CENTERLINE

T-Mobile
Cullen Morgan
Site Acquisition Consultant
750 W Center Street
Suite 301
West Bridgewater, MA 02379
(941)549-7263
cmorgan@clinellc.com

September 24, 2024

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

RE: NOTICE OF EXEMPT MODIFICATION
150 Willow Street, Cheshire, CT 06410
Latitude: 41.449422
Longitude: -72.904664
T-Mobile Site #: CTNH442A

Dear Members of the Siting Council:

T-Mobile currently maintains twelve (12) antennas at the 137-foot level of the existing 157-foot monopole tower 150 Willow Street, Cheshire, CT 06410. The 157-foot tower is owned by American Tower Corporation and the property is owned by William P. Stow Trustee. T-Mobile now intends to modify equipment at their existing telecommunications facility. All equipment modifications will take place at the 137-foot level of the tower.

Planned Modifications:

Install New:	Existing to be Removed:	Existing to Remain:
(3) AIR6419 B41 Antennas	(9) AIR21 B2A/B4P Antennas	(3) APXVAALL24_43-U- NA20 Antennas
(3) APXVLL19P_43-C- A20 Antennas	(3) 1B-twin AWS TMAs	(3) Radio 4449 B71+B85 RRUs
(3) Radio 4460 B25+B66 RRUs	(2) Equipment Cabinets	(1) 1.99” Hybrid Cable
(2) Ericsson Cabinets	(6) 1-5/8” Coax	
(2) 1.99” Hybrid cables	(2) 1-5/8” Hybrid Calbes	

This facility was approved by the CT Siting Council in Docket No. 324, dated May 1, 2007, with conditions. We used the information from the previous filing. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies§ 16- SOj-73, or 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 Mayor Lauren Garrett, chief elected official, Carlo Sarmiento, Chief Building Officer for the Town of Hamden as well as the property owner and the tower owner.

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

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

For the foregoing reasons, 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).

Respectfully Submitted,
Cullen Morgan
Site Acquisition Consultant
Centerline Communications, LLC (Agent to T-Mobile)
Mobile: (941) 549-7263
cmorgan@clinellc.com

cc: Mayor Lauren Garett, chief elected official – Town of Hamden, CT
Carlo Sarmiento, Chief Building Officer - Town of Winchester
Vertical Bridge - Tower Owner
Hamden Fish and Game Protective Association - Property Owner

C/O CULLEN MORGAN
941-549-7263
CENTERLINE COMMUNICATIONS LLC
12579 SAGEWOOD DRIVE
VENICE FL 34293

1 LBS **1 OF 1**

SHIP TO:
CONNECTICUT SITING COUNCIL
10 FRANKLIN SQUARE
NEW BRITAIN CT 06051-2655

CT 067 9-06

UPS GROUND
TRACKING #: 1Z 9Y4 503 03 0150 7009

BILLING: P/P

Reference # 1: CTNH442A CSC

CS 24.9.00. MACNV50 42.0A 10/2024*

CENTERLINE

EXHIBIT A

Letter of Authorization

VB-S1 Assets, LLC
c/o Vertical Bridge REIT, LLC
750 Park of Commerce Dr., Suite 200
Boca Raton, FL 33487
Phone: 919-334-6663
Email: acox@verticalbridge.com

LETTER OF AUTHORIZATION

This letter of Authorization dated this ___ day of 9/16/2024 2024 provides written authorization for T-Mobile Northeast LLC, LLC (Licensee) its attorney, agents or representatives to apply for any necessary zoning petitions, permits or any other approvals, including but not limited to the filing of a building permit application on behalf of VB-S1 Assets, LLC (Licensor) (after required zoning approval if required has been completed) which are necessary for Licensee's installation of its communication equipment on Licensor's tower at 150 Willow Street, Hamden, CT 06518.

VB-S1 Assets, LLC

By: DocuSigned by: Cesar Fermin
F93A71DD76784D0...

Name: Cesar Fermin

Title: Director Lease Administration

CENTERLINE

EXHIBIT B

Original Facility Approval

DOCKET NO. 324 – Sprint Nextel Corporation application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at 150 Willow Street, Hamden, Connecticut.	}	Connecticut
	}	Siting
	}	Council
		May 1, 2007

Decision and Order

Pursuant to the foregoing Findings of Fact and Opinion, the Connecticut Siting Council (Council) finds that the effects associated with the construction, operation, and maintenance of a telecommunications facility, including effects on the natural environment; ecological integrity and balance; public health and safety; scenic, historic, and recreational values; forests and parks; air and water purity; and fish and wildlife are not disproportionate, either alone or cumulatively with other effects, when compared to need, are not in conflict with the policies of the State concerning such effects, and are not sufficient reason to deny the application, and therefore directs that a Certificate of Environmental Compatibility and Public Need, as provided by General Statutes § 16-50k, be issued to Sprint Nextel Corporation, hereinafter referred to as the Certificate Holder, for a telecommunications facility at 150 Willow Street, Hamden, Connecticut.

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

1. The tower shall be constructed as a monopole, no taller than necessary to provide the proposed telecommunications services, sufficient to accommodate the antennas of Sprint Nextel Corporation and other entities, both public and private, but such tower shall not exceed a height of 160 feet above ground level. The height at the top of the antennas shall not exceed 160 feet above ground level.

2. The Certificate Holder shall prepare a Development and Management (D&M) Plan for this site in compliance with Sections 16-50j-75 through 16-50j-77 of the Regulations of Connecticut State Agencies. The D&M Plan shall be served on the Town of Hamden for comment, 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, equipment compound, radio equipment, 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.

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

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

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

6. The Certificate Holder shall provide reasonable space on the tower for no compensation for any Town of public safety services (police, fire and medical services), provided such use can be accommodated and is compatible with the structural integrity of the tower.

7. The Certificate Holder shall engineer a break point on the monopole to ensure that the tower setback radius remains outside of The Connecticut Light and Power Company easement.

8. The Certificate Holder shall comply with the Connecticut Department of Public Health's Best Management Practices to the extent applicable, to protect the drinking water supply.

9. Unless otherwise approved by the Council, 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.

10. Any request for extension of the time period referred to in Condition 9 shall be filed with the Council not later than 60 days prior to the expiration date of this Certificate and shall be served on all parties and intervenors, as listed in the service list, and the Town of Hamden. Any proposed modifications to this Decision and Order shall likewise be so served.

11. 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.

12. The Certificate Holder shall remove any nonfunctioning antenna, and associated antenna mounting equipment, within 60 days of the date the antenna ceased to function.

13. 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 site 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, the Council hereby directs 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 New Haven Register.

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

The parties and intervenors to this proceeding are:

Applicant	Its Representative
Sprint Nextel Corporation	Thomas J. Regan, Esq. Brown Rudnick Berlack Israels LLP CityPlace I, 38th Floor 185 Asylum Street Hartford, CT 06103-3402 Phone: 860-509-6522 Fax: 860-509-6501 Email: tregan@brownrudnick.com

CERTIFICATION

The undersigned members of the Connecticut Siting Council (Council) hereby certify that they have heard this case, or read the record thereof, in **DOCKET NO. 324** – Sprint Nextel Corporation application for a Certificate of Environmental Compatibility and Public Need for the construction, maintenance and operation of a wireless telecommunications facility at 150 Willow Street, Hamden, Connecticut, and voted as follows to approve the proposed site, located at 150 Willow Street, Hamden, Connecticut:

Council Members	Vote Cast
Daniel F. Caruso, Chairman	Yes
Colin C. Tait, Vice Chairman	Yes
Commissioner Donald W. Downes Designee: Gerald J. Heffernan	Yes
Commissioner Gina McCarthy Designee: Brian J. Emerick	Yes
Philip T. Ashton	Abstain
Daniel P. Lynch, Jr.	Yes
James J. Murphy, Jr.	Yes
Dr. Barbara Currier Bell	Yes
Edward S. Wilensky	Yes

Dated at New Britain, Connecticut, May 1, 2007.

CENTERLINE

EXHIBIT C

Property Card

Town of Hamden, CT

Property Listing Report

Map Block Lot	3430-001-00-0000	Building #	1	PID	18077	Account	

Property Information

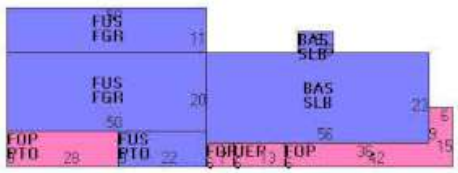
Property Location	150 WILLOW ST
Owner	HAMDEN FISH & GAME PROTECTIVE AS
Co-Owner	na
Mailing Address	P O BOX 5619 HAMDEN CT 06518-0619
Land Use	3850 FISH&GAME
Land Class	C
Zoning Code	T1
Census Tract	

Neighborhood	130
Acreage	84.58
Utilities	Public Water,Public
Lot Setting/Desc	Suburban Level
Book / Page	0232/0049
Additional Info	

Photo

3430-001-00-0000 04/23/2015

Sketch



Primary Construction Details

Year Built	1900
Building Desc.	FISH&GAME
Building Style	Clubs/Lodges
Building Grade	C
Stories	2
Occupancy	1.00
Exterior Walls	Vinyl Siding
Exterior Walls 2	NA
Roof Style	Gable/Hip
Roof Cover	Asphalt
Interior Walls	K PINE/A WD
Interior Walls 2	NA
Interior Floors 1	Vinyl/Asphalt
Interior Floors 2	NA

Heating Fuel	Oil
Heating Type	Forced Air-Duc
AC Type	
Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Total Rooms	
Bath Style	NA
Kitchen Style	NA
Fin Bsmt Area	
Fin Bsmt Quality	
Bsmt Gar	0
Fireplaces	0

(*Industrial / Commercial Details)

Building Use	Comm/Ind
Building Condition	A
Sprinkler %	NA
Heat / AC	NONE
Frame Type	WOOD FRAME
Baths / Plumbing	NONE
Ceiling / Wall	TYPICAL
Rooms / Prtns	LIGHT
Wall Height	
First Floor Use	NA
Foundation	NA

Report Created On 9/16/2024

Town of Hamden, CT

Property Listing Report

Map Block Lot	Building #	PID	Account
3430-001-00-0000	1	18077	

Valuation Summary

(Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings		131670
Extras	36300	25410
Improvements		
Outbuildings	268600	188020
Land	664000	112510
Total	1157000	457610

Outbuilding and Extra Features

Type	Description
CELL SITE	1 UNITS
GENERATOR	1 UNITS
FIREPLACE AVG	1 UNITS
SHED FRAME	740 S.F.
SHED COM MAS	64 S.F.
SHED COM MAS	360 S.F.
AIR CONDITIONING	1288 S.F.
FIREPLACE	1 UNITS
W/LOFT-AVG	576 S.F

Sub Areas

Subarea Type	Gross Area (sq ft)	Living Area (sq ft)
First Floor	1333	1333
Garage	1550	0
Porch, Open	600	0
Upper Story, Finished	1748	1748
Patio	450	0
Slab	1333	0
Enclosed Porch, Unfinished	78	0
Total Area	7092	3081

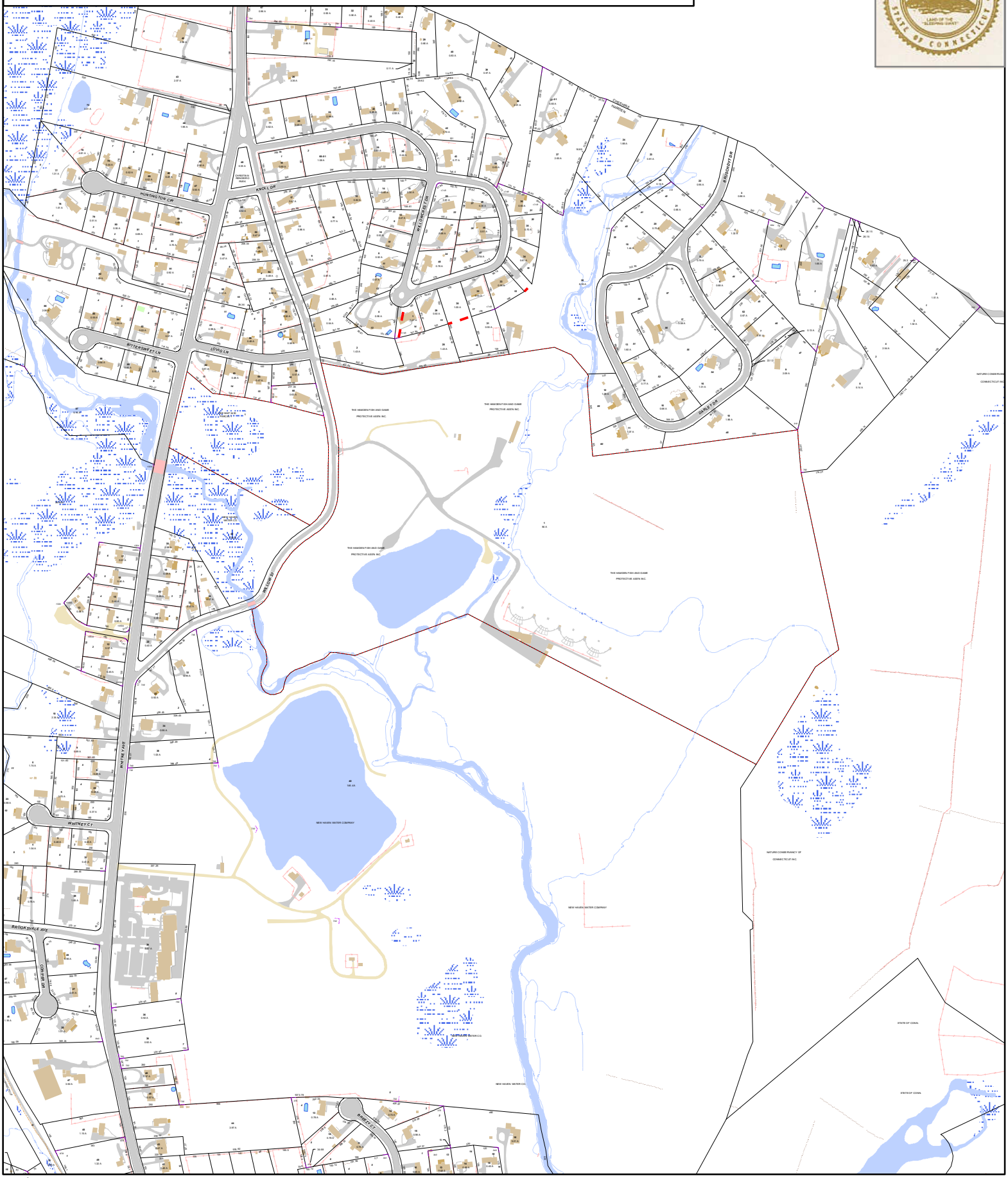
Sales History

Owner of Record	Book/ Page	Sale Date	Sale Price
HAMDEN FISH & GAME PROTECTIVE AS	0232/0049	1945-10-10	0

Report Created On 9/16/2024

Town of Hamden, Connecticut - Assessment Parcel Map

Parcel: 3430-001-00-0000 Address: 150 WILLOW ST



N

Approximate Scale: 1 inch = 600 feet

0 300 600 900 1,200 Feet

Map Produced: April 2024

Disclaimer: This map is for informational purposes only. All information is subject to verification by any user. The Town of Hamden and its mapping contractors assume no legal responsibility for the information contained herein.

CENTERLINE

EXHIBIT D

Construction Drawings

PROJECT INFORMATION

SITE NAME:	HAMDEN
SITE NUMBER:	CTNH442A
SITE ADDRESS:	150 WILLOW STREET HAMDEN, CT 06518
COUNTY	NEW HAVEN
MUNICIPALITY:	TOWN OF HAMDEN
ZONING:	T1 NATURAL & R2 RESIDENTAIL
LATITUDE:	N 41°26'57.92" (41.449422°) (NAD83)
LONGITUDE:	W 72°54'16.79" (-72.904664°) (NAD83)
TYPE OF SITE:	MONOPOLE
STRUCTURE HEIGHT:	157'-0" AGL
ANTENNA CENTER:	137'-0" AGL
GROUND ELEVATION:	128'-0" (NAVD 88)
PROPERTY OWNER NAME:	HAMDEN FISH & GAME PROTECTIVE ASSOCATION INC.
PROPERTY OWNER ADDRESS:	PO BOX 5619 HAMDEN, CT 06518
APPLICANT:	T-MOBILE NORTHEAST, LLC. 35 GRIFFIN RD S BLOOMFIELD, CONNECTICUT 06002
APPLICANT PHONE:	(860) 692-7100

PROJECT DIRECTORY

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

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

811 Know what's below. Call before you dig.

CENTERLINE ENGINEERING SERVICES, PA

T - Mobile NORTHEAST LLC

SITE NAME: HAMDEN
SITE ID: CTNH442A
ADDRESS: 150 WILLOW STREET
HAMDEN, CT 06518

TECHNOLOGY: 67E5D998E 6160
MODIFICATION: 67E5998E_1XAIR+1OP+1QP

VICINITY MAP
NOT TO SCALE

N

LOCATION MAP
NOT TO SCALE

GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSE OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.

