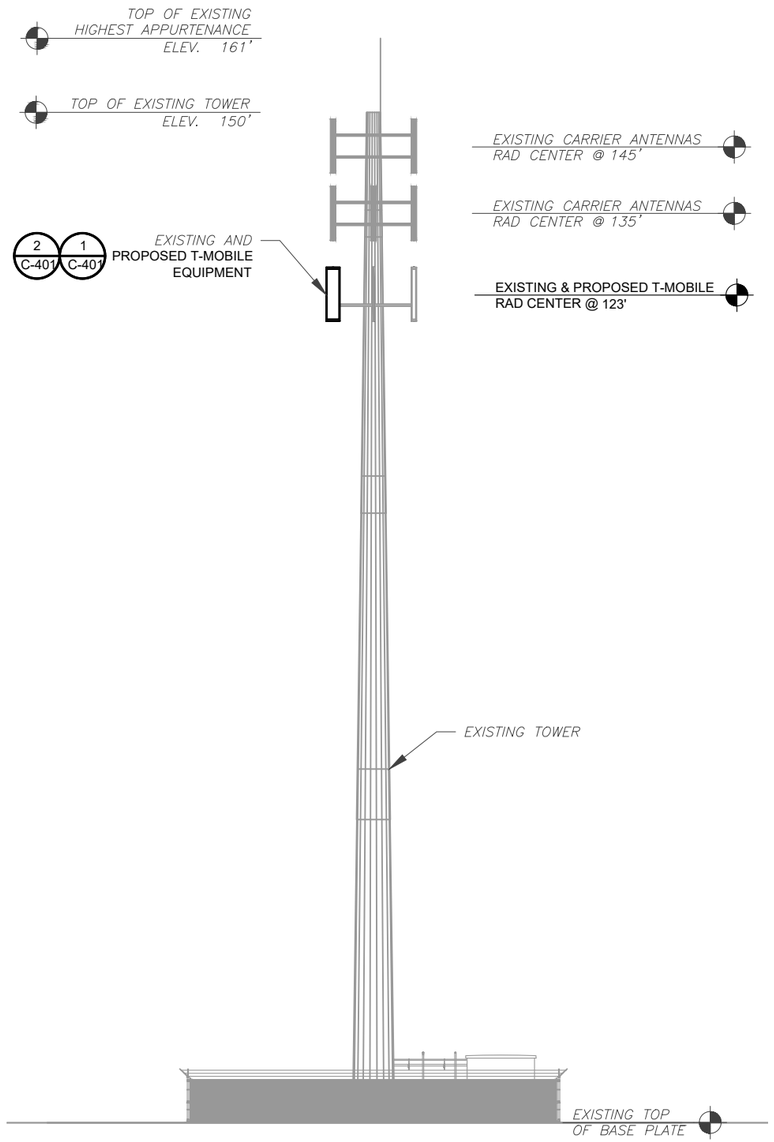


T-Mobile

DATE DRAWN:	05/20/21
ATC JOB NO:	13657492
CUSTOMER ID:	CTNH547A
CUSTOMER #:	CTNH547A

DETAILED GROUND PLAN

SHEET NUMBER:	REVISION:
C-102	0



1 TOWER ELEVATION
SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY SMJ, DATED 04/22/21, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.

TOWER NOTE:

1. IT IS THE CONTRACTOR'S RESPONSIBILITY TO CONFIRM WITH THE PROJECT MANAGER THAT THEY HAVE THE MOST RECENT VERSION OF THE STRUCTURAL ANALYSIS BEFORE COMMENCING WORK. EXISTING AND PROPOSED TOWER APPURTENANCES, MOUNTS, AND ANTENNAS ARE SHOWN BASED ON THE STRUCTURAL ANALYSIS.
2. WHERE APPLICABLE, ALL NEW ANTENNAS, EQUIPMENT, MOUNTS, CABLING, ETC. SHALL BE PAINTED/SOCKED TO MATCH EXISTING EQUIPMENT IN ACCORDANCE WITH FAA, JURISDICTION, AND/OR OTHER LOCAL REQUIREMENTS.
3. ROUTE PROPOSED CABLES ALONG SAME PATH AS EXISTING CABLES AND IN ACCORDANCE WITH STRUCTURAL ANALYSIS. IF ADEQUATE SPACE EXISTS, ROUTE CABLES THROUGH ENTRY PORT HOLE, UP INSIDE OF MONOPOLE, AND THROUGH EXIT PORT HOLE. IF ROUTING OUTSIDE THE MONOPOLE, ATTACH CABLES USING STAND-OFF ADAPTERS MOUNTED TO TOWER USING STAINLESS STEEL BANDING. ADEQUATELY SECURE CABLES USING EITHER APPROPRIATELY SIZED STAINLESS STEEL SNAP-INS OR MOUNTING HARDWARE AND BRACKETS AS SPECIFIED BY CABLE MANUFACTURER.
4. TOWER ELEVATIONS ARE MEASURED FROM TOP OF BASE PLATE TO MATCH STRUCTURAL ANALYSIS. ELEVATIONS DO NOT REFLECT TRUE ABOVE GROUND LEVEL (A.G.L.)

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370630
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SITE ADDRESS:
52 LIBRARY ST.
SALISBURY, CONNECTICUT, 06068

SEAL:

5/20/21

T-Mobile

DATE DRAWN:	05/20/21
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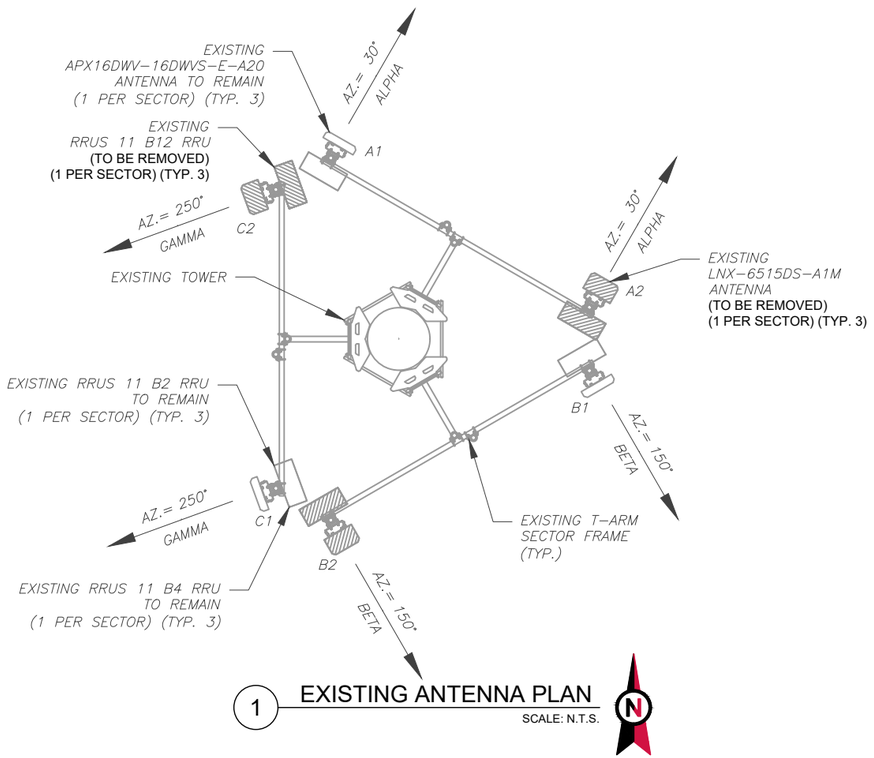
CUSTOMER ID:	CTNH547A
CUSTOMER #:	CTNH547A

TOWER ELEVATION

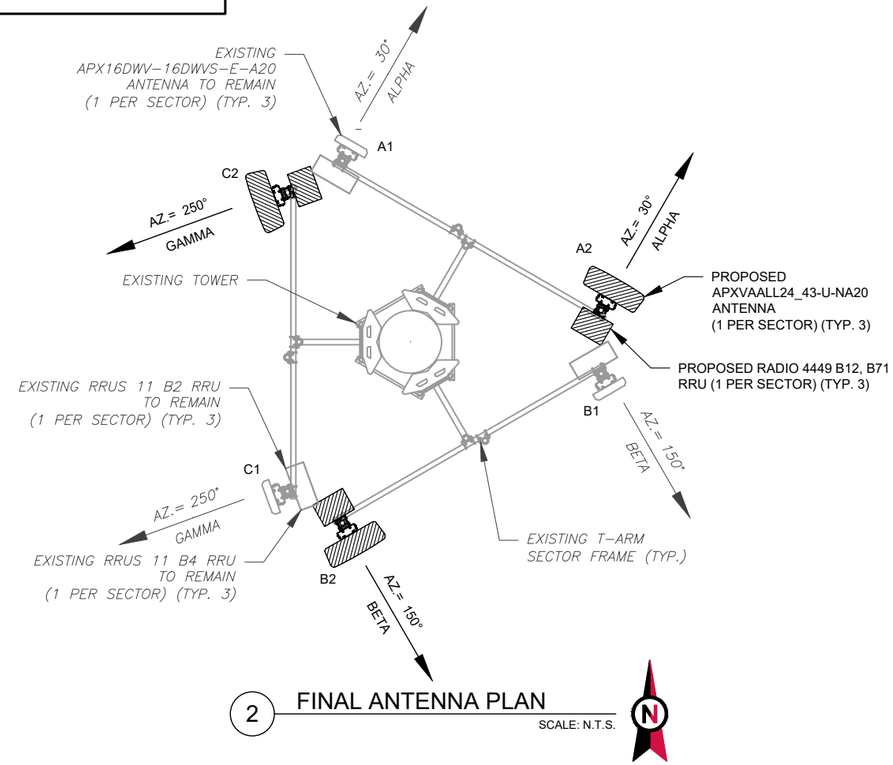
SHEET NUMBER:	REVISION:
C-201	0



1 EXISTING ANTENNA PLAN

SCALE: N.T.S.

PER MOUNT ANALYSIS COMPLETED BY SMJ, DATED 04/22/21, THE EXISTING MOUNT CAN ADEQUATELY SUPPORT THE PROPOSED LOADING.



2 FINAL ANTENNA PLAN

SCALE: N.T.S.

EXISTING ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	123'	30°	A1	APX16DWV-16DWVS-E-A20	U1900, L2100	0°/0°	RMN	RRUS11 B2, RRUS11 B4	RMN
			A2	LNX-6515DS-A1M	L700	0°/0°	RMV	RRUS11 B12	RMV
BETA	123'	150°	B1	APX16DWV-16DWVS-E-A20	U1900, L2100	0°/0°	RMN	RRUS11 B2, RRUS11 B4	RMN
			B2	LNX-6515DS-A1M	L700	0°/0°	RMV	RRUS11 B12	RMV
GAMMA	123'	250°	C1	APX16DWV-16DWVS-E-A20	U1900, L2100	0°/0°	RMN	RRUS11 B2, RRUS11 B4	RMN
			C2	LNX-6515DS-A1M	L700	0°/0°	RMV	RRUS11 B12	RMV

NOTES

1. CONFIRM WITH T-MOBILE REP FOR APPLICABLE UPDATES/REVISIONS AND MOST RECENT RFDS FOR NSN CONFIGURATION (CONFIG). GC TO CAP ALL UNUSED PORTS.
2. CONFIRM SPACING OF PROPOSED EQUIP DOES NOT CAUSE TOWER CONFLICTS NOR IMPEDE TOWER CLIMBING PEGS.

STATUS ABBREVIATIONS

RMV: TO BE REMOVED
RMN: TO REMAIN
REL: TO BE RELOCATED
ADD: TO BE ADDED

CABLE LENGTHS FOR JUMPERS

JUNCTION BOX TO RRU: 15'
RRU TO ANTENNA: 10'

FINAL ANTENNA SCHEDULE

LOCATION			ANTENNA SUMMARY					NON ANTENNA SUMMARY	
SECTOR	RAD	AZ	POS	ANTENNA	BAND	MECH/ELEC D-TILT	STATUS	ADDITIONAL TOWER MOUNTED EQUIPMENT	STATUS
ALPHA	123'	30°	A1	APX16DWV-16DWVS-E-A20	U1900, L2100	0°/0°	RMN	RRUS11 B2, RRUS11 B4	RMN
			A2	APXVAALL24_43-U-NA20	L700, L600, N600	0°/0°	ADD	RADIO 4449 B71 B85A	ADD
BETA	123'	150°	B1	APX16DWV-16DWVS-E-A20	U1900, L2100	0°/0°	RMN	RRUS11 B2, RRUS11 B4	RMN
			B2	APXVAALL24_43-U-NA20	L700, L600, N600	0°/0°	ADD	RADIO 4449 B71 B85A	ADD
GAMMA	123'	250°	C1	APX16DWV-16DWVS-E-A20	U1900, L2100	0°/0°	RMN	RRUS11 B2, RRUS11 B4	RMN
			C2	APXVAALL24_43-U-NA20	L700, L600, N600	0°/0°	ADD	RADIO 4449 B71 B85A	ADD

EXISTING FIBER DISTRIBUTION/OVP BOX		EXISTING CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
–	–	–	(2) 1 1/4"	RMN
–	–	–	(1) 1 1/4"	RMV

FINAL FIBER DISTRIBUTION / OVP BOX		FINAL CABLING SUMMARY		
MODEL NUMBER	STATUS	COAX	HYBRID	STATUS
-	-	-	(2) 1 1/4"	RMN
-	-	-	(1) 1 5/8"	ADD

3 EQUIPMENT SCHEDULES

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52 LIBRARY ST.
SALISBURY, CONNECTICUT, 06068

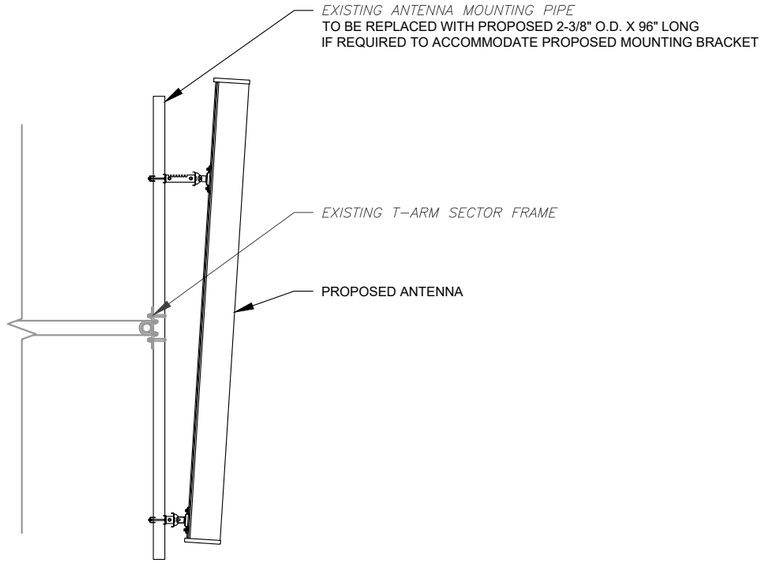
SEAL:

T-Mobile

DATE DRAWN:	05/20/21
ATC JOB NO:	13657492
CUSTOMER ID:	CTNH547A
CUSTOMER #:	CTNH547A

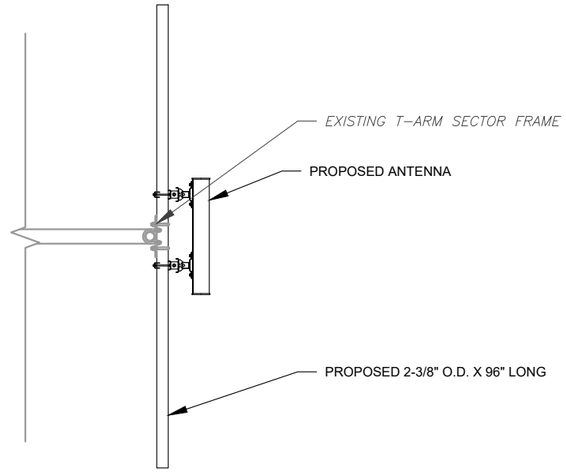
ANTENNA INFORMATION & SCHEDULE

SHEET NUMBER:	REVISION:
C-401	0



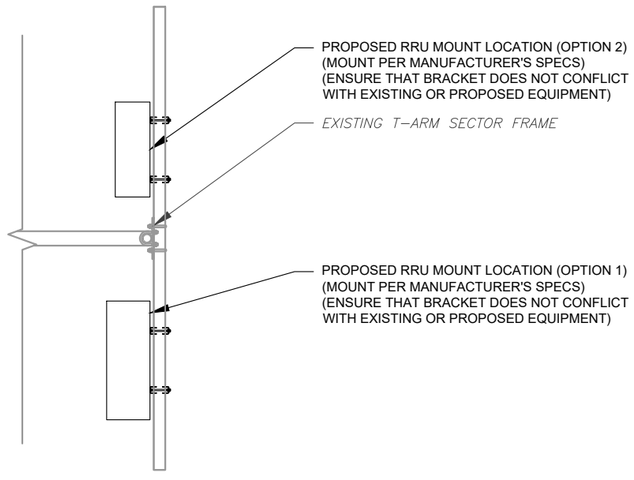
1 PROPOSED ANTENNA MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.



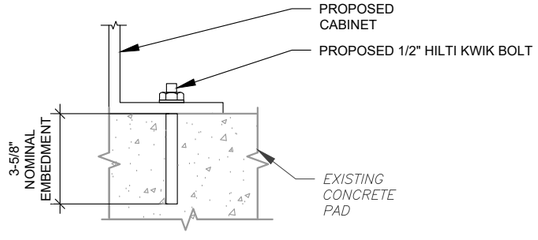
2 PROPOSED 5G ANTENNA MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.



3 PROPOSED RRU MOUNTING DETAIL - TYPICAL

SCALE: N.T.S.



NOTE:

INSTALL HILTI KWIK BOLT ANCHORS STRICTLY PER INSTALLATION INSTRUCTIONS INCLUDED WITH PRODUCT OR FOUND ONLINE AT WWW.US.HILTI.COM. PROPER INSTALLATION IS CRITICAL FOR FULL PERFORMANCE.

4 CABINET ATTACHMENT DETAIL

SCALE: NOT TO SCALE

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SALISBURY CT

T-MOBILE SITE NAME:

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SALISBURY, CONNECTICUT, 06068

SEAL:

T-Mobile

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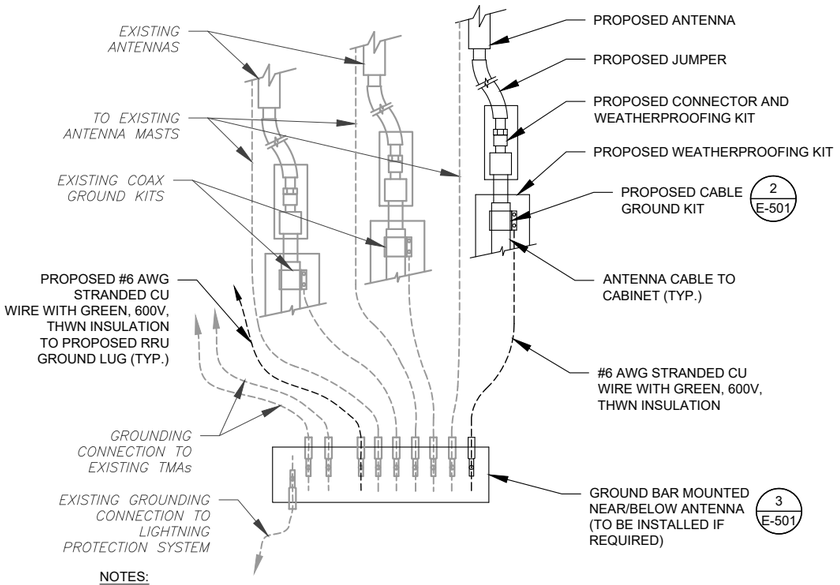
CUSTOMER ID:	CTNH547A
CUSTOMER #:	CTNH547A

CONSTRUCTION DETAILS

SHEET NUMBER:	REVISION:
C-501	0

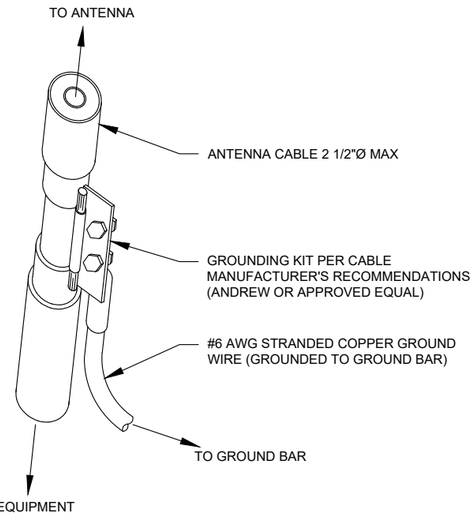


NOTES:

1. THIS DETAIL IS INTENDED TO SHOW THE GENERAL GROUNDING REQUIREMENTS. SLIGHT ADJUSTMENTS MAY BE REQUIRED BASED ON EXISTING SITE CONDITIONS. THE CONTRACTOR SHALL MAKE FIELD ADJUSTMENTS AS NEEDED AND INFORM THE CONSTRUCTION MANAGER OF ANY CONFLICTS.
2. SITE GROUNDING SHALL COMPLY WITH T-MOBILE GROUNDING STANDARDS, LATEST EDITION, AND COMPLY WITH T-MOBILE GROUNDING CHECKLIST, LATEST VERSION. WHEN NATIONAL AND LOCAL GROUNDING CODES ARE MORE STRINGENT THEY SHALL GOVERN.

1 TYPICAL ANTENNA GROUNDING DIAGRAM

SCALE: N.T.S.

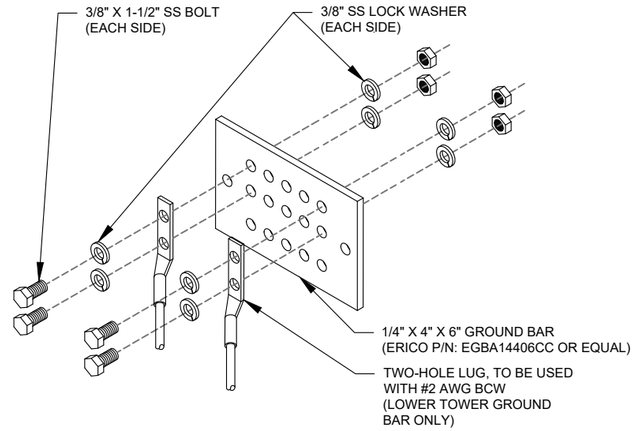


GROUND KIT NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. CONTRACTOR SHALL PROVIDE WEATHERPROOFING KIT (ANDREW PART NUMBER 221213) AND INSTALL/TAPE PER MANUFACTURER'S SPECIFICATIONS.

2 CABLE GROUND KIT CONNECTION DETAIL

SCALE: N.T.S.

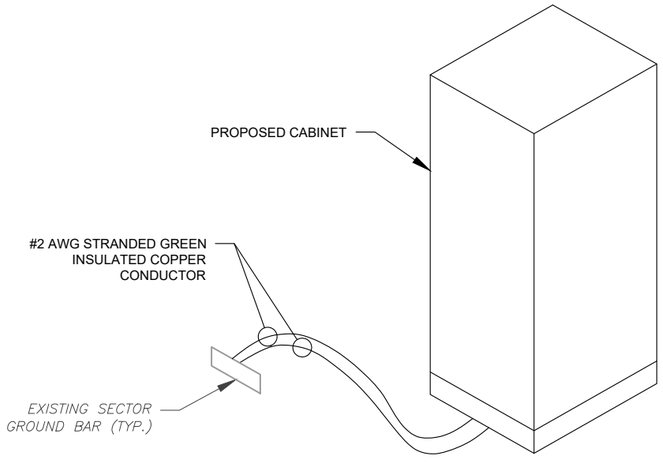


GROUND BAR NOTES:

1. GROUND BAR KITS COME WITH ALL HARDWARE, NUTS, BOLTS, WASHERS, ETC. EXCEPT THE STRUCTURAL MOUNTING MEMBER(S).
2. GROUND BAR TO BE BONDED DIRECTLY TO TOWER.

3 TOWER GROUND BAR DETAIL

SCALE: N.T.S.



4 CABINET GROUNDING DETAIL

SCALE: N.T.S.

ELECTRICAL NOTES:

1. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO COORDINATE WITH THE T-MOBILE REPRESENTATIVE AND LOCAL UTILITY COMPANY FOR THE INSTALLATION OF CONDUITS, CONDUCTORS, BREAKERS, DISCONNECTS, OR ANY OTHER EQUIPMENT REQUIRED FOR ELECTRICAL SERVICE. ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH LATEST EDITION OF THE STATE AND NATIONAL CODES, ORDINANCES AND REGULATIONS APPLICABLE TO THIS PROJECT.
2. ATC HAS NOT VERIFIED ANY EXISTING T-MOBILE GROUND EQUIPMENT OR ELECTRICAL LOADING. PROPOSED WORK BASED ON INSTALLATION CONFIGURATION PROVIDED BY T-MOBILE. CONTRACTOR TO VERIFY EXISTING T-MOBILE PANEL HAS SUFFICIENT SPACE FOR PROPOSED BREAKER. PROPOSED CABLE AND CONDUIT SHALL BE MINIMUM SIZE PER BELOW IN CHART.
3. FOR SPECIFIC CABINET / ANCILLARY EQUIPMENT WIRING REQUIREMENTS, THE T-MOBILE CONTRACTOR SHOULD REFERENCE DESIGN DOCUMENTS PROVIDED BY T-MOBILE FOR THIS CURRENT PROJECT CONFIGURATION, IN ACCORDANCE WITH LOCAL JURISDICTION REQUIREMENTS & NEC STANDARDS & PRACTICES.