3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

SCOPE OF WORK

1. REMOVE SIX EXISTING ANTENNAS
2. INSTALL SIX NEW ANTENNAS
3. REMOVE NINE RRUS
4. INSTALL THREE NEW RRUS
5. INSTALL THREE NEW 6x24 HYBRID CABLES
6. REMOVE RBS 6131 EQUIPMENT CABINET
7. REMOVE ALL UNUSED CABLES AND EQUIPMENT

DRAWING INDEX

NO.	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES, RF NOTES, CABLING NOTES
A-1	COMPOUND PLAN
A-2	EQUIPMENT LAYOUT
A-3	EQUIPMENT DETAILS
A-4	NORTHEAST ELEVATION
A-5	ANTENNA PLAN & SCHEDULE
SN-1	STRUCTURAL NOTES & SPECIAL INSPECTIONS
S-1	ANTENNA & RRU MOUNTING DETAILS
G-1	GROUNDING & ONE LINE DIAGRAM

DRAWING SCALE NOTES:

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

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

CENTERLINE ENGINEERING SERVICES, PA
750 W CENTER ST, SUITE 301
WEST BRIDGEWATER, MA 02379
PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
0	06/12/24	ISSUED FOR PERMIT	RC
A	04/29/24	ISSUED FOR REVIEW	TA

DESIGNED BY:	APPROVED BY:
TA	RC

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 06/12/2024

SITE NAME: HAMDEN
SITE ID: CTNH442A
SITE ADDRESS: 150 WILLOW STREET
HAMDEN, CT 06518
NEW HAVEN COUNTY

SHEET TITLE: **TITLE SHEET**
DRAWING: **T-1**

RF NOTES

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

ANTENNA CABLE & SCHEDULING NOTES

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

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
   CONTRACTOR - CENTERLINE COMMUNICATIONS
   SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER - T-MOBILE MOBILITY
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE MOBILITY SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. APPLICABLE BUILDING CODES:
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE: IBC 2015 & CONNECTICUT STATE BUILDING CODE 2018
ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE
LIGHTNING CODE: NFPA 780-2017

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

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

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

MANUAL OF STEEL CONSTRUCTION, ASD, FIFTEENTH EDITION;

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

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

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

ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCEIVER STATION	PROPOSED	NEW	TBR	TO BE REMOVED
EXISTING	EXISTING	N.T.S.	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED		

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PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
0	06/12/24	ISSUED FOR PERMIT	RC
A	04/29/24	ISSUED FOR REVIEW	TA

DESIGNED BY: TA | APPROVED BY: RC

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 06/12/2024

SITE NAME: HAMDEN

SITE ID: CTNH442A

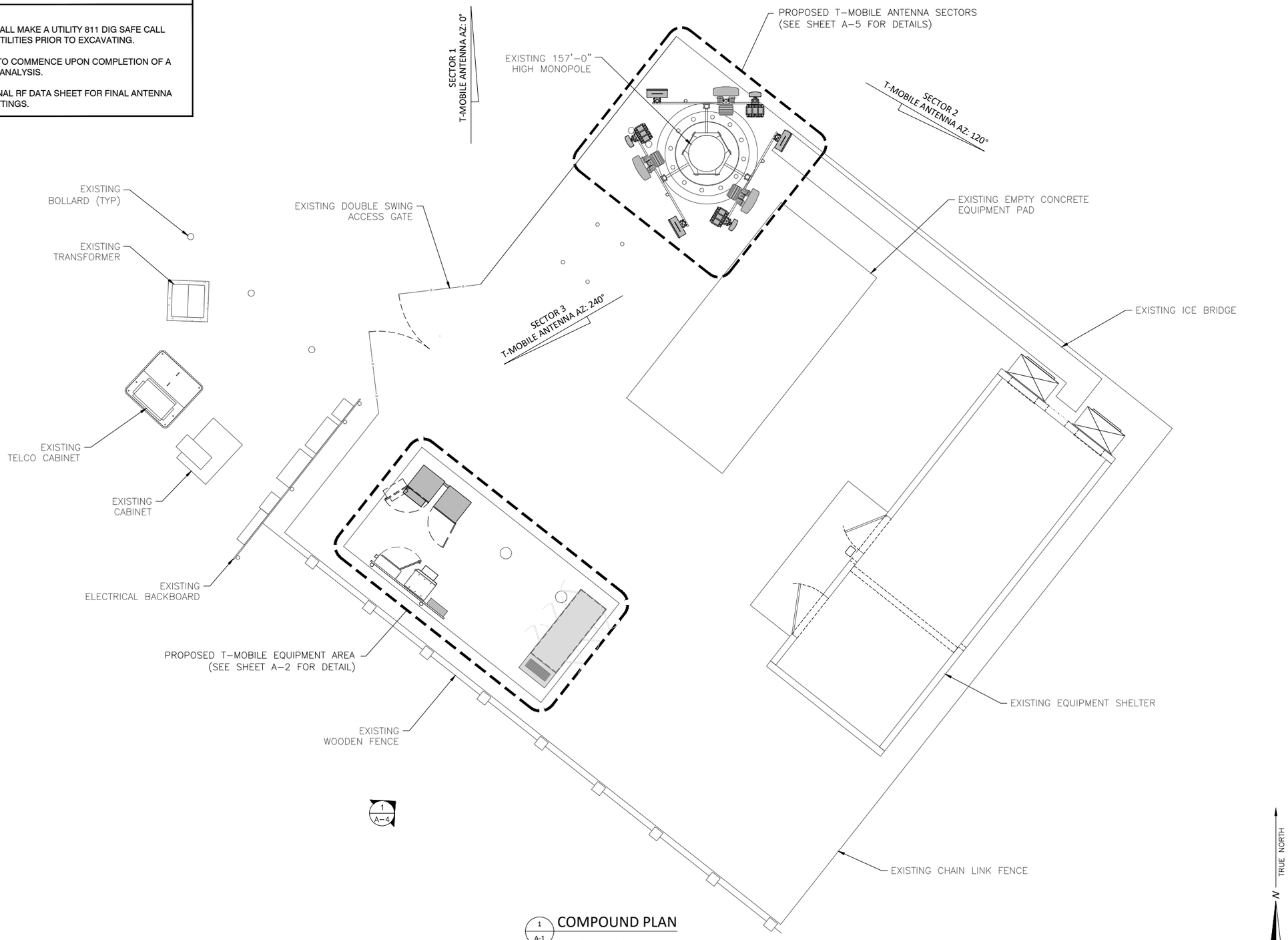
SITE ADDRESS:
150 WILLOW STREET
HAMDEN, CT 06518
NEW HAVEN COUNTY

SHEET TITLE: **GENERAL NOTES, RF NOTES, CABLING NOTES**

DRAWING: **GN-1**

NOTES

1. CONTRACTOR SHALL MAKE A UTILITY 811 DIG SAFE CALL TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
2. CONSTRUCTION TO COMMENCE UPON COMPLETION OF A PASSING MOUNT ANALYSIS.
3. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA MODELS AND SETTINGS.



1 A-1 COMPOUND PLAN

GRAPHIC SCALE

8 4 0 1 2 4 8

1/4 INCH = 1 FOOT (22X34)
1/8 INCH = 1 FOOT (11X17)

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TA	RC

STATE OF CONNECTICUT
DEREK J. CREASER
No. 25551
LICENSED PROFESSIONAL ENGINEER

DATE: 06/12/2024

SITE NAME: HAMDEN

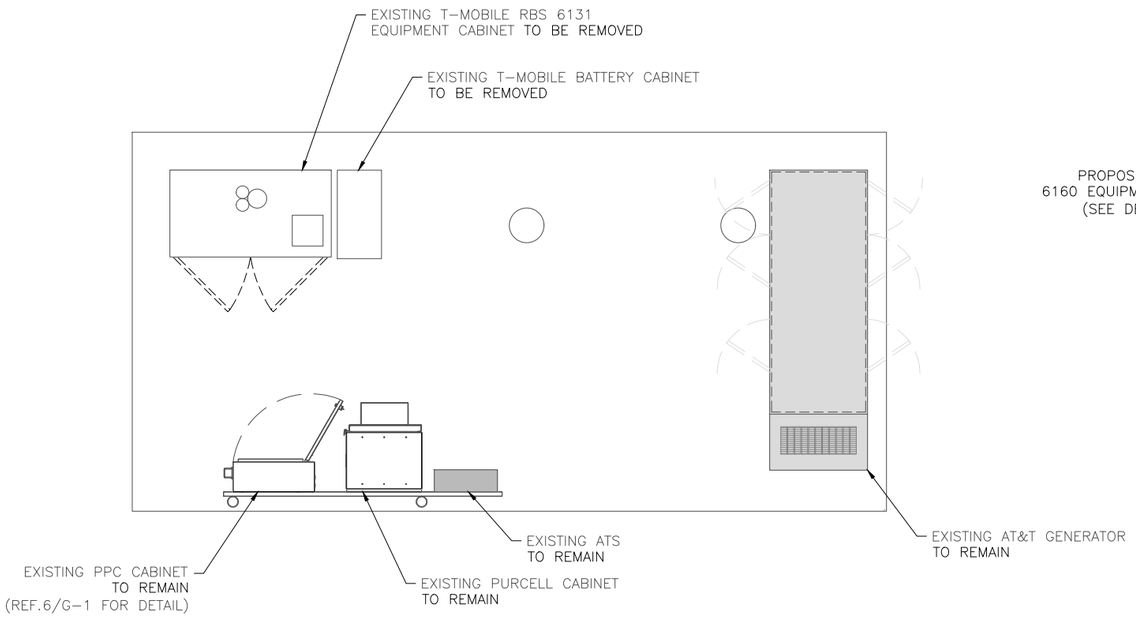
SITE ID: CTNH442A

SITE ADDRESS:
150 WILLOW STREET
HAMDEN, CT 06518
NEW HAVEN COUNTY

SHEET TITLE: COMPOUND PLAN

DRAWING: A-1

RAN EQUIPMENT		
CABINET	EXISTING	PROPOSED
ERICSSON RBS6131	(2) DUW30 (1) DUG20 (1) BB 6630 (1) BB 6648	
ERICSSON 6160	N/A	(1) RP 6651 (1) BB 6630 (1) BB 6648 (2) PSU 4813 vR4A (1) CSR IXRe V2
NOTE: RAN EQUIPMENT IS BASED ON RFDS REV5 DATED 04/04/2024		



1 A-2 EXISTING EQUIPMENT PLAN

GRAPHIC SCALE

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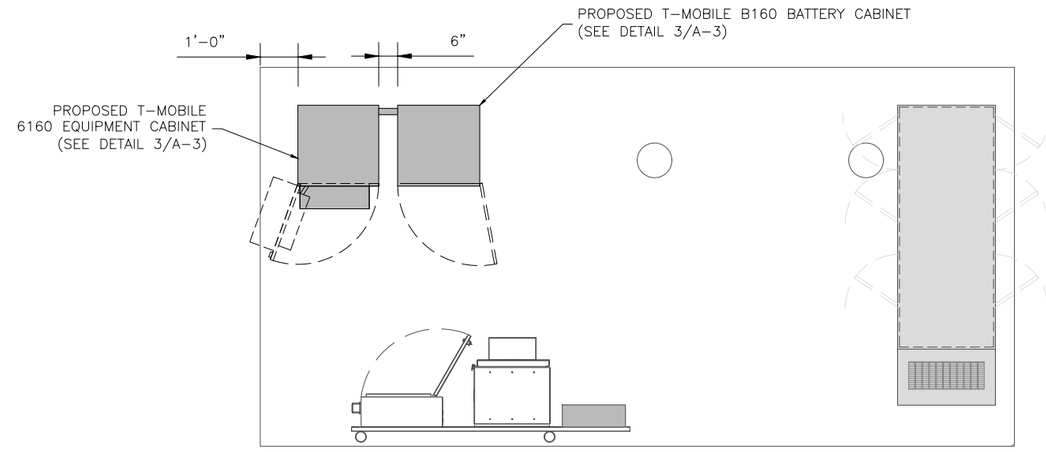
1/2 INCH = 1 FOOT (22X34)
1/4 INCH = 1 FOOT (11X17)



TRUE NORTH

N

2 A-2 PROPOSED EQUIPMENT PLAN

GRAPHIC SCALE

4 2 0 1 2 4

1/2 INCH = 1 FOOT (22X34)
1/4 INCH = 1 FOOT (11X17)

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 28351
LICENSED PROFESSIONAL ENGINEER

DATE: 06/12/2024

SITE NAME: HAMDEN

SITE ID: CTNH442A

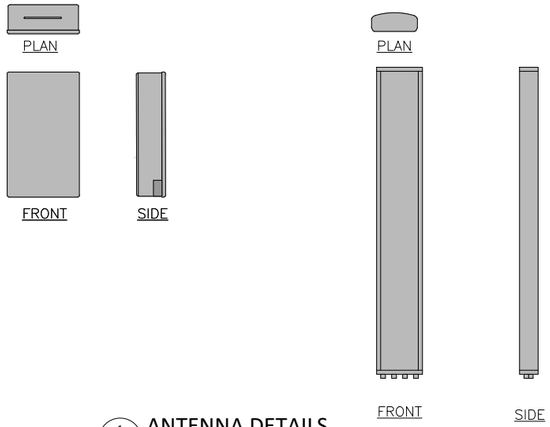
SITE ADDRESS:
150 WILLOW STREET
HAMDEN, CT 06518
NEW HAVEN COUNTY

SHEET TITLE: EQUIPMENT LAYOUT

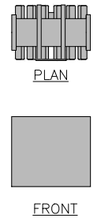
DRAWING: A-2

ERICSSON AIR 6419 B41	
MODEL #	AIR 6419 B41
MANUF.	ERICSSON
HEIGHT	34.5"
WIDTH	20.0"
DEPTH	8.0"
WEIGHT	68.5 LBS W/O MTG HARDWARE
FRONT EPA:	4.8 FT^2
SIDE EPA:	1.92 FT^2

RFS APXVLL19_43-C-A20	
MODEL #	APXVLL19_43-C-A20
MANUF.	RFS
HEIGHT	75.8"
WIDTH	11.3"
DEPTH	4.6"
WEIGHT	40.9 LBS W/O MTG HARDWARE 44.1 LBS W/ MTG HARDWARE
FRONT EPA:	6.01 FT^2
SIDE EPA:	2.67 FT^2



1 A-3 ANTENNA DETAILS



RADIO DIMENSIONS	
MODEL #	RADIO 4460 B25_B66
MANUF.	ERICSSON
HEIGHT	15.1"
WIDTH	17.0"
DEPTH	11.9"
WEIGHT	108 LBS
FRONT EPA:	
SIDE EPA:	

2 A-3 RADIO DETAILS

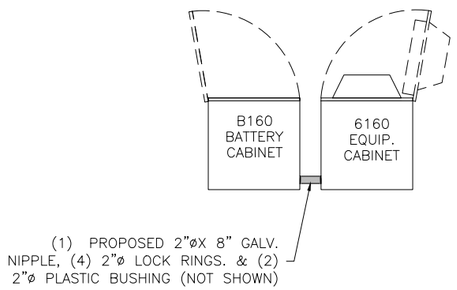
6160 AC ENCLOSURE

CAPACITY	
RACK SPACE USER EQUIP.	19U(19" RACK)
HARDWARE CAPABILITIES	POWER AND CPRI SUPPORT FOR MULTI-STANDARD REMOTE RADIOS (RRU OR AIR) ERS BASEBAND AND TRANSPORT UNITS Li-ION BATTERIES 3PP EQUIPMENT ADDITIONAL POWER FEED OPTIONS AVAILABLE
MECHANICAL SPECIFICATIONS	
WEIGHT	320lbs (INCLUDING ACTIVE EQUIPMENT)
DIMENSIONS (HWD)	63"x26"x26" (INCLUDING BASE FRAME)
BASE FRAME HEIGHT	6"
MOUNTING POSITION	GROUND
ENCLOSURE MATERIAL	ALUMINUM
COLOR	POWDER PAINT NCS 2002-B
DOOR	FRONT ACCESS
RACK TYPE	19" (IEC 60297-3-100)
LOCK TYPE	CYLINDER/PAD LOCK
POWER SYSTEM	
INPUT VOLTAGE	3P+N+PE 346/200-415/240 VAC 2P+N+PE 208/120-220/127 VAC 1P+N+PE 200-250 VAC

B160 BATTERY ENCLOSURE

CAPACITY	
VRLA12V:	100Ah/150Ah/170Ah/190Ah/210Ah
Li-ION	24U 19"/23"
SODIUM-NICKEL	3xFIAMM
ELECTRICAL SPECIFICATIONS	
DC OUTPUT	-48VDC/200A
BATTERY BREAKERS	2x125/2p
ALARMS	DOOR OPEN, CLIMATE FAILURE, MCB CONNECTION
MECHANICAL SPECIFICATIONS	
WEIGHT	295 lbs (PLUS 3 STRINGS OF RECOMMENDED 190 aHR FOR ADDITIONAL 1588LBS)
BATTERY WEIGHT	12 BATTERIES @ 136 lbs EACH = 1632 lbs
DIMENSIONS (HWD)	63"x26"x26" (INCLUDING BASE FRAME)
BASE FRAME HEIGHT	6"
MATERIAL	GALVANIZED STEEL (180g/m^2)
COLOR	POWDER PAINT NCS 2002-B
LOCKING TYPE	CYLINDER/PAD LOCK

3 A-3 PROPOSED EQUIPMENT CABINET SPECIFICATIONS



4 A-3 PROPOSED EQUIPMENT CONDUIT DETAIL

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PHONE: 781.713.4725

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 06/12/2024

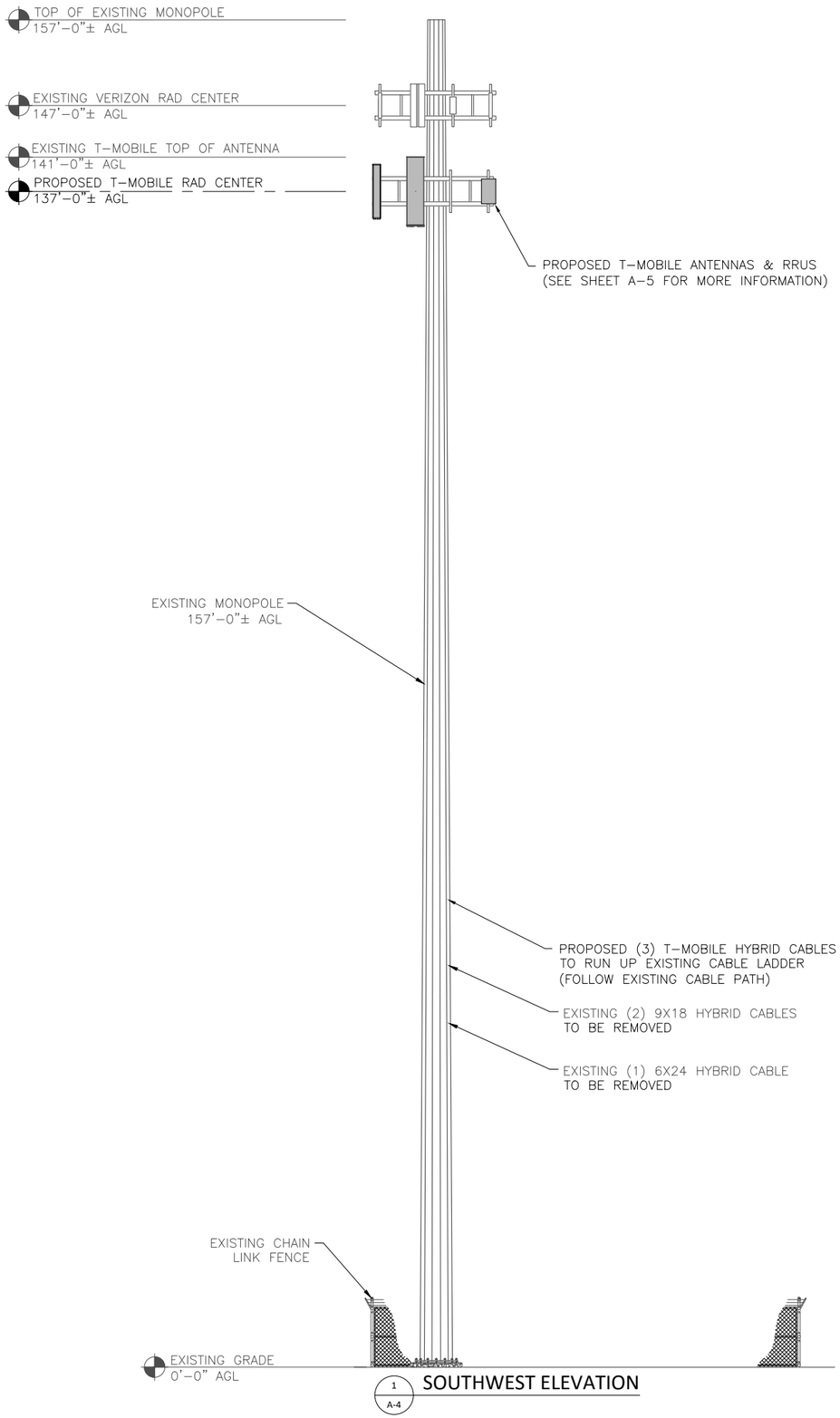
SITE NAME: HAMDEN

SITE ID: CTNH442A

SITE ADDRESS:
150 WILLOW STREET
HAMDEN, CT 06518
NEW HAVEN COUNTY

SHEET TITLE: EQUIPMENT DETAILS

DRAWING: A-3



1 A-4 SOUTHWEST ELEVATION

GRAPHIC SCALE

16 8 0 1 2 4 8 16

1/8 INCH = 1 FOOT (22X34)
1/16 INCH = 1 FOOT (11X17)