OCPD SIZE	WIRE SIZE	GROUND SIZE	CONDUIT SIZE
80A/2P	2#3 AWG	#8 AWG	1-1/4"
100/2P	2#2 AWG	#8 AWG	1-1/4"
125A/2P	2#1 AWG	#8 AWG	1-1/2"
150A/2P	2#1/0 AWG	#8 AWG	1-1/2"

AMERICAN TOWER®

Kimley»Horn

COA: PEC.0000738
421 FAYETTEVILLE ST, SUITE 600
RALEIGH, NC 27601

REV.	DESCRIPTION	BY	DATE
A	PRELIM	SM	04/15/21
0	ISSUED FOR CONSTRUCTION	KC	05/20/21

ATC SITE NUMBER:
370630
ATC SITE NAME:
SALISBURY CT
T-MOBILE SITE NAME:
CTNH547A
SITE ADDRESS:
52 LIBRARY ST.
SALISBURY, CONNECTICUT, 06068

SEAL:

T-Mobile

DATE DRAWN:	05/20/21
ATC JOB NO:	13657492
CUSTOMER ID:	CTNH547A
CUSTOMER #:	CTNH547A

GROUNDING DETAILS

SHEET NUMBER:	REVISION:
E-501	0

Section 5 - RAN Equipment

Existing RAN Equipment	
Template:	707C Tower
Enclosure	1
Enclosure Type	RBS 6102 MU AC
Baseband	DUW30 (U1900); BB 6630 (L2100, L700)
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* **(x 2)**

Proposed RAN Equipment	
Template:	67D07C 6102 MUAC
Enclosure	1
Enclosure Type	RBS 6102 MU AC
Baseband	DUW30 (U1900); BB 6630 (L2100); BB 6648 (L700, L600, N600)
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* **(x 2)**; Ericsson Hybrid Trunk 6/24 4AWG 100m

RAN Scope of Work:

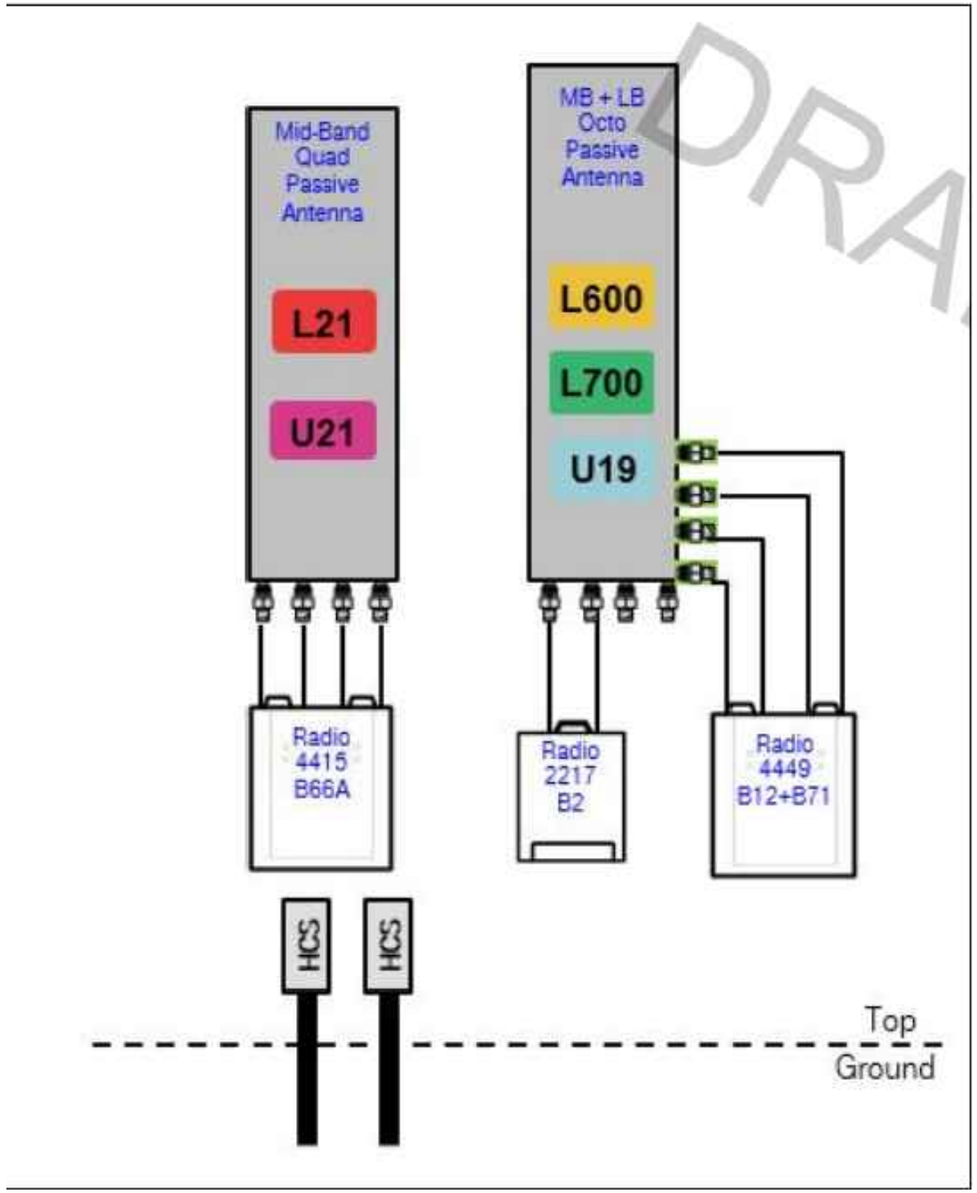
*** Existing Cabinet is RBS6102 ***

Replace (1) DUS41 with (1) BB6630 for LTE.
Add (1) BB6648 for future 5G

200 amp service existing

Add (1) 6X12 HCS
Existing: (2) HCS

1 CABINET CONFIGURATION
SCALE: NOT TO SCALE

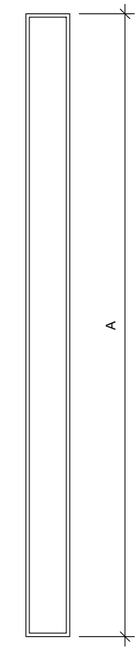


2 ANTENNA CONFIGURATION
SCALE: NOT TO SCALE

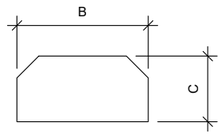
NOTE: THIS SHEET CREATED BY OTHERS AND PROVIDED BY REQUEST OF CUSTOMER WITHOUT EDIT.

SUPPLEMENTAL

SHEET NUMBER:	REVISION:
R-601	0



FRONT VIEW

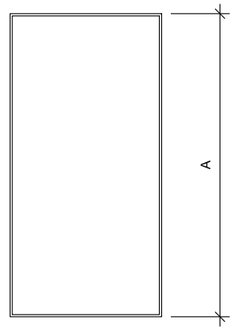


TOP VIEW

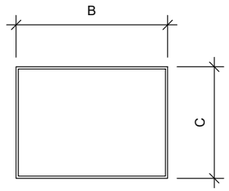
1 ANTENNA SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

ANTENNA SPECIFICATIONS				
ANTENNA MODEL	A	B	C	WEIGHT (LBS)
APXVAALL24_43-U-NA20	95.9"	24.0"	8.5"	122.8



FRONT VIEW



TOP VIEW

2 RRU SPECIFICATIONS

FOR ILLUSTRATIVE PURPOSES ONLY - NOT TO SCALE

RRU SPECIFICATIONS				
RRU MODEL	A	B	C	WEIGHT (LBS)
RADIO 4449 B12, B71	15.0"	13.2"	10.5"	75

SUPPLEMENTAL

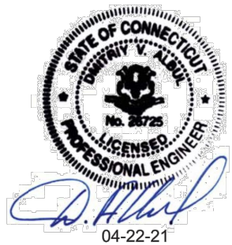
SHEET NUMBER: R-602

REVISION: 0

SMJ International

SMJ International LLC
49030 Pontiac Trail, Suite 100
Wixom, MI 48393
(616) 745-4777
info@smj-llc.com

STRUCTURAL EVALUATION LETTER
ANTENNA MOUNT ANALYSIS



04-22-21

SITE INFORMATION:

ATC Site Name:	SALISBURY CT, CT
ATC Site Number:	370630
ATC Engineering Number:	13657492_C8_02
Site Type:	Monopole Tower
Site Address:	52 Library Street, Salisbury, Litchfield County, CT
T-Mobile Site Name:	CTNH547A
T-Mobile Site Number:	CTNH547A

CURRENT WIND CRITERIA:

1. ANSI/TIA-222-H Standard

DATA SOURCES:

1. Preview Exhibit by American Tower Corporation
2. Radio Frequency Data Sheet by T-Mobile (Version 4), dated February 9, 2021
3. Mount Analysis Report by CLS Engineering PLLC (Project No. 41124-12948441-01-MA-R1), dated August 26, 2019
4. Mount Photos by American Tower Corporation, dated October 31, 2018

ASSUMPTIONS:

1. Tower mount and connections were built in accordance with the manufacturer's specifications, ANSI/TIA-222 standard, and governing building code.
2. The tower mounting system and connections have been maintained in accordance with the manufacturer's specification.
3. Tower mount connections and attachments are assumed not to control the design of mounting system and have been assumed adequate based on main member capacities.

Table 1 - Final Configuration

Mount Centerline (ft)	Antenna Centerline (ft)	Antenna Model	Mount Pipe Position Number (view from behind)	Antenna Mount System
122.0	123.0	(3) RFS APXVAALL24 43-U-NA20	3	(3) 12,5' T-Arms with Proposed op Support Rails
		(3) RFS APX16DWV-16DWVS-E-A20	1	
		(3) Ericsson Radio 4449 B71 B85A	3	
		(3) Ericsson RRUS 11 B4	1	
		(3) Ericsson RRUS 11 B2	1	

CONCLUSION:

Based on our analysis, we have determined the existing mount system **IS** sufficient for the final loading configuration, **considering modifications detailed in Mount Analysis by CLS Engineering (Project No. 12948441), dated August 6, 2019 have been completed**. If existing conditions in the field differ from those shown on the above referenced documents or the antenna loading is modified to be other than that shown on Table 1, this review letter will be required to be revised.

Table 2 - Mount Analysis Results

Mount Centerline (ft)	Structural Components	Controlling Usage	Pass/Fail	Necessary Modification
122.0	**Frame Rail**	**52%**	**Sufficient (67%)**	-
	Arm	**51%**		
	Top Support Rails	**25%**		
	Mount Pipes	**54%**		
	Bolt Connections	**67%**		

We at SMJ International, LLC appreciate the opportunity of providing our continuing professional services. If you have any questions or need further assistance on this or any other projects, please give us a call.

1 MOUNT ANALYSIS

NOTE: THIS SHEET WAS CREATED BY OTHERS AND PROVIDED AT THE REQUEST OF THE CUSTOMER WITHOUT EDIT. PLEASE REFERENCE THE MOUNT ANALYSIS REPORT FOR COMPLETE MOUNT ANALYSIS CALCULATIONS AND DETAILS. SUPPLEMENTAL PAGES INCLUDED IN THE CONSTRUCTION DRAWINGS ARE FOR REFERENCE ONLY. GENERAL CONTRACTOR IS TO VERYIFY THEY HAVE THE MOST RECENT MOUNT ANALYSIS PRIOR TO CONTRUCTION.

SUPPLEMENTAL

SHEET NUMBER: R-603

REVISION: 0

SMJ International

SMJ International LLC
49030 Pontiac Trail, Suite 100
Wixom, MI 48393
(616) 745-4777
info@smj-llc.com

04-22-21

STRUCTURAL EVALUATION LETTER
ANTENNA MOUNT ANALYSIS

SITE INFORMATION:

ATC Site Name:	SALISBURY CT, CT
ATC Site Number:	370630
ATC Engineering Number:	13657492_C8_02
Site Type:	Monopole Tower
Site Address:	52 Library Street, Salisbury, Litchfield County, CT
T-Mobile Site Name:	CTNH547A
T-Mobile Site Number:	CTNH547A

CURRENT WIND CRITERIA:

1. ANSI/TIA-222-H Standard

DATA SOURCES:

1. Preview Exhibit by American Tower Corporation
2. Radio Frequency Data Sheet by T-Mobile (Version 4), dated February 9, 2021
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CONCLUSION:

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Table 2 - Mount Analysis Results

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	Arm	**51%**		
	Top Support Rails	**25%**		
	Mount Pipes	**54%**		
	Bolt Connections	**67%**		

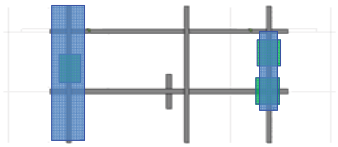
We at SMJ International, LLC appreciate the opportunity of providing our continuing professional services. If you have any questions or need further assistance on this or any other projects, please give us a call.

SMJ International

Date:	4/22/2021		**Decimal Degrees**	
Site:	SALISBURY CT, CT		**Latitude:**	41.9808
Engineer:	DVA		**Longitude:**	-73.4183
Location:	LITCHFIELD	CT		
Project No:	13657492_C8_02			
Carrier:	T-Mobile			
Mount Type:	Sector Mount			
TIA Rev.	H		**Mount Existing?**	Existing
ASCE Standard	ASCE 7-16		**Run Seismic?**	Yes

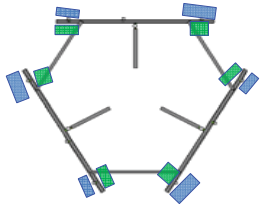
Ultimate Wind Speed:	113	mph				q_z:	30.19	psf
Exposure Category:	B		**Esc. Ice:**	0.970	in	$q_{z\,ice}$:	4.08	psf
Service Wind:	30	mph	**I:**	1.00		$q_{z\,live}$:	2.29	psf
Risk Category:	II		G_h:	1.00				
Ice Thickness:	1	in	Z_g:	1200		**S1:**	0.054	
Ice Wind Speed:	40	mph	K_{zmin}:	0.70		**Sds:**	0.177	
Centerline AGL	123	ft	**α:**	7.00		**Cs:**	0.089	
Ground Elevation	665.91	ft	K_z:	1.05		**Cs min:**	0.030	
Site Soil:	D (Default)		K_d:	0.95				
Topographic Method:	2		K_{zt}:	1.000				
Topographic Category:	1		**Ks:**	1.00				
			Ke:	0.976				
			Ka:	0.90				
			Kes(Wind)	0.950				
			Kes(Ice)	0.850				

ELEVATION VIEW



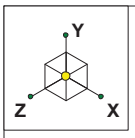
Alpha	M3	M2
Beta	M37	M36
Gamma	M20	M19

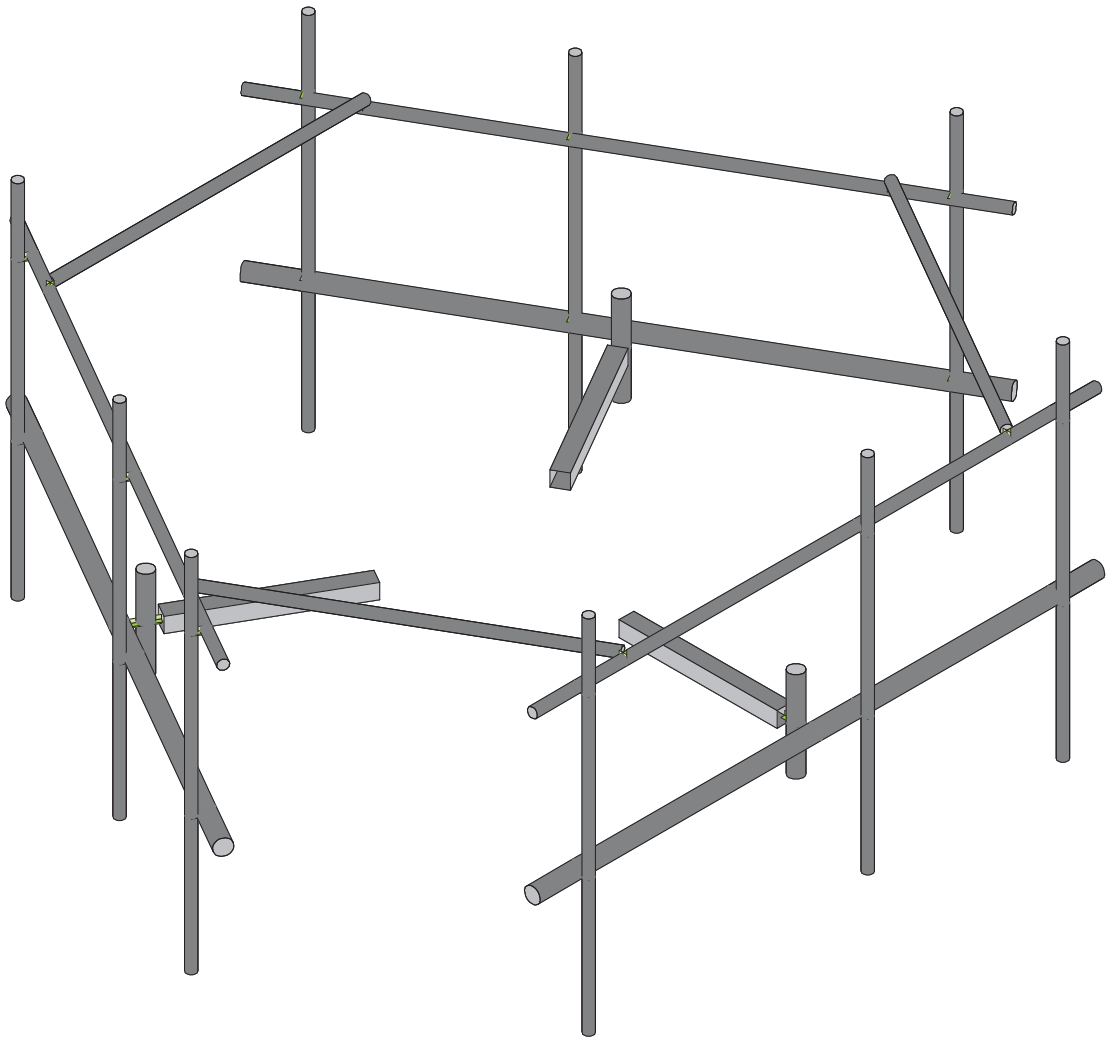
PLAN VIEW



Antennas		Existing / Proposed	Weight (lb)	Height (in)	Width (in)	Depth (in)	Type	Member Labels	Wind Load (F_A), lb				Wind Load Ice Case (F_A), lb					Wind Load Live Case (F_A), lb				Seismic Load, lb		
									0 deg	30 deg	60 deg	90 deg	0 deg	30 deg	60 deg	90 deg	Weightl ce	0 deg	30 deg	60 deg	90 deg	0 deg	90 deg	Vertical
RFS/CELWAVE	APXVAALL24 43-U-NA20	Proposed	122.80	95.9	24	8.5	Flat	M3, M37, M20	550	472	316	237	82	72	51	40	256	42	36	24	18	11	11	25
RFS/CELWAVE	APX16DWV-16DWVS-E-A20	Existing	41.80	59.9	13	3.15	Flat	M2, M36, M19	190	159	96	64	30	26	18	14	87	14	12	7	5	4	4	8
ERICSSON	Radio 4449 B71 B85A	Proposed	75.00	15	13.2	10.5	Flat	M3, M37, M20	45	43	38	36	8	7	7	6	27	3	3	3	3	7	7	15
ERICSSON	RRUS 11 B4	Existing	50.70	19.7	17	7.2	Flat	M2, M36, M19	76	65	43	32	13	11	8	6	39	6	5	3	2	4	4	10
ERICSSON	RRUS 11 B2	Existing	50.70	19.7	17	7.2	Flat	M2, M36, M19	76	65	43	32	13	11	8	6	39	6	5	3	2	4	4	10

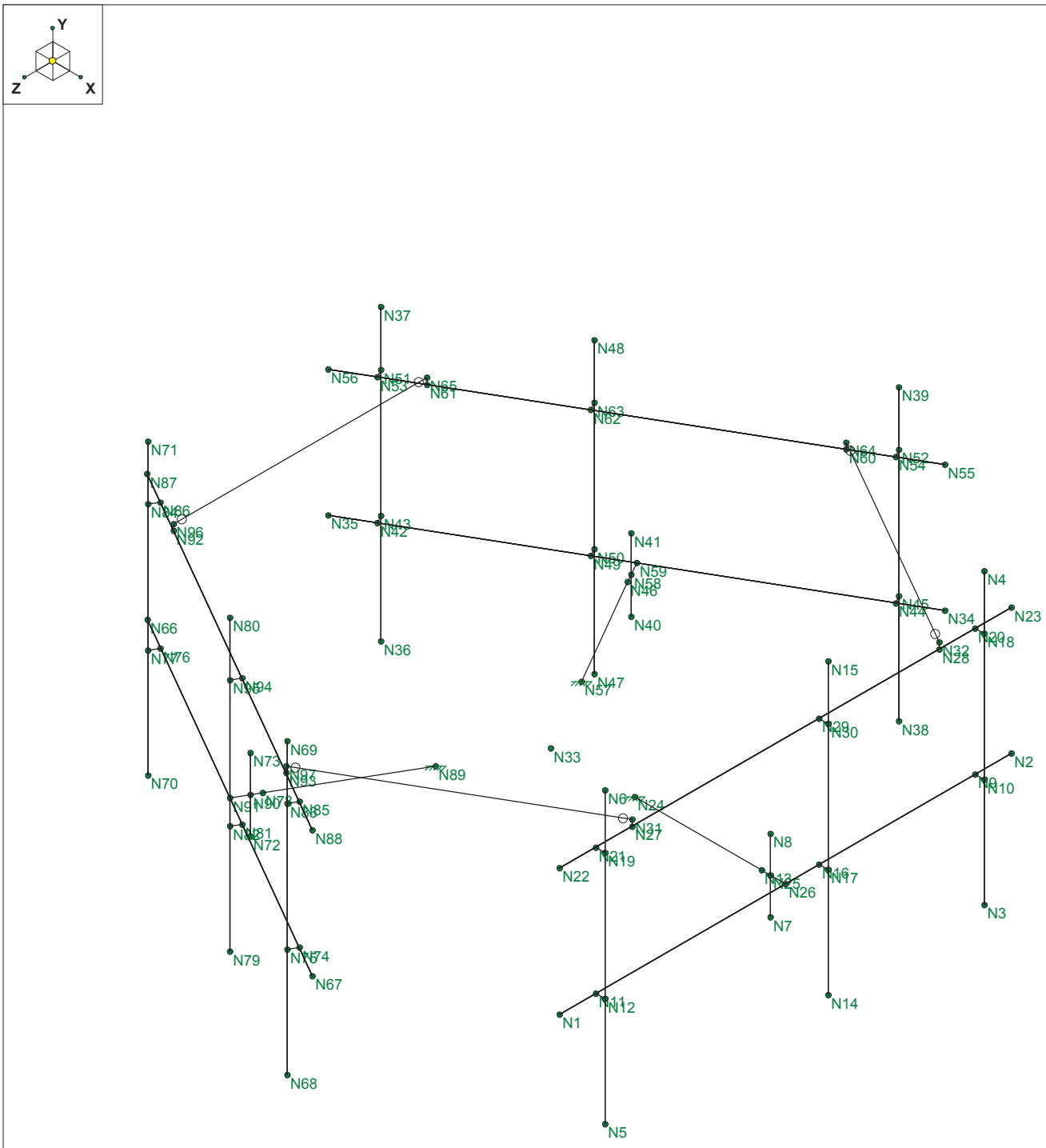
Lm (man live load) = ***500 lb***
Lv (man live load) = ***250 lb***





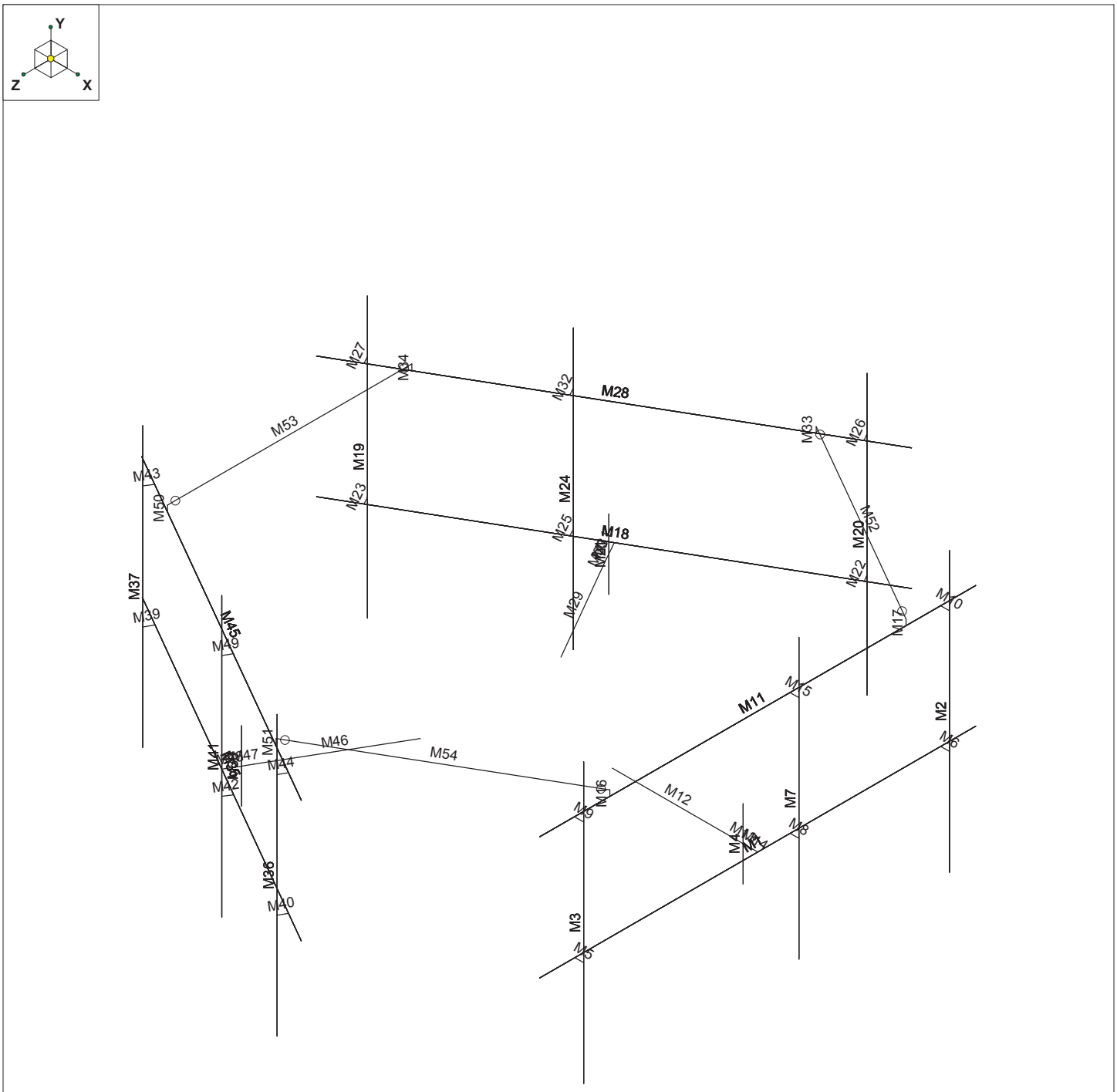
Envelope Only Solution

SMJ International, LLC		SK - 1
DVA	SALISBURY CT, CT	Apr 22, 2021 at 11:34 AM
13657492_C8_02	Sector Frame Model	370630_13657492_C8_02_T-Mobil.



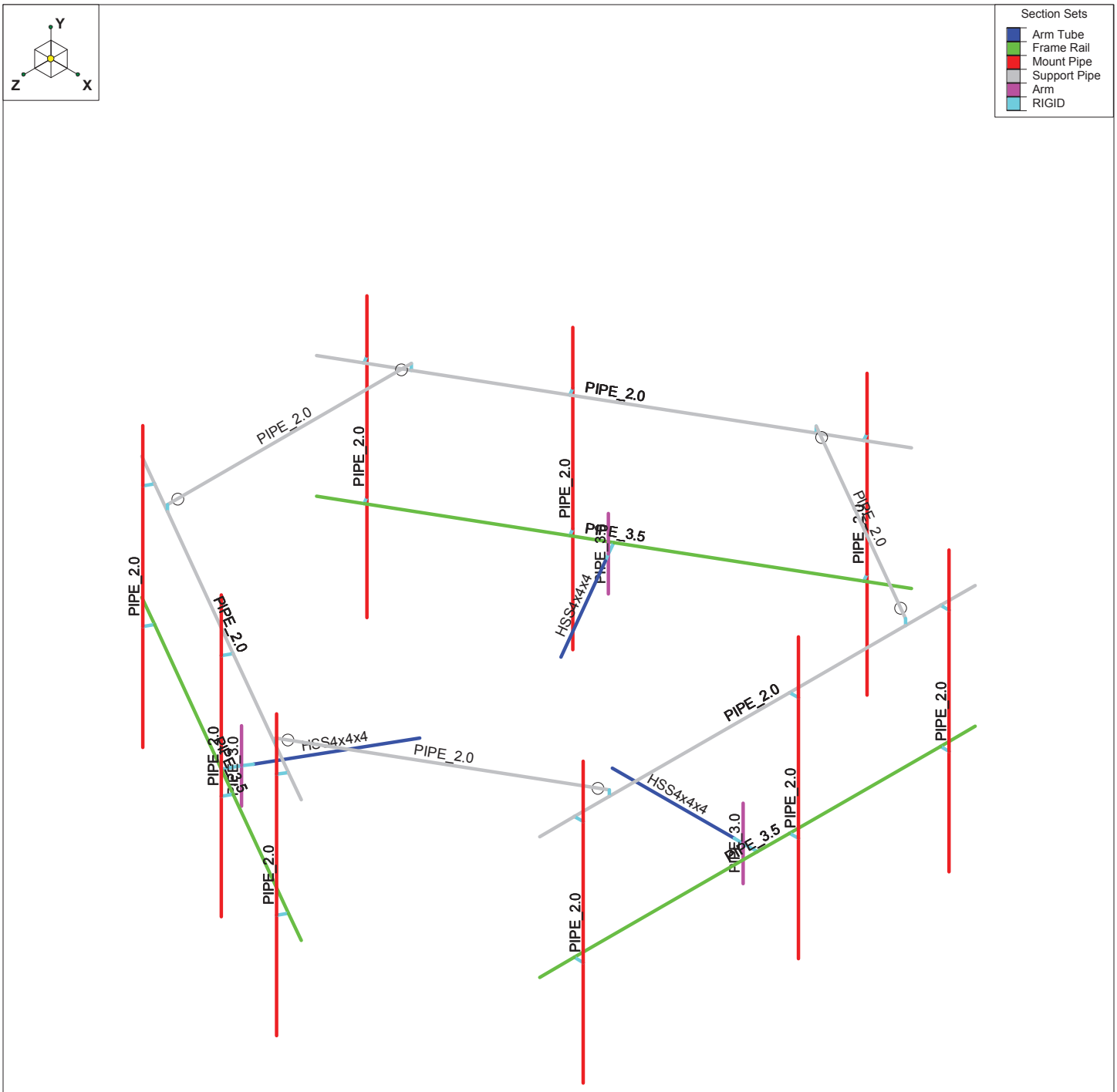
Envelope Only Solution

SMJ International, LLC		SK - 2
DVA	SALISBURY CT, CT	Apr 22, 2021 at 11:34 AM
13657492_C8_02	Joint Labels	370630_13657492_C8_02_T-Mobil.