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HAMDEN, CT 06518
NEW HAVEN COUNTY

SHEET TITLE:
NORTHEAST ELEVATION

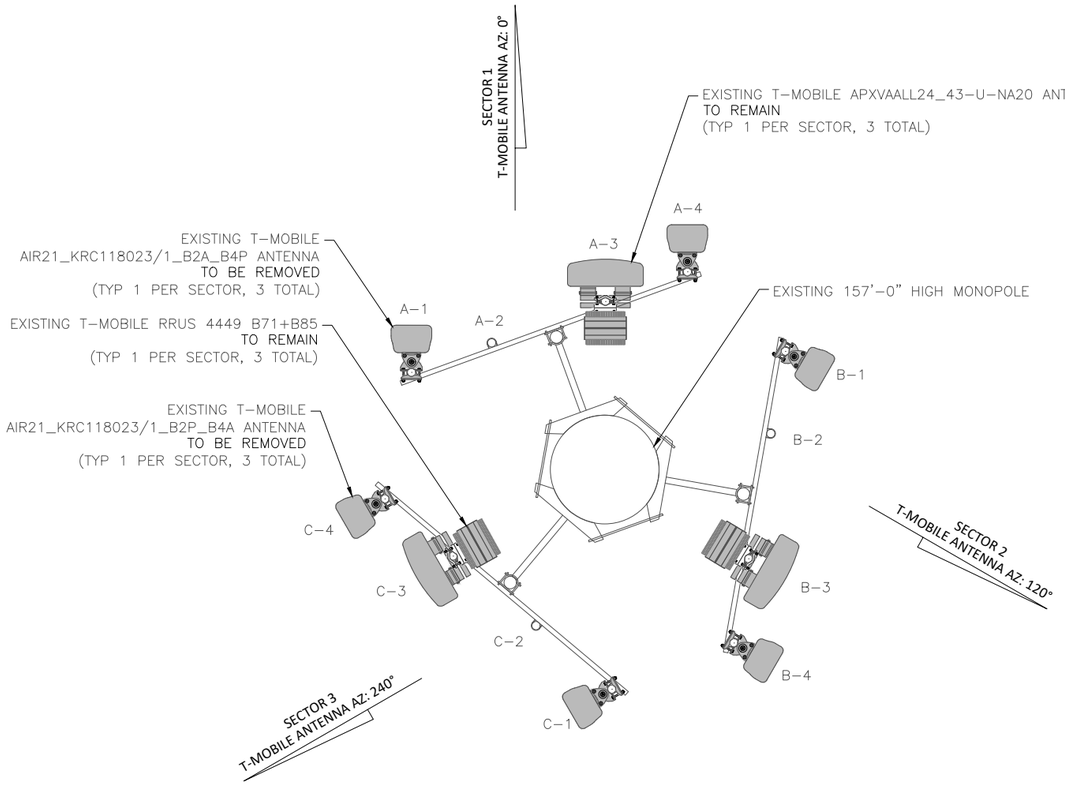
DRAWING:
A-4

ANTENNA & CABLE NOTES:

1. CONSTRUCTION TO COMMENCE UPON COMPLETION OF A PASSING MOUNT ANALYSIS.
2. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.
3. REMOVE ALL UNUSED CABLE, RRUs AND TMAs.
4. PAINT ANTENNAS AND EQUIP. TO MATCH EXISTING.

ANTENNA & CABLE SCHEDULE:

	LOCATION	AZIMUTH	RAD CENTER	STATUS	TECHNOLOGY	ANTENNA MODEL NO.	MECH DOWNTILT	ELEC DOWNTILT	TMA/RRU	CABLE SIZE	CABLE LENGTH
ALPHA	A-1	0°	137'-0"	PROPOSED	N2500	AIR6419 B41	0°	2°/2°	N/A	SHARED	N/A
	A-2	0°	137'-0"	OPEN	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	A-3	0°	137'-0"	EXISTING	L600, L700, N600	APXVAALL24_43-U-NA20	0°	2°/2°	RRUS 4449 B71+B85	SHARED	N/A
	A-4	0°	137'-0"	PROPOSED	G1900, L1900, N1900, L2100	APXVLL19P_43-C-A20	0°	0°/0°	RRUS 4460 B25+B66	6x24 HYBRID	200±
BETA	B-1	120°	137'-0"	PROPOSED	N2500	AIR6419 B41	0°	2°/2°	N/A	SHARED	N/A
	B-2	120°	137'-0"	OPEN	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	B-3	120°	137'-0"	EXISTING	L600, L700, N600	APXVAALL24_43-U-NA20	0°	2°/2°	RRUS 4449 B71+B85	SHARED	N/A
	B-4	120°	137'-0"	PROPOSED	G1900, L1900, N1900, L2100	APXVLL19P_43-C-A20	0°	0°/0°	RRUS 4460 B25+B66	6x24 HYBRID	200±
GAMMA	G-1	240°	137'-0"	PROPOSED	N2500	AIR6419 B41	0°	2°/2°	N/A	SHARED	N/A
	G-2	240°	137'-0"	OPEN	N/A	N/A	N/A	N/A	N/A	N/A	N/A
	G-3	240°	137'-0"	EXISTING	L600, L700, N600	APXVAALL24_43-U-NA20	0°	2°/2°	RRUS 4449 B71+B85	SHARED	N/A
	G-4	240°	137'-0"	PROPOSED	G1900, L1900, N1900, L2100	APXVLL19P_43-C-A20	0°	0°/0°	RRUS 4460 B25+B66	SHARED	200±
NOTE: DARK TEXT IN TABLE ABOVE DENOTES PROPOSED EQUIPMENT									TOTAL 6x24 HYBRID CABLE		600'±

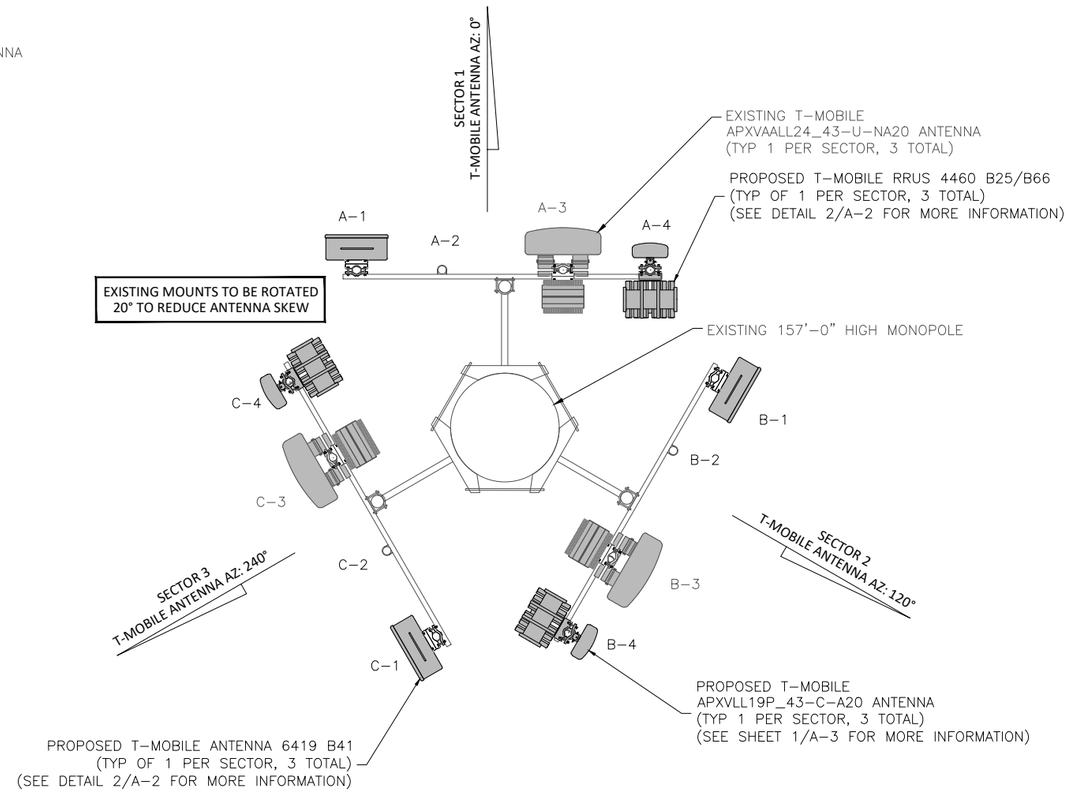


1 A-5 EXISTING ANTENNA PLAN

GRAPHIC SCALE

4 2 0 1 2 4

1/2 INCH = 1 FOOT (22X34)
1/4 INCH = 1 FOOT (11X17)



2 A-5 PROPOSED ANTENNA PLAN

GRAPHIC SCALE

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STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED
PROFESSIONAL ENGINEER

DATE: 06/12/2024

SITE NAME: HAMDEN

SITE ID: CTNH442A

SITE ADDRESS:
150 WILLOW STREET
HAMDEN, CT 06518
NEW HAVEN COUNTY

SHEET TITLE: ANTENNA PLAN & SCHEDULE

DRAWING: A-5

STRUCTURAL NOTES:

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

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

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

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

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

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

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

NOTES:

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

NOTES:

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

T - Mobile
NORTHEAST LLC

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

CENTERLINE
ENGINEERING SERVICES, PA

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

REVISIONS

REV	DATE	DESCRIPTION	BY
0	06/12/24	ISSUED FOR PERMIT	RC
A	04/29/24	ISSUED FOR REVIEW	TA

DESIGNED BY:	APPROVED BY:
TA	RC

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED
PROFESSIONAL ENGINEER

DATE: 06/12/2024

SITE NAME: HAMDEN

SITE ID: CTNH442A

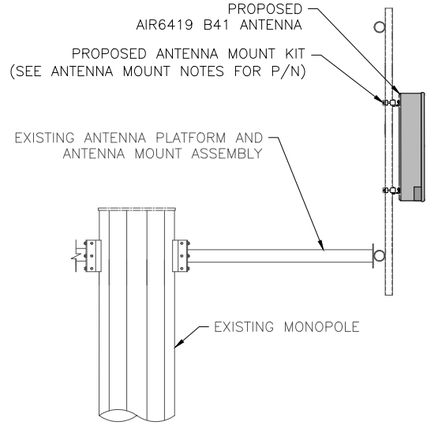
SITE ADDRESS:
150 WILLOW STREET
HAMDEN, CT 06518
NEW HAVEN COUNTY

SHEET TITLE: STRUCTURAL NOTES & SPECIAL INSPECTIONS

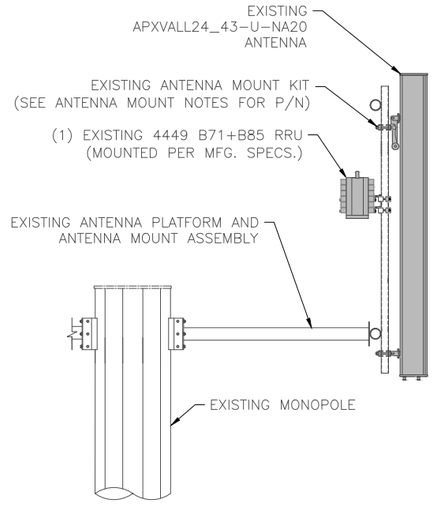
DRAWING: SN-1

NOTES FOR ANTENNA MOUNTS:

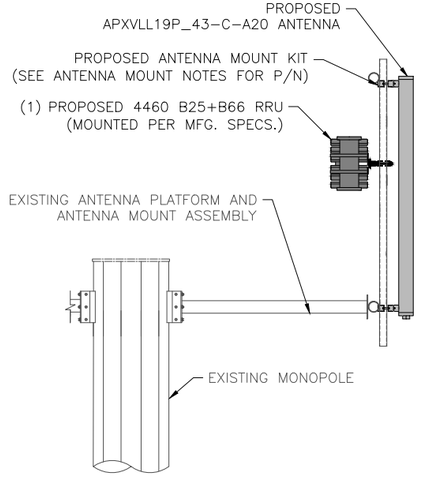
1. AIR6419: ERICSSON R2A PIPE MOUNT KIT
2. APXVLL19P_43-C-A20: APM40-5E PIPE MOUNT KIT



POSITION A-1, B-1, & C-1



POSITION A-3, B-3, & C-3



POSITION A-4, B-4, & C-4

NOTE:
ONLY (1) MOUNT POSITION SHOWN FOR CLARITY
(TYP. ALL POSITIONS)

1 / S-1 TYPICAL ANTENNA & RRU MOUNTING DETAIL

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REVISIONS

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DESIGNED BY:	APPROVED BY:
TA	RC

STATE OF CONNECTICUT
DEREK J. CREASER
No. 28551
LICENSED PROFESSIONAL ENGINEER

DATE: 06/12/2024

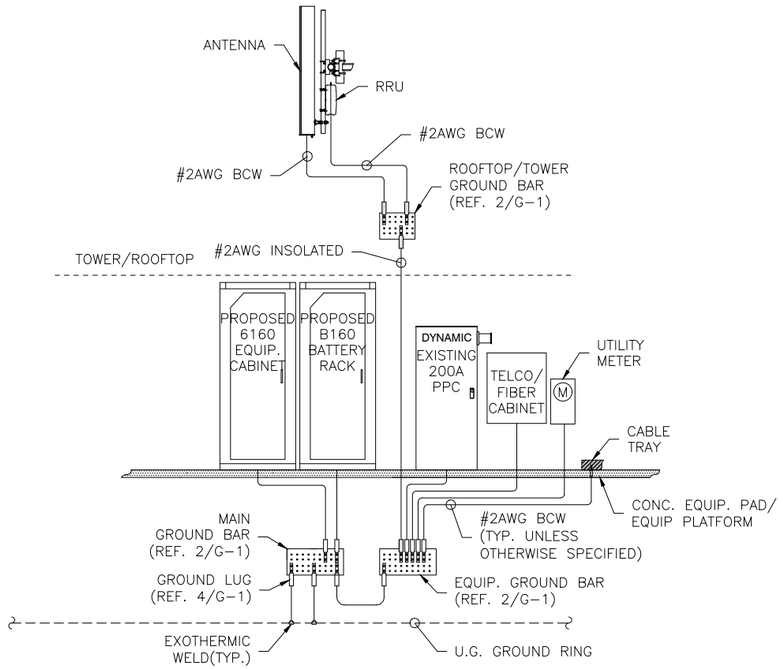
SITE NAME: HAMDEN

SITE ID: CTNH442A

SITE ADDRESS:
150 WILLOW STREET
HAMDEN, CT 06518
NEW HAVEN COUNTY

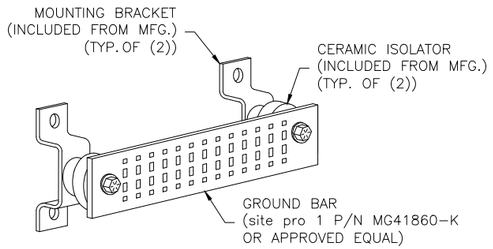
SHEET TITLE: ANTENNA & RRU MOUNTING DETAILS

DRAWING: S-1



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

1 / G-1 GROUNDING RISER DIAGRAM



2 / G-1 GROUND BAR DETAIL

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

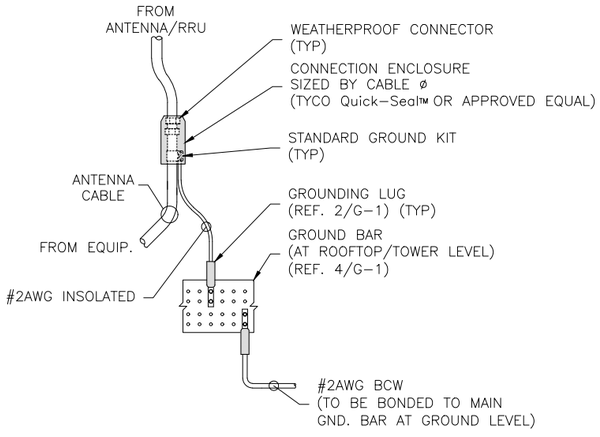
SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

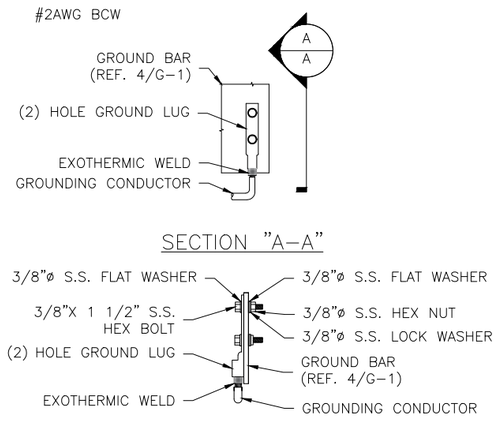
INTERIOR GROUND RING (#2)
EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
BUILDING STEEL (IF AVAILABLE) (#2)

3 / G-1 GROUND WIRE SCHEDULE



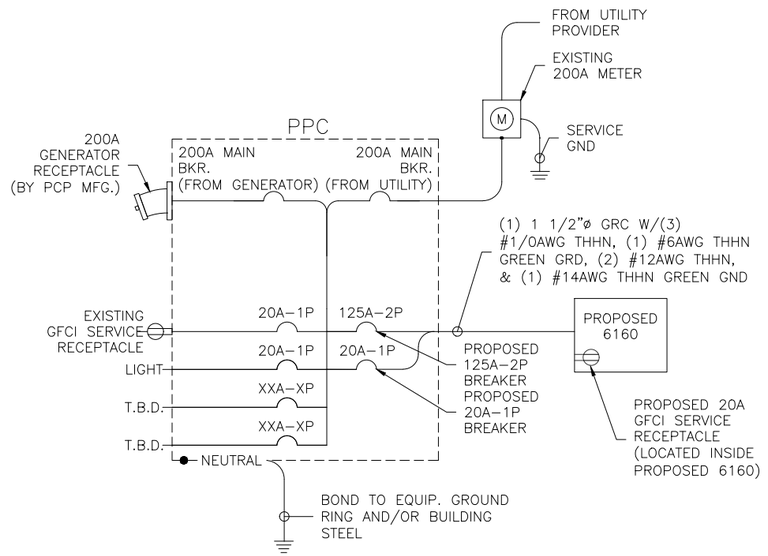
NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT BEND IN CABLE.
2. GROUND CABLES DIRECTLY TO CIGBE
3. JUMPER REQUIRED ONLY WHEN CABLE IS 1 1/4" OR LARGER

4 / G-1 ANTENNA/RRU GROUNDING DETAIL



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

5 / G-1 GROUND LUG DETAIL



6 / G-1 ONE LINE DIAGRAM

T - Mobile
NORTHEAST LLC

T-MOBILE NORTHEAST, LLC.
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ENGINEERING SERVICES, PA

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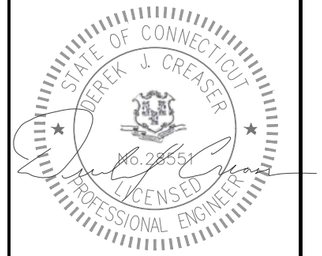
PHONE: 781.713.4725

REVISIONS

REV	DATE	DESCRIPTION	BY
0	06/12/24	ISSUED FOR PERMIT	RC
A	04/29/24	ISSUED FOR REVIEW	TA

DESIGNED BY:	APPROVED BY:
TA	RC



DATE: 06/12/2024

SITE NAME:
HAMDEN

SITE ID:
CTNH442A

SITE ADDRESS:
150 WILLOW STREET
HAMDEN, CT 06518
NEW HAVEN COUNTY

SHEET TITLE:
GROUNDING &
ONE LINE DIAGRAM

DRAWING:
G-1

CENTERLINE

EXHIBIT E

Structural Analysis Report

Structural Analysis Report

Prepared for:

Vertical Bridge

750 Park of Commerce Drive, Suite 200
Boca Raton, FL 33487

ATTN: Ms. Nicole Hoffman

Structure	:	**157 ft Monopole**
Site ID	:	**CT54XC773**
Proposed Carrier	:	**T-Mobile**
Site Name	:	**Hamden**
Vertical Bridge Site	:	**US-CT-5019**
Carrier Site Number	:	**CTNH442A**
Site Location	:	**150 Willow Street** **Hamden, CT** **41.44939, -72.904572**
County	:	**New Haven**
Date	:	**July 31, 2024**
Max Structure Usage	:	**31%**
Max Foundation Usage	:	**35%**
Result	:	**Pass**

STATE OF CONNECTICUT
THOMAS L TAYLOR
No. 28130
LICENSED
PROFESSIONAL ENGINEER

07.31.24

EXP. 01/31/2025
COA: PEC.0001536
EXP. 08/04/2024

Prepared By:
Nathan Wood, E.I.T. (NE)
Structural Engineer

Table of Contents

Introduction

The purpose of this report is to summarize results of a structural analysis performed on the 157 ft Monopole to reflect the change in loading by T-Mobile.

Supporting Documents

Tower Drawing	EEI Project # 14977, dated December 27, 2007
Foundation Drawing	EEI Project # 14977, dated December 27, 2007
Geotechnical Report	JGI Project # J2075344, dated June 29, 2007
Mount Analysis	PM&A Project # CTNH442A, dated June 12, 2024
Tower Inventory	Bennett & Press Analysis Job # 21.03.006.305, dated December 16, 2021
Proposed Loading	Vertical Bridge Colocation Application # P-051295, dated June 24, 2024
	Centerline CDs Site # CTNH442A, dated June 12, 2024

Analysis

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

Basic Wind Speed	120 mph (3-Second Gust) Vult*
Basic Wind Speed w/Ice	50 mph (3-Second Gust) w/ 1" radial ice concurrent
Code	ANSI/TIA-222-H / 2021 IBC / 2022 Connecticut State Building Code
Risk Category	II
Exposure Category	C
Topographic Category	1
Crest Height	0 ft
Spectral Response	Ss = 0.202* , S1 = 0.054
Site Class	D - Stiff Soil
Ground Elevation	125.71 ft
Annex S Considered	No

*** Design loads per 2022 Connecticut State Building Code.**

Conclusion

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

If you have any questions or require additional information, please contact Semaan Engineering Solutions at 402-289-1888.

Existing and Reserved Equipment

This loading **is** included in the analysis.

Centerline Elevation (ft)		Qty.	Antenna	Mount Type	Coax (in)	Carrier
Mount	Equip.					
145.0	147.0	6	JAHH-65B-R3B	(1) 12' Platform w/Rail	(12) 1 5/8" (2) Hybrid Cable	Verizon
		6	LPA-80080/4CF			
		3	MT6407-77A			
		3	CBC78T-DS-43-2X			
		3	RFV01U-D1A			
		3	RFV01U-D2A			
		2	RRFDC-3315-PF-48			
137.0	137.0	3	APXVAALL24_43-U-A20	(1) 12' Triple T-Arms w/V-Brace Reinforcement	(1) 6x12 Hybrid	T-Mobile
		3	4449 B71/B85 RRU			

Equipment to be Removed

This loading **is not** included in the analysis.

Centerline Elevation (ft)		Qty.	Antenna	Mount Type	Coax (in)	Carrier
Mount	Equip.					
158.0	158.0	3	APXVSPP18-C-A20	(1) EEI 12' Platform w/Rail	(12) 1 5/8" Fiber (3) 1 /14" Fiber (1) Trunk Line (2) 1/2" (3) RET	Sprint*
		3	APXVTM14-C-I20			
		3	96" x 14" x 7" Panel			
		12	16" x 9" x 6" Combiners			
		6	TD-RRH-8X20			
		3	800MHz RRH			
		6	800 MHz Notch Filter			
		6	1900MHz RRH			
		9	RET Kit			
		1	GPS Antenna			
		2	26" Microwave			
		2	ODU			
		1	GPS			
137.0	137.0	3	AIR21 B2a B4p	-	(6) 1 5/8" Coax (2) 1 5/8" Hybrid Cable	T-Mobile
		3	AIR21 B4a B2p			
		3	Twin Style 1B AWS TMA			

*** The Sprint loading located at 158 ft is to be removed prior to construction.**

Proposed Equipment

This loading **is** included in the analysis.

Centerline Elevation (ft)		Qty.	Antenna	Mount Type	Coax (in)	Carrier
Mount	Equip.					
137.0	137.0	3	APXVLL19P_43-C-A20	(1) **Existing** 12' Triple T-Arms w/V-Brace Reinforcement	(2) 6x24 Hybrid	T-Mobile
		3	AIR 6419 B41			
		3	4460 B25/B66 RRU			

Install proposed coax inside the pole shaft.

Structure Usages

Structural Component	Controlling Usage	Pass/Fail
Shaft	31%	Pass
Anchor Bolts	20%	Pass
Baseplate	21%	Pass

Foundations

Reaction Component	Analysis Reactions	% of Usage
Moment (Kips-Ft)	2,806.5	6%
Axial (Kips)	53.0	20%
Shear (Kips)	27.2	N/A
Reinf. Conc. Fnd. Capacity	N/A	35%

The structure base reactions resulting from this analysis were found to be acceptable through analysis based on geotechnical and foundation information, therefore no modification or reinforcement of the foundation will be required.

Standard Conditions

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

-- Information supplied by the client regarding the structure itself, antenna, mounts and feed line loading on the structure and its components, or other relevant information.

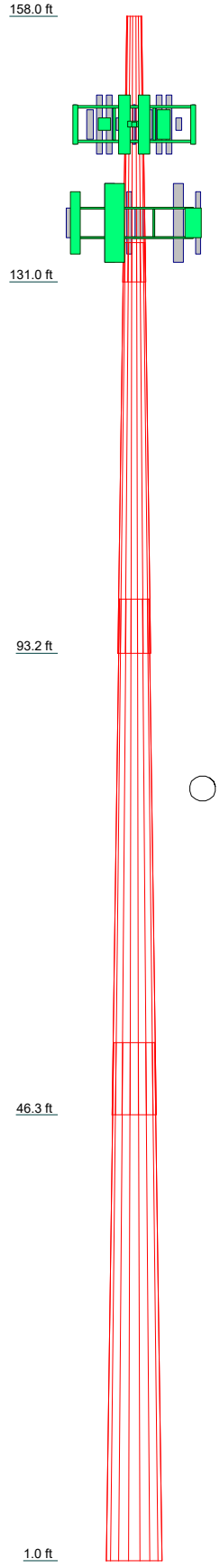
-- Information from drawings in the possession of Semaan Engineering Solutions, or generated by field inspections or measurements of the structure.

It is the responsibility of the client to ensure that the information provided to Semaan Engineering Solutions Holdings and used in the performance of our engineering services is correct and complete. In the absence of information to the contrary, we assume that all structures were constructed in accordance with the drawings and specifications and that their capacity has not significantly changed from the "as new" condition.

Unless explicitly agreed by both the client and Semaan Engineering Solutions, all services will be performed in accordance with the current revision of ANSI/TIA -222. The design basic wind speed will be determined based on the minimum basic wind speed as prescribed in ANSI/TIA-222. Although every effort is taken to ensure that the loading considered is adequate to meet the requirements of all applicable regulatory entities, we can provide no assurance to meet any other local and state codes or requirements. If wind and ice loads or other relevant parameters are to be different from the minimum values recommended by the codes, the client shall specify the exact requirement.

All services are performed, results obtained, and recommendations made in accordance with generally accepted engineering principles and practices. Semaan Engineering Solutions Holdings is not responsible for the conclusions, opinions and recommendations made by others based on the information we supply.

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	27.00	18	0.1875	4.00	18.5000	27.3567	A572-65	1.2
2	41.75	18	0.3750	5.50	25.6696	39.3646		5.4
3	52.42	18	0.4375	7.33	36.8105	54.0045		11.1
4	52.67	18	0.4735		50.7240	68.0000		15.9



DESIGNED APPURTENANCE LOADING

TYPE	ELEVATION	TYPE	ELEVATION
12' Platform w/Rail (Verizon)	145	CBC78T-DS-43-2X (Verizon)	145
LPA-80080/4CF w/6' Mount Pipe (Verizon)	145	CBC78T-DS-43-2X (Verizon)	145
LPA-80080/4CF w/6' Mount Pipe (Verizon)	145	RFV01U-D2A (Verizon)	145
LPA-80080/4CF w/6' Mount Pipe (Verizon)	145	RFV01U-D2A (Verizon)	145
RFV01U-D1A w/6' Mount Pipe (Verizon)	145	RFV01U-D2A (Verizon)	145
RFV01U-D1A w/6' Mount Pipe (Verizon)	145	RRFDC-3315-PF-48 w/6' Mount Pipe (Verizon)	145
RFV01U-D1A w/6' Mount Pipe (Verizon)	145	RRFDC-3315-PF-48 (Verizon)	145
JAHH-65B-R3B (Verizon)	145	12' Triple T-Arms w/V-Brace Reinforcement (T-Mobile)	137
JAHH-65B-R3B (Verizon)	145	APXVLL19P_43-C-A20 w/8' Mount Pipe (T-Mobile)	137
JAHH-65B-R3B (Verizon)	145	APXVLL19P_43-C-A20 w/8' Mount Pipe (T-Mobile)	137
Side By Side w/10' Mount Pipe (SES) (Verizon)	145	APXVLL19P_43-C-A20 w/8' Mount Pipe (T-Mobile)	137
Side By Side w/10' Mount Pipe (SES) (Verizon)	145	APXVAALL24_43-U-A20 w/8' Mount Pipe (T-Mobile)	137
Side By Side w/10' Mount Pipe (SES) (Verizon)	145	APXVAALL24_43-U-A20 w/8' Mount Pipe (T-Mobile)	137
JAHH-65B-R3B (Verizon)	145	APXVAALL24_43-U-A20 w/8' Mount Pipe (T-Mobile)	137
JAHH-65B-R3B (Verizon)	145	8'x2" Pipe Mount (T-Mobile)	137
JAHH-65B-R3B (Verizon)	145	8'x2" Pipe Mount (T-Mobile)	137
MT6407-77A w/8' Mount Pipe (Verizon)	145	8'x2" Pipe Mount (T-Mobile)	137
MT6407-77A w/8' Mount Pipe (Verizon)	145	AIR 6419 B41 w/8' Mount Pipe (T-Mobile)	137
MT6407-77A w/8' Mount Pipe (Verizon)	145	AIR 6419 B41 w/8' Mount Pipe (T-Mobile)	137
LPA-80080/4CF w/6' Mount Pipe (Verizon)	145	AIR 6419 B41 w/8' Mount Pipe (T-Mobile)	137
LPA-80080/4CF w/6' Mount Pipe (Verizon)	145	4460 B25/B66 RRU (T-Mobile)	137
LPA-80080/4CF w/6' Mount Pipe (Verizon)	145	4460 B25/B66 RRU (T-Mobile)	137
CBC78T-DS-43-2X (Verizon)	145	4460 B25/B66 RRU (T-Mobile)	137
		4449 B71/B85 RRU (T-Mobile)	137
		4449 B71/B85 RRU (T-Mobile)	137
		4449 B71/B85 RRU (T-Mobile)	137

MATERIAL STRENGTH

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

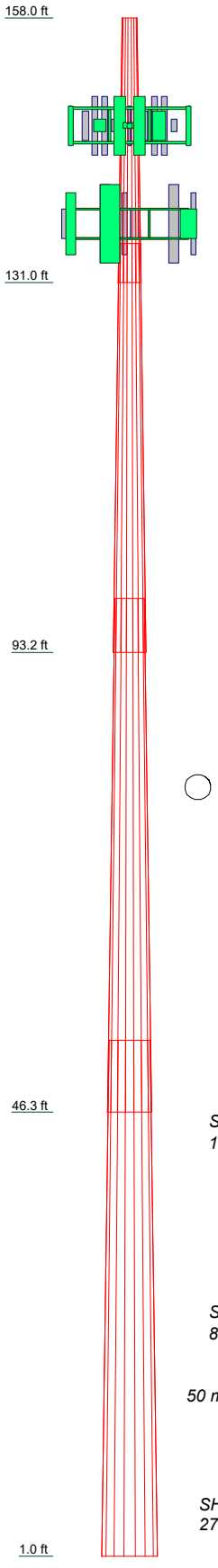
TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. Leg A azimuth is +60° from North.

Semaan Engineering Solutions
1047 N 205th Street
Elkhorn, NE 68022
Phone: 402.289.1888
FAX:

Job: ***CT54XC773_Hamden***			
Project: ***REV11***			
Client: Vertical Bridge	Drawn by: NathanW	App'd:	
Code: TIA-222-H	Date: 07/31/24	Scale: NTS	
Path: S:\TNX files\CT54XC773\CT54XC773_REV11\CT54XC773_REV11.eri		Dwg No. E-1	

Section	Length (ft)	Number of Sides	Thickness (in)	Socket Length (ft)	Top Dia (in)	Bot Dia (in)	Grade	Weight (K)
1	27.00	18	0.1875	4.00	18.5000	27.3567	A572-65	1.2
2	41.75	18	0.3750	5.50	25.6696	39.3646		5.4
3	52.42	18	0.4375	7.33	36.8105	54.0045		11.1
4	52.67	18	0.4735		50.7240	68.0000		15.9



MATERIAL STRENGTH

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

TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure C to the TIA-222-H Standard.
3. Tower designed for a 120 mph basic wind in accordance with the TIA-222-H Standard.
4. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
5. Deflections are based upon a 60 mph wind.
6. Tower Risk Category II.
7. Topographic Category 1 with Crest Height of 0.00 ft
8. Leg A azimuth is +60° from North.
9. CCISeismic Note: Seismic loads generated by CCISeismic 3.4.0
10. CCISeismic Note: Seismic calculations are in accordance with TIA-222-H-1
11. TOWER RATING: 31.3%

ALL REACTIONS ARE FACTORED

AXIAL 55 K
SHEAR 1 K *MOMENT 159 kip-ft*
TORQUE 0 kip-ft
SEISMIC

AXIAL 70 K
SHEAR 8 K *MOMENT 758 kip-ft*
TORQUE 0 kip-ft
50 mph WIND - 1.0000 in ICE

AXIAL 53 K
SHEAR 27 K *MOMENT 2807 kip-ft*
TORQUE 3 kip-ft
REACTIONS - 120 mph WIND

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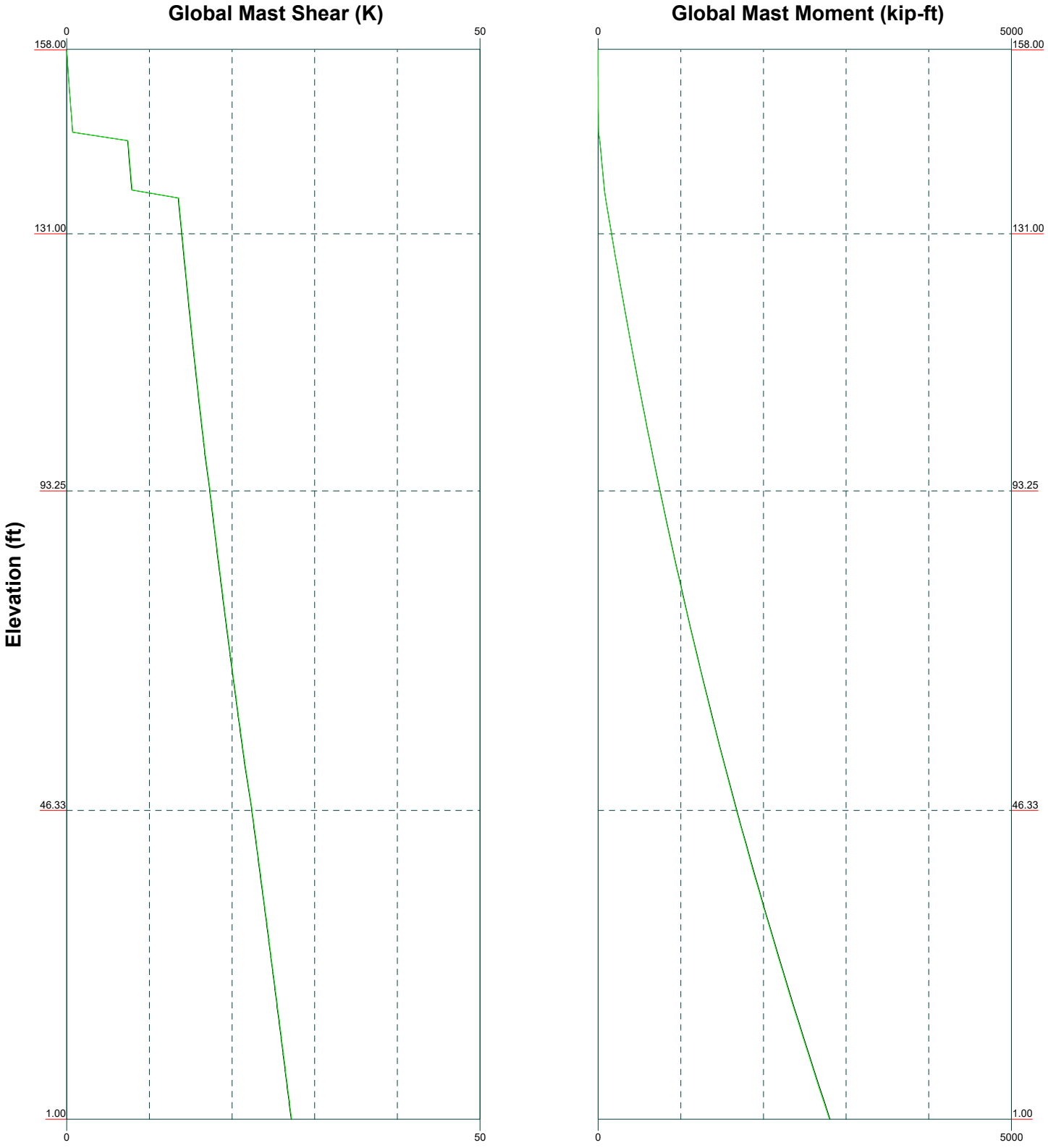
Phone: 402.289.1888
FAX:

Job: *CT54XC773_Hamden*			
Project: *REV11*			
Client: Vertical Bridge	Drawn by: NathanW	App'd:	
Code: TIA-222-H	Date: 07/31/24	Scale: NTS	
Path: \\192.168.1.12\Common\TNX files\CT54XC773\CT54XC773_REV11\CT54XC773_REV11.eri		Dwg No. E-1	

TIA-222-H - 120 mph/50 mph 1.0000 in Ice Exposure C

Maximum Values

Vx Vz Mx Mz



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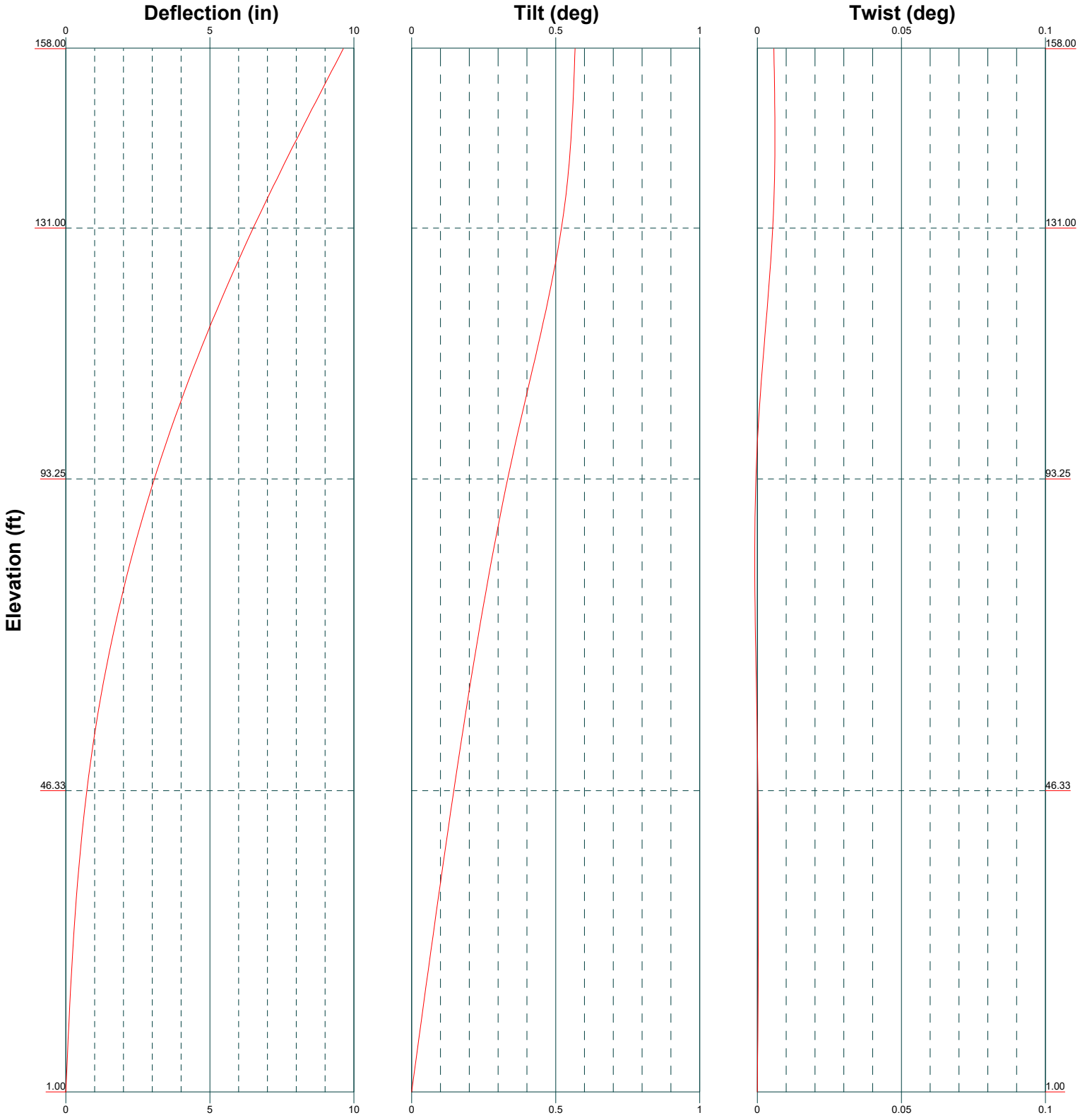
Elkhorn, NE 68022
Phone: 402.289.1888
FAX:

Job: CT54XC773_Hamden			
Project: REV11			
Client: Vertical Bridge	Drawn by: NathanW		App'd:
Code: TIA-222-H	Date: 07/31/24		Scale: NTS
Path: \\192.168.1.12\Common\TNX files\CT54XC773\CT54XC773_REV11\CT54XC773_REV11.eri			Dwg No. E-4

TIA-222-H - Service - 60 mph

Maximum Values



Semaan Engineering Solutions
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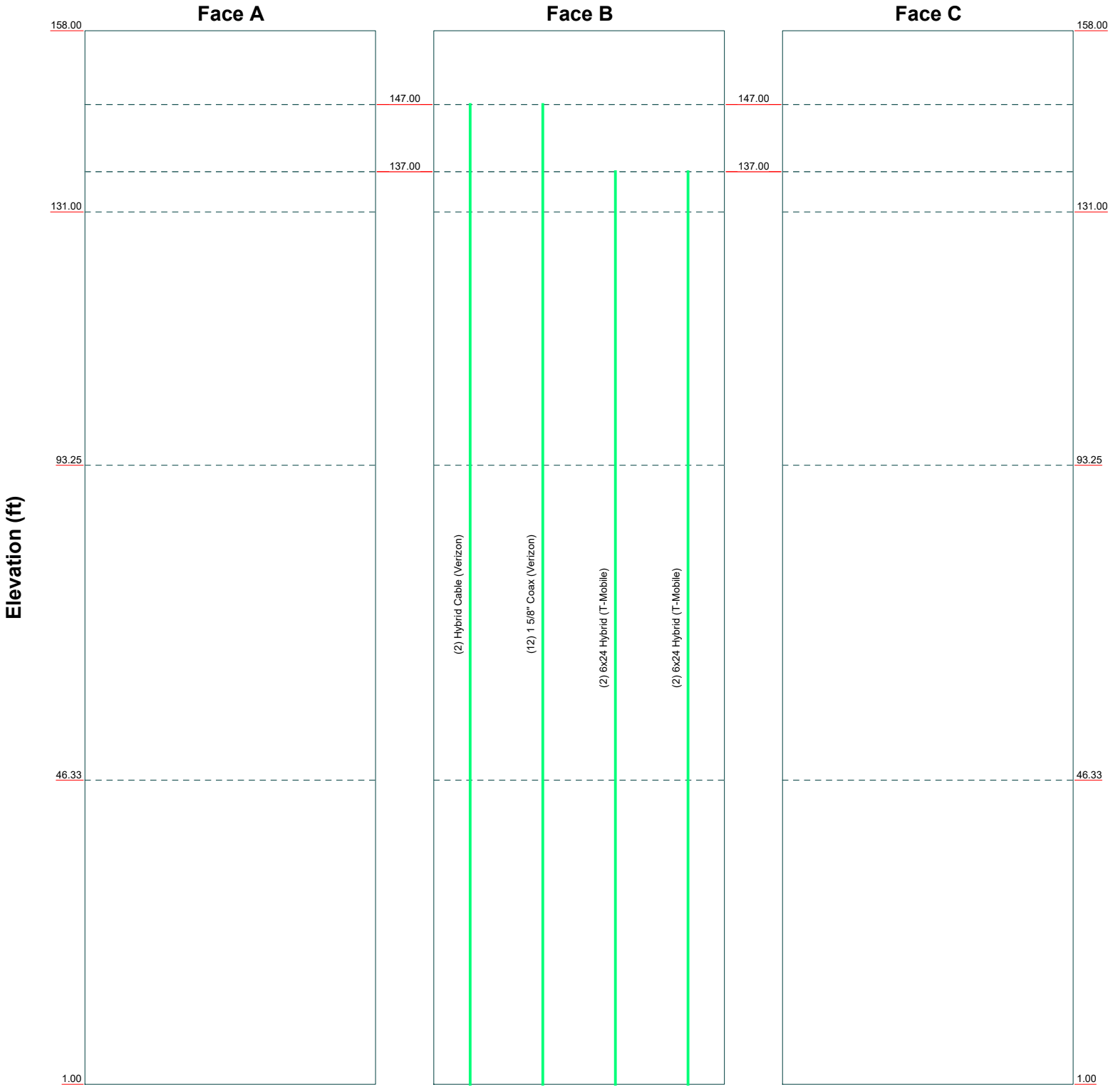
Elkhorn, NE 68022
Phone: 402.289.1888
FAX:

Job: ***CT54XC773_Hamden***			
Project: ***REV11***			
Client: Vertical Bridge	Drawn by: NathanW	App'd:	
Code: TIA-222-H	Date: 07/31/24	Scale: NTS	
Path: \\192.168.1.12\Common\TNX files\CT54XC773\CT54XC773_REV11\CT54XC773_REV11.eri		Dwg No. E-5	

Feed Line Distribution Chart
1' - 158'

Round | Flat | App In Face | App Out Face | Truss Leg



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Elkhorn, NE 68022
Phone: 402.289.1888
FAX:

Job: ***CT54XC773_Hamden***			
Project: ***REV11***			
Client: Vertical Bridge	Drawn by: NathanW	App'd:	
Code: TIA-222-H	Date: 07/31/24	Scale: NTS	
Path: \\192.168.1.12\Common\TNX files\CT54XC773\CT54XC773_REV11\CT54XC773_REV11.eri		Dwg No. E-7	

Tower Input Data

The tower is a monopole.
This tower is designed using the TIA-222-H standard.
The following design criteria apply:

Tower is located in New Haven County, Connecticut.
Tower base elevation above sea level: 126.71 ft.
Basic wind speed of 120 mph.
Risk Category II.
Exposure Category C.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.00 ft.
Nominal ice thickness of 1.0000 in.
Ice thickness is considered to increase with height.
Ice density of 56 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 50 °F.
Deflections calculated using a wind speed of 60 mph.
Leg A azimuth is +60° from North..
CCISeismic Note: Seismic loads generated by CCISeismic 3.4.0.
CCISeismic Note: Seismic calculations are in accordance with TIA-222-H-1.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in pole design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

Options

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

Tapered Pole Section Geometry

Section	Elevation ft	Section Length ft	Splice Length ft	Number of Sides	Top Diameter in	Bottom Diameter in	Wall Thickness in	Bend Radius in	Pole Grade
L1	158.00-131.00	27.00	4.00	18	18.5000	27.3567	0.1875	0.7500	A572-65 (65 ksi)
L2	131.00-93.25	41.75	5.50	18	25.6696	39.3646	0.3750	1.5000	A572-65 (65 ksi)
L3	93.25-46.33	52.42	7.33	18	36.8105	54.0045	0.4375	1.7500	A572-65 (65 ksi)
L4	46.33-1.00	52.67		18	50.7240	68.0000	0.4735	1.8940	A572-65 (65 ksi)

Tapered Pole Properties

Section	Tip Dia. in	Area in^2	I in^4	r in	C in	I/C in^3	J in^4	It/Q in^2	w in	w/t
L1	18.7565	10.8982	461.7305	6.5009	9.3980	49.1307	924.0685	5.4501	2.9260	15.605
	27.7498	16.1691	1507.9107	9.6451	13.8972	108.5047	3017.8055	8.0861	4.4848	23.919
L2	27.3401	30.1069	2433.6514	8.9796	13.0401	186.6276	4870.5050	15.0563	3.8578	10.288
	39.9141	46.4074	8912.9947	13.8413	19.9972	445.7112	17837.7174	23.2081	6.2682	16.715
L3	39.1429	50.5085	8442.2879	12.9124	18.6997	451.4655	16895.6843	25.2590	5.7086	13.048
	54.7701	74.3845	26965.8861	19.0163	27.4343	982.9263	53967.2546	37.1993	8.7348	19.965
L4	53.8761	75.5209	24092.7068	17.8389	25.7678	934.9930	48217.1155	37.7676	8.0941	17.094
	68.9760	101.4848	58463.8049	23.9719	34.5440	1692.4446	117004.538 0	50.7521	11.1346	23.516

Tower Elevation ft	Gusset Area (per face) ft^2	Gusset Thickness in	Gusset Grade	Adjust. Factor A_f	Adjust. Factor A_r	Weight Mult.	Double Angle Stitch Bolt Spacing Diagonals in	Double Angle Stitch Bolt Spacing Horizontals in	Double Angle Stitch Bolt Spacing Redundants in
L1 158.00-131.00				1	1	1			
L2 131.00-93.25				1	1	1			
L3 93.25-46.33				1	1	1			
L4 46.33-1.00				1	1	1			

Feed Line/Linear Appurtenances - Entered As Area

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
Hybrid Cable (Verizon)	B	No	No	Inside Pole	147.00 - 1.00	2	No Ice	0.00	1.78
							1/2" Ice	0.00	1.78
							1" Ice	0.00	1.78
1 5/8" Coax (Verizon)	B	No	No	Inside Pole	147.00 - 1.00	12	No Ice	0.00	1.04
							1/2" Ice	0.00	1.04
							1" Ice	0.00	1.04
6x24 Hybrid (T-Mobile)	B	No	No	Inside Pole	137.00 - 1.00	2	No Ice	0.00	2.22
							1/2" Ice	0.00	2.22
							1" Ice	0.00	2.22
6x24 Hybrid (T-Mobile)	B	No	No	Inside Pole	137.00 - 1.00	2	No Ice	0.00	2.22
							1/2" Ice	0.00	2.22

Description	Face or Leg	Allow Shield	Exclude From Torque Calculation	Component Type	Placement ft	Total Number		C_AA_A ft^2/ft	Weight plf
							1" Ice	0.00	2.22

Feed Line/Linear Appurtenances Section Areas

Tower Section	Tower Elevation ft	Face	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	158.00-131.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.31
		C	0.000	0.000	0.000	0.000	0.00
L2	131.00-93.25	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	0.94
		C	0.000	0.000	0.000	0.000	0.00
L3	93.25-46.33	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	1.17
		C	0.000	0.000	0.000	0.000	0.00
L4	46.33-1.00	A	0.000	0.000	0.000	0.000	0.00
		B	0.000	0.000	0.000	0.000	1.13
		C	0.000	0.000	0.000	0.000	0.00

Feed Line/Linear Appurtenances Section Areas - With Ice

Tower Section	Tower Elevation ft	Face or Leg	Ice Thickness in	A_R ft^2	A_F ft^2	C_AA_A In Face ft^2	C_AA_A Out Face ft^2	Weight K
L1	158.00-131.00	A	1.158	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.31
		C		0.000	0.000	0.000	0.000	0.00
L2	131.00-93.25	A	1.129	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	0.94
		C		0.000	0.000	0.000	0.000	0.00
L3	93.25-46.33	A	1.076	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	1.17
		C		0.000	0.000	0.000	0.000	0.00
L4	46.33-1.00	A	0.968	0.000	0.000	0.000	0.000	0.00
		B		0.000	0.000	0.000	0.000	1.13
		C		0.000	0.000	0.000	0.000	0.00

Feed Line Center of Pressure

Section	Elevation ft	CP_X in	CP_Z in	CP_X Ice in	CP_Z Ice in
L1	158.00-131.00	0.0000	0.0000	0.0000	0.0000
L2	131.00-93.25	0.0000	0.0000	0.0000	0.0000
L3	93.25-46.33	0.0000	0.0000	0.0000	0.0000
L4	46.33-1.00	0.0000	0.0000	0.0000	0.0000

Note: For pole sections, center of pressure calculations do not consider feed line shielding.

User Defined Loads - Seismic

Description	Elevation	Offset From Centroid	Azimuth Angle	E_v	E_{hx}	E_{hz}	E_h
	ft	ft	°	K	K	K	K
CCISeismic Tower Section 1 - 1	154.50	0.00	0.0000	0.01	0.00	0.00	0.03
CCISeismic Tower Section 1 - 2	146.00	0.00	0.0000	0.02	0.00	0.00	0.04
CCISeismic Tower Section 1 - 3	136.00	0.00	0.0000	0.02	0.00	0.00	0.04
CCISeismic Tower Section 2 - 1	134.13	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic Tower Section 2 - 2	128.25	0.00	0.0000	0.05	0.00	0.00	0.07
CCISeismic Tower Section 2 - 3	118.25	0.00	0.0000	0.05	0.00	0.00	0.07
CCISeismic Tower Section 2 - 4	108.25	0.00	0.0000	0.06	0.00	0.00	0.06
CCISeismic Tower Section 2 - 5	98.25	0.00	0.0000	0.07	0.00	0.00	0.06
CCISeismic Tower Section 3 - 1	97.54	0.00	0.0000	0.02	0.00	0.00	0.02
CCISeismic Tower Section 3 - 2	91.33	0.00	0.0000	0.08	0.00	0.00	0.06
CCISeismic Tower Section 3 - 3	81.33	0.00	0.0000	0.09	0.00	0.00	0.05
CCISeismic Tower Section 3 - 4	71.33	0.00	0.0000	0.09	0.00	0.00	0.04
CCISeismic Tower Section 3 - 5	61.33	0.00	0.0000	0.10	0.00	0.00	0.03
CCISeismic Tower Section 3 - 6	51.33	0.00	0.0000	0.11	0.00	0.00	0.03
CCISeismic Tower Section 4 - 1	52.33	0.00	0.0000	0.03	0.00	0.00	0.01
CCISeismic Tower Section 4 - 2	46.00	0.00	0.0000	0.12	0.00	0.00	0.02
CCISeismic Tower Section 4 - 3	36.00	0.00	0.0000	0.12	0.00	0.00	0.01
CCISeismic Tower Section 4 - 4	26.00	0.00	0.0000	0.13	0.00	0.00	0.01
CCISeismic Tower Section 4 - 5	16.00	0.00	0.0000	0.14	0.00	0.00	0.00
CCISeismic Tower Section 4 - 6	6.00	0.00	0.0000	0.15	0.00	0.00	0.00
CCISeismic 12' Platform w/Rail	145.00	0.00	0.0000	0.07	0.00	0.00	0.13
CCISeismic antel LPA-80080/4CF w/6' Mount Pipe	145.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic antel LPA-80080/4CF w/6' Mount Pipe	145.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic antel LPA-80080/4CF w/6' Mount Pipe	145.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic samsung RFV01U-D1A w/6' Mount Pipe	145.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic samsung RFV01U-D1A w/6' Mount Pipe	145.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic samsung RFV01U-D1A w/6' Mount Pipe	145.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic commscope JAHH-65B-R3B	145.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic commscope JAHH-65B-R3B	145.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic commscope JAHH-65B-R3B	145.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic tower mounts Side By Side w/10' Mount Pipe (SES)	145.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic tower mounts Side By Side w/10' Mount Pipe (SES)	145.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic tower mounts Side By Side w/10' Mount Pipe (SES)	145.00	0.00	0.0000	0.00	0.00	0.00	0.01