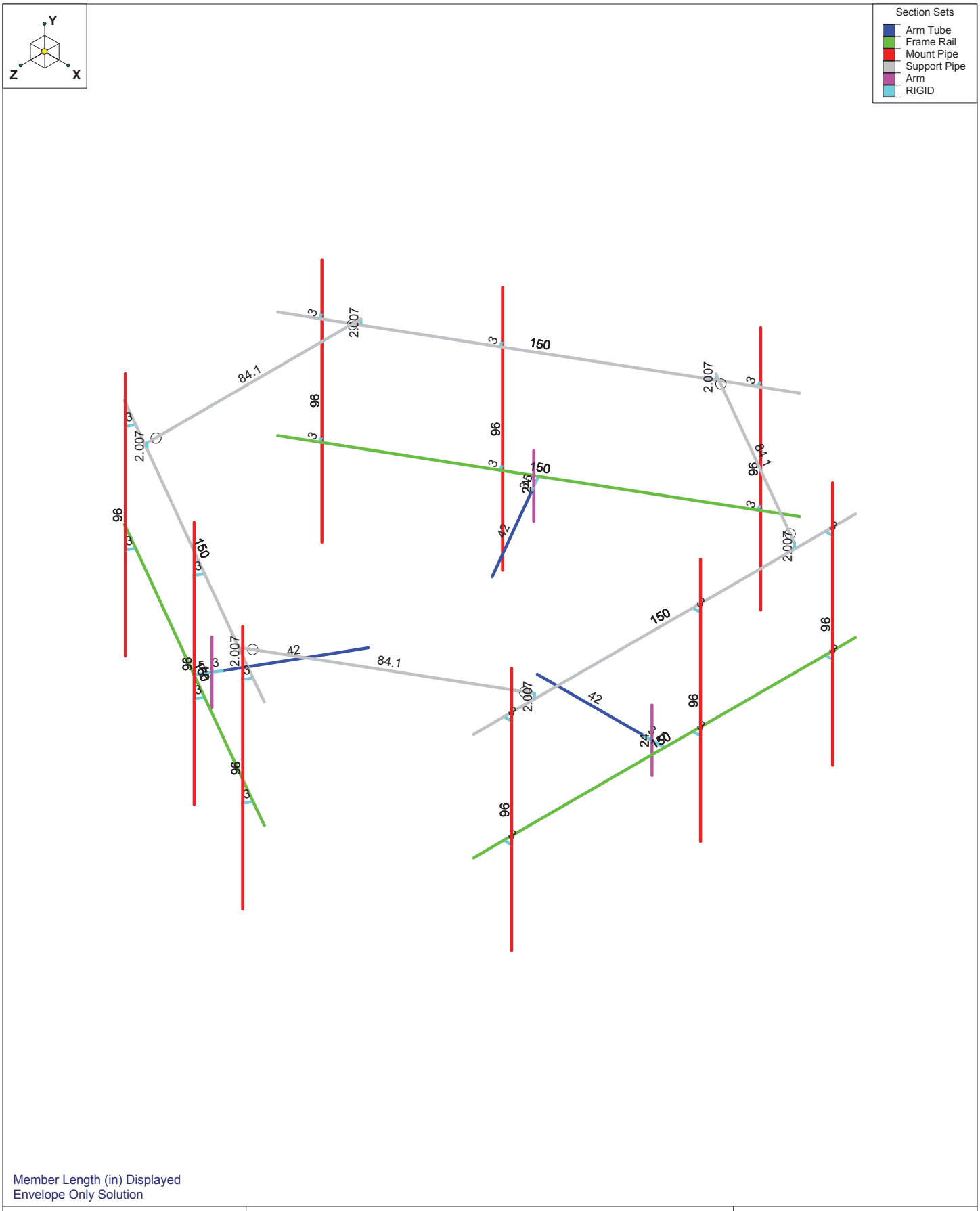
Envelope Only Solution

SMJ International, LLC		SK - 3
DVA	SALISBURY CT, CT	Apr 22, 2021 at 11:34 AM
13657492_C8_02	Member Labels	370630_13657492_C8_02_T-Mobil.



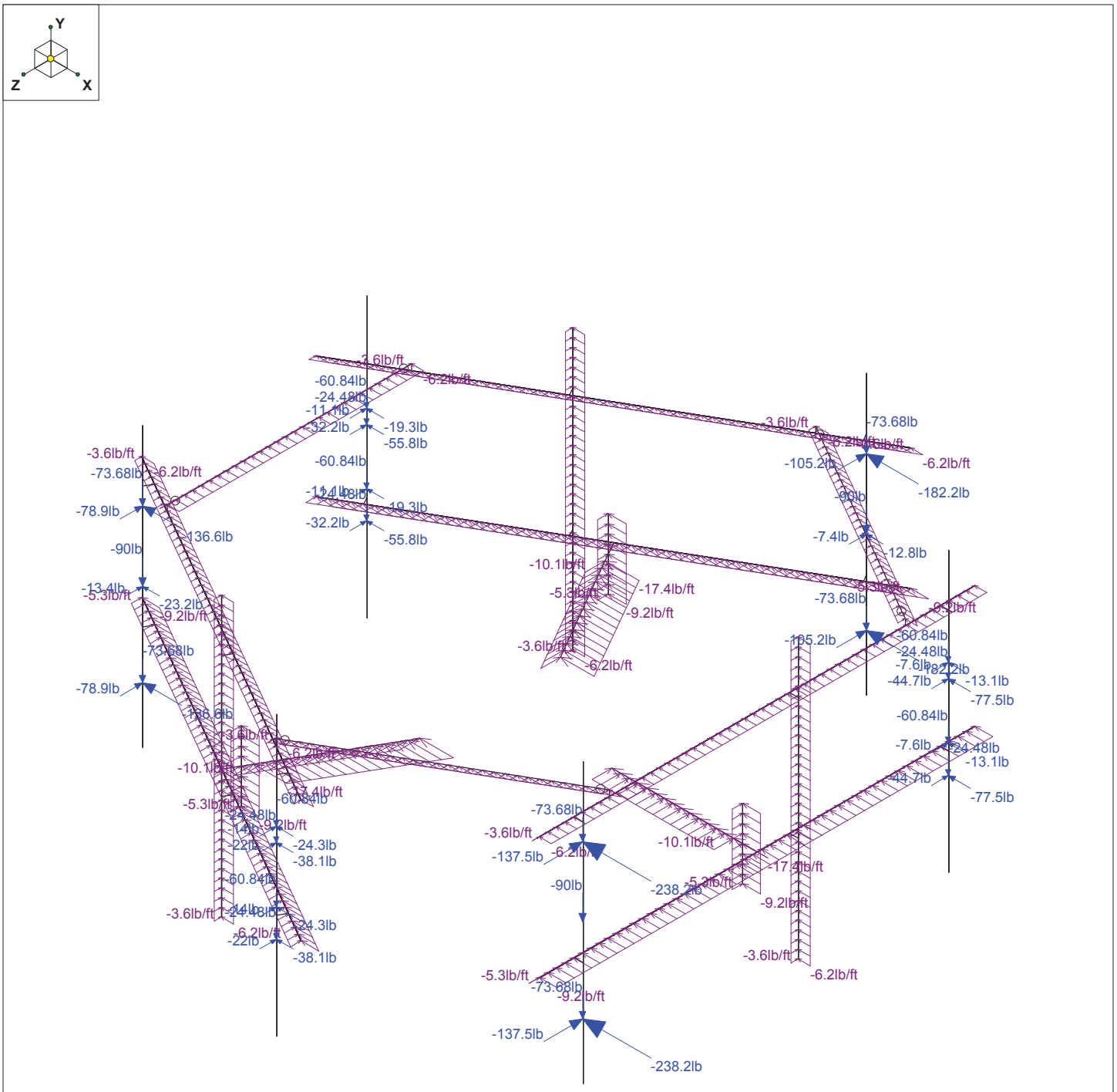
Envelope Only Solution

SMJ International, LLC		SK - 4
DVA	SALISBURY CT, CT	Apr 22, 2021 at 11:34 AM
13657492_C8_02	Member Shapes	370630_13657492_C8_02_T-Mobil.



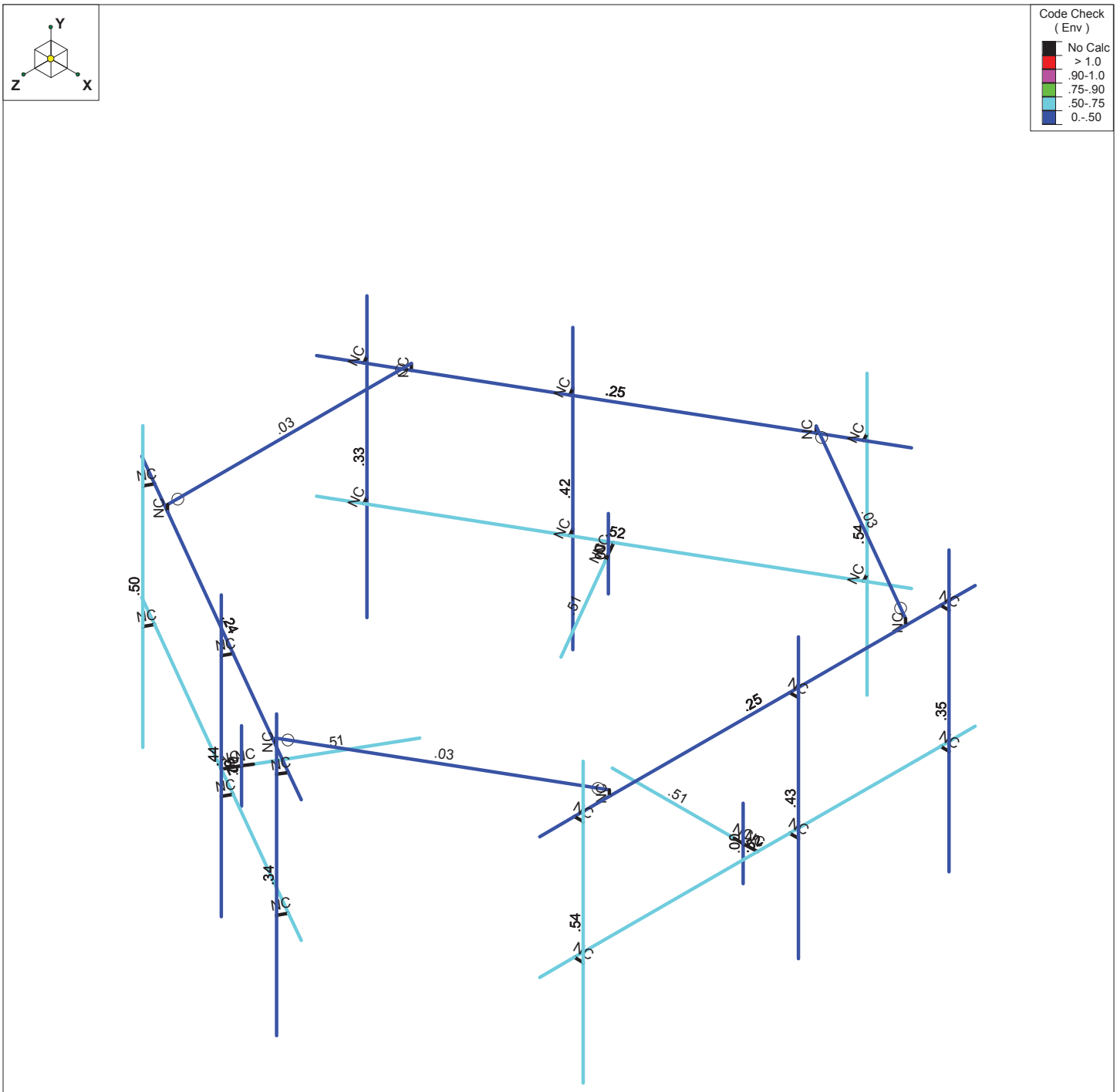
Member Length (in) Displayed
Envelope Only Solution

SMJ International, LLC		SK - 5
DVA	SALISBURY CT, CT	Apr 22, 2021 at 11:34 AM
13657492_C8_02	Member Lengths	370630_13657492_C8_02_T-Mobil.



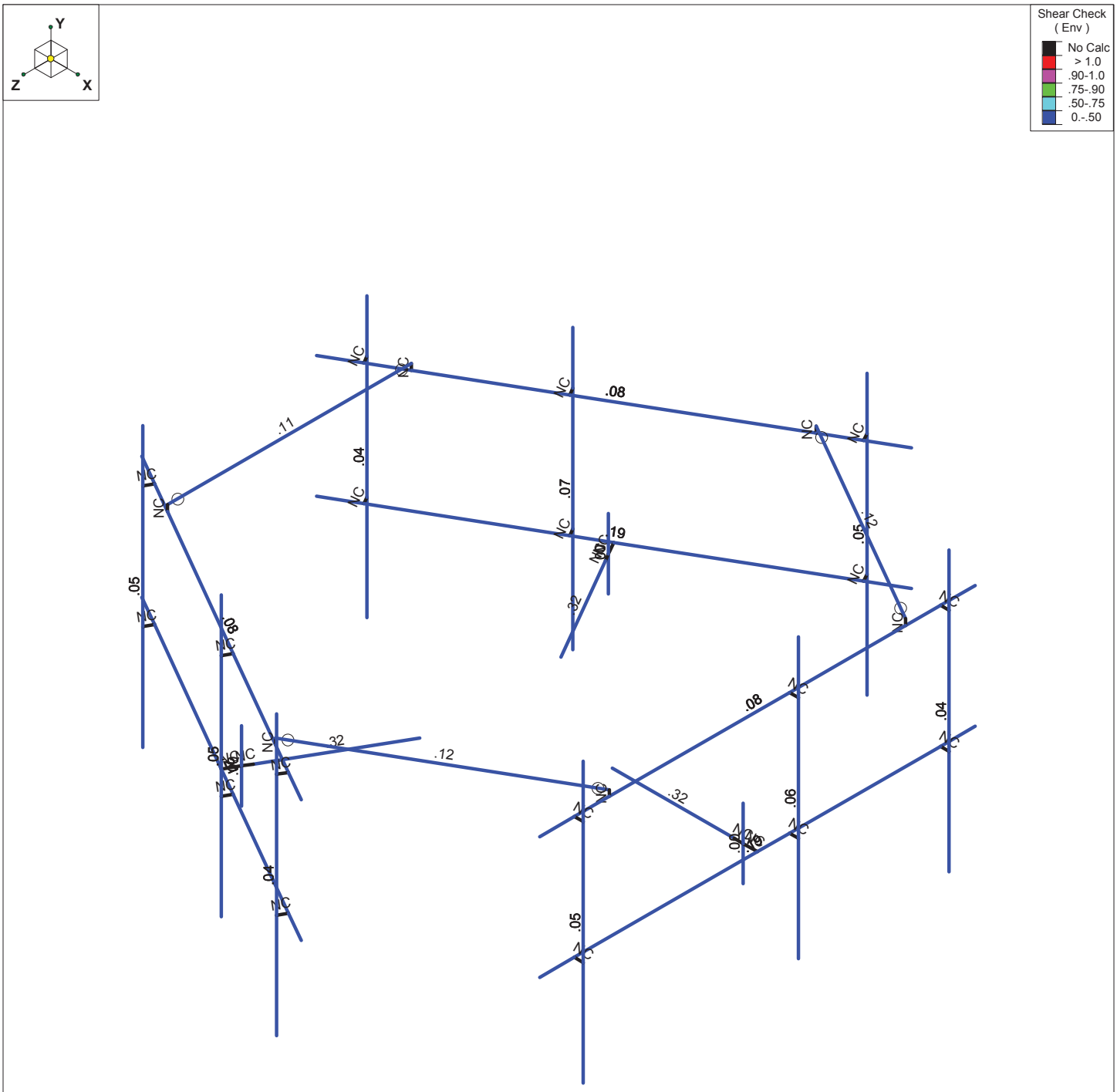
Loads: LC 13, 1.2DL+1.0WL(330)
Envelope Only Solution

SMJ International, LLC		SK - 6
DVA	SALISBURY CT, CT	Apr 22, 2021 at 11:34 AM
13657492_C8_02	Controlling Load Case	370630_13657492_C8_02_T-Mobil.



Member Code Checks Displayed (Enveloped)
Envelope Only Solution

SMJ International, LLC		SK - 7
DVA	SALISBURY CT, CT	Apr 22, 2021 at 11:34 AM
13657492_C8_02	Member Bending Check	370630_13657492_C8_02_T-Mobil.



Member Shear Checks Displayed (Enveloped)
Envelope Only Solution

SMJ International, LLC		SK - 8
DVA	SALISBURY CT, CT	Apr 22, 2021 at 11:34 AM
13657492_C8_02	Member Shear Check	370630_13657492_C8_02_T-Mobil.

Global

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

Hot Rolled Steel Code	AISC 14th(360-10): LRFD
Adjust Stiffness?	Yes(Iterative)
RISAConnection Code	AISC 14th(360-10): ASD
Cold Formed Steel Code	AISI S100-12: LRFD
Wood Code	AF&PA NDS-12: ASD
Wood Temperature	< 100F
Concrete Code	ACI 318-11
Masonry Code	ACI 530-13: Strength
Aluminum Code	AA ADM1-10: LRFD - Building

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

Global, Continued

Seismic Code	ASCE 7-10
Seismic Base Elevation (in)	Not Entered
Add Base Weight?	Yes
Ct X	.02
Ct Z	.02
T X (sec)	Not Entered
T Z (sec)	Not Entered
R X	3
R Z	3
Ct Exp. X	.75
Ct Exp. Z	.75
SD1	1
SDS	1
S1	1
TL (sec)	5
Risk Cat	I or II
Om Z	1
Om X	1
Rho Z	1
Rho X	1

Member Primary Data

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
1	M1	N1	N2			Frame Rail	Beam	Pipe	A53 Gr.B	Typical
2	M2	N3	N4			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
3	M3	N5	N6			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
4	M4	N7	N8			Arm	VBrace	Pipe	A53 Gr.B	Typical
5	M5	N11	N12			RIGID	None	None	RIGID	Typical
6	M6	N9	N10			RIGID	None	None	RIGID	Typical
7	M7	N14	N15			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
8	M8	N16	N17			RIGID	None	None	RIGID	Typical
9	M9	N21	N19			RIGID	None	None	RIGID	Typical
10	M10	N20	N18			RIGID	None	None	RIGID	Typical
11	M11	N22	N23			Support Pipe	Beam	Pipe	A53 Gr.B	Typical
12	M12	N13	N24			Arm Tube	Beam	Tube	A500 Gr.B...	Typical
13	M13	N13	N25			RIGID	None	None	RIGID	Typical
14	M14	N25	N26			RIGID	None	None	RIGID	Typical
15	M15	N29	N30			RIGID	None	None	RIGID	Typical
16	M16	N27	N31			RIGID	None	None	RIGID	Typical
17	M17	N28	N32			RIGID	None	None	RIGID	Typical
18	M18	N34	N35			Frame Rail	Beam	Pipe	A53 Gr.B	Typical
19	M19	N36	N37			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
20	M20	N38	N39			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
21	M21	N40	N41			Arm	VBrace	Pipe	A53 Gr.B	Typical
22	M22	N44	N45			RIGID	None	None	RIGID	Typical
23	M23	N42	N43			RIGID	None	None	RIGID	Typical
24	M24	N47	N48			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
25	M25	N49	N50			RIGID	None	None	RIGID	Typical
26	M26	N54	N52			RIGID	None	None	RIGID	Typical
27	M27	N53	N51			RIGID	None	None	RIGID	Typical
28	M28	N55	N56			Support Pipe	Beam	Pipe	A53 Gr.B	Typical

Member Primary Data (Continued)

	Label	I Joint	J Joint	K Joint	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rules
29	M29	N46	N57			Arm Tube	Beam	Tube	A500 Gr.B..	Typical
30	M30	N46	N58			RIGID	None	None	RIGID	Typical
31	M31	N58	N59			RIGID	None	None	RIGID	Typical
32	M32	N62	N63			RIGID	None	None	RIGID	Typical
33	M33	N60	N64			RIGID	None	None	RIGID	Typical
34	M34	N61	N65			RIGID	None	None	RIGID	Typical
35	M35	N66	N67			Frame Rail	Beam	Pipe	A53 Gr.B	Typical
36	M36	N68	N69			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
37	M37	N70	N71			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
38	M38	N72	N73			Arm	VBrace	Pipe	A53 Gr.B	Typical
39	M39	N76	N77			RIGID	None	None	RIGID	Typical
40	M40	N74	N75			RIGID	None	None	RIGID	Typical
41	M41	N79	N80			Mount Pipe	Column	Pipe	A53 Gr.B	Typical
42	M42	N81	N82			RIGID	None	None	RIGID	Typical
43	M43	N86	N84			RIGID	None	None	RIGID	Typical
44	M44	N85	N83			RIGID	None	None	RIGID	Typical
45	M45	N87	N88			Support Pipe	Beam	Pipe	A53 Gr.B	Typical
46	M46	N78	N89			Arm Tube	Beam	Tube	A500 Gr.B..	Typical
47	M47	N78	N90			RIGID	None	None	RIGID	Typical
48	M48	N90	N91			RIGID	None	None	RIGID	Typical
49	M49	N94	N95			RIGID	None	None	RIGID	Typical
50	M50	N92	N96			RIGID	None	None	RIGID	Typical
51	M51	N93	N97			RIGID	None	None	RIGID	Typical
52	M52	N64	N32			Support Pipe	Beam	Pipe	A53 Gr.B	Typical
53	M53	N65	N96			Support Pipe	Beam	Pipe	A53 Gr.B	Typical
54	M54	N97	N31			Support Pipe	Beam	Pipe	A53 Gr.B	Typical

Material Takeoff

	Material	Size	Pieces	Length[in]	Weight[K]
1	General				
2	RIGID		30	90	0
3	Total General		30	90	0
4					
5	Hot Rolled Steel				
6	A500 Gr.B Rect	HSS4x4x4	3	126	.1
7	A53 Gr.B	PIPE_2.0	15	1566.3	.5
8	A53 Gr.B	PIPE_3.0	3	72	0
9	A53 Gr.B	PIPE_3.5	3	450	.3
10	Total HR Steel		24	2214.3	.9

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]	Footing
1	N24	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
2	N33							
3	N57	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	
4	N89	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction	

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Joint	Point	Distribu...	Area(M...	Surface...
1	Dead	None		-1			21			
2	Wind (0 deg)	None					21	17		
3	Wind (90 deg)	None					21	21		
4	Wind (30 deg)	None					42	36		
5	Wind (60 deg)	None					42	36		
6	Wind (120 deg)	None					42	36		
7	Wind (150 deg)	None					42	36		
8	Dead Ice	None					21	24		
9	Wind + Ice (0 deg)	None					21	17		
10	Wind + Ice (90 deg)	None					21	21		
11	Wind + Ice (30 deg)	None					42	36		
12	Wind + Ice (60 deg)	None					42	36		
13	Wind + Ice (120 deg)	None					42	36		
14	Wind + Ice (150 deg)	None					42	36		
15	Live Lm1	None					1			
16	Live Lm2	None					1			
17	Live Lm3	None					1			
18	Wind + Live Lm (0 deg)	None					21	17		
19	Wind + Live Lm (90 deg)	None					21	21		
20	Wind + Live Lm (30 deg)	None					42	36		
21	Wind + Live Lm (60 deg)	None					42	36		
22	Wind + Live Lm (120 deg)	None					42	36		
23	Wind + Live Lm (150 deg)	None					42	36		
24	Live Lv1	None					3			
25	Live Lv2	None					3			
26	Live Lv3	None					3			
27	Seismic Antenna (0 deg)	None					21			
28	Seismic Antenna (90 deg)	None					21			
29	Seismic (0 deg)	None	-.088	-.035						
30	Seismic (90 deg)	None		-.035	.088					
31	Seismic (30 deg)	None	-.077	-.035	.044					
32	Seismic (60 deg)	None	-.044	-.035	.077					
33	Seismic (120 deg)	None	.044	-.035	.077					
34	Seismic (150 deg)	None	.077	-.035	.044					
35	Seismic Vertical	None					21			

Load Combinations

	Description	Solve	PDe...	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
1	1.4DL	Yes	Y		1	1.4																				
2	1.2DL+1.0WL(0)	Yes	Y		1	1.2	2	1																		
3	1.2DL+1.0WL(30)	Yes	Y		1	1.2	4	1																		
4	1.2DL+1.0WL(60)	Yes	Y		1	1.2	5	1																		
5	1.2DL+1.0WL(90)	Yes	Y		1	1.2	3	1																		
6	1.2DL+1.0WL(120)	Yes	Y		1	1.2	6	1																		
7	1.2DL+1.0WL(150)	Yes	Y		1	1.2	7	1																		
8	1.2DL+1.0WL(180)	Yes	Y		1	1.2	2	-1																		
9	1.2DL+1.0WL(210)	Yes	Y		1	1.2	4	-1																		
10	1.2DL+1.0WL(240)	Yes	Y		1	1.2	5	-1																		
11	1.2DL+1.0WL(270)	Yes	Y		1	1.2	3	-1																		

Load Combinations (Continued)

	Description	Solve	PDe...	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
12	1.2DL+1.0WL(300)	Yes	Y		1	1.2	6	-1																		
13	1.2DL+1.0WL(330)	Yes	Y		1	1.2	7	-1																		
14	1.2DL+1.0DLi+1.0WLi...	Yes	Y		1	1.2	8	1	9	1																
15	1.2DL+1.0DLi+1.0WLi...	Yes	Y		1	1.2	8	1	11	1																
16	1.2DL+1.0DLi+1.0WLi...	Yes	Y		1	1.2	8	1	12	1																
17	1.2DL+1.0DLi+1.0WLi...	Yes	Y		1	1.2	8	1	10	1																
18	1.2DL+1.0DLi+1.0WLi...	Yes	Y		1	1.2	8	1	13	1																
19	1.2DL+1.0DLi+1.0WLi...	Yes	Y		1	1.2	8	1	14	1																
20	1.2DL+1.0DLi+1.0WLi...	Yes	Y		1	1.2	8	1	9	-1																
21	1.2DL+1.0DLi+1.0WLi...	Yes	Y		1	1.2	8	1	11	-1																
22	1.2DL+1.0DLi+1.0WLi...	Yes	Y		1	1.2	8	1	12	-1																
23	1.2DL+1.0DLi+1.0WLi...	Yes	Y		1	1.2	8	1	10	-1																
24	1.2DL+1.0DLi+1.0WLi...	Yes	Y		1	1.2	8	1	13	-1																
25	1.2DL+1.0DLi+1.0WLi...	Yes	Y		1	1.2	8	1	14	-1																
26	1.2DL+1.5LLm1+1.0W...	Yes	Y		1	1.2	15	1.5	18	1																
27	1.2DL+1.5LLm1+1.0W...	Yes	Y		1	1.2	15	1.5	20	1																
28	1.2DL+1.5LLm1+1.0W...	Yes	Y		1	1.2	15	1.5	21	1																
29	1.2DL+1.5LLm1+1.0W...	Yes	Y		1	1.2	15	1.5	19	1																
30	1.2DL+1.5LLm1+1.0W...	Yes	Y		1	1.2	15	1.5	22	1																
31	1.2DL+1.5LLm1+1.0W...	Yes	Y		1	1.2	15	1.5	23	1																
32	1.2DL+1.5LLm1+1.0W...	Yes	Y		1	1.2	15	1.5	18	-1																
33	1.2DL+1.5LLm1+1.0W...	Yes	Y		1	1.2	15	1.5	20	-1																
34	1.2DL+1.5LLm1+1.0W...	Yes	Y		1	1.2	15	1.5	21	-1																
35	1.2DL+1.5LLm1+1.0W...	Yes	Y		1	1.2	15	1.5	19	-1																
36	1.2DL+1.5LLm1+1.0W...	Yes	Y		1	1.2	15	1.5	22	-1																
37	1.2DL+1.5LLm1+1.0W...	Yes	Y		1	1.2	15	1.5	23	-1																
38	1.2DL+1.5LLm2+1.0W...	Yes	Y		1	1.2	16	1.5	18	1																
39	1.2DL+1.5LLm2+1.0W...	Yes	Y		1	1.2	16	1.5	20	1																
40	1.2DL+1.5LLm2+1.0W...	Yes	Y		1	1.2	16	1.5	21	1																
41	1.2DL+1.5LLm2+1.0W...	Yes	Y		1	1.2	16	1.5	19	1																
42	1.2DL+1.5LLm2+1.0W...	Yes	Y		1	1.2	16	1.5	22	1																
43	1.2DL+1.5LLm2+1.0W...	Yes	Y		1	1.2	16	1.5	23	1																
44	1.2DL+1.5LLm2+1.0W...	Yes	Y		1	1.2	16	1.5	18	-1																
45	1.2DL+1.5LLm2+1.0W...	Yes	Y		1	1.2	16	1.5	20	-1																
46	1.2DL+1.5LLm2+1.0W...	Yes	Y		1	1.2	16	1.5	21	-1																
47	1.2DL+1.5LLm2+1.0W...	Yes	Y		1	1.2	16	1.5	19	-1																
48	1.2DL+1.5LLm2+1.0W...	Yes	Y		1	1.2	16	1.5	22	-1																
49	1.2DL+1.5LLm2+1.0W...	Yes	Y		1	1.2	16	1.5	23	-1																
50	1.2DL+1.5LLm3+1.0W...	Yes	Y		1	1.2	17	1.5	18	1																
51	1.2DL+1.5LLm3+1.0W...	Yes	Y		1	1.2	17	1.5	20	1																
52	1.2DL+1.5LLm3+1.0W...	Yes	Y		1	1.2	17	1.5	21	1																
53	1.2DL+1.5LLm3+1.0W...	Yes	Y		1	1.2	17	1.5	19	1																
54	1.2DL+1.5LLm3+1.0W...	Yes	Y		1	1.2	17	1.5	22	1																
55	1.2DL+1.5LLm3+1.0W...	Yes	Y		1	1.2	17	1.5	23	1																
56	1.2DL+1.5LLm3+1.0W...	Yes	Y		1	1.2	17	1.5	18	-1																
57	1.2DL+1.5LLm3+1.0W...	Yes	Y		1	1.2	17	1.5	20	-1																
58	1.2DL+1.5LLm3+1.0W...	Yes	Y		1	1.2	17	1.5	21	-1																
59	1.2DL+1.5LLm3+1.0W...	Yes	Y		1	1.2	17	1.5	19	-1																
60	1.2DL+1.5LLm3+1.0W...	Yes	Y		1	1.2	17	1.5	22	-1																
61	1.2DL+1.5LLm3+1.0W...	Yes	Y		1	1.2	17	1.5	23	-1																
62	1.2DL+1.5LLv1	Yes	Y		1	1.2	24	1.5																		
63	1.2DL+1.5LLv2	Yes	Y		1	1.2	25	1.5																		