Description	Elevation	Offset From Centroid	Azimuth Angle	E_v	E_{hx}	E_{hz}	E_h
	ft	ft	°	K	K	K	K
CCISeismic commscope JAHH-65B-R3B	145.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic commscope JAHH-65B-R3B	145.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic commscope JAHH-65B-R3B	145.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic samsung MT6407-77A w/8' Mount Pipe	145.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic samsung MT6407-77A w/8' Mount Pipe	145.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic samsung MT6407-77A w/8' Mount Pipe	145.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic antel LPA-80080/4CF w/6' Mount Pipe	145.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic antel LPA-80080/4CF w/6' Mount Pipe	145.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic antel LPA-80080/4CF w/6' Mount Pipe	145.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic commscope CBC78T-DS-43-2X	145.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic commscope CBC78T-DS-43-2X	145.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic commscope CBC78T-DS-43-2X	145.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic samsung RFV01U-D2A	145.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic samsung RFV01U-D2A	145.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic samsung RFV01U-D2A	145.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic raycap RRFDC-3315-PF-48 w/6' Mount Pipe	145.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic raycap RRFDC-3315-PF-48	145.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic 12' Triple T-Arms w/V-Brace Reinforcement	137.00	0.00	0.0000	0.07	0.00	0.00	0.12
CCISeismic rfs APXVLL19P_43-C-A20 w/8' Mount Pipe	137.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic rfs APXVLL19P_43-C-A20 w/8' Mount Pipe	137.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic rfs APXVLL19P_43-C-A20 w/8' Mount Pipe	137.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic rfs APXVAALL24_43-U-A20 w/8' Mount Pipe	137.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic rfs APXVAALL24_43-U-A20 w/8' Mount Pipe	137.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic rfs APXVAALL24_43-U-A20 w/8' Mount Pipe	137.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic tower mounts 8'x2" Pipe Mount	137.00	0.00	0.0000	0.00	0.00	0.00	0.00

Description	Elevation	Offset From Centroid	Azimuth Angle	E_v	E_{hx}	E_{hz}	E_h
	ft	ft	°	K	K	K	K
CCISeismic tower mounts 8'x2" Pipe Mount	137.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic tower mounts 8'x2" Pipe Mount	137.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic ericsson AIR 6419 B41 w/8' Mount Pipe	137.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic ericsson AIR 6419 B41 w/8' Mount Pipe	137.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic ericsson AIR 6419 B41 w/8' Mount Pipe	137.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic ericsson 4460 B25/B66 RRU	137.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic ericsson 4460 B25/B66 RRU	137.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic ericsson 4460 B25/B66 RRU	137.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic ericsson 4449 B71/B85 RRU	137.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic ericsson 4449 B71/B85 RRU	137.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic ericsson 4449 B71/B85 RRU	137.00	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic (2) general cable Hybrid Cable From 0 to 146 (137ft to146ft)	142.50	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) general cable Hybrid Cable From 0 to 146 (127ft to137ft)	133.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) general cable Hybrid Cable From 0 to 146 (117ft to127ft)	123.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) general cable Hybrid Cable From 0 to 146 (107ft to117ft)	113.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) general cable Hybrid Cable From 0 to 146 (97ft to107ft)	103.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) general cable Hybrid Cable From 0 to 146 (87ft to97ft)	93.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) general cable Hybrid Cable From 0 to 146 (77ft to87ft)	83.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) general cable Hybrid Cable From 0 to 146 (67ft to77ft)	73.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) general cable Hybrid Cable From 0 to 146 (57ft to67ft)	63.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) general cable Hybrid Cable From 0 to 146 (47ft to57ft)	53.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) general cable Hybrid Cable From 0 to 146 (37ft to47ft)	43.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) general cable Hybrid Cable From 0 to 146 (27ft to37ft)	33.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) general cable Hybrid Cable From 0 to 146	23.00	0.00	0.0000	0.00	0.00	0.00	0.00

Description	Elevation	Offset From Centroid	Azimuth Angle	E_v	E_{hx}	E_{hz}	E_h
	ft	ft	°	K	K	K	K
(17ft to27ft)							
CCISeismic (2) general cable Hybrid Cable From 0 to 146 (7ft to17ft)	13.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) general cable Hybrid Cable From 0 to 146 (0ft to7ft)	4.50	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (137ft to146ft)	142.50	0.00	0.0000	0.00	0.00	0.00	0.01
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (127ft to137ft)	133.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (117ft to127ft)	123.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (107ft to117ft)	113.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (97ft to107ft)	103.00	0.00	0.0000	0.01	0.00	0.00	0.01
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (87ft to97ft)	93.00	0.00	0.0000	0.01	0.00	0.00	0.00
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (77ft to87ft)	83.00	0.00	0.0000	0.01	0.00	0.00	0.00
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (67ft to77ft)	73.00	0.00	0.0000	0.01	0.00	0.00	0.00
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (57ft to67ft)	63.00	0.00	0.0000	0.01	0.00	0.00	0.00
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (47ft to57ft)	53.00	0.00	0.0000	0.01	0.00	0.00	0.00
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (37ft to47ft)	43.00	0.00	0.0000	0.01	0.00	0.00	0.00
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (27ft to37ft)	33.00	0.00	0.0000	0.01	0.00	0.00	0.00
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (17ft to27ft)	23.00	0.00	0.0000	0.01	0.00	0.00	0.00
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (7ft to17ft)	13.00	0.00	0.0000	0.01	0.00	0.00	0.00
CCISeismic (12) general cable 1 5/8" Coax From 0 to 146 (0ft to7ft)	4.50	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (127ft to136ft)	132.50	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (117ft to127ft)	123.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136	113.00	0.00	0.0000	0.00	0.00	0.00	0.00

Description	Elevation	Offset From Centroid	Azimuth Angle	E_v	E_{hx}	E_{hz}	E_h
	ft	ft	°	K	K	K	K
(107ft to117ft)							
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (97ft to107ft)	103.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (87ft to97ft)	93.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (77ft to87ft)	83.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (67ft to77ft)	73.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (57ft to67ft)	63.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (47ft to57ft)	53.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (37ft to47ft)	43.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (27ft to37ft)	33.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (17ft to27ft)	23.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (7ft to17ft)	13.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (0ft to7ft)	4.50	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (127ft to136ft)	132.50	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (117ft to127ft)	123.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (107ft to117ft)	113.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (97ft to107ft)	103.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (87ft to97ft)	93.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (77ft to87ft)	83.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (67ft to77ft)	73.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (57ft to67ft)	63.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (47ft	53.00	0.00	0.0000	0.00	0.00	0.00	0.00

Description	Elevation ft	Offset From Centroid ft	Azimuth Angle °	E_v K	E_{hx} K	E_{hz} K	E_h K
to57ft)							
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (37ft to47ft)	43.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (27ft to37ft)	33.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (17ft to27ft)	23.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (7ft to17ft)	13.00	0.00	0.0000	0.00	0.00	0.00	0.00
CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (0ft to7ft)	4.50	0.00	0.0000	0.00	0.00	0.00	0.00

Discrete Tower Loads

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
*									
12' Platform w/Rail	C	From	0.00	0.0000	145.00	No Ice	31.60	29.33	1.59
(Verizon)		Centroid-Face	0.00			1/2" Ice	38.57	36.09	1.95
			2.00			1" Ice	45.54	42.85	2.31
LPA-80080/4CF w/6' Mount Pipe	A	From	3.50	30.0000	145.00	No Ice	3.11	6.82	0.03
(Verizon)		Centroid-Face	6.00			1/2" Ice	3.58	7.65	0.07
			2.00			1" Ice	4.02	8.35	0.10
LPA-80080/4CF w/6' Mount Pipe	B	From	3.50	50.0000	145.00	No Ice	3.11	6.82	0.03
(Verizon)		Centroid-Face	6.00			1/2" Ice	3.58	7.65	0.07
			2.00			1" Ice	4.02	8.35	0.10
LPA-80080/4CF w/6' Mount Pipe	C	From	3.50	30.0000	145.00	No Ice	3.11	6.82	0.03
(Verizon)		Centroid-Face	6.00			1/2" Ice	3.58	7.65	0.07
			2.00			1" Ice	4.02	8.35	0.10
RFV01U-D1A w/6' Mount Pipe	A	From	3.50	30.0000	145.00	No Ice	3.00	2.67	0.12
(Verizon)		Centroid-Face	3.00			1/2" Ice	3.57	3.32	0.15
			2.00			1" Ice	4.04	3.84	0.19
RFV01U-D1A w/6' Mount Pipe	B	From	3.50	50.0000	145.00	No Ice	3.00	2.67	0.12
(Verizon)		Centroid-Face	3.00			1/2" Ice	3.57	3.32	0.15
			2.00			1" Ice	4.04	3.84	0.19
RFV01U-D1A w/6' Mount Pipe	C	From	3.50	30.0000	145.00	No Ice	3.00	2.67	0.12
(Verizon)		Centroid-Face	3.00			1/2" Ice	3.57	3.32	0.15
			2.00			1" Ice	4.04	3.84	0.19
JAHH-65B-R3B	A	From	3.50	30.0000	145.00	No Ice	9.10	5.97	0.06
(Verizon)		Centroid-Face	1.00			1/2" Ice	9.56	6.43	0.12
			2.00			1" Ice	10.04	6.90	0.19
JAHH-65B-R3B	B	From	3.50	50.0000	145.00	No Ice	9.10	5.97	0.06
(Verizon)		Centroid-Face	1.00			1/2" Ice	9.56	6.43	0.12
			2.00			1" Ice	10.04	6.90	0.19
JAHH-65B-R3B	C	From	3.50	30.0000	145.00	No Ice	9.10	5.97	0.06

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
(Verizon)		Centroid-Face	1.00			1/2" Ice	9.56	6.43	0.12
			2.00			1" Ice	10.04	6.90	0.19
Side By Side w/10' Mount Pipe (SES) (Verizon)	A	From Centroid-Face	3.50	30.0000	145.00	No Ice	3.64	3.31	0.08
			0.00			1/2" Ice	4.74	4.43	0.12
			2.00			1" Ice	5.87	5.57	0.17
Side By Side w/10' Mount Pipe (SES) (Verizon)	B	From Centroid-Face	3.50	50.0000	145.00	No Ice	3.64	3.31	0.08
			0.00			1/2" Ice	4.74	4.43	0.12
			2.00			1" Ice	5.87	5.57	0.17
Side By Side w/10' Mount Pipe (SES) (Verizon)	C	From Centroid-Face	3.50	30.0000	145.00	No Ice	3.64	3.31	0.08
			0.00			1/2" Ice	4.74	4.43	0.12
			2.00			1" Ice	5.87	5.57	0.17
JAHH-65B-R3B (Verizon)	A	From Centroid-Face	3.50	30.0000	145.00	No Ice	9.10	5.97	0.06
			-1.00			1/2" Ice	9.56	6.43	0.12
			2.00			1" Ice	10.04	6.90	0.19
JAHH-65B-R3B (Verizon)	B	From Centroid-Face	3.50	50.0000	145.00	No Ice	9.10	5.97	0.06
			-1.00			1/2" Ice	9.56	6.43	0.12
			2.00			1" Ice	10.04	6.90	0.19
JAHH-65B-R3B (Verizon)	C	From Centroid-Face	3.50	30.0000	145.00	No Ice	9.10	5.97	0.06
			-1.00			1/2" Ice	9.56	6.43	0.12
			2.00			1" Ice	10.04	6.90	0.19
MT6407-77A w/8' Mount Pipe (Verizon)	A	From Centroid-Face	3.50	30.0000	145.00	No Ice	6.16	4.14	0.13
			-3.00			1/2" Ice	6.97	5.20	0.19
			2.00			1" Ice	7.58	5.92	0.25
MT6407-77A w/8' Mount Pipe (Verizon)	B	From Centroid-Face	3.50	50.0000	145.00	No Ice	6.16	4.14	0.13
			-3.00			1/2" Ice	6.97	5.20	0.19
			2.00			1" Ice	7.58	5.92	0.25
MT6407-77A w/8' Mount Pipe (Verizon)	C	From Centroid-Face	3.50	30.0000	145.00	No Ice	6.16	4.14	0.13
			-3.00			1/2" Ice	6.97	5.20	0.19
			2.00			1" Ice	7.58	5.92	0.25
LPA-80080/4CF w/6' Mount Pipe (Verizon)	A	From Centroid-Face	3.50	30.0000	145.00	No Ice	3.11	6.82	0.03
			-6.00			1/2" Ice	3.58	7.65	0.07
			2.00			1" Ice	4.02	8.35	0.10
LPA-80080/4CF w/6' Mount Pipe (Verizon)	B	From Centroid-Face	3.50	50.0000	145.00	No Ice	3.11	6.82	0.03
			-6.00			1/2" Ice	3.58	7.65	0.07
			2.00			1" Ice	4.02	8.35	0.10
LPA-80080/4CF w/6' Mount Pipe (Verizon)	C	From Centroid-Face	3.50	30.0000	145.00	No Ice	3.11	6.82	0.03
			-6.00			1/2" Ice	3.58	7.65	0.07
			2.00			1" Ice	4.02	8.35	0.10
CBC78T-DS-43-2X (Verizon)	A	From Centroid-Face	3.50	30.0000	145.00	No Ice	0.37	0.51	0.02
			0.00			1/2" Ice	0.45	0.60	0.03
			2.00			1" Ice	0.53	0.70	0.04
CBC78T-DS-43-2X (Verizon)	B	From Centroid-Face	3.50	50.0000	145.00	No Ice	0.37	0.51	0.02
			0.00			1/2" Ice	0.45	0.60	0.03
			2.00			1" Ice	0.53	0.70	0.04
CBC78T-DS-43-2X (Verizon)	C	From Centroid-Face	3.50	30.0000	145.00	No Ice	0.37	0.51	0.02
			0.00			1/2" Ice	0.45	0.60	0.03
			2.00			1" Ice	0.53	0.70	0.04
RFV01U-D2A (Verizon)	A	From Centroid-Face	3.50	30.0000	145.00	No Ice	1.88	1.01	0.08
			-3.00			1/2" Ice	2.05	1.14	0.10
			2.00			1" Ice	2.22	1.28	0.12
RFV01U-D2A (Verizon)	B	From Centroid-Face	3.50	50.0000	145.00	No Ice	1.88	1.01	0.08
			-3.00			1/2" Ice	2.05	1.14	0.10
			2.00			1" Ice	2.22	1.28	0.12
RFV01U-D2A (Verizon)	C	From Centroid-Face	3.50	30.0000	145.00	No Ice	1.88	1.01	0.08
			-3.00			1/2" Ice	2.05	1.14	0.10
			2.00			1" Ice	2.22	1.28	0.12
RRFDC-3315-PF-48 w/6'	A	From	2.00	90.0000	145.00	No Ice	4.64	3.94	0.05

Description	Face or Leg	Offset Type	Offsets: Horz Lateral Vert ft ft ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
Mount Pipe		Centroid-Le	0.00			1/2" Ice	5.20	4.65	0.10
(Verizon)		g	2.00			1" Ice	5.68	5.24	0.15
RRFDC-3315-PF-48	A	From	2.00	90.0000	145.00	No Ice	3.79	2.51	0.03
(Verizon)		Centroid-Le	0.00			1/2" Ice	4.04	2.72	0.06
*		g	2.00			1" Ice	4.30	2.94	0.10
12' Triple T-Arms w/V-Brace	C	None		0.0000	137.00	No Ice	20.50	20.50	1.63
Reinforcement						1/2" Ice	26.00	26.00	2.00
(T-Mobile)						1" Ice	31.50	31.50	2.36
APXVLL19P_43-C-A20 w/8'	A	From Face	3.00	0.0000	137.00	No Ice	8.73	6.45	0.09
Mount Pipe			6.00			1/2" Ice	9.38	7.75	0.16
(T-Mobile)			0.00			1" Ice	9.97	8.71	0.23
APXVLL19P_43-C-A20 w/8'	B	From Face	3.00	0.0000	137.00	No Ice	8.73	6.45	0.09
Mount Pipe			6.00			1/2" Ice	9.38	7.75	0.16
(T-Mobile)			0.00			1" Ice	9.97	8.71	0.23
APXVLL19P_43-C-A20 w/8'	C	From Face	3.00	0.0000	137.00	No Ice	8.73	6.45	0.09
Mount Pipe			6.00			1/2" Ice	9.38	7.75	0.16
(T-Mobile)			0.00			1" Ice	9.97	8.71	0.23
APXVAALL24_43-U-A20	A	From Face	3.00	0.0000	137.00	No Ice	20.27	11.04	0.19
w/8' Mount Pipe			2.00			1/2" Ice	20.91	12.47	0.33
(T-Mobile)			0.00			1" Ice	21.57	13.57	0.48
APXVAALL24_43-U-A20	B	From Face	3.00	0.0000	137.00	No Ice	20.27	11.04	0.19
w/8' Mount Pipe			2.00			1/2" Ice	20.91	12.47	0.33
(T-Mobile)			0.00			1" Ice	21.57	13.57	0.48
APXVAALL24_43-U-A20	C	From Face	3.00	0.0000	137.00	No Ice	20.27	11.04	0.19
w/8' Mount Pipe			2.00			1/2" Ice	20.91	12.47	0.33
(T-Mobile)			0.00			1" Ice	21.57	13.57	0.48
8'x2" Pipe Mount	A	From Face	3.00	0.0000	137.00	No Ice	1.90	1.90	0.03
(T-Mobile)			-2.00			1/2" Ice	2.73	2.73	0.05
			0.00			1" Ice	3.40	3.40	0.07
8'x2" Pipe Mount	B	From Face	3.00	0.0000	137.00	No Ice	1.90	1.90	0.03
(T-Mobile)			-2.00			1/2" Ice	2.73	2.73	0.05
			0.00			1" Ice	3.40	3.40	0.07
8'x2" Pipe Mount	C	From Face	3.00	0.0000	137.00	No Ice	1.90	1.90	0.03
(T-Mobile)			-2.00			1/2" Ice	2.73	2.73	0.05
			0.00			1" Ice	3.40	3.40	0.07
AIR 6419 B41 w/8' Mount	A	From Face	3.00	0.0000	137.00	No Ice	7.59	4.55	0.13
Pipe			-6.00			1/2" Ice	8.43	5.61	0.19
(T-Mobile)			0.00			1" Ice	9.06	6.33	0.26
AIR 6419 B41 w/8' Mount	B	From Face	3.00	0.0000	137.00	No Ice	7.59	4.55	0.13
Pipe			-6.00			1/2" Ice	8.43	5.61	0.19
(T-Mobile)			0.00			1" Ice	9.06	6.33	0.26
AIR 6419 B41 w/8' Mount	C	From Face	3.00	0.0000	137.00	No Ice	7.59	4.55	0.13
Pipe			-6.00			1/2" Ice	8.43	5.61	0.19
(T-Mobile)			0.00			1" Ice	9.06	6.33	0.26
4460 B25/B66 RRU	A	From Face	3.00	0.0000	137.00	No Ice	2.56	1.98	0.11
(T-Mobile)			6.00			1/2" Ice	2.76	2.16	0.13
			0.00			1" Ice	2.97	2.34	0.16
4460 B25/B66 RRU	B	From Face	3.00	0.0000	137.00	No Ice	2.56	1.98	0.11
(T-Mobile)			6.00			1/2" Ice	2.76	2.16	0.13
			0.00			1" Ice	2.97	2.34	0.16
4460 B25/B66 RRU	C	From Face	3.00	0.0000	137.00	No Ice	2.56	1.98	0.11
(T-Mobile)			6.00			1/2" Ice	2.76	2.16	0.13
			0.00			1" Ice	2.97	2.34	0.16
4449 B71/B85 RRU	A	From Face	3.00	0.0000	137.00	No Ice	1.95	1.58	0.07
(T-Mobile)			2.00			1/2" Ice	2.13	1.74	0.09
			0.00			1" Ice	2.31	1.91	0.12