Load Combinations (Continued)

	Description	Solve	PDe...	SRSS	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...	B...	Fa...
64	1.2DL+1.5LLv3	Yes	Y		1	1.2	26	1.5																
65	1.2DL+1.0Ev+1.0Eh(0)	Yes	Y		1	1.2	35	1	29	1	27	1	28												
66	1.2DL+1.0Ev+1.0Eh(30)	Yes	Y		1	1.2	35	1	31	1	27	.867	28	.5											
67	1.2DL+1.0Ev+1.0Eh(60)	Yes	Y		1	1.2	35	1	32	1	27	.5	28	.866											
68	1.2DL+1.0Ev+1.0Eh(90)	Yes	Y		1	1.2	35	1	30	1	27		28	1											
69	1.2DL+1.0Ev+1.0Eh(1...	Yes	Y		1	1.2	35	1	33	1	27	-.5	28	.866											
70	1.2DL+1.0Ev+1.0Eh(1...	Yes	Y		1	1.2	35	1	34	1	27	-.8...	28	.5											
71	1.2DL+1.0Ev+1.0Eh(1...	Yes	Y		1	1.2	35	1	29	-1	27	-1	28												
72	1.2DL+1.0Ev+1.0Eh(2...	Yes	Y		1	1.2	35	1	31	-1	27	-.8...	28	-.5											
73	1.2DL+1.0Ev+1.0Eh(2...	Yes	Y		1	1.2	35	1	32	-1	27	-.5	28	-.8...											
74	1.2DL+1.0Ev+1.0Eh(2...	Yes	Y		1	1.2	35	1	30	-1	27		28	-1											
75	1.2DL+1.0Ev+1.0Eh(3...	Yes	Y		1	1.2	35	1	33	-1	27	.5	28	-.8...											
76	1.2DL+1.0Ev+1.0Eh(3...	Yes	Y		1	1.2	35	1	34	-1	27	.866	28	-.5											

Envelope Joint Reactions

	Joint		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-in]	LC	MY [lb...	LC	MZ [lb-in]	LC
1	N24	max	1238.247	13	1536.069	27	951.676	12	20539.3...	64	41615...	4	69907.811	31
2		min	-946.776	7	784.118	57	-951.535	6	-45687....	30	-4165...	10	18810.813	13
3	N57	max	736.365	13	1536.043	45	1156.677	11	83208.7...	47	40092...	9	4952.7	44
4		min	-882.369	7	784.155	27	-1409.944	5	15013.8...	5	-4016...	3	-42115.241	64
5	N89	max	1067.78	2	1535.932	60	1100.083	11	-14546....	10	38360...	13	-4324.892	8
6		min	-1213.472	8	784.164	42	-846.71	5	-52572....	16	-3838...	7	-74400.442	50
7	Totals:	max	2970.935	2	4523.836	21	3029.318	11						
8		min	-2970.943	8	2356.375	3	-3029.321	5						

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[...	Dir	LC	phi*Pn...	phi*Pnt...	phi*Mn...	phi*Mn...	Cb	Eqn
1	M3	PIPE_2.0	.542	36	13	.048	36		13	14916....	32130	22459.5	22459.5	2...	H1-1b
2	M20	PIPE_2.0	.537	36	5	.047	36		5	14916....	32130	22459.5	22459.5	2...	H1-1b
3	M35	PIPE_3.5	.520	75	59	.206	75		10	41651....	78750	95445	95445	1...	H1-1b
4	M1	PIPE_3.5	.520	75	27	.195	75		2	41651....	78750	95445	95445	1...	H1-1b
5	M18	PIPE_3.5	.520	75	44	.194	75		6	41651....	78750	95445	95445	1...	H1-1b
6	M12	HSS4x4x4	.512	42	34	.318	42	y	30	13254...	139518	194166	194166	1...	H3-6
7	M29	HSS4x4x4	.509	42	49	.318	42	y	46	13254...	139518	194166	194166	1...	H3-6
8	M46	HSS4x4x4	.508	42	53	.318	42	y	50	13254...	139518	194166	194166	1...	H3-6
9	M37	PIPE_2.0	.504	36	56	.049	36		9	14916....	32130	22459.5	22459.5	2...	H1-1b
10	M41	PIPE_2.0	.442	36	9	.054	36		8	14916....	32130	22459.5	22459.5	2...	H1-1b
11	M7	PIPE_2.0	.434	36	13	.056	36		13	14916....	32130	22459.5	22459.5	2...	H1-1b
12	M24	PIPE_2.0	.424	36	6	.071	36		4	14916....	32130	22459.5	22459.5	2...	H1-1b
13	M2	PIPE_2.0	.345	36	3	.040	36		6	14916....	32130	22459.5	22459.5	2...	H1-1b
14	M36	PIPE_2.0	.338	36	10	.040	36		2	14916....	32130	22459.5	22459.5	1...	H1-1b
15	M19	PIPE_2.0	.328	36	7	.044	36		10	14916....	32130	22459.5	22459.5	2...	H1-1b
16	M11	PIPE_2.0	.246	85.938	13	.077	23.4...		31	6295.4...	32130	22459.5	22459.5	1...	H1-1b
17	M28	PIPE_2.0	.245	85.938	5	.077	23.4...		47	6295.4...	32130	22459.5	22459.5	1...	H1-1b
18	M45	PIPE_2.0	.239	85.938	20	.076	23.4...		50	6295.4...	32130	22459.5	22459.5	1...	H1-1b
19	M52	PIPE_2.0	.030	42.05	16	.115	0		48	17830....	32130	22459.5	22459.5	1...	H1-1b
20	M54	PIPE_2.0	.030	42.05	24	.115	0		33	17830....	32130	22459.5	22459.5	1...	H1-1b
21	M53	PIPE_2.0	.030	42.05	20	.115	0		51	17830....	32130	22459.5	22459.5	1...	H1-1b
22	M4	PIPE_3.0	.001	12	7	.001	12		7	63823....	65205	68985	68985	1...	H1-1b

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[..	Dir	LC	phi*Pn...	phi*Pnt..	phi*Mn...	phi*Mn..	Cb	Eqn
23	M38	PIPE_3.0	.001	12	4	.001	12		3	63823....	65205	68985	68985	1...	H1-1b
24	M21	PIPE_3.0	.001	12	12	.001	12		12	63823....	65205	68985	68985	1...	H1-1b

SMJ International

BOLT CONNECTION CALCULATION

BOLT PROPERTIES

Date:	4/22/2021
Site:	*SALISBURY CT, CT*
Engineer:	*DVA*
Project No:	*13657492_C8_02*
Connection Location:	*Mount to Tower*

Bolt Capacity Equation	TIA-222-H	
Connection Type	Steel	
Bolt Size, **d**	5/8	in
Threads per Inch, **n**	11	
Steel Grade	A307	
Bolt Ultimate Tensile Stress, $\mathbf{F_u}$	60	ksi
Threads Exclusion	N	
Shear Plane	1	

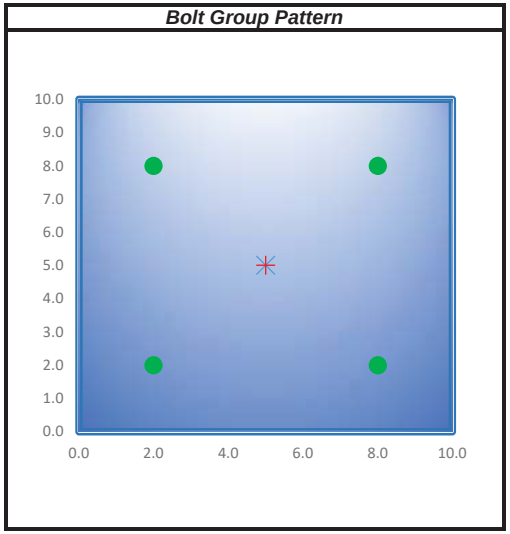
Net Bolt Cross-Sectional Area, **An**	0.226	in^2
Gross Bolt Cross-Sectional Area, **Ag**	0.307	in^2
Tensile Steel Strength (per bolt), $\mathbf{\varphi R_{nt}}$	10170	lbs
Shear Steel Strength (per bolt), $\mathbf{\varphi R_{nv}}$	6903	lbs

SMJ International

BOLT CONNECTION CALCULATION
BOLT GROUP CHECK

Date:	*4/22/2021*
Site:	*SALISBURY CT, CT*
Engineer:	*DVA*
Project No:	*13657492_C8_02*
Connection Location:	*Mount to Tower*

Bolt Group Pattern



Loads Properties					
Controlling LC:	6				
Load Point Number:	N24				
X-Coordinate (in.)	5.00				
Y-Coordinate (in.)	5.00				
Z-Coordinate (in.)	0.00				
Shear Load, Px (lbs)	-952.000	0	0	0	0
Shear Load, Py (lbs)	-785.000	0	0	0	0
Axial Load, Pz (lbs)	-518.000	0	0	0	0
Moment, Mx (lb-in)	-43635.000	0	0	0	0
Moment, My (lb-in)	-39338.000	0	0	0	0
Moment, Mz (lb-in)	-15407.000	0	0	0	0

Member Properties	***X***	***Y***
Start Coordinates:	0.0	0.0
Dimentions:	10.0	10.0

Number of Bolts: 4

		Bolt Coordinates		***Bolt Loads***		***Steel Bolt Usage***			
No.	***Bolt Type***	***Xo (in)***	***Yo (in)***	***Axial (lbs)***	***Shear (lbs)***	***Tension***	***Shear***	***Combined***	***Max. Capacity***
1	Main Type	2.00	2.00	228.58	930.47	2.2%	13.5%	13.5%	13.5%
2	Main Type	2.00	8.00	-7043.92	1215.29	0.0%	17.6%	17.6%	17.6%
3	Main Type	8.00	2.00	6784.92	601.53	66.7%	8.7%	66.7%	66.7%
4	Main Type	8.00	8.00	-487.58	986.40	0.0%	14.3%	14.3%	14.3%

Bolt Group Properties:

Xc =	5.00	in.
Yc =	5.00	in.
Ic.y =	11.04	in.^2
Ic.x =	11.04	in.^2
Ic.xy =	22.09	in.^2

Loads at Center of Gravity of Bolt Group:

Pz =	-518.00	lbs
Px =	-952.00	lbs
Py =	-785.00	lbs
Mx =	-43635.00	lb-in
My =	-39338.00	lb-in
Mz =	-15407.00	lb-in

U-bolt Connection: No

Total Capacity for Bolt Group: 66.7%

AMERICAN TOWER®
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Structural Analysis Report

Structure	:	**148.5 ft Monopole**
ATC Site Name	:	**SALISBURY CT, CT**
ATC Asset Number	:	**370630**
Engineering Number	:	**13657492_C3_03**
Proposed Carrier	:	**T-MOBILE**
Carrier Site Name	:	**CTNH547A**
Carrier Site Number	:	**CTNH547A**
Site Location	:	**52 Library St.** **Salisbury, CT 06068-0000** **41.980900,-73.418400**
County	:	**Litchfield**
Date	:	**April 28, 2021**
Max Usage	:	**27%**
Result	:	**Pass**

Prepared By:
Pedro Morales Mendoza
Engineer Intern

Reviewed By:

Authorized by "EOR"
30 Apr 2021 10:11:54 cosign

COA: PEC.0001553

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Calculations ..... Attached

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 148.5 ft monopole to reflect the change in loading by T-MOBILE.

Supporting Documents

Tower Drawings	PJF Job #29206-0003, dated January 9, 2006
Foundation Drawing	PJF Job #29206-0003, dated January 9, 2006
Geotechnical Report	JGI Eastern, Inc. Project #05463G, dated August 11, 2005
Mount Analysis	SMJ International LLC Project #13657492_C8_02, dated April 22, 2021

Analysis

The tower was analyzed using American Tower Corporation's tower analysis software. This program considers an elastic three-dimensional model and second-order effects per ANSI/TIA-222.

Basic Wind Speed:	113 mph (3-Second Gust)
Basic Wind Speed w/ Ice:	40 mph (3-Second Gust) w/ 1" radial ice concurrent
Code:	ANSI/TIA-222-H / 2015 IBC / 2018 Connecticut State Building Code
Exposure Category:	B
Risk Category:	II
Topographic Factor Procedure:	Method 1
Topographic Category:	1
Crest Height (H):	0 ft
Spectral Response:	Ss = 0.17, S_1 = 0.05
Site Class:	D - Stiff Soil

Conclusion

Based on the analysis results, the structure meets the requirements per the applicable codes listed above. The tower and foundation can support the equipment as described in this report.

If you have any questions or require additional information, please contact American Tower via email at Engineering@americantower.com. Please include the American Tower site name, site number, and engineering number in the subject line for any questions.

Existing and Reserved Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
156.0	1	RFS Celwave PD220	Flush	(1) 1/2" Coax	TOWN OF SALISBURY
150.0	1	RFS Celwave PD220	Flush	-	SALISBURY VOLUNTEER AMBULANCE SERVICE, INC.
146.0	-	-	Empty T-Arm	-	OTHER
144.0	3	Ericsson Radio 8843 - B2 + B66A	T-Arm	(2) 0.39" (10mm) Fiber Trunk (2) 0.78" (19.7mm) 8 AWG 6 (3) 0.96" (24.3mm) Cable (6) 1 5/8" Coax (6) 1/2" Coax (2) 2" conduit	AT&T MOBILITY
	3	Ericsson RRUS 4449 B5, B12			
	3	Ericsson RRUS 4478 B14			
	1	Raycap DC9-48-60-24-8C-EV			
	3	Powerwave Allgon 7770.00			
	2	CCI DMP65R-BU4D			
	1	Raycap DC6-48-60-18-8F(32.8 lbs)			
	6	Powerwave Allgon LGP21401			
	2	CCI OPA65R-BU4DA-K			
	1	CCI OPA65R-BU6D			
	1	CCI DMP65R-BU6DA			
134.0	3	Samsung B2/B66A RRH-BR049	T-Arm	(6) 1 5/8" Coax (2) 1 5/8" Hybriflex	VERIZON WIRELESS
	3	Samsung B5/B13 RRH-BR04C			
	1	Raycap RVZDC-6627-PF-48			
	3	Samsung MT6407-77A			
	6	JMA Wireless MX06FRO660-03			
	6	Antel LPA-80080/6CF ___			
123.0	3	Ericsson RRUS 11 B2	T-Arm w/ Support Rails	(2) 1 1/4" (1.25"-31.8mm) Fiber	T-MOBILE
	3	Ericsson RRUS 11 B4			
	3	RFS APX16DWV-16DWVS-E-A20			

Equipment to be Removed

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
123.0	3	RFS APXVAARR24_43-U-NA20	-	(1) 1 1/4" (1.25"-31.8mm) Fiber	T-MOBILE
	3	Ericsson Radio 4449 B12,B71			

Proposed Equipment

Elev.[1] (ft)	Qty	Antenna	Mount Type	Lines	Carrier
123.0	3	Ericsson Radio 4449 B71 B85A	T-Arm w/ Support Rails	(1) 1 5/8" Hybriflex	T-MOBILE
	3	RFS APXVAALL24 43-U-NA20			

[1] Contracted elevations are shown for appurtenances within contracted installation tolerances. Appurtenances outside of contract limits are shown at installed elevations.

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Anchor Bolts	21%	Pass
Shaft	25%	Pass
Base Plate	15%	Pass

Foundations

Reaction Component	Original Design Reactions	Factored Design Reactions*	Analysis Reactions	% of Design
Moment (Kips-Ft)	7,150.0	9,652.5	2,251.3	23%
Shear (Kips)	62.0	83.7	22.4	27%
* The design reactions are factored by 1.35 per ANSI/TIA-222-H, Sec. 15.6.2				

The structure base reactions resulting from this analysis are acceptable when compared to those shown on the original structure drawings, therefore no modification or reinforcement of the foundation will be required.

Deflection and Sway*

Antenna Elevation (ft)	Antenna	Carrier	Deflection (ft)	Sway (Rotation) (°)
123.0	Ericsson Radio 4449 B71 B85A	T-MOBILE	0.327	0.339
	RFS APXVAALL24 43-U-NA20			

***Deflection and Sway was evaluated considering a design wind speed of 60 mph (3-Second Gust) per ANSI/TIA-222-H**

Standard Conditions

All engineering services performed by A.T. Engineering Service, PLLC are prepared on the basis that the information used is current and correct. This information may consist of, but is not limited to the following:

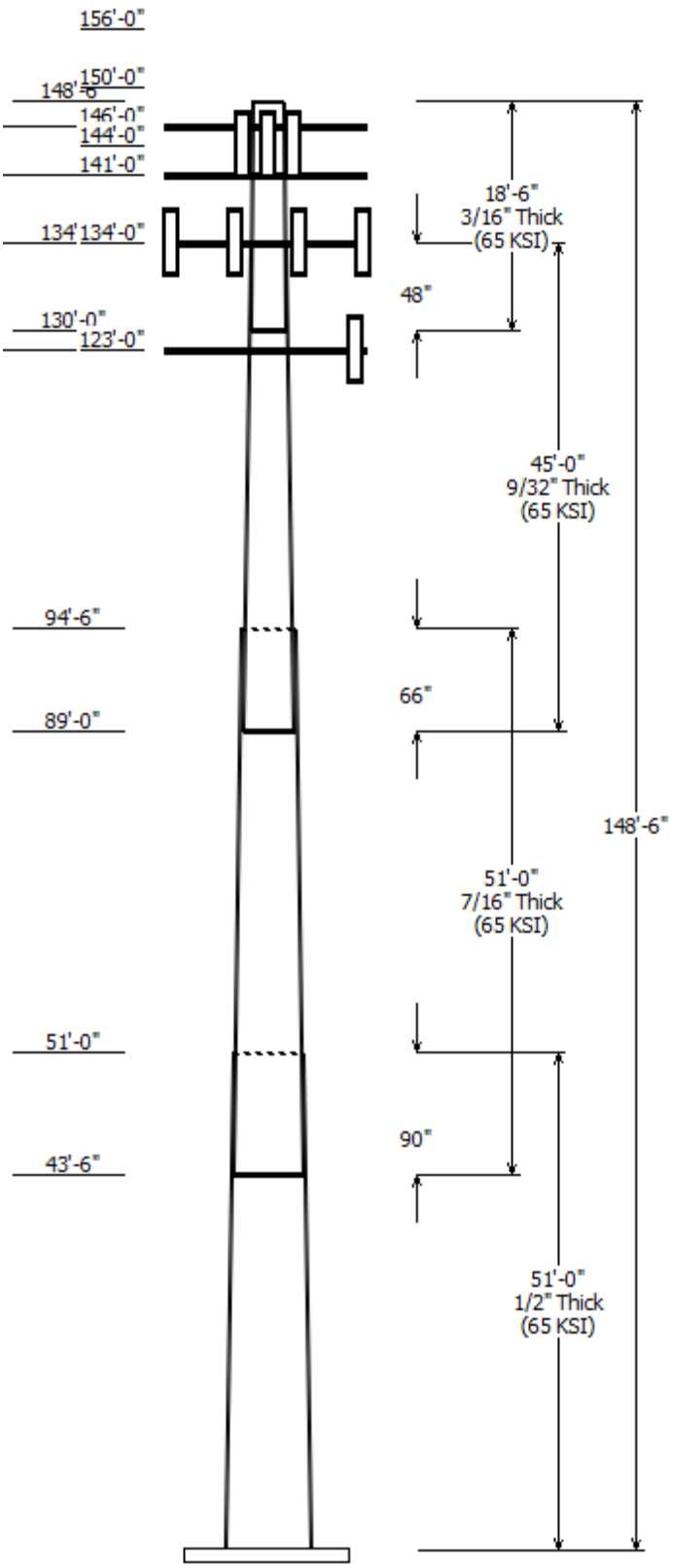
- Information supplied by the client regarding antenna, mounts and feed line loading
- Information from drawings, design and analysis documents, and field notes in the possession of A.T. Engineering Service, PLLC

It is the responsibility of the client to ensure that the information provided to A.T. Engineering Service, PLLC and used in the performance of our engineering services is correct and complete.

All assets of American Tower Corporation, its affiliates and subsidiaries (collectively "American Tower") are inspected at regular intervals. Based upon these inspections and in the absence of information to the contrary, American Tower assumes that all structures were constructed in accordance with the drawings and specifications.

Unless explicitly agreed by both the client and A.T. Engineering Service, PLLC, all services will be performed in accordance with the current revision of ANSI/TIA-222.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. A.T. Engineering Service, PLLC is not responsible for the conclusions, opinions and recommendations made by others based on the information supplied herein.



Job Information

Client :	T-MOBILE		
Pole :	370630	Code:	ANSI/TIA-222-H
Location :	SALISBURY CT, CT		
Description :	149 ft Monopole	Risk Category :	II
Shape :	18 Sides	Exposure :	B
Height :	148.50 (ft)	Topo Method :	Method 1
Base Elev (ft):	0.00	Topographic Category :	1
Taper:	0.340018 (in/ft)		

Sections Properties

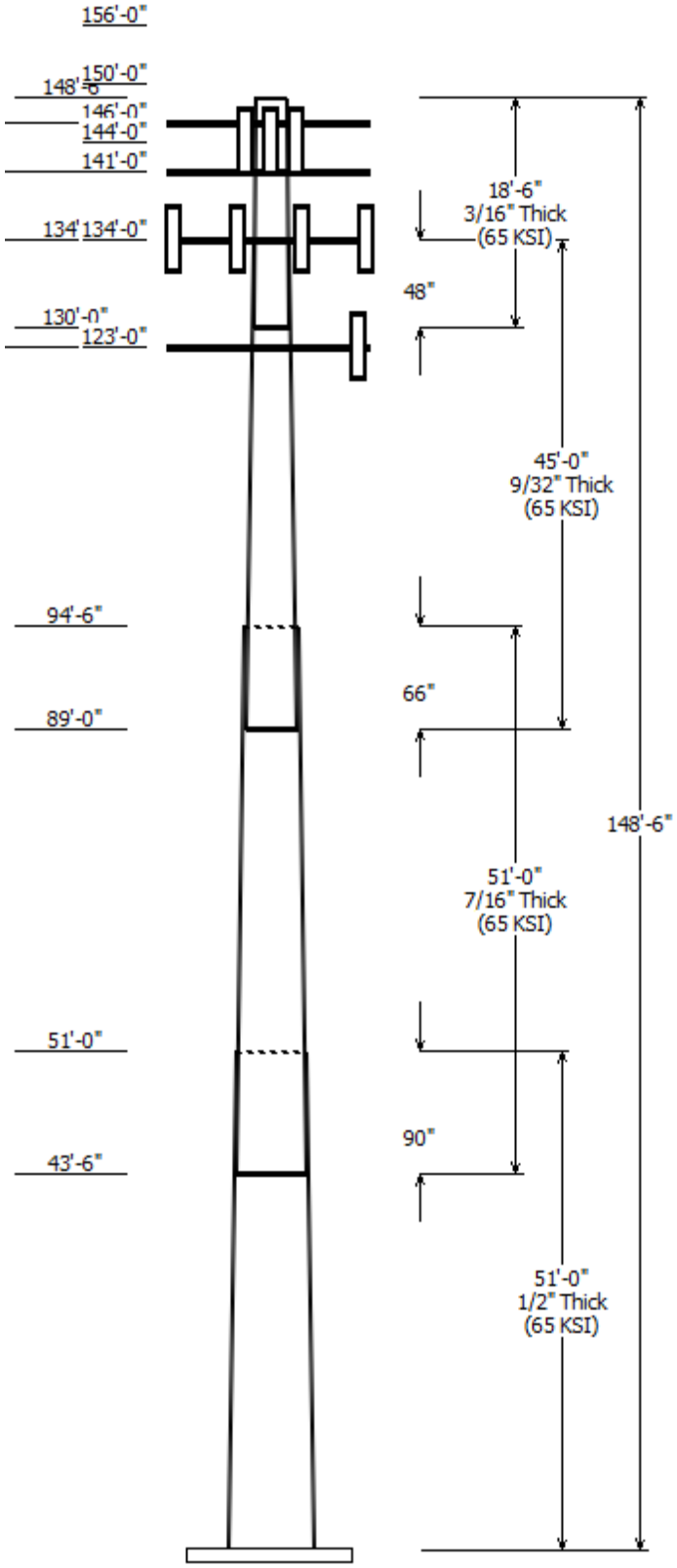
Shaft Section	Length (ft)	Diameter (in) Accross Flats Top	Bottom	Thick (in)	Joint Type	Overlap Length (in)	Shape	Steel Grade (ksi)
1	51.000	55.73	73.08	0.500		0.000	18 Sides	65
2	51.000	41.82	59.16	0.438	Slip Joint	90.000	18 Sides	65
3	45.000	28.95	44.25	0.281	Slip Joint	66.000	18 Sides	65
4	18.500	24.40	30.69	0.188	Slip Joint	48.000	18 Sides	65

Discrete Appurtenance

Attach Elev (ft)	Force Elev (ft)	Qty	Description
156.000	156.000	1	RFS Celwave PD220
150.000	150.000	1	RFS Celwave PD220
146.000	146.000	4	Flat T-Arm
144.000	144.000	1	CCI DMP65R-BU6DA
144.000	144.000	2	CCI OPA65R-BU4DA-K
144.000	144.000	2	CCI DMP65R-BU4D
144.000	144.000	1	CCI OPA65R-BU6D
144.000	144.000	3	Powerwave Allgon 7770.00
144.000	144.000	1	Raycap DC9-48-60-24-8C-EV
144.000	144.000	3	Ericsson RRUS 4478 B14
144.000	144.000	3	Ericsson RRUS 4449 B5, B12
144.000	144.000	3	Ericsson Radio 8843 - B2 + B66
144.000	144.000	1	Raycap DC6-48-60-18-8F(32.8 lb
144.000	144.000	6	Powerwave Allgon LGP21401
141.000	141.000	3	Flat T-Arm
134.000	134.750	3	Round T-Arm
134.000	134.000	6	Antel LPA-80080/6CF ___
134.000	134.000	6	JMA Wireless MX06FRO660-03
134.000	134.000	3	Samsung MT6407-77A
134.000	134.000	1	Raycap RVZDC-6627-PF-48
134.000	134.000	3	Samsung B5/B13 RRH-BR04C
134.000	134.000	3	Samsung B2/B66A RRH-BR049
123.000	123.000	3	Round T-Arm w/ Support Rails
123.000	123.000	3	RFS APXVAALL24 43-U-NA20
123.000	123.000	3	RFS APX16DWV-16DWVS-E-A20
123.000	123.000	3	Ericsson RRUS 11 B2
123.000	123.000	3	Ericsson RRUS 11 B4
123.000	123.000	3	Ericsson Radio 4449 B71 B85A