Description	Face or Leg	Offset Type	Offsets: Horz Lateral ft / Vert ft	Azimuth Adjustment °	Placement ft		C_AA_A Front ft^2	C_AA_A Side ft^2	Weight K
4449 B71/B85 RRU (T-Mobile)	B	From Face	3.00	0.0000	137.00	No Ice	1.95	1.58	0.07
			2.00			1/2" Ice	2.13	1.74	0.09
			0.00			1" Ice	2.31	1.91	0.12
4449 B71/B85 RRU (T-Mobile)	C	From Face	3.00	0.0000	137.00	No Ice	1.95	1.58	0.07
			2.00			1/2" Ice	2.13	1.74	0.09
			0.00			1" Ice	2.31	1.91	0.12
*									

Tower Pressures - No Ice

$G_H = 1.100$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1 158.00-131.00	143.63	1.366	48	52.320	A	0.000	52.320	52.320	100.00	0.000	0.000
					B	0.000	52.320		100.00	0.000	0.000
					C	0.000	52.320		100.00	0.000	0.000
L2 131.00-93.25	111.11	1.294	45	105.785	A	0.000	105.785	105.785	100.00	0.000	0.000
					B	0.000	105.785		100.00	0.000	0.000
					C	0.000	105.785		100.00	0.000	0.000
L3 93.25-46.33	68.91	1.17	41	183.587	A	0.000	183.587	183.587	100.00	0.000	0.000
					B	0.000	183.587		100.00	0.000	0.000
					C	0.000	183.587		100.00	0.000	0.000
L4 46.33-1.00	23.73	0.935	32	232.054	A	0.000	232.054	232.054	100.00	0.000	0.000
					B	0.000	232.054		100.00	0.000	0.000
					C	0.000	232.054		100.00	0.000	0.000

Tower Pressure - With Ice

$G_H = 1.100$

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft^2	Face	A_F ft^2	A_R ft^2	A_{leg} ft^2	Leg %	C_AA_A In Face ft^2	C_AA_A Out Face ft^2
L1 158.00-131.00	143.63	1.366	8	1.1584	57.533	A	0.000	57.533	57.533	100.00	0.000	0.000
						B	0.000	57.533		100.00	0.000	0.000
						C	0.000	57.533		100.00	0.000	0.000
L2 131.00-93.25	111.11	1.294	8	1.1291	113.074	A	0.000	113.074	113.074	100.00	0.000	0.000
						B	0.000	113.074		100.00	0.000	0.000
						C	0.000	113.074		100.00	0.000	0.000
L3 93.25-46.33	68.91	1.17	7	1.0764	192.416	A	0.000	192.416	192.416	100.00	0.000	0.000
						B	0.000	192.416		100.00	0.000	0.000
						C	0.000	192.416		100.00	0.000	0.000
L4 46.33-1.00	23.73	0.935	6	0.9676	240.187	A	0.000	240.187	240.187	100.00	0.000	0.000

Section Elevation ft	z ft	K_Z	q_z psf	t_Z in	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
						B	0.000	240.187		100.00	0.000	0.000
						C	0.000	240.187		100.00	0.000	0.000

Tower Pressure - Service

$G_H = 1.100$

Section Elevation ft	z ft	K_Z	q_z psf	A_G ft²	Face	A_F ft²	A_R ft²	A_{leg} ft²	Leg %	C_AA_A In Face ft²	C_AA_A Out Face ft²
L1	143.63	1.366	11	52.320	A	0.000	52.320	52.320	100.00	0.000	0.000
158.00-131.00					B	0.000	52.320		100.00	0.000	0.000
					C	0.000	52.320		100.00	0.000	0.000
L2	111.11	1.294	10	105.785	A	0.000	105.785	105.785	100.00	0.000	0.000
131.00-93.25					B	0.000	105.785		100.00	0.000	0.000
					C	0.000	105.785		100.00	0.000	0.000
L3 93.25-46.33	68.91	1.17	9	183.587	A	0.000	183.587	183.587	100.00	0.000	0.000
					B	0.000	183.587		100.00	0.000	0.000
					C	0.000	183.587		100.00	0.000	0.000
L4 46.33-1.00	23.73	0.935	7	232.054	A	0.000	232.054	232.054	100.00	0.000	0.000
					B	0.000	232.054		100.00	0.000	0.000
					C	0.000	232.054		100.00	0.000	0.000

Tower Forces - No Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.31	1.24	A	1	0.63	48	1	1	52.320	1.73	63.94	C
158.00-131.00			B	1	0.63		1	1	52.320			
			C	1	0.63		1	1	52.320			
L2	0.94	5.44	A	1	0.63	45	1	1	105.785	3.30	87.53	C
131.00-93.25			B	1	0.63		1	1	105.785			
			C	1	0.63		1	1	105.785			
L3	1.17	11.14	A	1	0.63	41	1	1	183.587	5.17	110.22	C
93.25-46.33			B	1	0.63		1	1	183.587			
			C	1	0.63		1	1	183.587			
L4 46.33-1.00	1.13	15.86	A	1	0.63	32	1	1	232.054	5.19	114.58	C
			B	1	0.63		1	1	232.054			
			C	1	0.63		1	1	232.054			
Sum Weight:	3.55	33.68						OTM	1079.31 kip-ft	15.40		

Tower Forces - No Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.31	1.24	A	1	0.63	48	1	1	52.320	1.73	63.94	C
158.00-131.00			B	1	0.63		1	1	52.320			
			C	1	0.63		1	1	52.320			
L2	0.94	5.44	A	1	0.63	45	1	1	105.785	3.30	87.53	C
131.00-93.25			B	1	0.63		1	1	105.785			
			C	1	0.63		1	1	105.785			
L3	1.17	11.14	A	1	0.63	41	1	1	183.587	5.17	110.22	C
93.25-46.33			B	1	0.63		1	1	183.587			
			C	1	0.63		1	1	183.587			
L4 46.33-1.00	1.13	15.86	A	1	0.63	32	1	1	232.054	5.19	114.58	C
			B	1	0.63		1	1	232.054			
			C	1	0.63		1	1	232.054			
Sum Weight:	3.55	33.68						OTM	1079.31 kip-ft	15.40		

Tower Forces - No Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.31	1.24	A	1	0.63	48	1	1	52.320	1.73	63.94	C
158.00-131.00			B	1	0.63		1	1	52.320			
			C	1	0.63		1	1	52.320			
L2	0.94	5.44	A	1	0.63	45	1	1	105.785	3.30	87.53	C
131.00-93.25			B	1	0.63		1	1	105.785			
			C	1	0.63		1	1	105.785			
L3	1.17	11.14	A	1	0.63	41	1	1	183.587	5.17	110.22	C
93.25-46.33			B	1	0.63		1	1	183.587			
			C	1	0.63		1	1	183.587			
L4 46.33-1.00	1.13	15.86	A	1	0.63	32	1	1	232.054	5.19	114.58	C
			B	1	0.63		1	1	232.054			
			C	1	0.63		1	1	232.054			
Sum Weight:	3.55	33.68						OTM	1079.31 kip-ft	15.40		

Tower Forces - With Ice - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.31	2.17	A	1	1.1	8	1	1	57.533	0.58	21.31	C
158.00-131.00			B	1	1.1		1	1	57.533			
			C	1	1.1		1	1	57.533			
L2	0.94	7.24	A	1	1.1	8	1	1	112.889	1.07	28.31	C
131.00-93.25			B	1	1.1		1	1	112.889			
			C	1	1.1		1	1	112.889			
L3	1.17	14.09	A	1	1.1	7	1	1	192.004	1.64	34.94	C

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
93.25-46.33			B	1	1.1		1	1	192.004			
			C	1	1.1		1	1	192.004			
L4 46.33-1.00	1.13	19.19	A	1	1.1	6	1	1	239.364	1.62	35.83	C
			B	1	1.1		1	1	239.364			
			C	1	1.1		1	1	239.364			
Sum Weight:	3.55	42.70						OTM	348.02 kip-ft	4.91		

Tower Forces - With Ice - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.31	2.17	A	1	1.1	8	1	1	57.533	0.58	21.31	C
158.00-131.00			B	1	1.1		1	1	57.533			
			C	1	1.1		1	1	57.533			
L2	0.94	7.24	A	1	1.1	8	1	1	112.889	1.07	28.31	C
131.00-93.25			B	1	1.1		1	1	112.889			
			C	1	1.1		1	1	112.889			
L3	1.17	14.09	A	1	1.1	7	1	1	192.004	1.64	34.94	C
93.25-46.33			B	1	1.1		1	1	192.004			
			C	1	1.1		1	1	192.004			
L4 46.33-1.00	1.13	19.19	A	1	1.1	6	1	1	239.364	1.62	35.83	C
			B	1	1.1		1	1	239.364			
			C	1	1.1		1	1	239.364			
Sum Weight:	3.55	42.70						OTM	348.02 kip-ft	4.91		

Tower Forces - With Ice - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.31	2.17	A	1	1.1	8	1	1	57.533	0.58	21.31	C
158.00-131.00			B	1	1.1		1	1	57.533			
			C	1	1.1		1	1	57.533			
L2	0.94	7.24	A	1	1.1	8	1	1	112.889	1.07	28.31	C
131.00-93.25			B	1	1.1		1	1	112.889			
			C	1	1.1		1	1	112.889			
L3	1.17	14.09	A	1	1.1	7	1	1	192.004	1.64	34.94	C
93.25-46.33			B	1	1.1		1	1	192.004			
			C	1	1.1		1	1	192.004			
L4 46.33-1.00	1.13	19.19	A	1	1.1	6	1	1	239.364	1.62	35.83	C
			B	1	1.1		1	1	239.364			
			C	1	1.1		1	1	239.364			
Sum Weight:	3.55	42.70						OTM	348.02 kip-ft	4.91		

Tower Forces - Service - Wind Normal To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.31	1.24	A	1	0.63	11	1	1	52.320	0.39	14.30	C
158.00-131.00			B	1	0.63		1	1	52.320			
			C	1	0.63		1	1	52.320			
L2	0.94	5.44	A	1	0.63	10	1	1	105.785	0.74	19.58	C
131.00-93.25			B	1	0.63		1	1	105.785			
			C	1	0.63		1	1	105.785			
L3	1.17	11.14	A	1	0.63	9	1	1	183.587	1.16	24.65	C
93.25-46.33			B	1	0.63		1	1	183.587			
			C	1	0.63		1	1	183.587			
L4 46.33-1.00	1.13	15.86	A	1	0.63	7	1	1	232.054	1.16	25.63	C
			B	1	0.63		1	1	232.054			
			C	1	0.63		1	1	232.054			
Sum Weight:	3.55	33.68						OTM	241.42 kip-ft	3.44		

Tower Forces - Service - Wind 60 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.31	1.24	A	1	0.63	11	1	1	52.320	0.39	14.30	C
158.00-131.00			B	1	0.63		1	1	52.320			
			C	1	0.63		1	1	52.320			
L2	0.94	5.44	A	1	0.63	10	1	1	105.785	0.74	19.58	C
131.00-93.25			B	1	0.63		1	1	105.785			
			C	1	0.63		1	1	105.785			
L3	1.17	11.14	A	1	0.63	9	1	1	183.587	1.16	24.65	C
93.25-46.33			B	1	0.63		1	1	183.587			
			C	1	0.63		1	1	183.587			
L4 46.33-1.00	1.13	15.86	A	1	0.63	7	1	1	232.054	1.16	25.63	C
			B	1	0.63		1	1	232.054			
			C	1	0.63		1	1	232.054			
Sum Weight:	3.55	33.68						OTM	241.42 kip-ft	3.44		

Tower Forces - Service - Wind 90 To Face

Section Elevation ft	Add Weight K	Self Weight K	Face	e	C_F	q_z psf	D_F	D_R	A_E ft²	F K	w plf	Ctrl. Face
L1	0.31	1.24	A	1	0.63	11	1	1	52.320	0.39	14.30	C
158.00-131.00			B	1	0.63		1	1	52.320			
			C	1	0.63		1	1	52.320			
L2	0.94	5.44	A	1	0.63	10	1	1	105.785	0.74	19.58	C
131.00-93.25			B	1	0.63		1	1	105.785			
			C	1	0.63		1	1	105.785			
L3	1.17	11.14	A	1	0.63	9	1	1	183.587	1.16	24.65	C
93.25-46.33			B	1	0.63		1	1	183.587			
			C	1	0.63		1	1	183.587			
L4 46.33-1.00	1.13	15.86	A	1	0.63	7	1	1	232.054	1.16	25.63	C
			B	1	0.63		1	1	232.054			
			C	1	0.63		1	1	232.054			
Sum Weight:	3.55	33.68						OTM	241.42 kip-ft	3.44		

Force Totals

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Leg Weight	33.68					
Bracing Weight	0.00					
Total Member Self-Weight	33.68			-0.16	0.00	
Total Weight	44.21			-0.16	0.00	
Wind 0 deg - No Ice		0.00	-27.21	-2750.86	0.00	-0.61
Wind 30 deg - No Ice		13.59	-23.53	-2377.46	-1372.53	1.99
Wind 60 deg - No Ice		23.51	-13.57	-1370.48	-2373.47	0.18
Wind 90 deg - No Ice		27.15	0.00	-0.16	-2741.85	-2.86
Wind 120 deg - No Ice		23.55	13.59	1373.58	-2379.39	-1.26
Wind 150 deg - No Ice		13.61	23.57	2383.06	-1375.95	1.86
Wind 180 deg - No Ice		0.00	27.21	2750.54	0.00	0.61
Wind 210 deg - No Ice		-13.59	23.53	2377.14	1372.53	-1.99
Wind 240 deg - No Ice		-23.51	13.57	1370.16	2373.47	-0.18
Wind 270 deg - No Ice		-27.15	0.00	-0.16	2741.85	2.86
Wind 300 deg - No Ice		-23.55	-13.59	-1373.90	2379.39	1.26
Wind 330 deg - No Ice		-13.61	-23.57	-2383.38	1375.95	-1.86
Member Ice	9.02					
Total Weight Ice	60.25			-0.57	0.00	
Wind 0 deg - Ice		0.00	-7.64	-735.52	0.00	-0.04
Wind 30 deg - Ice		3.82	-6.62	-636.58	-367.20	0.26
Wind 60 deg - Ice		6.61	-3.82	-367.28	-635.15	-0.06
Wind 90 deg - Ice		7.63	0.00	-0.57	-732.99	-0.44
Wind 120 deg - Ice		6.61	3.82	366.20	-635.27	-0.16
Wind 150 deg - Ice		3.82	6.62	635.54	-367.26	0.25
Wind 180 deg - Ice		0.00	7.64	734.38	0.00	0.04
Wind 210 deg - Ice		-3.82	6.62	635.43	367.20	-0.26
Wind 240 deg - Ice		-6.61	3.82	366.13	635.15	0.06
Wind 270 deg - Ice		-7.63	0.00	-0.57	732.99	0.44
Wind 300 deg - Ice		-6.61	-3.82	-367.34	635.27	0.16
Wind 330 deg - Ice		-3.82	-6.62	-636.69	367.26	-0.25
Total Weight	44.21			-0.16	0.00	
Wind 0 deg - Service		0.00	-6.09	-615.45	0.00	-0.14
Wind 30 deg - Service		3.04	-5.26	-531.92	-307.01	0.44

Load Case	Vertical Forces K	Sum of Forces X K	Sum of Forces Z K	Sum of Overturning Moments, M_x kip-ft	Sum of Overturning Moments, M_z kip-ft	Sum of Torques kip-ft
Wind 60 deg - Service		5.26	-3.04	-306.68	-530.91	0.04
Wind 90 deg - Service		6.07	0.00	-0.16	-613.31	-0.64
Wind 120 deg - Service		5.27	3.04	307.12	-532.23	-0.28
Wind 150 deg - Service		3.04	5.27	532.93	-307.78	0.42
Wind 180 deg - Service		0.00	6.09	615.13	0.00	0.14
Wind 210 deg - Service		-3.04	5.26	531.60	307.01	-0.44
Wind 240 deg - Service		-5.26	3.04	306.36	530.91	-0.04
Wind 270 deg - Service		-6.07	0.00	-0.16	613.31	0.64
Wind 300 deg - Service		-5.27	-3.04	-307.44	532.23	0.28
Wind 330 deg - Service		-3.04	-5.27	-533.25	307.78	-0.42
Seismic Vertical	1.90					
Seismic Horizontal 0 deg		0.00	-1.33	-155.36	0.00	0.00
Seismic Horizontal 30 deg		0.66	-1.15	-134.54	-77.68	0.00
Seismic Horizontal 60 deg		1.15	-0.66	-77.68	-134.54	0.00
Seismic Horizontal 90 deg		1.33	0.00	0.00	-155.36	0.00
Seismic Horizontal 120 deg		1.15	0.66	77.68	-134.54	0.00
Seismic Horizontal 150 deg		0.66	1.15	134.54	-77.68	0.00
Seismic Horizontal 180 deg		0.00	1.33	155.36	0.00	0.00
Seismic Horizontal 210 deg		-0.66	1.15	134.54	77.68	0.00
Seismic Horizontal 240 deg		-1.15	0.66	77.68	134.54	0.00
Seismic Horizontal 270 deg		-1.33	0.00	0.00	155.36	0.00
Seismic Horizontal 300 deg		-1.15	-0.66	-77.68	134.54	0.00
Seismic Horizontal 330 deg		-0.66	-1.15	-134.54	77.68	0.00