Linear Appurtenance

Elev (ft) From	To	Description	Exposed To Wind
0.000	123.0	1 1/4" (1.25"-	No
0.000	123.0	1 5/8" Hybriflex	No
0.000	134.0	1 5/8" Coax	No
0.000	134.0	1 5/8" Hybriflex	No
0.000	144.0	0.39" (10mm)	No
0.000	144.0	0.78" (19.7mm) 8	No
0.000	144.0	0.96" (24.3mm)	No
0.000	144.0	1 5/8" Coax	No



0.000	144.0	1/2" Coax	No
0.000	144.0	2" conduit	No
0.000	156.0	1/2" Coax	No

Load Cases

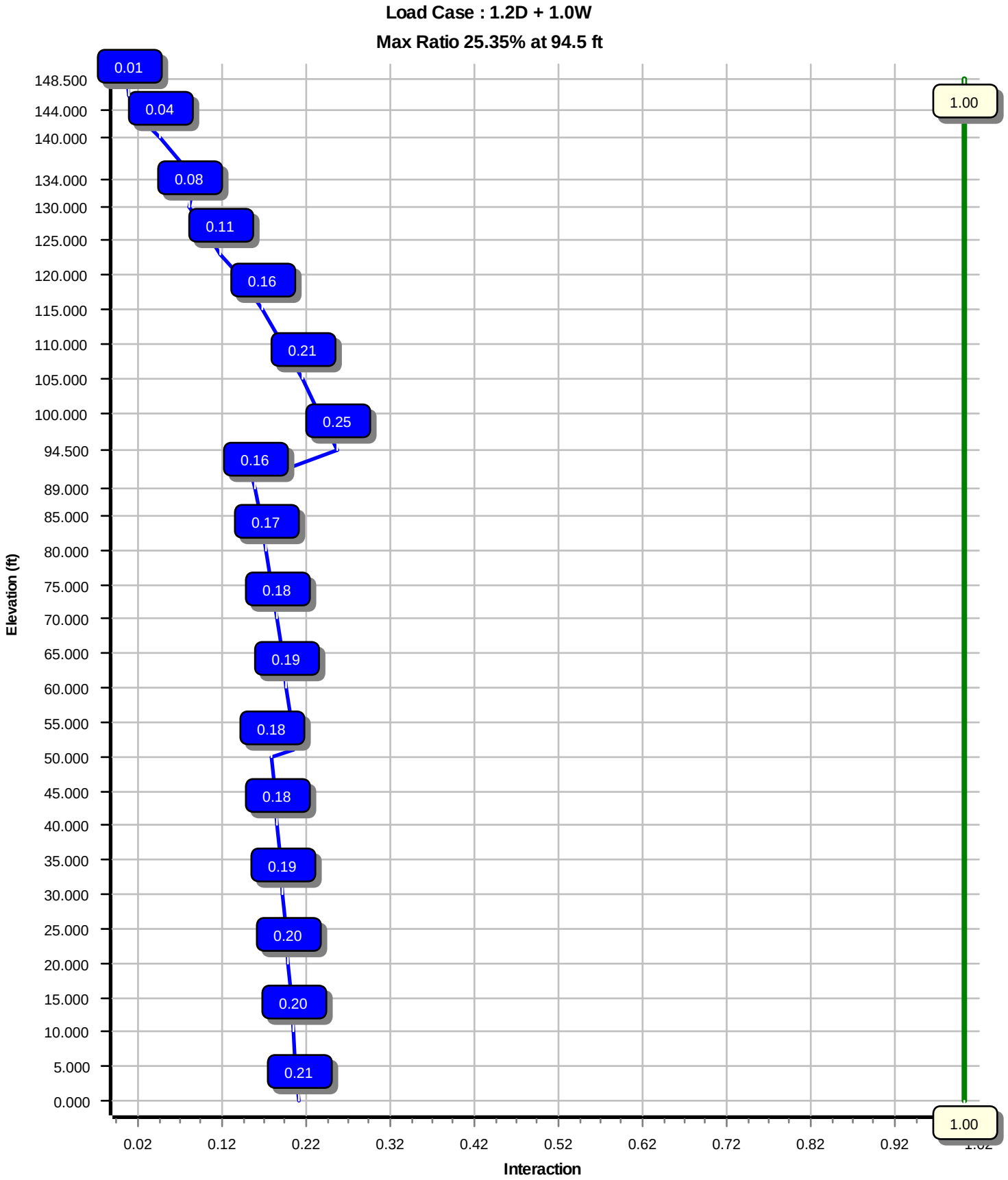
1.2D + 1.0W	113 mph with No Ice
0.9D + 1.0W	113 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Reactions

Load Case	Moment (kip-ft)	Shear (kip)	Axial (kip)
1.2D + 1.0W	2251.34	22.41	56.13
0.9D + 1.0W	2243.17	22.40	42.10
1.2D + 1.0Di + 1.0Wi	408.79	4.24	72.13
1.2D + 1.0Ev + 1.0Eh	218.02	2.08	55.23
0.9D - 1.0Ev + 1.0Eh	217.13	2.08	38.65
1.0D + 1.0W	566.47	5.65	46.78

Dish Deflections

Load Case	Attach Elev (ft)	Deflection (in)	Rotation (deg)
	0.00	0.000	0.000


Load Case : 1.2D + 1.0W
Max Ratio 25.35% at 94.5 ft
0.01
0.04
0.08
0.11
0.16
0.21
0.25
0.16
0.17
0.18
0.19
0.18
0.18
0.19
0.20
0.20
0.21
1.00
1.00
148.500
144.000
140.000
134.000
130.000
125.000
120.000
115.000
110.000
105.000
100.000
94.500
89.000
85.000
80.000
75.000
70.000
65.000
60.000
55.000
50.000
45.000
40.000
35.000
30.000
25.000
20.000
15.000
10.000
5.000
0.000
Elevation (ft)
0.02
0.12
0.22
0.32
0.42
0.52
0.62
0.72
0.82
0.92
Interaction

Site Number: 370630 Code: ANSI/TIA-222-H

Site Name: SALISBURY CT, CT Engineering Number:13657492_C3_03 4/29/2021 3:00:44 PM

Customer: T-MOBILE

Analysis Parameters

Location :	Litchfield County, CT	Height (ft) :	148.5
Code :	ANSI/TIA-222-H	Base Diameter (in) :	73.08
Shape :	18 Sides	Top Diameter (in) :	24.40
Pole Type :	Taper	Taper (in/ft) :	0.340
Pole Manfacturer :	PennSummit Tub	Rotation (deg) :	0.00
Kd (non-service) :	0.95	Ke :	0.98

Ice & Wind Parameters

Exposure Category:	B	Design Wind Speed Without Ice:	113 mph
Risk Category:	II	Design Wind Speed With Ice:	40 mph
Topographic Factor Procedure:	Method 1	Operational Wind Speed:	60 mph
Topographic Category:	1	Design Ice Thickness:	1.00 in
Crest Height:	0 ft	HMSL:	667.00 ft

Seismic Parameters

Analysis Method:	Equivalent Lateral Force Method				
Site Class:	D - Stiff Soil				
Period Based on Rayleigh Method (sec):	1.29				
T_L (sec):	6	p:	1	C_s:	0.044
S_s:	0.166	S_1:	0.054	C_s Max:	0.044
F_a:	1.600	F_v:	2.400	C_s Min:	0.030
S_{ds}:	0.177	S_{d1}:	0.086		

Load Cases

1.2D + 1.0W	113 mph with No Ice
0.9D + 1.0W	113 mph with No Ice (Reduced DL)
1.2D + 1.0Di + 1.0Wi	40 mph with 1.00 in Radial Ice
1.2D + 1.0Ev + 1.0Eh	Seismic
0.9D - 1.0Ev + 1.0Eh	Seismic (Reduced DL)
1.0D + 1.0W	Serviceability 60 mph

Site Number: 370630 Code: ANSI/TIA-222-H

Site Name: SALISBURY CT, CT Engineering Number:13657492_C3_03 4/29/2021 3:00:44 PM

Customer: T-MOBILE

Shaft Section Properties

Sect Info	Length (ft)	Thick (in)	Fy (ksi)	Joint Type	Slip Joint Len (in)	Weight (lb)	Bottom Dia (in)	Bottom Elev (ft)	Bottom Area (in²)	Bottom Ix (in⁴)	Bottom W/t Ratio	Bottom D/t Ratio	Top Dia (in)	Top Elev (ft)	Top Area (in²)	Top Ix (in⁴)	Top W/t Ratio	Top D/t Ratio	Taper (in/ft)
1-18	51.000	0.5000	65		0.00	17,601	73.08	0.00	115.18	76659.4	24.36	146.16	55.73	51.00	87.66	33795.1	18.25	111.48	0.340018
2-18	51.000	0.4375	65	Slip	90.00	12,062	59.16	43.50	81.55	35532.9	22.43	135.23	41.82	94.50	57.47	12435.9	15.45	95.60	0.340018
3-18	45.000	0.2813	65	Slip	66.00	4,966	44.25	89.00	39.26	9592.3	26.33	157.33	28.95	134.00	25.60	2659.4	16.74	102.93	0.340018
4-18	18.500	0.1875	65	Slip	48.00	1,025	30.69	130.00	18.15	2133.9	27.45	163.68	24.40	148.50	14.41	1067.2	21.54	130.13	0.340018
				Shaft Weight		35,654													

Discrete Appurtenance Properties

Attach Elev (ft)	Description	Qty	Ka	Vert Ecc (ft)	No Ice Weight (lb)	No Ice EPAa (sf)	No Ice Orientation Factor	Ice Weight (lb)	Ice EPAa (sf)	Ice Orientation Factor
156.00	RFS Celwave PD220	1	1.00	0.000	25.00	5.400	1.00	118.06	10.033	1.00
150.00	RFS Celwave PD220	1	1.00	0.000	25.00	5.400	1.00	118.06	10.033	1.00
146.00	Flat T-Arm	4	0.75	0.000	250.00	12.900	0.67	389.19	18.347	0.67
144.00	Powerwave Allgon LGP21401	6	0.80	0.000	14.10	1.104	0.50	30.68	1.578	0.50
144.00	Raycap DC6-48-60-18-8F(32.8	1	0.80	0.000	32.80	1.470	1.00	73.80	1.934	1.00
144.00	Ericsson Radio 8843 - B2 + B66A	3	0.80	0.000	71.90	1.650	0.50	112.85	2.213	0.50
144.00	Ericsson RRUS 4449 B5, B12	3	0.80	0.000	71.00	1.969	0.50	113.83	2.589	0.50
144.00	Ericsson RRUS 4478 B14	3	0.80	0.000	59.40	2.021	0.67	100.19	2.648	0.67
144.00	Raycap DC9-48-60-24-8C-EV	1	0.80	0.000	16.00	4.788	1.00	101.80	5.766	1.00
144.00	Powerwave Allgon 7770.00	3	0.80	0.000	35.00	5.508	0.65	117.88	6.191	0.65
144.00	CCI DMP65R-BU4D	2	0.80	0.000	67.90	8.280	0.62	187.93	9.626	0.62
144.00	CCI OPA65R-BU4DA-K	2	0.80	0.000	52.50	8.435	0.72	174.33	9.790	0.72
144.00	CCI DMP65R-BU6DA	1	0.80	0.000	79.40	12.709	0.72	250.61	14.563	0.72
144.00	CCI OPA65R-BU6D	1	0.80	0.000	63.20	12.871	1.00	236.90	14.730	1.00
141.00	Flat T-Arm	3	0.75	0.000	250.00	12.900	0.67	388.71	18.328	0.67
134.00	Samsung B2/B66A RRH-BR049	3	0.80	0.000	84.40	1.875	0.50	126.48	2.470	0.50
134.00	Samsung B5/B13 RRH-BR04C	3	0.80	0.000	70.30	1.875	0.50	108.03	2.470	0.50
134.00	Raycap RVZDC-6627-PF-48	1	0.80	0.000	32.00	3.781	1.00	104.33	4.653	1.00
134.00	Samsung MT6407-77A	3	0.80	0.000	81.60	4.709	0.61	148.83	5.711	0.61
134.00	Antel LPA-80080/6CF ___	6	0.80	0.000	21.00	8.628	0.62	140.84	5.078	0.62
134.00	Round T-Arm	3	0.75	0.750	250.00	9.700	0.67	387.84	15.137	0.67
134.00	JMA Wireless MX06FRO660-03	6	0.80	0.000	60.00	9.872	0.71	218.13	11.682	0.71
123.00	Ericsson Radio 4449 B71 B85A	3	0.80	0.000	75.00	1.650	0.50	114.34	2.206	0.50
123.00	Ericsson RRUS 11 B4	3	0.80	0.000	50.70	2.791	0.67	98.06	3.508	0.67
123.00	Ericsson RRUS 11 B2	3	0.80	0.000	50.70	2.791	0.67	98.06	3.508	0.67
123.00	RFS APX16DWV-16DWVS-E-A20	3	0.80	0.000	40.70	6.586	0.60	117.11	8.003	0.60
123.00	Round T-Arm w/ Support Rails	3	0.75	0.000	400.00	14.400	0.67	618.73	22.406	0.67
123.00	RFS APXVAALL24 43-U-NA20	3	0.80	0.000	122.80	20.243	0.63	377.58	22.669	0.63
Totals	Num Loadings:28	78			7,225.30			14,708.29		

Linear Appurtenance Properties

Load Case Azimuth (deg) :

Elev From (ft)	Elev To (ft)	Qty	Description	Coax Dia (in)	Coax Wt (lb/ft)	Flat	Max Coax / Row	Dist Between Rows (in)	Dist Between Cols (in)	Azimuth (deg)	Dist From Face (in)	Exposed To Wind	Carrier
0.00	156.00	1	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	TOWN OF
0.00	144.00	2	0.39" (10mm) Fiber	0.39	0.06	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	144.00	2	0.78" (19.7mm) 8 AWG	0.78	0.59	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	144.00	3	0.96" (24.3mm) Cable	0.96	0.88	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	144.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	144.00	6	1/2" Coax	0.63	0.15	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY
0.00	144.00	2	2" conduit	2.38	3.65	N	0	0.00	0.00	0	0.00	N	AT&T MOBILITY

0.00	134.00	6	1 5/8" Coax	1.98	0.82	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	134.00	2	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	0.00	N	VERIZON WIRELESS
0.00	123.00	2	1 1/4" (1.25"- 31.8mm)	1.25	1.05	N	0	0.00	0.00	0	0.00	N	T-MOBILE
0.00	123.00	1	1 5/8" Hybriflex	1.98	1.30	N	0	0.00	0.00	0	0.00	N	T-MOBILE

Segment Properties (Max Len : 5. ft)

Seg Top Elev (ft)	Description	Thick (in)	Flat Dia (in)	Area (in^2)	Ix (in^4)	W/t Ratio	D/t Ratio	F'y (ksi)	S (in^3)	Z (in^3)	Weight (lb)
0.00		0.5000	73.080	115.180	76,659.4	24.36	146.16	72.7	2066.	0.0	0.0
5.00		0.5000	71.380	112.482	71,397.6	23.76	142.76	73.5	1970.	0.0	1,936.7
10.00		0.5000	69.680	109.784	66,382.4	23.16	139.36	74.2	1876.	0.0	1,890.8
15.00		0.5000	67.980	107.086	61,607.6	22.56	135.96	74.9	1785.	0.0	1,844.9
20.00		0.5000	66.280	104.389	57,067.5	21.96	132.56	75.6	1695.	0.0	1,799.0
25.00		0.5000	64.580	101.691	52,756.1	21.36	129.16	76.3	1609.	0.0	1,753.1
30.00		0.5000	62.879	98.993	48,667.6	20.76	125.76	77.0	1524.	0.0	1,707.2
35.00		0.5000	61.179	96.295	44,795.9	20.16	122.36	77.7	1442.	0.0	1,661.3
40.00		0.5000	59.479	93.597	41,135.2	19.56	118.96	78.4	1362.	0.0	1,615.4
43.50	Bot - Section 2	0.5000	58.289	91.708	38,695.0	19.15	116.58	78.9	1307.	0.0	1,103.5
45.00		0.5000	57.779	90.899	37,679.5	18.97	115.56	79.1	1284.	0.0	880.4
50.00		0.5000	56.079	88.201	34,423.1	18.37	112.16	79.8	1209.	0.0	2,878.9
51.00	Top - Section 1	0.4375	56.614	78.005	31,102.0	21.41	129.40	76.2	1082.	0.0	565.4
55.00		0.4375	55.254	76.117	28,897.3	20.86	126.29	76.9	1030.	0.0	1,048.9
60.00		0.4375	53.554	73.756	26,291.2	20.17	122.41	77.7	966.9	0.0	1,275.0
65.00		0.4375	51.854	71.395	23,846.6	19.49	118.52	78.5	905.8	0.0	1,234.8
70.00		0.4375	50.154	69.035	21,558.5	18.80	114.64	79.3	846.6	0.0	1,194.6
75.00		0.4375	48.454	66.674	19,421.6	18.12	110.75	80.1	789.5	0.0	1,154.5
80.00		0.4375	46.754	64.313	17,430.8	17.43	106.87	80.9	734.3	0.0	1,114.3
85.00		0.4375	45.054	61.953	15,581.0	16.75	102.98	81.7	681.2	0.0	1,074.1
89.00	Bot - Section 3	0.4375	43.693	60.064	14,199.1	16.20	99.87	82.3	640.1	0.0	830.4
90.00		0.4375	43.353	59.592	13,866.9	16.06	99.09	82.5	630.0	0.0	336.7
94.50	Top - Section 2	0.2813	42.386	37.592	8,419.8	25.16	150.68	71.8	391.3	0.0	1,482.3
95.00		0.2813	42.216	37.440	8,318.3	25.05	150.07	71.9	388.1	0.0	63.8
100.0		0.2813	40.516	35.922	7,347.0	23.99	144.03	73.2	357.2	0.0	624.1
105.0		0.2813	38.816	34.404	6,454.5	22.92	137.99	74.4	327.5	0.0	598.3
110.0		0.2813	37.116	32.886	5,637.3	21.85	131.94	75.7	299.2	0.0	572.4
115.0		0.2813	35.416	31.368	4,892.2	20.79	125.90	76.9	272.1	0.0	546.6
120.0		0.2813	33.716	29.851	4,215.9	19.72	119.86	78.2	246.3	0.0	520.8
123.0		0.2813	32.695	28.940	3,841.7	19.08	116.23	79.0	231.4	0.0	300.1
125.0		0.2813	32.015	28.333	3,604.9	18.66	113.81	79.5	221.8	0.0	194.9
130.0	Bot - Section 4	0.2813	30.315	26.815	3,056.0	17.59	107.77	80.7	198.6	0.0	469.1
134.0	Top - Section 3	0.1875	29.330	17.343	1,861.0	26.17	156.43	70.6	125.0	0.0	598.3
135.0		0.1875	28.990	17.141	1,796.6	25.85	154.61	71.0	122.1	0.0	58.7
140.0		0.1875	27.290	16.129	1,496.9	24.25	145.55	72.9	108.0	0.0	283.0
141.0		0.1875	26.950	15.927	1,441.2	23.93	143.73	73.3	105.3	0.0	54.5
144.0		0.1875	25.930	15.320	1,282.6	22.97	138.29	74.4	97.4	0.0	159.5
145.0		0.1875	25.590	15.117	1,232.5	22.65	136.48	74.8	94.9	0.0	51.8
146.0		0.1875	25.250	14.915	1,183.6	22.33	134.67	75.1	92.3	0.0	51.1
148.5		0.1875	24.400	14.409	1,067.2	21.54	130.13	76.1	86.2	0.0	124.7
											35,654.0

Load Case: 1.2D + 1.0W — 113 mph with No Ice — 19 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.00

Applied Segment Forces Summary

		Shaft Forces		Discrete Forces				Linear Forces		Sum of Forces			
Seg Elev (ft)	Description	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Torsion MY (lb-ft)	Moment MZ (lb-ft)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Wind FX (lb)	Dead Load (lb)	Torsion MY (lb-ft)	Moment MZ (lb)
0.00		260.4	0.0					0.0	0.0	260.4	0.0	0.0	0.0
5.00		514.6	2,324.1					0.0	168.8	514.6	2,492.8	0.0	0.0
10.00		502.3	2,269.0					0.0	168.8	502.3	2,437.8	0.0	0.0
15.00		490.1	2,213.9					0.0	168.8	490.1	2,382.7	0.0	0.0
20.00		477.8	2,158.8					0.0	168.8	477.8	2,327.6	0.0	0.0
25.00		465.6	2,103.7					0.0	168.8	465.6	2,272.5	0.0	0.0
30.00		458.7	2,048.6					0.0	168.8	458.7	2,217.4	0.0	0.0
35.00		460.9	1,993.6					0.0	168.8	460.9	2,162.3	0.0	0.0
40.00		395.4	1,938.5					0.0	168.8	395.4	2,107.3	0.0	0.0
43.50	Bot - Section 2	234.7	1,324.2					0.0	118.1	234.7	1,442.3	0.0	0.0
45.00		309.0	1,056.5					0.0	50.6	309.0	1,107.2	0.0	0.0
50.00		285.3	3,454.7					0.0	168.8	285.3	3,623.4	0.0	0.0
51.00	Top - Section 1	237.5	678.5					0.0	33.8	237.5	712.3	0.0	0.0
55.00		426.3	1,258.7					0.0	135.0	426.3	1,393.7	0.0	0.0
60.00		470.9	1,530.0					0.0	168.8	470.9	1,698.7	0.0	0.0
65.00		466.5	1,481.8					0.0	168.8	466.5	1,650.5	0.0	0.0
70.00		460.9	1,433.6					0.0	168.8	460.9	1,602.3	0.0	0.0
75.00		454.1	1,385.4					0.0	168.8	454.1	1,554.1	0.0	0.0
80.00		446.3	1,337.2					0.0	168.8	446.3	1,505.9	0.0	0.0
85.00		394.7	1,289.0					0.0	168.8	394.7	1,457.7	0.0	0.0
89.00	Bot - Section 3	217.1	996.5					0.0	135.0	217.1	1,131.5	0.0	0.0
90.00		236.6	404.0					0.0	33.8	236.6	437.8	0.0	0.0
94.50	Top - Section 2	214.3	1,778.8					0.0	151.9	214.3	1,930.7	0.0	0.0
95.00		230.2	76.6					0.0	16.9	230.2	93.5	0.0	0.0
100.00		412.3	748.9					0.0	168.8	412.3	917.7	0.0	0.0
105.00		400.5	717.9					0.0	168.8	400.5	886.7	0.0	0.0
110.00		388.1	686.9					0.0	168.8	388.1	855.7	0.0	0.0
115.00		375.1	655.9					0.0	168.8	375.1	824.7	0.0	0.0
120.00		291.4	624.9					0.0	168.8	291.4	793.7	0.0	0.0
123.00	Appurtenance(s)	177.2	360.1	2,543.5	0.0	0.0	2,663.6	0.0	101.3	2,720.7	3,125.0	0.0	0.0
125.00		240.0	233.9					0.0	59.4	240.0	293.2	0.0	0.0
130.00	Bot - Section 4	302.3	563.0					0.0	148.4	302.3	711.3	0.0	0.0
134.00	Top - Section 3	164.6	717.9	3,166.5	0.0	393.5	2,372.3	0.0	118.7	3,331.1	3,208.9	0.0	0.0
135.00		189.1	70.4					0.0	20.7	189.1	91.1	0.0	0.0
140.00		187.3	339.6					0.0	103.3	187.3	442.9	0.0	0.0
141.00	Appurtenance(s)	119.7	65.4	706.9	0.0	0.0	900.0	0.0	20.7	826.7	986.1	0.0	0.0
144.00	Appurtenance(s)	118.5	191.4	2,171.9	0.0	0.0	1,474.4	0.0	62.0	2,290.3	1,727.8	0.0	0.0
145.00		57.9	62.1					0.0	0.2	57.9	62.3	0.0	0.0
146.00	Appurtenance(s)	99.3	61.3	952.0	0.0	0.0	1,200.0	0.0	0.2	1,051.3	1,261.5	0.0	0.0
148.50		70.5	149.7					0.0	0.5	70.5	150.1	0.0	0.0
								Totals:		22,244.7	56,080.8	0.00	0.00

Load Case: 1.2D + 1.0W 113 mph with No Ice 19 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.20
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-56.13	-22.41	0.00	-2,251.34	0.00	2,251.34	7,541.17	2,021.41	13,251.2	11,272.6	0.00	0.00	0.207
5.00	-53.62	-21.93	0.00	-2,139.31	0.00	2,139.31	7,435.91	1,974.07	12,637.7	10,853.2	0.02	-0.04	0.204
10.00	-51.17	-21.46	0.00	-2,029.67	0.00	2,029.67	7,327.23	1,926.72	12,038.8	10,436.2	0.09	-0.08	0.202
15.00	-48.77	-21.00	0.00	-1,922.36	0.00	1,922.36	7,215.13	1,879.37	11,454.4	10,022.2	0.20	-0.12	0.199
20.00	-46.43	-20.55	0.00	-1,817.35	0.00	1,817.35	7,099.60	1,832.02	10,884.6	9,611.47	0.35	-0.17	0.196
25.00	-44.15	-20.12	0.00	-1,714.57	0.00	1,714.57	6,980.64	1,784.67	10,329.3	9,204.34	0.55	-0.21	0.193
30.00	-41.91	-19.68	0.00	-1,613.99	0.00	1,613.99	6,858.27	1,737.32	9,788.59	8,801.20	0.80	-0.26	0.190
35.00	-39.74	-19.24	0.00	-1,515.59	0.00	1,515.59	6,732.46	1,689.97	9,262.37	8,402.42	1.09	-0.30	0.186
40.00	-37.62	-18.86	0.00	-1,419.38	0.00	1,419.38	6,603.24	1,642.62	8,750.69	8,008.36	1.43	-0.35	0.183
43.50	-36.17	-18.63	0.00	-1,353.37	0.00	1,353.37	6,510.74	1,609.48	8,401.16	7,735.51	1.70	-0.38	0.181
45.00	-35.06	-18.34	0.00	-1,325.42	0.00	1,325.42	6,470.58	1,595.27	8,253.54	7,619.37	1.82	-0.40	0.180
50.00	-31.43	-18.04	0.00	-1,233.74	0.00	1,233.74	6,334.51	1,547.93	7,770.93	7,235.83	2.27	-0.45	0.176
51.00	-30.71	-17.81	0.00	-1,215.71	0.00	1,215.71	5,351.19	1,369.00	6,946.29	6,185.72	2.36	-0.46	0.202
55.00	-29.30	-17.40	0.00	-1,144.47	0.00	1,144.47	5,265.80	1,335.85	6,614.05	5,938.51	2.76	-0.50	0.198
60.00	-27.59	-16.94	0.00	-1,057.49	0.00	1,057.49	5,155.98	1,294.42	6,210.21	5,632.89	3.31	-0.55	0.193
65.00	-25.93	-16.48	0.00	-972.82	0.00	972.82	5,042.74	1,252.99	5,819.08	5,331.40	3.92	-0.60	0.188
70.00	-24.32	-16.02	0.00	-890.43	0.00	890.43	4,926.07	1,211.56	5,440.67	5,034.40	4.58	-0.66	0.182
75.00	-22.76	-15.57	0.00	-810.32	0.00	810.32	4,805.98	1,170.13	5,074.99	4,742.24	5.30	-0.72	0.176
80.00	-21.24	-15.13	0.00	-732.46	0.00	732.46	4,682.46	1,128.70	4,722.02	4,455.30	6.08	-0.77	0.169
85.00	-19.77	-14.73	0.00	-656.82	0.00	656.82	4,555.52	1,087.27	4,381.78	4,173.92	6.92	-0.83	0.162
89.00	-18.64	-14.51	0.00	-597.90	0.00	597.90	4,451.50	1,054.13	4,118.74	3,953.08	7.64	-0.88	0.156
90.00	-18.20	-14.27	0.00	-583.40	0.00	583.40	4,425.16	1,045.84	4,054.25	3,898.48	7.82	-0.89	0.154
94.50	-16.26	-14.04	0.00	-519.17	0.00	519.17	2,429.52	659.73	2,508.88	2,107.23	8.68	-0.94	0.254
95.00	-16.16	-13.82	0.00	-512.16	0.00	512.16	2,423.93	657.07	2,488.66	2,093.84	8.78	-0.94	0.252
100.00	-15.23	-13.41	0.00	-443.08	0.00	443.08	2,366.19	630.43	2,290.98	1,960.54	9.82	-1.03	0.233
105.00	-14.34	-13.01	0.00	-376.03	0.00	376.03	2,305.01	603.79	2,101.48	1,828.59	10.94	-1.10	0.212
110.00	-13.47	-12.62	0.00	-310.97	0.00	310.97	2,240.42	577.15	1,920.16	1,698.37	12.13	-1.18	0.190
115.00	-12.64	-12.25	0.00	-247.85	0.00	247.85	2,172.39	550.52	1,747.02	1,570.22	13.41	-1.25	0.164
120.00	-11.85	-11.95	0.00	-186.62	0.00	186.62	2,100.95	523.88	1,582.06	1,444.51	14.76	-1.31	0.135
123.00	-8.78	-9.16	0.00	-150.78	0.00	150.78	2,056.44	507.89	1,487.01	1,370.41	15.59	-1.35	0.115
125.00	-8.49	-8.92	0.00	-132.46	0.00	132.46	2,026.08	497.24	1,425.28	1,321.61	16.16	-1.37	0.105
130.00	-7.78	-8.60	0.00	-87.87	0.00	87.87	1,947.78	470.60	1,276.68	1,201.87	17.62	-1.41	0.077
134.00	-4.65	-5.19	0.00	-53.07	0.00	53.07	1,102.25	304.37	801.14	661.88	18.82	-1.44	0.085
135.00	-4.56	-5.00	0.00	-47.88	0.00	47.88	1,095.19	300.82	782.56	649.92	19.12	-1.44	0.078
140.00	-4.13	-4.81	0.00	-22.86	0.00	22.86	1,057.85	283.06	692.91	590.46	20.65	-1.47	0.043
141.00	-3.16	-3.95	0.00	-18.06	0.00	18.06	1,049.97	279.51	675.64	578.66	20.96	-1.48	0.034
144.00	-1.49	-1.62	0.00	-6.19	0.00	6.19	1,025.50	268.86	625.12	543.49	21.89	-1.48	0.013
145.00	-1.43	-1.56	0.00	-4.57	0.00	4.57	1,017.07	265.31	608.72	531.85	22.20	-1.48	0.010
146.00	-0.20	-0.48	0.00	-3.01	0.00	3.01	1,008.51	261.75	592.53	520.26	22.52	-1.49	0.006
148.50	0.00	-0.47	0.00	-1.82	0.00	1.82	986.50	252.88	553.02	491.52	23.29	-1.49	0.004

Load Case: 0.9D + 1.0W — 113 mph with No Ice (Reduced DL) — 19 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		260.4	0.0					0.0	0.0	260.4	0.0	0.0	0.0
5.00		514.6	1,743.0					0.0	126.6	514.6	1,869.6	0.0	0.0
10.00		502.3	1,701.7					0.0	126.6	502.3	1,828.3	0.0	0.0
15.00		490.1	1,660.4					0.0	126.6	490.1	1,787.0	0.0	0.0
20.00		477.8	1,619.1					0.0	126.6	477.8	1,745.7	0.0	0.0
25.00		465.6	1,577.8					0.0	126.6	465.6	1,704.4	0.0	0.0
30.00		458.7	1,536.5					0.0	126.6	458.7	1,663.1	0.0	0.0
35.00		460.9	1,495.2					0.0	126.6	460.9	1,621.8	0.0	0.0
40.00		395.4	1,453.9					0.0	126.6	395.4	1,580.4	0.0	0.0
43.50	Bot - Section 2	234.7	993.1					0.0	88.6	234.7	1,081.7	0.0	0.0
45.00		309.0	792.4					0.0	38.0	309.0	830.4	0.0	0.0
50.00		285.3	2,591.0					0.0	126.6	285.3	2,717.6	0.0	0.0
51.00	Top - Section 1	237.5	508.9					0.0	25.3	237.5	534.2	0.0	0.0
55.00		426.3	944.0					0.0	101.3	426.3	1,045.3	0.0	0.0
60.00		470.9	1,147.5					0.0	126.6	470.9	1,274.1	0.0	0.0
65.00		466.5	1,111.3					0.0	126.6	466.5	1,237.9	0.0	0.0
70.00		460.9	1,075.2					0.0	126.6	460.9	1,201.8	0.0	0.0
75.00		454.1	1,039.0					0.0	126.6	454.1	1,165.6	0.0	0.0
80.00		446.3	1,002.9					0.0	126.6	446.3	1,129.5	0.0	0.0
85.00		394.7	966.7					0.0	126.6	394.7	1,093.3	0.0	0.0
89.00	Bot - Section 3	217.1	747.4					0.0	101.3	217.1	848.6	0.0	0.0
90.00		236.6	303.0					0.0	25.3	236.6	328.3	0.0	0.0
94.50	Top - Section 2	214.3	1,334.1					0.0	113.9	214.3	1,448.0	0.0	0.0
95.00		230.2	57.4					0.0	12.7	230.2	70.1	0.0	0.0
100.00		412.3	561.7					0.0	126.6	412.3	688.3	0.0	0.0
105.00		400.5	538.4					0.0	126.6	400.5	665.0	0.0	0.0
110.00		388.1	515.2					0.0	126.6	388.1	641.8	0.0	0.0
115.00		375.1	491.9					0.0	126.6	375.1	618.5	0.0	0.0
120.00		291.4	468.7					0.0	126.6	291.4	595.3	0.0	0.0
123.00	Appurtenance(s)	177.2	270.1	2,543.5	0.0	0.0	1,997.7	0.0	76.0	2,720.7	2,343.7	0.0	0.0
125.00		240.0	175.4					0.0	44.5	240.0	219.9	0.0	0.0
130.00	Bot - Section 4	302.3	422.2					0.0	111.3	302.3	533.5	0.0	0.0
134.00	Top - Section 3	164.6	538.5	3,166.5	0.0	393.5	1,779.2	0.0	89.0	3,331.1	2,406.7	0.0	0.0
135.00		189.1	52.8					0.0	15.5	189.1	68.3	0.0	0.0
140.00		187.3	254.7					0.0	77.4	187.3	332.2	0.0	0.0
141.00	Appurtenance(s)	119.7	49.1	706.9	0.0	0.0	675.0	0.0	15.5	826.7	739.6	0.0	0.0
144.00	Appurtenance(s)	118.5	143.5	2,171.9	0.0	0.0	1,105.8	0.0	46.5	2,290.3	1,295.8	0.0	0.0
145.00		57.9	46.6					0.0	0.1	57.9	46.7	0.0	0.0
146.00	Appurtenance(s)	99.3	46.0	952.0	0.0	0.0	900.0	0.0	0.1	1,051.3	946.1	0.0	0.0
148.50		70.5	112.3					0.0	0.3	70.5	112.6	0.0	0.0
								Totals:		22,244.7	42,060.6	0.00	0.00

Load Case: 0.9D + 1.0W 113 mph with No Ice (Reduced DL) 19 Iterations

Gust Response Factor :1.10
Dead Load Factor :0.90
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-42.10	-22.40	0.00	-2,243.17	0.00	2,243.17	7,541.17	2,021.41	13,251.2	11,272.6	0.00	0.00	0.205
5.00	-40.21	-21.91	0.00	-2,131.17	0.00	2,131.17	7,435.91	1,974.07	12,637.7	10,853.2	0.02	-0.04	0.202
10.00	-38.37	-21.44	0.00	-2,021.60	0.00	2,021.60	7,327.23	1,926.72	12,038.8	10,436.2	0.09	-0.08	0.199
15.00	-36.57	-20.97	0.00	-1,914.41	0.00	1,914.41	7,215.13	1,879.37	11,454.4	10,022.2	0.20	-0.12	0.196
20.00	-34.81	-20.52	0.00	-1,809.56	0.00	1,809.56	7,099.60	1,832.02	10,884.6	9,611.47	0.35	-0.17	0.193
25.00	-33.09	-20.07	0.00	-1,706.98	0.00	1,706.98	6,980.64	1,784.67	10,329.3	9,204.34	0.55	-0.21	0.190
30.00	-31.41	-19.63	0.00	-1,606.63	0.00	1,606.63	6,858.27	1,737.32	9,788.59	8,801.20	0.79	-0.26	0.187
35.00	-29.78	-19.18	0.00	-1,508.48	0.00	1,508.48	6,732.46	1,689.97	9,262.37	8,402.42	1.09	-0.30	0.184
40.00	-28.19	-18.80	0.00	-1,412.56	0.00	1,412.56	6,603.24	1,642.62	8,750.69	8,008.36	1.43	-0.35	0.181
43.50	-27.10	-18.57	0.00	-1,346.76	0.00	1,346.76	6,510.74	1,609.48	8,401.16	7,735.51	1.70	-0.38	0.178
45.00	-26.26	-18.27	0.00	-1,318.91	0.00	1,318.91	6,470.58	1,595.27	8,253.54	7,619.37	1.82	-0.40	0.177
50.00	-23.54	-17.98	0.00	-1,227.56	0.00	1,227.56	6,334.51	1,547.93	7,770.93	7,235.83	2.26	-0.44	0.174
51.00	-23.00	-17.74	0.00	-1,209.59	0.00	1,209.59	5,351.19	1,369.00	6,946.29	6,185.72	2.35	-0.45	0.200
55.00	-21.94	-17.33	0.00	-1,138.61	0.00	1,138.61	5,265.80	1,335.85	6,614.05	5,938.51	2.75	-0.49	0.196
60.00	-20.65	-16.86	0.00	-1,051.97	0.00	1,051.97	5,155.98	1,294.42	6,210.21	5,632.89	3.30	-0.55	0.191
65.00	-19.40	-16.40	0.00	-967.65	0.00	967.65	5,042.74	1,252.99	5,819.08	5,331.40	3.90	-0.60	0.186
70.00	-18.19	-15.95	0.00	-885.63	0.00	885.63	4,926.07	1,211.56	5,440.67	5,034.40	4.56	-0.66	0.180
75.00	-17.02	-15.50	0.00	-805.89	0.00	805.89	4,805.98	1,170.13	5,074.99	4,742.24	5.28	-0.71	0.174
80.00	-15.88	-15.05	0.00	-728.41	0.00	728.41	4,682.46	1,128.70	4,722.02	4,455.30	6.06	-0.77	0.167
85.00	-14.78	-14.65	0.00	-653.16	0.00	653.16	4,555.52	1,087.27	4,381.78	4,173.92	6.89	-0.83	0.160
89.00	-13.93	-14.43	0.00	-594.54	0.00	594.54	4,451.50	1,054.13	4,118.74	3,953.08	7.60	-0.87	0.154
90.00	-13.59	-14.20	0.00	-580.11	0.00	580.11	4,425.16	1,045.84	4,054.25	3,898.48	7.79	-0.88	0.152
94.50	-12.14	-13.97	0.00	-516.22	0.00	516.22	2,429.52	659.73	2,508.88	2,107.23	8.64	-0.93	0.250
95.00	-12.07	-13.74	0.00	-509.23	0.00	509.23	2,423.93	657.07	2,488.66	2,093.84	8.74	-0.94	0.249
100.00	-11.37	-13.34	0.00	-440.51	0.00	440.51	2,366.19	630.43	2,290.98	1,960.54	9.77	-1.02	0.230
105.00	-10.69	-12.94	0.00	-373.83	0.00	373.83	2,305.01	603.79	2,101.48	1,828.59	10.88	-1.10	0.210
110.00	-10.04	-12.55	0.00	-309.14	0.00	309.14	2,240.42	577.15	1,920.16	1,698.37	12.08	-1.17	0.187
115.00	-9.42	-12.17	0.00	-246.39	0.00	246.39	2,172.39	550.52	1,747.02	1,570.22	13.35	-1.24	0.162
120.00	-8.82	-11.88	0.00	-185.53	0.00	185.53	2,100.95	523.88	1,582.06	1,444.51	14.69	-1.31	0.133
123.00	-6.53	-9.10	0.00	-149.90	0.00	149.90	2,056.44	507.89	1,487.01	1,370.41	15.52	-1.34	0.113
125.00	-6.31	-8.86	0.00	-131.69	0.00	131.69	2,026.08	497.24	1,425.28	1,321.61	16.09	-1.36	0.103
130.00	-5.78	-8.55	0.00	-87.37	0.00	87.37	1,947.78	470.60	1,276.68	1,201.87	17.54	-1.41	0.076
134.00	-3.46	-5.16	0.00	-52.77	0.00	52.77	1,102.25	304.37	801.14	661.88	18.73	-1.43	0.083
135.00	-3.39	-4.97	0.00	-47.61	0.00	47.61	1,095.19	300.82	782.56	649.92	19.03	-1.44	0.077
140.00	-3.06	-4.78	0.00	-22.75	0.00	22.75	1,057.85	283.06	692.91	590.46	20.55	-1.46	0.042
141.00	-2.35	-3.93	0.00	-17.97	0.00	17.97	1,049.97	279.51	675.64	578.66	20.86	-1.47	0.033
144.00	-1.11	-1.61	0.00	-6.17	0.00	6.17	1,025.50	268.86	625.12	543.49	21.79	-1.48	0.012
145.00	-1.06	-1.55	0.00	-4.56	0.00	4.56	1,017.07	265.31	608.72	531.85	22.09	-1.48	0.010
146.00	-0.15	-0.48	0.00	-3.01	0.00	3.01	1,008.51	261.75	592.53	520.26	22.40	-1.48	0.006
148.50	0.00	-0.47	0.00	-1.82	0.00	1.82	986.50	252.88	553.02	491.52	23.18	-1.48	0.004

Load Case: 1.2D + 1.0Di + 1.0Wi — 40 mph with 1.00 in Radial Ice — 18 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		54.8	0.0					0.0	0.0	54.8	0.0	0.0	0.0
5.00		108.4	2,673.3					0.0	168.8	108.4	2,842.1	0.0	0.0
10.00		106.1	2,650.1					0.0	168.8	106.1	2,818.9	0.0	0.0
15.00		103.6	2,605.6					0.0	168.8	103.6	2,774.3	0.0	0.0
20.00		101.2	2,554.1					0.0	168.8	101.2	2,722.8	0.0	0.0
25.00		98.7	2,498.9					0.0	168.8	98.7	2,667.7	0.0	0.0
30.00		97.4	2,441.5					0.0	168.8	97.4	2,610.3	0.0	0.0
35.00		98.0	2,382.5					0.0	168.8	98.0	2,551.3	0.0	0.0
40.00		84.2	2,322.3					0.0	168.8	84.2	2,491.1	0.0	0.0
43.50	Bot - Section 2	50.0	1,590.5					0.0	118.1	50.0	1,708.6	0.0	0.0
45.00		65.9	1,172.1					0.0	50.6	65.9	1,222.7	0.0	0.0
50.00		60.9	3,831.4					0.0	168.8	60.9	4,000.2	0.0	0.0
51.00	Top - Section 1	50.7	753.9					0.0	33.8	50.7	787.7	0.0	0.0
55.00		91.1	1,554.5					0.0	135.0	91.1	1,689.6	0.0	0.0
60.00		100.8	1,891.6					0.0	168.8	100.8	2,060.4	0.0	0.0
65.00		100.0	1,835.1					0.0	168.8	100.0	2,003.9	0.0	0.0
70.00		98.9	1,778.3					0.0	168.8	98.9	1,947.1	0.0	0.0
75.00		97.7	1,721.1					0.0	168.8	97.7	1,889.9	0.0	0.0
80.00		96.2	1,663.6					0.0	168.8	96.2	1,832.4	0.0	0.0
85.00		85.2	1,605.8					0.0	168.8	85.2	1,774.6	0.0	0.0
89.00	Bot - Section 3	46.9	1,243.8					0.0	135.0	46.9	1,378.8	0.0	0.0
90.00		51.2	466.3					0.0	33.8	51.2	500.1	0.0	0.0
94.50	Top - Section 2	46.4	2,050.5					0.0	151.9	46.4	2,202.4	0.0	0.0
95.00		49.9	106.8					0.0	16.9	49.9	123.6	0.0	0.0
100.00		89.5	1,039.5					0.0	168.8	89.5	1,208.3	0.0	0.0
105.00		87.2	998.1					0.0	168.8	87.2	1,166.9	0.0	0.0
110.00		84.7	956.5					0.0	168.8	84.7	1,125.3	0.0	0.0
115.00		82.1	914.7					0.0	168.8	82.1	1,083.5	0.0	0.0
120.00		64.0	872.8					0.0	168.8	64.0	1,041.6	0.0	0.0
123.00	Appurtenance(s)	39.0	504.9	409.6	0.0	0.0	4,769.3	0.0	101.3	448.6	5,375.5	0.0	0.0
125.00		53.0	328.7					0.0	59.4	53.0	388.0	0.0	0.0
130.00	Bot - Section 4	66.8	788.5					0.0	148.4	66.8	936.9	0.0	0.0
134.00	Top - Section 3	36.5	893.4	430.0	0.0	77.0	4,558.8	0.0	118.7	466.5	5,570.9	0.0	0.0
135.00		42.1	113.9					0.0	20.7	42.1	134.5	0.0	0.0
140.00		41.7	545.1					0.0	103.3	41.7	648.3	0.0	0.0
141.00	Appurtenance(s)	26.8	106.1	125.8	0.0	0.0	1,226.1	0.0	20.7	152.6	1,352.9	0.0	0.0
144.00	Appurtenance(s)	26.5	309.2	323.6	0.0	0.0	2,843.2	0.0	62.0	350.2	3,214.3	0.0	0.0
145.00		13.0	101.0					0.0	0.2	13.0	101.2	0.0	0.0
146.00	Appurtenance(s)	22.3	99.7	169.7	0.0	0.0	1,636.8	0.0	0.2	192.0	1,736.6	0.0	0.0
148.50		15.9	242.6					0.0	0.5	15.9	243.1	0.0	0.0
								Totals:		4,193.97	71,928.3	0.00	0.00

Load Case: 1.2D + 1.0Di + 1.0Wi 40 mph with 1.00 in Radial Ice 18 Iterations

Gust Response Factor :1.10 Ice Dead Load Factor :1.00
Dead Load Factor :1.20 Ice Importance Factor :1.00
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-72.13	-4.24	0.00	-408.79	0.00	408.79	7,541.17	2,021.41	13,251.2	11,272.6	0.00	0.00	0.046
5.00	-69.29	-4.14	0.00	-387.61	0.00	387.61	7,435.91	1,974.07	12,637.7	10,853.2	0.00	-0.01	0.045
10.00	-66.47	-4.04	0.00	-366.92	0.00	366.92	7,327.23	1,926.72	12,038.8	10,436.2	0.02	-0.01	0.044
15.00	-63.70	-3.94	0.00	-346.72	0.00	346.72	7,215.13	1,879.37	11,454.4	10,022.2	0.04	-0.02	0.043
20.00	-60.97	-3.85	0.00	-327.01	0.00	327.01	7,099.60	1,832.02	10,884.6	9,611.47	0.06	-0.03	0.043
25.00	-58.31	-3.76	0.00	-307.76	0.00	307.76	6,980.64	1,784.67	10,329.3	9,204.34	0.10	-0.04	0.042
30.00	-55.69	-3.67	0.00	-288.98	0.00	288.98	6,858.27	1,737.32	9,788.59	8,801.20	0.14	-0.05	0.041
35.00	-53.14	-3.57	0.00	-270.65	0.00	270.65	6,732.46	1,689.97	9,262.37	8,402.42	0.20	-0.05	0.040
40.00	-50.65	-3.49	0.00	-252.78	0.00	252.78	6,603.24	1,642.62	8,750.69	8,008.36	0.26	-0.06	0.039
43.50	-48.94	-3.44	0.00	-240.56	0.00	240.56	6,510.74	1,609.48	8,401.16	7,735.51	0.31	-0.07	0.039
45.00	-47.72	-3.38	0.00	-235.39	0.00	235.39	6,470.58	1,595.27	8,253.54	7,619.37	0.33	-0.07	0.038
50.00	-43.72	-3.32	0.00	-218.49	0.00	218.49	6,334.51	1,547.93	7,770.93	7,235.83	0.41	-0.08	0.037
51.00	-42.93	-3.27	0.00	-215.17	0.00	215.17	5,351.19	1,369.00	6,946.29	6,185.72	0.43	-0.08	0.043
55.00	-41.24	-3.18	0.00	-202.09	0.00	202.09	5,265.80	1,335.85	6,614.05	5,938.51	0.50	-0.09	0.042
60.00	-39.18	-3.09	0.00	-186.17	0.00	186.17	5,155.98	1,294.42	6,210.21	5,632.89	0.60	-0.10	0.041
65.00	-37.18	-2.99	0.00	-170.74	0.00	170.74	5,042.74	1,252.99	5,819.08	5,331.40	0.70	-0.11	0.039
70.00	-35.23	-2.89	0.00	-155.80	0.00	155.80	4,926.07	1,211.56	5,440.67	5,034.40	0.82	-0.12	0.038
75.00	-33.34	-2.80	0.00	-141.34	0.00	141.34	4,805.98	1,170.13	5,074.99	4,742.24	0.95	-0.13	0.037
80.00	-31.51	-2.70	0.00	-127.37	0.00	127.37	4,682.46	1,128.70	4,722.02	4,455.30	1.09	-0.14	0.035
85.00	-29.73	-2.62	0.00	-113.86	0.00	113.86	4,555.52	1,087.27	4,381.78	4,173.92	1.24	-0.15	0.034
89.00	-28.35	-2.57	0.00	-103.40	0.00	103.40	4,451.50	1,054.13	4,118.74	3,953.08	1.37	-0.16	0.033
90.00	-27.85	-2.52	0.00	-100.83	0.00	100.83	4,425.16	1,045.84	4,054.25	3,898.48	1.40	-0.16	0.032
94.50	-25.65	-2.47	0.00	-89.50	0.00	89.50	2,429.52	659.73	2,508.88	2,107.23	1.55	-0.17	0.053
95.00	-25.53	-2.42	0.00	-88.27	0.00	88.27	2,423.93	657.07	2,488.66	2,093.84	1.57	-0.17	0.053
100.00	-24.32	-2.33	0.00	-76.17	0.00	76.17	2,366.19	630.43	2,290.98	1,960.54	1.75	-0.18	0.049
105.00	-23.15	-2.25	0.00	-64.50	0.00	64.50	2,305.01	603.79	2,101.48	1,828.59	1.95	-0.19	0.045
110.00	-22.03	-2.16	0.00	-53.26	0.00	53.26	2,240.42	577.15	1,920.16	1,698.37	2.16	-0.21	0.041
115.00	-20.94	-2.08	0.00	-42.45	0.00	42.45	2,172.39	550.52	1,747.02	1,570.22	2.38	-0.22	0.037
120.00	-19.90	-2.02	0.00	-32.04	0.00	32.04	2,100.95	523.88	1,582.06	1,444.51	2.62	-0.23	0.032
123.00	-14.53	-1.55	0.00	-25.99	0.00	25.99	2,056.44	507.89	1,487.01	1,370.41	2.77	-0.24	0.026
125.00	-14.14	-1.49	0.00	-22.89	0.00	22.89	2,026.08	497.24	1,425.28	1,321.61	2.87	-0.24	0.024
130.00	-13.20	-1.42	0.00	-15.42	0.00	15.42	1,947.78	470.60	1,276.68	1,201.87	3.12	-0.25	0.020
134.00	-7.63	-0.93	0.00	-9.65	0.00	9.65	1,102.25	304.37	801.14	661.88	3.33	-0.25	0.022
135.00	-7.50	-0.89	0.00	-8.71	0.00	8.71	1,095.19	300.82	782.56	649.92	3.39	-0.25	0.020
140.00	-6.85	-0.85	0.00	-4.25	0.00	4.25	1,057.85	283.06	692.91	590.46	3.65	-0.26	0.014
141.00	-5.50	-0.69	0.00	-3.40	0.00	3.40	1,049.97	279.51	675.64	578.66	3.71	-0.26	0.011
144.00	-2.29	-0.32	0.00	-1.34	0.00	1.34	1,025.50	268.86	625.12	543.49	3.87	-0.26	0.005
145.00	-2.18	-0.31	0.00	-1.01	0.00	1.01	1,017.07	265.31	608.72	531.85	3.93	-0.26	0.004
146.00	-0.45	-0.11	0.00	-0.70	0.00	0.70	1,008.51	261.75	592.53	520.26	3.98	-0.26	0.002
148.50	0.00	-0.11	0.00	-0.42	0.00	0.42	986.50	252.88	553.02	491.52	4.12	-0.26	0.001

Load Case: 1.0D + 1.0W Serviceability 60 mph 18 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.00
Wind Load Factor :1.00

Applied Segment Forces Summary

Seg Elev (ft)	Description	Shaft Forces Wind FX (lb)	Shaft Forces Dead Load (lb)	Discrete Forces Wind FX (lb)	Discrete Forces Torsion MY (lb-ft)	Discrete Forces Moment MZ (lb-ft)	Discrete Forces Dead Load (lb)	Linear Forces Wind FX (lb)	Linear Forces Dead Load (lb)	Sum of Forces Wind FX (lb)	Sum of Forces Dead Load (lb)	Sum of Forces Torsion MY (lb-ft)	Sum of Forces Moment MZ (lb)
0.00		65.7	0.0					0.0	0.0	65.7	0.0	0.0	0.0
5.00		129.8	1,936.7					0.0	140.7	129.8	2,077.4	0.0	0.0
10.00		126.7	1,890.8					0.0	140.7	126.7	2,031.5	0.0	0.0
15.00		123.6	1,844.9					0.0	140.7	123.6	1,985.6	0.0	0.0
20.00		120.5	1,799.0					0.0	140.7	120.5	1,939.7	0.0	0.0
25.00		117.4	1,753.1					0.0	140.7	117.4	1,893.8	0.0	0.0
30.00		115.7	1,707.2					0.0	140.7	115.7	1,847.9	0.0	0.0
35.00		116.3	1,661.3					0.0	140.7	116.3	1,801.9	0.0	0.0
40.00		99.7	1,615.4					0.0	140.7	99.7	1,756.0	0.0	0.0
43.50	Bot - Section 2	59.2	1,103.5					0.0	98.5	59.2	1,201.9	0.0	0.0
45.00		78.0	880.4					0.0	42.2	78.0	922.6	0.0	0.0
50.00		72.0	2,878.9					0.0	140.7	72.0	3,019.5	0.0	0.0
51.00	Top - Section 1	59.9	565.4					0.0	28.1	59.9	593.6	0.0	0.0
55.00		107.5	1,048.9					0.0	112.5	107.5	1,161.4	0.0	0.0
60.00		118.8	1,275.0					0.0	140.7	118.8	1,415.6	0.0	0.0
65.00		117.7	1,234.8					0.0	140.7	117.7	1,375.4	0.0	0.0
70.00		116.3	1,194.6					0.0	140.7	116.3	1,335.3	0.0	0.0
75.00		114.5	1,154.5					0.0	140.7	114.5	1,295.1	0.0	0.0
80.00		112.6	1,114.3					0.0	140.7	112.6	1,255.0	0.0	0.0
85.00		99.6	1,074.1					0.0	140.7	99.6	1,214.8	0.0	0.0
89.00	Bot - Section 3	54.8	830.4					0.0	112.5	54.8	942.9	0.0	0.0
90.00		59.7	336.7					0.0	28.1	59.7	364.8	0.0	0.0
94.50	Top - Section 2	54.1	1,482.3					0.0	126.6	54.1	1,608.9	0.0	0.0
95.00		58.1	63.8					0.0	14.1	58.1	77.9	0.0	0.0
100.00		104.0	624.1					0.0	140.7	104.0	764.7	0.0	0.0
105.00		101.0	598.3					0.0	140.7	101.0	738.9	0.0	0.0
110.00		97.9	572.4					0.0	140.7	97.9	713.1	0.0	0.0
115.00		94.6	546.6					0.0	140.7	94.6	687.3	0.0	0.0
120.00		73.5	520.8					0.0	140.7	73.5	661.4	0.0	0.0
123.00	Appurtenance(s)	44.7	300.1	641.6	0.0	0.0	2,219.7	0.0	84.4	686.3	2,604.2	0.0	0.0
125.00		60.5	194.9					0.0	49.5	60.5	244.3	0.0	0.0
130.00	Bot - Section 4	76.2	469.1					0.0	123.7	76.2	592.8	0.0	0.0
134.00	Top - Section 3	41.5	598.3	798.8	0.0	99.3	1,976.9	0.0	98.9	840.3	2,674.1	0.0	0.0
135.00		47.7	58.7					0.0	17.2	47.7	75.9	0.0	0.0
140.00		47.2	283.0					0.0	86.0	47.2	369.1	0.0	0.0
141.00	Appurtenance(s)	30.2	54.5	178.3	0.0	0.0	750.0	0.0	17.2	208.5	821.7	0.0	0.0
144.00	Appurtenance(s)	29.9	159.5	547.9	0.0	0.0	1,228.7	0.0	51.6	577.8	1,439.8	0.0	0.0
145.00		14.6	51.8					0.0	0.2	14.6	51.9	0.0	0.0
146.00	Appurtenance(s)	25.1	51.1	240.1	0.0	0.0	1,000.0	0.0	0.2	265.2	1,051.2	0.0	0.0
148.50		17.8	124.7					0.0	0.4	17.8	125.1	0.0	0.0
								Totals:		5,611.35	46,734.0	0.00	0.00

Load Case: 1.0D + 1.0W Serviceability 60 mph 18 Iterations

Gust Response Factor :1.10
Dead Load Factor :1.00
Wind Load Factor :1.00

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-46.78	-5.65	0.00	-566.47	0.00	566.47	7,541.17	2,021.41	13,251.2	11,272.6	0.00	0.00	0.056
5.00	-44.71	-5.53	0.00	-538.21	0.00	538.21	7,435.91	1,974.07	12,637.7	10,853.2	0.01	-0.01	0.056
10.00	-42.67	-5.41	0.00	-510.57	0.00	510.57	7,327.23	1,926.72	12,038.8	10,436.2	0.02	-0.02	0.055
15.00	-40.69	-5.29	0.00	-483.53	0.00	483.53	7,215.13	1,879.37	11,454.4	10,022.2	0.05	-0.03	0.054
20.00	-38.75	-5.18	0.00	-457.07	0.00	457.07	7,099.60	1,832.02	10,884.6	9,611.47	0.09	-0.04	0.053
25.00	-36.85	-5.07	0.00	-431.18	0.00	431.18	6,980.64	1,784.67	10,329.3	9,204.34	0.14	-0.05	0.052
30.00	-35.00	-4.96	0.00	-405.85	0.00	405.85	6,858.27	1,737.32	9,788.59	8,801.20	0.20	-0.06	0.051
35.00	-33.20	-4.84	0.00	-381.08	0.00	381.08	6,732.46	1,689.97	9,262.37	8,402.42	0.27	-0.08	0.050
40.00	-31.44	-4.75	0.00	-356.86	0.00	356.86	6,603.24	1,642.62	8,750.69	8,008.36	0.36	-0.09	0.049
43.50	-30.24	-4.69	0.00	-340.25	0.00	340.25	6,510.74	1,609.48	8,401.16	7,735.51	0.43	-0.10	0.049
45.00	-29.32	-4.61	0.00	-333.22	0.00	333.22	6,470.58	1,595.27	8,253.54	7,619.37	0.46	-0.10	0.048
50.00	-26.30	-4.54	0.00	-310.15	0.00	310.15	6,334.51	1,547.93	7,770.93	7,235.83	0.57	-0.11	0.047
51.00	-25.70	-4.48	0.00	-305.61	0.00	305.61	5,351.19	1,369.00	6,946.29	6,185.72	0.59	-0.11	0.054
55.00	-24.54	-4.38	0.00	-287.69	0.00	287.69	5,265.80	1,335.85	6,614.05	5,938.51	0.69	-0.12	0.053
60.00	-23.12	-4.26	0.00	-265.81	0.00	265.81	5,155.98	1,294.42	6,210.21	5,632.89	0.83	-0.14	0.052
65.00	-21.75	-4.14	0.00	-244.51	0.00	244.51	5,042.74	1,252.99	5,819.08	5,331.40	0.98	-0.15	0.050
70.00	-20.41	-4.03	0.00	-223.79	0.00	223.79	4,926.07	1,211.56	5,440.67	5,034.40	1.15	-0.17	0.049
75.00	-19.12	-3.91	0.00	-203.65	0.00	203.65	4,805.98	1,170.13	5,074.99	4,742.24	1.33	-0.18	0.047
80.00	-17.86	-3.80	0.00	-184.08	0.00	184.08	4,682.46	1,128.70	4,722.02	4,455.30	1.53	-0.19	0.045
85.00	-16.65	-3.70	0.00	-165.06	0.00	165.06	4,555.52	1,087.27	4,381.78	4,173.92	1.74	-0.21	0.043
89.00	-15.70	-3.65	0.00	-150.25	0.00	150.25	4,451.50	1,054.13	4,118.74	3,953.08	1.92	-0.22	0.042
90.00	-15.34	-3.59	0.00	-146.61	0.00	146.61	4,425.16	1,045.84	4,054.25	3,898.48	1.97	-0.22	0.041
94.50	-13.73	-3.53	0.00	-130.47	0.00	130.47	2,429.52	659.73	2,508.88	2,107.23	2.18	-0.24	0.068
95.00	-13.65	-3.47	0.00	-128.70	0.00	128.70	2,423.93	657.07	2,488.66	2,093.84	2.21	-0.24	0.067
100.00	-12.89	-3.37	0.00	-111.34	0.00	111.34	2,366.19	630.43	2,290.98	1,960.54	2.47	-0.26	0.062
105.00	-12.15	-3.27	0.00	-94.49	0.00	94.49	2,305.01	603.79	2,101.48	1,828.59	2.75	-0.28	0.057
110.00	-11.43	-3.17	0.00	-78.14	0.00	78.14	2,240.42	577.15	1,920.16	1,698.37	3.05	-0.30	0.051
115.00	-10.74	-3.08	0.00	-62.28	0.00	62.28	2,172.39	550.52	1,747.02	1,570.22	3.37	-0.31	0.045
120.00	-10.08	-3.00	0.00	-46.89	0.00	46.89	2,100.95	523.88	1,582.06	1,444.51	3.71	-0.33	0.037
123.00	-7.48	-2.30	0.00	-37.89	0.00	37.89	2,056.44	507.89	1,487.01	1,370.41	3.92	-0.34	0.031
125.00	-7.24	-2.24	0.00	-33.29	0.00	33.29	2,026.08	497.24	1,425.28	1,321.61	4.06	-0.34	0.029
130.00	-6.65	-2.16	0.00	-22.08	0.00	22.08	1,947.78	470.60	1,276.68	1,201.87	4.43	-0.36	0.022
134.00	-3.98	-1.30	0.00	-13.34	0.00	13.34	1,102.25	304.37	801.14	661.88	4.73	-0.36	0.024
135.00	-3.90	-1.26	0.00	-12.03	0.00	12.03	1,095.19	300.82	782.56	649.92	4.81	-0.36	0.022
140.00	-3.53	-1.21	0.00	-5.75	0.00	5.75	1,057.85	283.06	692.91	590.46	5.19	-0.37	0.013
141.00	-2.71	-0.99	0.00	-4.54	0.00	4.54	1,049.97	279.51	675.64	578.66	5.27	-0.37	0.010
144.00	-1.28	-0.41	0.00	-1.56	0.00	1.56	1,025.50	268.86	625.12	543.49	5.50	-0.37	0.004
145.00	-1.22	-0.39	0.00	-1.15	0.00	1.15	1,017.07	265.31	608.72	531.85	5.58	-0.37	0.003
146.00	-0.17	-0.12	0.00	-0.76	0.00	0.76	1,008.51	261.75	592.53	520.26	5.66	-0.37	0.002
148.50	0.00	-0.12	0.00	-0.46	0.00	0.46	986.50	252.88	553.02	491.52	5.86	-0.37	0.001

Equivalent Lateral Forces Method Analysis

Spectral Response Acceleration for Short Period (S_s):	0.17
Spectral Response Acceleration at 1.0 Second Period (S_1):	0.05
Long-Period Transition Period (T_L):	6
Importance Factor (I_E):	1.00
Site Coefficient F_a:	1.60
Site Coeffiecient F_v:	2.40
Response Modification Coefficient (R):	1.50
Design Spectral Response Acceleration at Short Period (S_{ds}):	0.18
Design Spectral Response Acceleration at 1.0 Second Period (S_{d1}):	0.09
Seismic Response Coefficient (C_s):	0.04
Upper Limit C_s	0.04
Lower Limit C_s	0.03
Period based on Rayleigh Method (sec):	1.29
Redundancy Factor (p):	1.00
Seismic Force Distribution Exponent (k):	1.40
Total Unfactored Dead Load:	46.78 k
Seismic Base Shear (E):	2.08 k

Load Case 1.2D + 1.0Ev + 1.0Eh Seismic

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	147.25	125	134	0.007	15	155
38	145.50	51	54	0.003	6	63
37	144.50	52	54	0.003	6	64
36	142.50	211	216	0.011	24	261
35	140.50	72	72	0.004	8	89
34	137.50	369	359	0.019	39	456
33	134.50	76	72	0.004	8	94
32	132.00	697	640	0.034	70	861
31	127.50	593	519	0.027	57	732
30	124.00	244	206	0.011	22	302
29	121.50	384	314	0.016	34	475
28	117.50	661	516	0.027	56	817
27	112.50	687	505	0.026	55	849
26	107.50	713	492	0.026	54	881
25	102.50	739	477	0.025	52	913
24	97.50	765	460	0.024	50	945
23	94.75	78	45	0.002	5	96
22	92.25	1,609	896	0.047	98	1,988
21	89.50	365	195	0.010	21	451
20	87.00	943	484	0.025	53	1,165
19	82.50	1,215	579	0.030	63	1,501
18	77.50	1,255	548	0.029	60	1,550
17	72.50	1,295	515	0.027	56	1,600
16	67.50	1,335	480	0.025	52	1,650
15	62.50	1,375	444	0.023	48	1,699

14	57.50	1,416	407	0.021	44	1,749
13	53.00	1,161	298	0.016	32	1,435
12	50.50	594	142	0.007	16	733
11	47.50	3,020	665	0.035	72	3,730
10	44.25	923	184	0.010	20	1,140
9	41.75	1,202	221	0.012	24	1,485
8	37.50	1,756	278	0.015	30	2,169
7	32.50	1,802	233	0.012	25	2,226
6	27.50	1,848	190	0.010	21	2,283
5	22.50	1,894	147	0.008	16	2,340
4	17.50	1,940	106	0.006	12	2,396
3	12.50	1,986	68	0.004	7	2,453
2	7.50	2,031	34	0.002	4	2,510
1	2.50	2,077	7	0.000	1	2,566
RFS Celwave PD220	148.50	25	27	0.001	3	31
RFS Celwave PD220	148.50	25	27	0.001	3	31
Flat T-Arm	146.00	1,000	1,057	0.055	115	1,235
Powerwave Allgon LGP	144.00	85	88	0.005	10	105
Raycap DC6-48-60-18-	144.00	33	34	0.002	4	41
Ericsson Radio 8843	144.00	216	224	0.012	24	266
Ericsson RRUS 4449 B	144.00	213	221	0.012	24	263
Ericsson RRUS 4478 B	144.00	178	185	0.010	20	220
Raycap DC9-48-60-24-	144.00	16	17	0.001	2	20
Powerwave Allgon 777	144.00	105	109	0.006	12	130
CCI DMP65R-BU4D	144.00	136	141	0.007	15	168
CCI OPA65R-BU4DA-K	144.00	105	109	0.006	12	130
CCI DMP65R-BU6DA	144.00	79	82	0.004	9	98
CCI OPA65R-BU6D	144.00	63	66	0.003	7	78
Flat T-Arm	141.00	750	755	0.040	82	927
Samsung B2/B66A RRH-	134.00	253	237	0.012	26	313
Samsung B5/B13 RRH-B	134.00	211	198	0.010	22	261
Raycap RVZDC-6627-PF	134.00	32	30	0.002	3	40
Samsung MT6407-77A	134.00	245	230	0.012	25	302
Antel LPA-80080/6CF	134.00	126	118	0.006	13	156
Round T-Arm	134.00	750	703	0.037	77	927
JMA Wireless MX06FRO	134.00	360	338	0.018	37	445
Ericsson Radio 4449	123.00	225	187	0.010	20	278
Ericsson RRUS 11 B4	123.00	152	127	0.007	14	188
Ericsson RRUS 11 B2	123.00	152	127	0.007	14	188
RFS APX16DWV-16DWVS-	123.00	122	102	0.005	11	151
Round T-Arm w/ Suppo	123.00	1,200	999	0.052	109	1,482
RFS APXVAALL24 43-U-	123.00	368	307	0.016	33	455
		46,784	19,095	1.000	2,082	57,798

Load Case 0.9D - 1.0Ev + 1.0Eh Seismic (Reduced DL)

Segment	Height Above Base (ft)	Weight (lb)	W_z (lb-ft)	C_{vx}	Horizontal Force (lb)	Vertical Force (lb)
39	147.25	125	134	0.007	15	108
38	145.50	51	54	0.003	6	44
37	144.50	52	54	0.003	6	45
36	142.50	211	216	0.011	24	183
35	140.50	72	72	0.004	8	62
34	137.50	369	359	0.019	39	319
33	134.50	76	72	0.004	8	66
32	132.00	697	640	0.034	70	603
31	127.50	593	519	0.027	57	513
30	124.00	244	206	0.011	22	211
29	121.50	384	314	0.016	34	332
28	117.50	661	516	0.027	56	572
27	112.50	687	505	0.026	55	594

26	107.50	713	492	0.026	54	617
25	102.50	739	477	0.025	52	639
24	97.50	765	460	0.024	50	661
23	94.75	78	45	0.002	5	67
22	92.25	1,609	896	0.047	98	1,391
21	89.50	365	195	0.010	21	315
20	87.00	943	484	0.025	53	815
19	82.50	1,215	579	0.030	63	1,050
18	77.50	1,255	548	0.029	60	1,085
17	72.50	1,295	515	0.027	56	1,120
16	67.50	1,335	480	0.025	52	1,154
15	62.50	1,375	444	0.023	48	1,189
14	57.50	1,416	407	0.021	44	1,224
13	53.00	1,161	298	0.016	32	1,004
12	50.50	594	142	0.007	16	513
11	47.50	3,020	665	0.035	72	2,611
10	44.25	923	184	0.010	20	798
9	41.75	1,202	221	0.012	24	1,039
8	37.50	1,756	278	0.015	30	1,518
7	32.50	1,802	233	0.012	25	1,558
6	27.50	1,848	190	0.010	21	1,598
5	22.50	1,894	147	0.008	16	1,637
4	17.50	1,940	106	0.006	12	1,677
3	12.50	1,986	68	0.004	7	1,717
2	7.50	2,031	34	0.002	4	1,756
1	2.50	2,077	7	0.000	1	1,796
RFS Celwave PD220	148.50	25	27	0.001	3	22
RFS Celwave PD220	148.50	25	27	0.001	3	22
Flat T-Arm	146.00	1,000	1,057	0.055	115	865
Powerwave Allgon LGP	144.00	85	88	0.005	10	73
Raycap DC6-48-60-18-	144.00	33	34	0.002	4	28
Ericsson Radio 8843	144.00	216	224	0.012	24	186
Ericsson RRUS 4449 B	144.00	213	221	0.012	24	184
Ericsson RRUS 4478 B	144.00	178	185	0.010	20	154
Raycap DC9-48-60-24-	144.00	16	17	0.001	2	14
Powerwave Allgon 777	144.00	105	109	0.006	12	91
CCI DMP65R-BU4D	144.00	136	141	0.007	15	117
CCI OPA65R-BU4DA-K	144.00	105	109	0.006	12	91
CCI DMP65R-BU6DA	144.00	79	82	0.004	9	69
CCI OPA65R-BU6D	144.00	63	66	0.003	7	55
Flat T-Arm	141.00	750	755	0.040	82	648
Samsung B2/B66A RRH-	134.00	253	237	0.012	26	219
Samsung B5/B13 RRH-B	134.00	211	198	0.010	22	182
Raycap RVZDC-6627-PF	134.00	32	30	0.002	3	28
Samsung MT6407-77A	134.00	245	230	0.012	25	212
Antel LPA-80080/6CF	134.00	126	118	0.006	13	109
Round T-Arm	134.00	750	703	0.037	77	648
JMA Wireless MX06FRO	134.00	360	338	0.018	37	311
Ericsson Radio 4449	123.00	225	187	0.010	20	195
Ericsson RRUS 11 B4	123.00	152	127	0.007	14	132
Ericsson RRUS 11 B2	123.00	152	127	0.007	14	132
RFS APX16DWV-16DWVS-	123.00	122	102	0.005	11	106
Round T-Arm w/ Suppo	123.00	1,200	999	0.052	109	1,038
RFS APXVAALL24 43-U-	123.00	368	307	0.016	33	319
		46,784	19,095	1.000	2,082	40,449

Load Case 1.2D + 1.0Ev + 1.0Eh Seismic

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-55.23	-2.08	0.00	-218.02	0.00	218.02	7,541.17	2,021.41	13,251.2	11,272.6	0.00	0.00	0.027
5.00	-52.72	-2.08	0.00	-207.61	0.00	207.61	7,435.91	1,974.07	12,637.7	10,853.2	0.00	0.00	0.026
10.00	-50.27	-2.08	0.00	-197.20	0.00	197.20	7,327.23	1,926.72	12,038.8	10,436.2	0.01	-0.01	0.026
15.00	-47.87	-2.07	0.00	-186.81	0.00	186.81	7,215.13	1,879.37	11,454.4	10,022.2	0.02	-0.01	0.025
20.00	-45.53	-2.06	0.00	-176.46	0.00	176.46	7,099.60	1,832.02	10,884.6	9,611.47	0.03	-0.02	0.025
25.00	-43.25	-2.04	0.00	-166.18	0.00	166.18	6,980.64	1,784.67	10,329.3	9,204.34	0.05	-0.02	0.024
30.00	-41.02	-2.02	0.00	-155.99	0.00	155.99	6,858.27	1,737.32	9,788.59	8,801.20	0.08	-0.02	0.024
35.00	-38.85	-1.99	0.00	-145.91	0.00	145.91	6,732.46	1,689.97	9,262.37	8,402.42	0.11	-0.03	0.023
40.00	-37.37	-1.96	0.00	-135.98	0.00	135.98	6,603.24	1,642.62	8,750.69	8,008.36	0.14	-0.03	0.023
43.50	-36.23	-1.95	0.00	-129.10	0.00	129.10	6,510.74	1,609.48	8,401.16	7,735.51	0.17	-0.04	0.022
45.00	-32.50	-1.87	0.00	-126.19	0.00	126.19	6,470.58	1,595.27	8,253.54	7,619.37	0.18	-0.04	0.022
50.00	-31.76	-1.86	0.00	-116.83	0.00	116.83	6,334.51	1,547.93	7,770.93	7,235.83	0.22	-0.04	0.021
51.00	-30.33	-1.83	0.00	-114.97	0.00	114.97	5,351.19	1,369.00	6,946.29	6,185.72	0.23	-0.04	0.024
55.00	-28.58	-1.78	0.00	-107.67	0.00	107.67	5,265.80	1,335.85	6,614.05	5,938.51	0.27	-0.05	0.024
60.00	-26.88	-1.73	0.00	-98.76	0.00	98.76	5,155.98	1,294.42	6,210.21	5,632.89	0.32	-0.05	0.023
65.00	-25.23	-1.68	0.00	-90.09	0.00	90.09	5,042.74	1,252.99	5,819.08	5,331.40	0.38	-0.06	0.022
70.00	-23.63	-1.63	0.00	-81.68	0.00	81.68	4,926.07	1,211.56	5,440.67	5,034.40	0.44	-0.06	0.021
75.00	-22.08	-1.57	0.00	-73.55	0.00	73.55	4,805.98	1,170.13	5,074.99	4,742.24	0.51	-0.07	0.020
80.00	-20.58	-1.50	0.00	-65.72	0.00	65.72	4,682.46	1,128.70	4,722.02	4,455.30	0.58	-0.07	0.019
85.00	-19.42	-1.45	0.00	-58.20	0.00	58.20	4,555.52	1,087.27	4,381.78	4,173.92	0.66	-0.08	0.018
89.00	-18.96	-1.43	0.00	-52.39	0.00	52.39	4,451.50	1,054.13	4,118.74	3,953.08	0.73	-0.08	0.018
90.00	-16.98	-1.33	0.00	-50.96	0.00	50.96	4,425.16	1,045.84	4,054.25	3,898.48	0.75	-0.08	0.017
94.50	-16.88	-1.33	0.00	-44.97	0.00	44.97	2,429.52	659.73	2,508.88	2,107.23	0.83	-0.09	0.028
95.00	-15.94	-1.28	0.00	-44.31	0.00	44.31	2,423.93	657.07	2,488.66	2,093.84	0.84	-0.09	0.028
100.00	-15.02	-1.22	0.00	-37.93	0.00	37.93	2,366.19	630.43	2,290.98	1,960.54	0.94	-0.10	0.026
105.00	-14.14	-1.17	0.00	-31.81	0.00	31.81	2,305.01	603.79	2,101.48	1,828.59	1.04	-0.10	0.024
110.00	-13.29	-1.12	0.00	-25.96	0.00	25.96	2,240.42	577.15	1,920.16	1,698.37	1.15	-0.11	0.021
115.00	-12.48	-1.06	0.00	-20.38	0.00	20.38	2,172.39	550.52	1,747.02	1,570.22	1.27	-0.11	0.019
120.00	-12.00	-1.02	0.00	-15.09	0.00	15.09	2,100.95	523.88	1,582.06	1,444.51	1.39	-0.12	0.016
123.00	-8.96	-0.79	0.00	-12.02	0.00	12.02	2,056.44	507.89	1,487.01	1,370.41	1.46	-0.12	0.013
125.00	-8.22	-0.74	0.00	-10.43	0.00	10.43	2,026.08	497.24	1,425.28	1,321.61	1.52	-0.12	0.012
130.00	-7.36	-0.67	0.00	-6.74	0.00	6.74	1,947.78	470.60	1,276.68	1,201.87	1.65	-0.13	0.009
134.00	-4.83	-0.45	0.00	-4.08	0.00	4.08	1,102.25	304.37	801.14	661.88	1.76	-0.13	0.011
135.00	-4.37	-0.41	0.00	-3.63	0.00	3.63	1,095.19	300.82	782.56	649.92	1.78	-0.13	0.010
140.00	-4.28	-0.40	0.00	-1.58	0.00	1.58	1,057.85	283.06	692.91	590.46	1.92	-0.13	0.007
141.00	-3.10	-0.29	0.00	-1.18	0.00	1.18	1,049.97	279.51	675.64	578.66	1.95	-0.13	0.005
144.00	-1.51	-0.15	0.00	-0.30	0.00	0.30	1,025.50	268.86	625.12	543.49	2.03	-0.13	0.002
145.00	-1.45	-0.14	0.00	-0.15	0.00	0.15	1,017.07	265.31	608.72	531.85	2.06	-0.13	0.002
146.00	-0.06	-0.01	0.00	-0.02	0.00	0.02	1,008.51	261.75	592.53	520.26	2.09	-0.13	0.000
148.50	0.00	-0.01	0.00	0.00	0.00	0.00	986.50	252.88	553.02	491.52	2.16	-0.13	0.000

Load Case 0.9D - 1.0Ev + 1.0Eh Seismic (Reduced DL)

Calculated Forces

Seg Elev (ft)	Pu FY (-) (kips)	Vu FX (-) (kips)	Tu MY (ft-kips)	Mu MZ (ft-kips)	Mu MX (ft-kips)	Resultant Moment (ft-kips)	phi Pn (kips)	phi Vn (kips)	phi Tn (ft-kips)	phi Mn (ft-kips)	Total Deflect (in)	Rotation (deg)	Ratio
0.00	-38.65	-2.08	0.00	-217.13	0.00	217.13	7,541.17	2,021.41	13,251.2	11,272.6	0.00	0.00	0.024
5.00	-36.90	-2.08	0.00	-206.72	0.00	206.72	7,435.91	1,974.07	12,637.7	10,853.2	0.00	0.00	0.024
10.00	-35.18	-2.08	0.00	-196.32	0.00	196.32	7,327.23	1,926.72	12,038.8	10,436.2	0.01	-0.01	0.024
15.00	-33.50	-2.07	0.00	-185.94	0.00	185.94	7,215.13	1,879.37	11,454.4	10,022.2	0.02	-0.01	0.023
20.00	-31.86	-2.05	0.00	-175.61	0.00	175.61	7,099.60	1,832.02	10,884.6	9,611.47	0.03	-0.02	0.023
25.00	-30.27	-2.03	0.00	-165.35	0.00	165.35	6,980.64	1,784.67	10,329.3	9,204.34	0.05	-0.02	0.022
30.00	-28.71	-2.01	0.00	-155.19	0.00	155.19	6,858.27	1,737.32	9,788.59	8,801.20	0.08	-0.02	0.022
35.00	-27.19	-1.98	0.00	-145.14	0.00	145.14	6,732.46	1,689.97	9,262.37	8,402.42	0.11	-0.03	0.021
40.00	-26.15	-1.96	0.00	-135.24	0.00	135.24	6,603.24	1,642.62	8,750.69	8,008.36	0.14	-0.03	0.021
43.50	-25.35	-1.94	0.00	-128.39	0.00	128.39	6,510.74	1,609.48	8,401.16	7,735.51	0.16	-0.04	0.020
45.00	-22.74	-1.86	0.00	-125.48	0.00	125.48	6,470.58	1,595.27	8,253.54	7,619.37	0.18	-0.04	0.020
50.00	-22.23	-1.85	0.00	-116.16	0.00	116.16	6,334.51	1,547.93	7,770.93	7,235.83	0.22	-0.04	0.020
51.00	-21.23	-1.82	0.00	-114.31	0.00	114.31	5,351.19	1,369.00	6,946.29	6,185.72	0.23	-0.04	0.022
55.00	-20.00	-1.77	0.00	-107.04	0.00	107.04	5,265.80	1,335.85	6,614.05	5,938.51	0.27	-0.05	0.022
60.00	-18.81	-1.73	0.00	-98.17	0.00	98.17	5,155.98	1,294.42	6,210.21	5,632.89	0.32	-0.05	0.021
65.00	-17.66	-1.67	0.00	-89.54	0.00	89.54	5,042.74	1,252.99	5,819.08	5,331.40	0.38	-0.06	0.020
70.00	-16.54	-1.62	0.00	-81.17	0.00	81.17	4,926.07	1,211.56	5,440.67	5,034.40	0.44	-0.06	0.019
75.00	-15.45	-1.56	0.00	-73.08	0.00	73.08	4,805.98	1,170.13	5,074.99	4,742.24	0.51	-0.07	0.019
80.00	-14.40	-1.50	0.00	-65.29	0.00	65.29	4,682.46	1,128.70	4,722.02	4,455.30	0.58	-0.07	0.018
85.00	-13.59	-1.44	0.00	-57.81	0.00	57.81	4,555.52	1,087.27	4,381.78	4,173.92	0.66	-0.08	0.017
89.00	-13.27	-1.42	0.00	-52.04	0.00	52.04	4,451.50	1,054.13	4,118.74	3,953.08	0.73	-0.08	0.016
90.00	-11.88	-1.32	0.00	-50.61	0.00	50.61	4,425.16	1,045.84	4,054.25	3,898.48	0.74	-0.08	0.016
94.50	-11.81	-1.32	0.00	-44.66	0.00	44.66	2,429.52	659.73	2,508.88	2,107.23	0.83	-0.09	0.026
95.00	-11.15	-1.27	0.00	-44.00	0.00	44.00	2,423.93	657.07	2,488.66	2,093.84	0.83	-0.09	0.026
100.00	-10.51	-1.22	0.00	-37.66	0.00	37.66	2,366.19	630.43	2,290.98	1,960.54	0.93	-0.09	0.024
105.00	-9.90	-1.16	0.00	-31.58	0.00	31.58	2,305.01	603.79	2,101.48	1,828.59	1.03	-0.10	0.022
110.00	-9.30	-1.11	0.00	-25.77	0.00	25.77	2,240.42	577.15	1,920.16	1,698.37	1.14	-0.11	0.019
115.00	-8.73	-1.05	0.00	-20.23	0.00	20.23	2,172.39	550.52	1,747.02	1,570.22	1.26	-0.11	0.017
120.00	-8.40	-1.02	0.00	-14.98	0.00	14.98	2,100.95	523.88	1,582.06	1,444.51	1.38	-0.12	0.014
123.00	-6.27	-0.79	0.00	-11.93	0.00	11.93	2,056.44	507.89	1,487.01	1,370.41	1.46	-0.12	0.012
125.00	-5.76	-0.73	0.00	-10.35	0.00	10.35	2,026.08	497.24	1,425.28	1,321.61	1.51	-0.12	0.011
130.00	-5.15	-0.66	0.00	-6.69	0.00	6.69	1,947.78	470.60	1,276.68	1,201.87	1.64	-0.13	0.008
134.00	-3.38	-0.45	0.00	-4.05	0.00	4.05	1,102.25	304.37	801.14	661.88	1.75	-0.13	0.009
135.00	-3.06	-0.41	0.00	-3.60	0.00	3.60	1,095.19	300.82	782.56	649.92	1.77	-0.13	0.008
140.00	-3.00	-0.40	0.00	-1.57	0.00	1.57	1,057.85	283.06	692.91	590.46	1.91	-0.13	0.005
141.00	-2.17	-0.29	0.00	-1.17	0.00	1.17	1,049.97	279.51	675.64	578.66	1.94	-0.13	0.004
144.00	-1.06	-0.14	0.00	-0.30	0.00	0.30	1,025.50	268.86	625.12	543.49	2.02	-0.13	0.002
145.00	-1.02	-0.14	0.00	-0.15	0.00	0.15	1,017.07	265.31	608.72	531.85	2.05	-0.13	0.001
146.00	-0.04	-0.01	0.00	-0.01	0.00	0.01	1,008.51	261.75	592.53	520.26	2.07	-0.13	0.000
148.50	0.00	-0.01	0.00	0.00	0.00	0.00	986.50	252.88	553.02	491.52	2.14	-0.13	0.000

Analysis Summary

	Reactions						Max Usage	
Load Case	Shear FX (kips)	Shear FZ (kips)	Axial FY (kips)	Moment MX (ft-kips)	Moment MY (ft-kips)	Moment MZ (ft-kips)	Elev (ft)	Interaction Ratio
1.2D + 1.0W	22.41	0.00	56.13	0.00	0.00	2251.34	94.50	0.25
0.9D + 1.0W	22.40	0.00	42.10	0.00	0.00	2243.17	94.50	0.25
1.2D + 1.0Di + 1.0Wi	4.24	0.00	72.13	0.00	0.00	408.79	94.50	0.05
1.2D + 1.0Ev + 1.0Eh	2.08	0.00	55.23	0.00	0.00	218.02	94.50	0.03
0.9D - 1.0Ev + 1.0Eh	2.08	0.00	38.65	0.00	0.00	217.13	94.50	0.03
1.0D + 1.0W	5.65	0.00	46.78	0.00	0.00	566.47	94.50	0.07

Base Plate & Anchor Rod Analysis

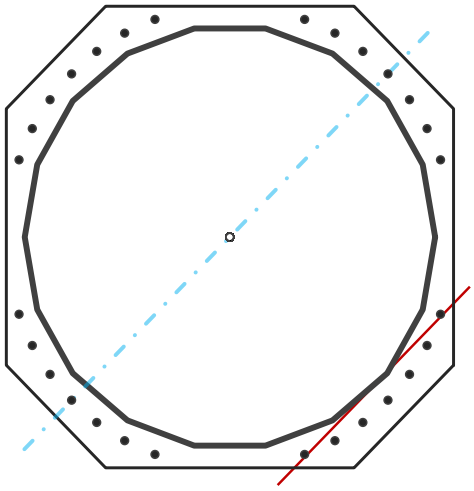
Pole Dimensions		
Number of Sides	18	-
Diameter	73.08	in
Thickness	1/2	in
Orientation Offset	0	°

Base Reactions		
Moment, Mu	2,251.3	k-ft
Axial, Pu	56.1	k
Shear, Vu	22.4	k
Neutral Axis	225	°

Report Capacities		
Component	Capacity	Result
Base Plate	15%	Pass
Anchor Rods	21%	Pass
Dwyidag	-	-

Base Plate		
Shape	Square	-
Width	81	in
Thickness	3 1/4	in
Grade	A572-50	
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Clip	18	in
Orientation Offset	0	°
Anchor Rod Detail	d	η=0.5
Clear Distance	3	in
Applied Moment, Mu	735.6	k
Bending Stress, ϕMn	4913.1	k

Original Anchor Rods		
Arrangement	Cluster	-
Quantity	28	-
Diameter, ø	2 1/4	in
Bolt Circle	81	in
Grade	A615-75	
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Spacing	6.0	in
Orientation Offset	0	°
Applied Force, Pu	49.6	k
Anchor Rods, ϕPn	243.6	k



Calculations for Monopole Base Plate & Anchor Rod Analysis

Reaction Distribution

Reaction	Shear Vu	Moment Mu	Factor
-	k	k-ft	-
Base Forces	22.4	2251.3	1.00
Anchor Rod Forces	22.4	2251.3	1.00
Additional Bolt (Grp1) Forces	0.0	0.0	0.00
Additional Bolt (Grp2) Forces	0.0	0.0	0.00
Dywidag Forces	0.0	0.0	0.00
Stiffener Forces	0.0	0.0	0.00

Geometric Properties

Section	Gross Area	Net Area	Individual Inertia	Threads per Inch	Moment of Inertia
-	in^2	in^2	in^4	#	in^4
Pole	113.4305	6.3017	0.5269		74701.41
Bolt	3.9761	3.2477	0.8393	4.5	74601.82
Bolt1	0.0000	0.0000	0.0000	0	0.00
Bolt2	0.0000	0.0000	0.0000	0	0.00
Dywidag	0.0000	0.0000	0.0000		0.00
Stiffener	0.0000	0.0000	0.0000		0.00

Base Plate		
Shape	Square	-
Width, W	81	in
Thickness, t	3.25	in
Yield Strength, Fy	50	ksi
Tensile Strength, Fu	65	ksi
Base Plate Chord	34.933	in
Detail Type	d	-
Detail Factor	0.50	-
Clear Distance	3	-

Anchor Rods		
Anchor Rod Quantity, N	28	-
Rod Diameter, d	2.25	in
Bolt Circle, BC	81	in
Yield Strength, Fy	75	ksi
Tensile Strength, Fu	100	ksi
Applied Axial, Pu	49.6	k
Applied Shear, Vu	0.2	k
Compressive Capacity, ϕPn	243.6	k
Tensile Capacity, ϕRnt	0.204	OK
Interaction Capacity	0.205	OK

External Base Plate		
Chord Length AA	41.346	in
Additional AA	0.000	in
Section Modulus, Z	109.180	in^3
Applied Moment, Mu	735.6	k-ft
Bending Capacity, ϕMn	4913.1	k-ft
Capacity, Mu/ϕMn	0.150	OK
Chord Length AB	40.217	in
Additional AB	0.000	in
Section Modulus, Z	106.198	in^3
Applied Moment, Mu	598.4	k-ft
Bending Capacity, ϕMn	4778.9	k-ft
Capacity, Mu/ϕMn	0.125	OK
Bend Line Length	0.000	in
Additional Bend Line	0.000	in
Section Modulus, Z	0.000	in^3
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

Internal Base Plate		
Arc Length	0.000	in
Section Modulus, Z	0.000	in^3
Moment Arm	0.000	in
Applied Moment, Mu	0.0	k-ft
Bending Capacity, ϕMn	0.0	k-ft
Capacity, Mu/ϕMn		

RAN Template:	A&L Template:	Power System Template:
67D07C 6102 MUAC	67D07C_1QP+1OP	Custom

CTNH547A_L600_2.1_draft

Section 1 - Site Information

Site ID: CTNH547A
Status: Draft
Version: 2.1
Project Type: L600
Approved: Not Approved
Approved By: Not Approved
Last Modified: 4/23/2019 11:42:21 AM
Last Modified By: GSM1900\AMurill9

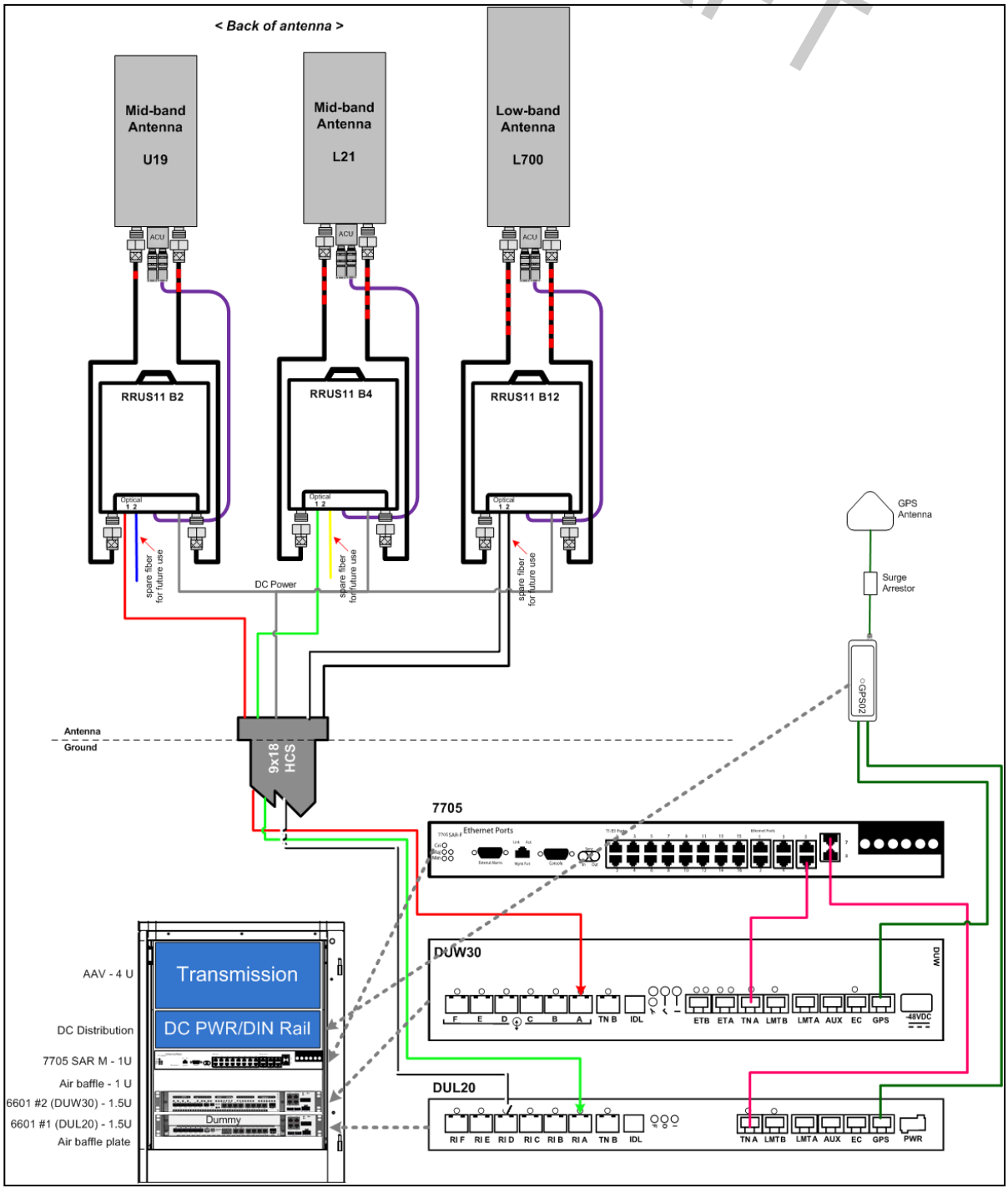
Site Name: CTNH547A
Site Class: Monopole
Site Type: Structure Non Building
Plan Year:
Market: CONNECTICUT
Vendor: Ericsson
Landlord: ATC

Latitude: 41.9808000000
Longitude: -73.4183000000
Address: 52 Library St
City, State: Salisbury, CT
Region: NORTHEAST

RAN Template: 67D07C 6102 MUAC			AL Template: 67D07C_1QP+1OP	
Sector Count: 3	**Antenna Count:** 6	**Coax Line Count:** 0	**TMA Count:** 0	**RRU Count:** 9

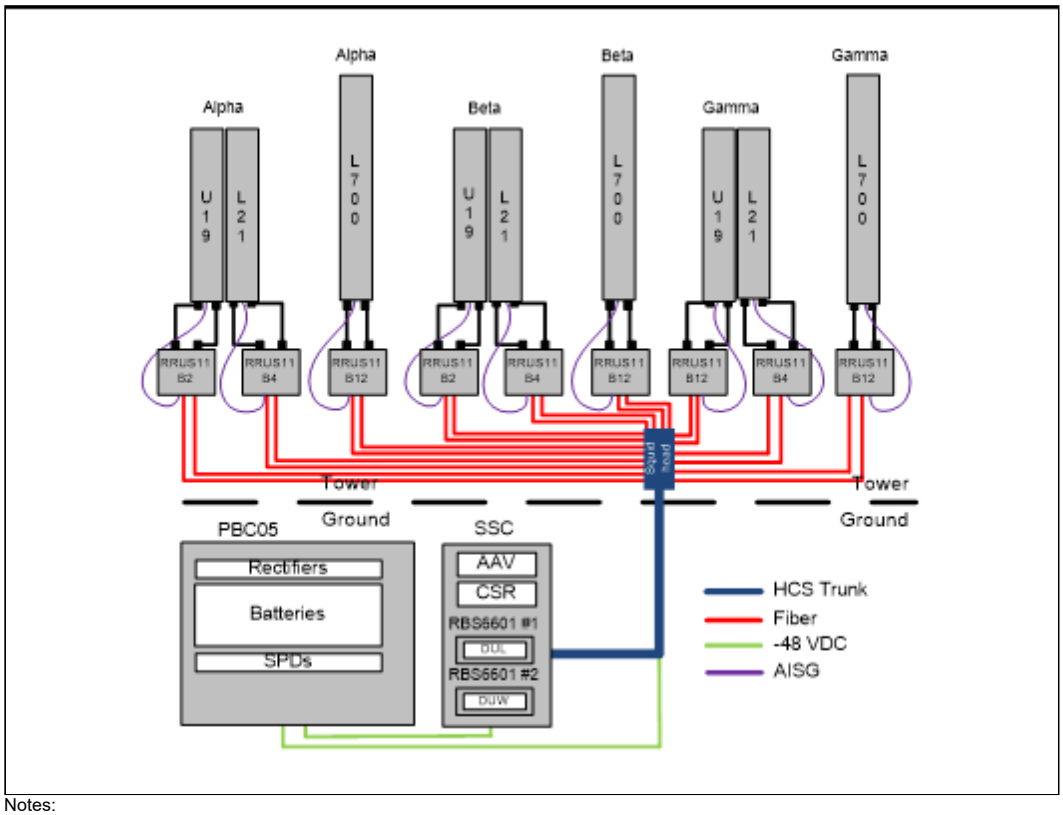
Section 2 - Existing Template Images

AL_707C_TowerTop.png



Notes:

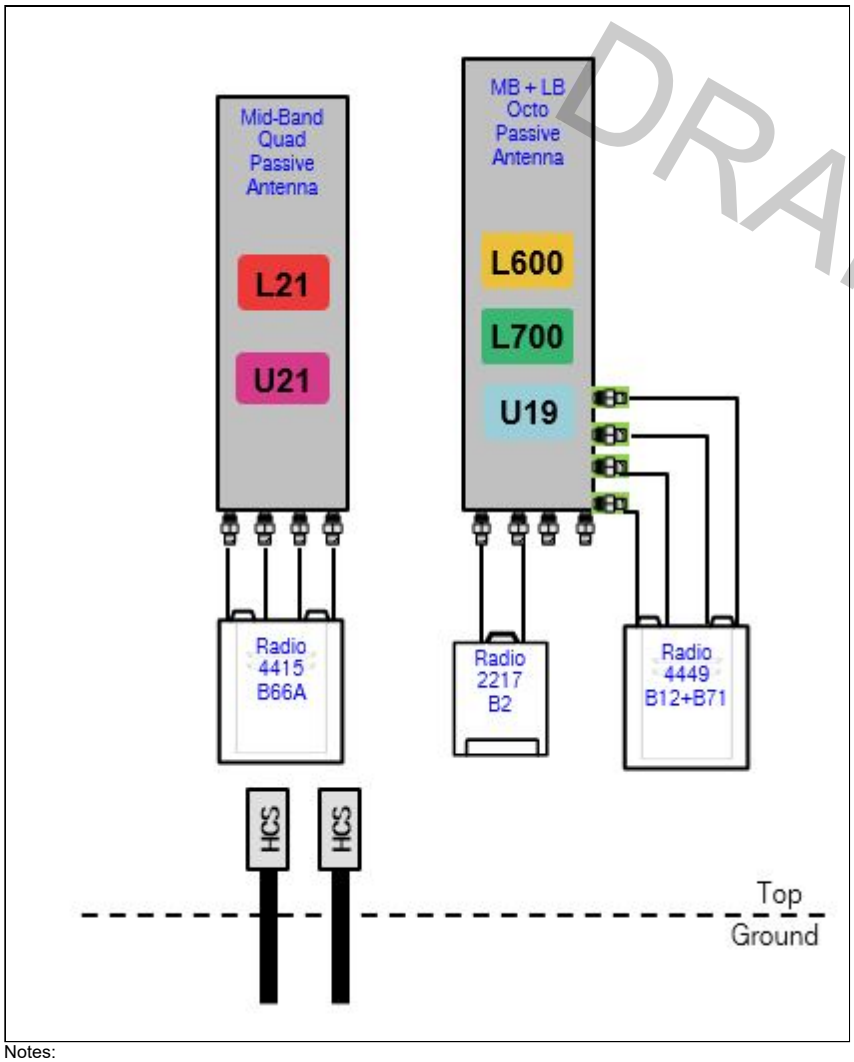
707C-RAN.PNG



Notes:

Section 3 - Proposed Template Images

67D07C.JPG



Notes:

Section 4 - Siteplan Images

----- This section is intentionally blank. -----

RAN Template:	A&L Template:	Power System Template:
67D07C 6102 MUAC	67D07C_1QP+1OP	Custom

CTNH547A_L600_2.1_draft

Section 5 - RAN Equipment

Existing RAN Equipment	
Template:	707C Tower
Enclosure	1
Enclosure Type	RBS 6102 MU AC
Baseband	DUW30 (U1900); DUS41 (L2100, L700)
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* (x 2)

Proposed RAN Equipment	
Template:	67D07C 6102 MUAC
Enclosure	1
Enclosure Type	RBS 6102 MU AC
Baseband	DUW30 (U1900); BB 6630 (L2100, L700, L600); BB 6630 (N600 (DARK))
Hybrid Cable System	Ericsson 6x12 HCS *Select Length & AWG* (x 3)

RAN Scope of Work:

*** Existing Cabinet is RBS6102 ***

Replace (1) DUS41 with (1) BB6630 for LTE.
Add (1) BB6630 for future 5G

Add (1) 6X12 HCS
Existing: (2) HCS

RAN Template:	A&L Template:	Power System Template:
67D07C 6102 MUAC	67D07C_1QP+1OP	Custom

CTNH547A_L600_2.1_draft

Section 6 - A&L Equipment

Existing Template: 707C_Tower_1QP_1DP
Proposed Template: 67D07C_1QP+1OP

Sector 1 (Existing) view from behind			
Coverage Type	A - Outdoor Macro		
Antenna	1		2
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		Andrew - LNX-6515DS-A1M (Dual)
Azimuth	30		30
M. Tilt	0		0
Height	125		125
Ports	P1	P2	P3
Active Tech.	U1900	L2100	L700
Dark Tech.			
Restricted Tech.			
Decomm. Tech.			
E. Tilt			
Cables	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**
TMAs			
Diplexers / Combiners			
Radio	RRUS11 B2 (At Antenna)	RRUS11 B4 (At Antenna)	RRUS11 B12 (At Antenna)
Sector Equipment			

Unconnected Equipment:

Scope of Work:

RAN Template:	A&L Template:	Power System Template:
67D07C 6102 MUAC	67D07C_1QP+1OP	Custom

CTNH547A_L600_2.1_draft

Sector 1 (Proposed) view from behind						
Coverage Type	A - Outdoor Macro					
Antenna	1		2			
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	30		30			
M. Tilt	0		0			
Height	125		125			
Ports	P1	P2	P3	P4	P5	P6
Active Tech.	U1900	L2100	L700 L600	L700 L600		
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt						
Cables	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**	Coax Jumper **(x2)**		
TMAs						
Diplexers / Combiners						
Radio	RRUS11 B2 (At Antenna)	RRUS11 B4 (At Antenna)	Radio 4449 B71+B12 (At Antenna)	SHARED Radio 4449 B71+B12 (At Antenna)		
Sector Equipment						

Unconnected Equipment:

Scope of Work:

Replace LB Dual In Position 2 with (1) LB/MB Octo.
Replace RRUS11 B12 with (1) Radio 4449 B71+B12 for L600 and L700 in Position 2.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:	Power System Template:
67D07C 6102 MUAC	67D07C_1QP+1OP	Custom

CTNH547A_L600_2.1_draft

Sector 2 (Existing) view from behind			
Coverage Type	A - Outdoor Macro		
Antenna	1		2
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		Andrew - LNX-6515DS-A1M (Dual)
Azimuth	150		150
M. Tilt	0		0
Height	125		125
Ports	P1	P2	P3
Active Tech.	U1900	L2100	L700
Dark Tech.			
Restricted Tech.			
Decomm. Tech.			
E. Tilt			
Cables	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)
TMAs			
Diplexers / Combiners			
Radio	RRUS11 B2 (At Antenna)	RRUS11 B4 (At Antenna)	RRUS11 B12 (At Antenna)
Sector Equipment			

Unconnected Equipment:

Scope of Work:

RAN Template:	A&L Template:	Power System Template:
67D07C 6102 MUAC	67D07C_1QP+1OP	Custom

CTNH547A_L600_2.1_draft

Sector 2 (Proposed) view from behind						
Coverage Type	A - Outdoor Macro					
Antenna	1		2			
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	150		150			
M. Tilt	0		0			
Height	125		125			
Ports	P1	P2	P3	P4	P5	P6
Active Tech.	U1900	L2100	L700 L600	L700 L600		
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt						
Cables	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)		
TMAs						
Diplexers / Combiners						
Radio	RRUS11 B2 (At Antenna)	RRUS11 B4 (At Antenna)	Radio 4449 B71+B12 (At Antenna)	SHARED Radio 4449 B71+B12 (At Antenna)		
Sector Equipment						

Unconnected Equipment:

Scope of Work:

Replace LB Dual In Position 2 with (1) LB/MB Octo.
Replace RRUS11 B12 with (1) Radio 4449 B71+B12 for L600 and L700 in Position 2.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:	Power System Template:
67D07C 6102 MUAC	67D07C_1QP+1OP	Custom

CTNH547A_L600_2.1_draft

Sector 3 (Existing) view from behind			
Coverage Type	A - Outdoor Macro		
Antenna	1		2
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		Andrew - LNX-6515DS-A1M (Dual)
Azimuth	250		250
M. Tilt	0		0
Height	125		125
Ports	P1	P2	P3
Active Tech.	U1900	L2100	L700
Dark Tech.			
Restricted Tech.			
Decomm. Tech.			
E. Tilt			
Cables	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)
TMAs			
Diplexers / Combiners			
Radio	RRUS11 B2 (At Antenna)	RRUS11 B4 (At Antenna)	RRUS11 B12 (At Antenna)
Sector Equipment			

Unconnected Equipment:

Scope of Work:

RAN Template:	A&L Template:	Power System Template:
67D07C 6102 MUAC	67D07C_1QP+1OP	Custom

CTNH547A_L600_2.1_draft

Sector 3 (Proposed) view from behind						
Coverage Type	A - Outdoor Macro					
Antenna	1		2			
Antenna Model	RFS - APX16DWV-16DWV-S-E-A20 (Quad)		RFS - APXVAARR24_43-U-NA20 (Octo)			
Azimuth	250		250			
M. Tilt	0		0			
Height	125		125			
Ports	P1	P2	P3	P4	P5	P6
Active Tech.	U1900	L2100	L700 L600	L700 L600		
Dark Tech.						
Restricted Tech.						
Decomm. Tech.						
E. Tilt						
Cables	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)	Coax Jumper (x2)		
TMAs						
Diplexers / Combiners						
Radio	RRUS11 B2 (At Antenna)	RRUS11 B4 (At Antenna)	Radio 4449 B71+B12 (At Antenna)	SHARED Radio 4449 B71+B12 (At Antenna)		
Sector Equipment						

Unconnected Equipment:

Scope of Work:

Replace LB Dual In Position 2 with (1) LB/MB Octo.
Replace RRUS11 B12 with (1) Radio 4449 B71+B12 for L600 and L700 in Position 2.

*A dashed border indicates shared equipment. Any connected equipment is denoted with the SHARED keyword.

RAN Template:	A&L Template:	Power System Template:
67D07C 6102 MUAC	67D07C_1QP+1OP	Custom

CTNH547A_L600_2.1_draft

Section 7 - Power Systems Equipment

Existing Power Systems Equipment

----- This section is intentionally blank. -----

Proposed Power Systems Equipment

EBI Consulting

environmental | engineering | due diligence

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

T-Mobile Existing Facility

Site ID: CTNH547A

52 Library Street
Salisbury, Connecticut 06068

May 14, 2021

EBI Project Number: 6221002330

Site Compliance Summary	
Compliance Status:	**COMPLIANT**
Site total MPE% of FCC general population allowable limit:	**11.20%**

21 B Street, Burlington, MA 01803 · Tel: (781) 273.2500 · Fax: (781) 273.3311

May 14, 2021

T-Mobile
Attn: Jason Overbey, RF Manager
35 Griffin Road South
Bloomfield, Connecticut 06002

Emissions Analysis for Site: CTNH547A

EBI Consulting was directed to analyze the proposed T-Mobile facility located at **52 Library Street** in **Salisbury, 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 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ($\mu W/cm^2$). The number of $\mu W/cm^2$ 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 ($\mu W/cm^2$). The general population exposure limits for the 600 MHz and 700 MHz frequency bands are approximately 400 $\mu W/cm^2$ and 467 $\mu W/cm^2$, respectively. The general population exposure limit for the 1900 MHz (PCS), 2100 MHz (AWS) and 11 GHz frequency bands is 1000 $\mu W/cm^2$. 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 52 Library Street in Salisbury, 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 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) 2 UMTS 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 (AWS Band – 2100 MHz) were considered for each sector of the proposed installation. These Channels have a transmit power of 60 Watts per Channel.

6) 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.

7) 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.

8) The antennas used in this modeling are the RFS APX16DWV-16DWV-S-E-A20 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s) in Sector A, the RFS APX16DWV-16DWV-S-E-A20 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 MHz channel(s) in Sector B, the RFS APX16DWV-16DWV-S-E-A20 for the 1900 MHz / 2100 MHz channel(s), the RFS APXVAALL24_43-U-NA20 for the 600 MHz / 600 MHz / 700 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.

9) The antenna mounting height centerline of the proposed antennas is 123 feet above ground level (AGL).

10) 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.

11) 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:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz	Frequency Bands:	1900 MHz / 2100 MHz
Gain:	15.9 dBd / 15.9 dBd	Gain:	15.9 dBd / 15.9 dBd	Gain:	15.9 dBd / 15.9 dBd
Height (AGL):	123 feet	Height (AGL):	123 feet	Height (AGL):	123 feet
Channel Count:	4	Channel Count:	4	Channel Count:	4
Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts	Total TX Power (W):	180 Watts
ERP (W):	7,002.81	ERP (W):	7,002.81	ERP (W):	7,002.81
Antenna A1 MPE %:	**1.84%**	Antenna B1 MPE %:	**1.84%**	Antenna C1 MPE %:	**1.84%**
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	Frequency Bands:	600 MHz / 600 MHz / 700 MHz	Frequency Bands:	600 MHz / 600 MHz / 700 MHz
Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd	Gain:	12.95 dBd / 12.95 dBd / 13.65 dBd
Height (AGL):	123 feet	Height (AGL):	123 feet	Height (AGL):	123 feet
Channel Count:	5	Channel Count:	5	Channel Count:	5
Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts	Total TX Power (W):	200 Watts
ERP (W):	4,151.83	ERP (W):	4,151.83	ERP (W):	4,151.83
Antenna A2 MPE %:	**2.60%**	Antenna B2 MPE %:	**2.60%**	Antenna C2 MPE %:	**2.60%**

Site Composite MPE %	
Carrier	**MPE %**
T-Mobile (Max at Sector A):	4.43%
Litchfield County Dispatch	0.64%
EMS	0.32%
AT&T	3.99%
Verizon	1.82%
Site Total MPE % :	11.20%

T-Mobile MPE % Per Sector	
T-Mobile Sector A Total:	4.43%
T-Mobile Sector B Total:	4.43%
T-Mobile Sector C Total:	4.43%
Site Total MPE % :	11.20%

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 (μW/cm²)	Frequency (MHz)	Allowable MPE (μW/cm²)	Calculated % MPE
T-Mobile 1900 MHz UMTS	2	1167.14	123.0	6.13	1900 MHz UMTS	1000	0.61%
T-Mobile 2100 MHz LTE	2	2334.27	123.0	12.26	2100 MHz LTE	1000	1.23%
T-Mobile 600 MHz LTE	2	591.73	123.0	3.11	600 MHz LTE	400	0.78%
T-Mobile 600 MHz NR	1	1577.94	123.0	4.14	600 MHz NR	400	1.04%
T-Mobile 700 MHz LTE	2	695.22	123.0	3.65	700 MHz LTE	467	0.78%
						Total:	**4.43%**

• 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:	4.43%
Sector B:	4.43%
Sector C:	4.43%
T-Mobile Maximum MPE % (Sector A):	4.43%
Site Total:	11.20%
Site Compliance Status:	**COMPLIANT**

The anticipated composite MPE value for this site assuming all carriers present is **11.20%** 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.