Load Combinations

Comb. No.	Description
1	Dead Only
2	1.2 Dead+1.0 Wind 0 deg - No Ice
3	0.9 Dead+1.0 Wind 0 deg - No Ice
4	1.2 Dead+1.0 Wind 30 deg - No Ice
5	0.9 Dead+1.0 Wind 30 deg - No Ice
6	1.2 Dead+1.0 Wind 60 deg - No Ice
7	0.9 Dead+1.0 Wind 60 deg - No Ice
8	1.2 Dead+1.0 Wind 90 deg - No Ice
9	0.9 Dead+1.0 Wind 90 deg - No Ice
10	1.2 Dead+1.0 Wind 120 deg - No Ice
11	0.9 Dead+1.0 Wind 120 deg - No Ice
12	1.2 Dead+1.0 Wind 150 deg - No Ice
13	0.9 Dead+1.0 Wind 150 deg - No Ice
14	1.2 Dead+1.0 Wind 180 deg - No Ice
15	0.9 Dead+1.0 Wind 180 deg - No Ice
16	1.2 Dead+1.0 Wind 210 deg - No Ice
17	0.9 Dead+1.0 Wind 210 deg - No Ice
18	1.2 Dead+1.0 Wind 240 deg - No Ice
19	0.9 Dead+1.0 Wind 240 deg - No Ice
20	1.2 Dead+1.0 Wind 270 deg - No Ice
21	0.9 Dead+1.0 Wind 270 deg - No Ice
22	1.2 Dead+1.0 Wind 300 deg - No Ice
23	0.9 Dead+1.0 Wind 300 deg - No Ice
24	1.2 Dead+1.0 Wind 330 deg - No Ice
25	0.9 Dead+1.0 Wind 330 deg - No Ice
26	1.2 Dead+1.0 Ice+1.0 Temp
27	1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp
28	1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp

Comb. No.	Description
29	1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp
30	1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp
31	1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp
32	1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp
33	1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp
34	1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp
35	1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp
36	1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp
37	1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp
38	1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp
39	Dead+Wind 0 deg - Service
40	Dead+Wind 30 deg - Service
41	Dead+Wind 60 deg - Service
42	Dead+Wind 90 deg - Service
43	Dead+Wind 120 deg - Service
44	Dead+Wind 150 deg - Service
45	Dead+Wind 180 deg - Service
46	Dead+Wind 210 deg - Service
47	Dead+Wind 240 deg - Service
48	Dead+Wind 270 deg - Service
49	Dead+Wind 300 deg - Service
50	Dead+Wind 330 deg - Service
51	1.2 Dead+1.0 Ev+1.0 Eh 0 deg
52	0.9 Dead-1.0 Ev+1.0 Eh 0 deg
53	1.2 Dead+1.0 Ev+1.0 Eh 30 deg
54	0.9 Dead-1.0 Ev+1.0 Eh 30 deg
55	1.2 Dead+1.0 Ev+1.0 Eh 60 deg
56	0.9 Dead-1.0 Ev+1.0 Eh 60 deg
57	1.2 Dead+1.0 Ev+1.0 Eh 90 deg
58	0.9 Dead-1.0 Ev+1.0 Eh 90 deg
59	1.2 Dead+1.0 Ev+1.0 Eh 120 deg
60	0.9 Dead-1.0 Ev+1.0 Eh 120 deg
61	1.2 Dead+1.0 Ev+1.0 Eh 150 deg
62	0.9 Dead-1.0 Ev+1.0 Eh 150 deg
63	1.2 Dead+1.0 Ev+1.0 Eh 180 deg
64	0.9 Dead-1.0 Ev+1.0 Eh 180 deg
65	1.2 Dead+1.0 Ev+1.0 Eh 210 deg
66	0.9 Dead-1.0 Ev+1.0 Eh 210 deg
67	1.2 Dead+1.0 Ev+1.0 Eh 240 deg
68	0.9 Dead-1.0 Ev+1.0 Eh 240 deg
69	1.2 Dead+1.0 Ev+1.0 Eh 270 deg
70	0.9 Dead-1.0 Ev+1.0 Eh 270 deg
71	1.2 Dead+1.0 Ev+1.0 Eh 300 deg
72	0.9 Dead-1.0 Ev+1.0 Eh 300 deg
73	1.2 Dead+1.0 Ev+1.0 Eh 330 deg
74	0.9 Dead-1.0 Ev+1.0 Eh 330 deg

Maximum Member Forces

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L1	158 - 131	Pole	Max Tension	27	0.00	-0.00	-0.00
			Max. Compression	26	-17.74	0.00	0.60
			Max. Mx	8	-9.38	-105.65	0.10
			Max. My	2	-9.37	-0.02	106.58
			Max. Vy	8	13.58	-105.65	0.10
			Max. Vx	2	-13.65	-0.02	106.58
			Max. Torque	9			2.85

Section No.	Elevation ft	Component Type	Condition	Gov. Load Comb.	Axial K	Major Axis Moment kip-ft	Minor Axis Moment kip-ft
L2	131 - 93.25	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-26.40	0.00	0.60
			Max. Mx	8	-16.24	-652.52	0.16
			Max. My	2	-16.24	-0.01	655.72
			Max. Vy	8	16.71	-652.52	0.16
			Max. Vx	2	-16.77	-0.01	655.72
			Max. Torque	9			2.85
L3	93.25 - 46.3333	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-43.05	0.00	0.60
			Max. Mx	8	-29.98	-1511.16	0.19
			Max. My	2	-29.98	-0.00	1517.18
			Max. Vy	8	21.48	-1511.16	0.19
			Max. Vx	2	-21.54	-0.00	1517.18
			Max. Torque	9			2.85
L4	46.3333 - 1	Pole	Max Tension	1	0.00	0.00	0.00
			Max. Compression	26	-70.17	0.00	0.60
			Max. Mx	8	-53.04	-2796.04	0.19
			Max. My	2	-53.04	-0.01	2805.30
			Max. Vy	8	27.17	-2796.04	0.19
			Max. Vx	2	-27.23	-0.01	2805.30
			Max. Torque	9			2.85

Maximum Reactions

Location	Condition	Gov. Load Comb.	Vertical K	Horizontal, X K	Horizontal, Z K
Pole	Max. Vert	26	70.17	0.00	0.00
	Max. H_x	20	53.05	27.15	0.00
	Max. H_z	2	53.05	-0.01	27.21
	Max. M_x	2	2805.30	-0.01	27.21
	Max. M_z	8	2796.04	-27.15	0.00
	Max. Torsion	9	2.85	-27.15	0.00
	Min. Vert	52	37.88	0.00	1.33
	Min. H_x	8	53.05	-27.15	0.00
	Min. H_z	14	53.05	-0.01	-27.21
	Min. M_x	14	-2804.90	-0.01	-27.21
	Min. M_z	20	-2796.04	27.15	0.00
	Min. Torsion	21	-2.85	27.15	0.00

Tower Mast Reaction Summary

Load Combination	Vertical K	$Shear_x$ K	$Shear_z$ K	Overturning Moment, M_x kip-ft	Overturning Moment, M_z kip-ft	Torque kip-ft
Dead Only	44.21	0.00	0.00	-0.16	0.00	0.00
1.2 Dead+1.0 Wind 0 deg - No Ice	53.05	0.01	-27.21	-2805.30	-0.01	-0.61
0.9 Dead+1.0 Wind 0 deg - No Ice	39.79	-0.00	-27.21	-2791.22	0.00	-0.61
1.2 Dead+1.0 Wind 30 deg - No Ice	53.05	13.59	-23.53	-2424.50	-1399.66	1.98

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
0.9 Dead+1.0 Wind 30 deg - No Ice	39.79	13.59	-23.53	-2412.33	-1392.67	1.98
1.2 Dead+1.0 Wind 60 deg - No Ice	53.05	23.51	-13.57	-1397.60	-2420.38	0.18
0.9 Dead+1.0 Wind 60 deg - No Ice	39.79	23.51	-13.57	-1390.57	-2408.28	0.18
1.2 Dead+1.0 Wind 90 deg - No Ice	53.05	27.15	-0.00	-0.19	-2796.04	-2.85
0.9 Dead+1.0 Wind 90 deg - No Ice	39.79	27.15	0.00	-0.14	-2782.07	-2.85
1.2 Dead+1.0 Wind 120 deg - No Ice	53.05	23.55	13.59	1400.70	-2426.43	-1.25
0.9 Dead+1.0 Wind 120 deg - No Ice	39.79	23.55	13.59	1393.75	-2414.31	-1.25
1.2 Dead+1.0 Wind 150 deg - No Ice	53.05	13.61	23.57	2430.15	-1403.17	1.86
0.9 Dead+1.0 Wind 150 deg - No Ice	39.79	13.61	23.57	2418.05	-1396.15	1.86
1.2 Dead+1.0 Wind 180 deg - No Ice	53.05	0.01	27.21	2804.90	-0.01	0.61
0.9 Dead+1.0 Wind 180 deg - No Ice	39.79	-0.00	27.21	2790.93	0.00	0.61
1.2 Dead+1.0 Wind 210 deg - No Ice	53.05	-13.59	23.53	2424.09	1399.67	-1.98
0.9 Dead+1.0 Wind 210 deg - No Ice	39.79	-13.59	23.53	2412.03	1392.68	-1.98
1.2 Dead+1.0 Wind 240 deg - No Ice	53.05	-23.51	13.57	1397.20	2420.38	-0.18
0.9 Dead+1.0 Wind 240 deg - No Ice	39.79	-23.51	13.57	1390.28	2408.29	-0.18
1.2 Dead+1.0 Wind 270 deg - No Ice	53.05	-27.15	-0.00	-0.19	2796.04	2.85
0.9 Dead+1.0 Wind 270 deg - No Ice	39.79	-27.15	0.00	-0.14	2782.07	2.85
1.2 Dead+1.0 Wind 300 deg - No Ice	53.05	-23.55	-13.59	-1401.10	2426.43	1.25
0.9 Dead+1.0 Wind 300 deg - No Ice	39.79	-23.55	-13.59	-1394.05	2414.31	1.25
1.2 Dead+1.0 Wind 330 deg - No Ice	53.05	-13.61	-23.57	-2430.56	1403.16	-1.86
0.9 Dead+1.0 Wind 330 deg - No Ice	39.79	-13.61	-23.57	-2418.35	1396.15	-1.86
1.2 Dead+1.0 Ice+1.0 Temp	70.17	0.00	0.00	-0.60	0.00	0.00
1.2 Dead+1.0 Wind 0 deg+1.0 Ice+1.0 Temp	70.17	-0.00	-7.64	-757.85	0.00	-0.04
1.2 Dead+1.0 Wind 30 deg+1.0 Ice+1.0 Temp	70.17	3.82	-6.62	-655.90	-378.31	0.26
1.2 Dead+1.0 Wind 60 deg+1.0 Ice+1.0 Temp	70.17	6.61	-3.82	-378.45	-654.37	-0.06
1.2 Dead+1.0 Wind 90 deg+1.0 Ice+1.0 Temp	70.17	7.63	-0.00	-0.65	-755.17	-0.44
1.2 Dead+1.0 Wind 120 deg+1.0 Ice+1.0 Temp	70.17	6.61	3.82	377.22	-654.49	-0.16
1.2 Dead+1.0 Wind 150 deg+1.0 Ice+1.0 Temp	70.17	3.82	6.62	654.73	-378.38	0.25
1.2 Dead+1.0 Wind 180 deg+1.0 Ice+1.0 Temp	70.17	-0.00	7.64	756.55	0.00	0.04
1.2 Dead+1.0 Wind 210 deg+1.0 Ice+1.0 Temp	70.17	-3.82	6.62	654.61	378.31	-0.26
1.2 Dead+1.0 Wind 240 deg+1.0 Ice+1.0 Temp	70.17	-6.61	3.82	377.16	654.37	0.06

Load Combination	Vertical	$Shear_x$	$Shear_z$	Overturning Moment, M_x	Overturning Moment, M_z	Torque
	K	K	K	kip-ft	kip-ft	kip-ft
1.2 Dead+1.0 Wind 270 deg+1.0 Ice+1.0 Temp	70.17	-7.63	-0.00	-0.65	755.17	0.44
1.2 Dead+1.0 Wind 300 deg+1.0 Ice+1.0 Temp	70.17	-6.61	-3.82	-378.52	654.49	0.16
1.2 Dead+1.0 Wind 330 deg+1.0 Ice+1.0 Temp	70.17	-3.82	-6.62	-656.02	378.38	-0.25
Dead+Wind 0 deg - Service	44.21	-0.00	-6.09	-625.66	0.00	-0.14
Dead+Wind 30 deg - Service	44.21	3.04	-5.26	-540.75	-312.11	0.44
Dead+Wind 60 deg - Service	44.21	5.26	-3.04	-311.77	-539.71	0.04
Dead+Wind 90 deg - Service	44.21	6.07	0.00	-0.17	-623.48	-0.64
Dead+Wind 120 deg - Service	44.21	5.27	3.04	312.22	-541.06	-0.28
Dead+Wind 150 deg - Service	44.21	3.04	5.27	541.77	-312.89	0.42
Dead+Wind 180 deg - Service	44.21	-0.00	6.09	625.33	0.00	0.14
Dead+Wind 210 deg - Service	44.21	-3.04	5.26	540.42	312.11	-0.44
Dead+Wind 240 deg - Service	44.21	-5.26	3.04	311.44	539.71	-0.04
Dead+Wind 270 deg - Service	44.21	-6.07	0.00	-0.17	623.48	0.64
Dead+Wind 300 deg - Service	44.21	-5.27	-3.04	-312.55	541.06	0.28
Dead+Wind 330 deg - Service	44.21	-3.04	-5.27	-542.10	312.89	-0.42
1.2 Dead+1.0 Ev+1.0 Eh 0 deg	54.96	0.00	-1.33	-158.81	0.00	0.00
0.9 Dead-1.0 Ev+1.0 Eh 0 deg	37.88	0.00	-1.33	-157.73	0.00	0.00
1.2 Dead+1.0 Ev+1.0 Eh 30 deg	54.96	0.66	-1.15	-137.56	-79.30	0.00
0.9 Dead-1.0 Ev+1.0 Eh 30 deg	37.88	0.66	-1.15	-136.62	-78.79	0.00
1.2 Dead+1.0 Ev+1.0 Eh 60 deg	54.96	1.15	-0.66	-79.50	-137.36	0.00
0.9 Dead-1.0 Ev+1.0 Eh 60 deg	37.88	1.15	-0.66	-78.94	-136.47	0.00
1.2 Dead+1.0 Ev+1.0 Eh 90 deg	54.96	1.33	0.00	-0.20	-158.61	0.00
0.9 Dead-1.0 Ev+1.0 Eh 90 deg	37.88	1.33	0.00	-0.15	-157.58	0.00
1.2 Dead+1.0 Ev+1.0 Eh 120 deg	54.96	1.15	0.66	79.10	-137.36	0.00
0.9 Dead-1.0 Ev+1.0 Eh 120 deg	37.88	1.15	0.66	78.64	-136.47	0.00
1.2 Dead+1.0 Ev+1.0 Eh 150 deg	54.96	0.66	1.15	137.16	-79.30	0.00
0.9 Dead-1.0 Ev+1.0 Eh 150 deg	37.88	0.66	1.15	136.32	-78.79	0.00
1.2 Dead+1.0 Ev+1.0 Eh 180 deg	54.96	0.00	1.33	158.41	0.00	0.00
0.9 Dead-1.0 Ev+1.0 Eh 180 deg	37.88	0.00	1.33	157.43	0.00	0.00
1.2 Dead+1.0 Ev+1.0 Eh 210 deg	54.96	-0.66	1.15	137.16	79.30	-0.00
0.9 Dead-1.0 Ev+1.0 Eh 210 deg	37.88	-0.66	1.15	136.32	78.79	-0.00
1.2 Dead+1.0 Ev+1.0 Eh 240 deg	54.96	-1.15	0.66	79.10	137.36	-0.00
0.9 Dead-1.0 Ev+1.0 Eh 240 deg	37.88	-1.15	0.66	78.64	136.47	-0.00
1.2 Dead+1.0 Ev+1.0 Eh 270 deg	54.96	-1.33	0.00	-0.20	158.61	-0.00
0.9 Dead-1.0 Ev+1.0 Eh 270 deg	37.88	-1.33	0.00	-0.15	157.58	-0.00
1.2 Dead+1.0 Ev+1.0 Eh 300 deg	54.96	-1.15	-0.66	-79.50	137.36	-0.00
0.9 Dead-1.0 Ev+1.0 Eh 300 deg	37.88	-1.15	-0.66	-78.94	136.47	-0.00
1.2 Dead+1.0 Ev+1.0 Eh 330 deg	54.96	-0.66	-1.15	-137.56	79.30	-0.00
0.9 Dead-1.0 Ev+1.0 Eh 330 deg	37.88	-0.66	-1.15	-136.62	78.79	-0.00

Solution Summary

	Sum of Applied Forces			Sum of Reactions			
Load Comb.	PX K	PY K	PZ K	PX K	PY K	PZ K	% Error
1	0.00	-44.21	0.00	0.00	44.21	0.00	0.000%
2	0.00	-53.05	-27.21	-0.01	53.05	27.21	0.009%
3	0.00	-39.79	-27.21	0.00	39.79	27.21	0.006%
4	13.59	-53.05	-23.53	-13.59	53.05	23.53	0.000%
5	13.59	-39.79	-23.53	-13.59	39.79	23.53	0.000%
6	23.51	-53.05	-13.57	-23.51	53.05	13.57	0.000%
7	23.51	-39.79	-13.57	-23.51	39.79	13.57	0.000%
8	27.15	-53.05	0.00	-27.15	53.05	0.00	0.000%
9	27.15	-39.79	0.00	-27.15	39.79	0.00	0.000%
10	23.55	-53.05	13.59	-23.55	53.05	-13.59	0.000%
11	23.55	-39.79	13.59	-23.55	39.79	-13.59	0.000%
12	13.61	-53.05	23.57	-13.61	53.05	-23.57	0.000%
13	13.61	-39.79	23.57	-13.61	39.79	-23.57	0.000%
14	0.00	-53.05	27.21	-0.01	53.05	-27.21	0.009%
15	0.00	-39.79	27.21	0.00	39.79	-27.21	0.006%
16	-13.59	-53.05	23.53	13.59	53.05	-23.53	0.000%
17	-13.59	-39.79	23.53	13.59	39.79	-23.53	0.000%
18	-23.51	-53.05	13.57	23.51	53.05	-13.57	0.000%
19	-23.51	-39.79	13.57	23.51	39.79	-13.57	0.000%
20	-27.15	-53.05	0.00	27.15	53.05	0.00	0.000%
21	-27.15	-39.79	0.00	27.15	39.79	0.00	0.000%
22	-23.55	-53.05	-13.59	23.55	53.05	13.59	0.000%
23	-23.55	-39.79	-13.59	23.55	39.79	13.59	0.000%
24	-13.61	-53.05	-23.57	13.61	53.05	23.57	0.000%
25	-13.61	-39.79	-23.57	13.61	39.79	23.57	0.000%
26	0.00	-70.17	0.00	0.00	70.17	0.00	0.000%
27	0.00	-70.17	-7.64	0.00	70.17	7.64	0.000%
28	3.82	-70.17	-6.62	-3.82	70.17	6.62	0.000%
29	6.61	-70.17	-3.82	-6.61	70.17	3.82	0.000%
30	7.63	-70.17	0.00	-7.63	70.17	0.00	0.000%
31	6.61	-70.17	3.82	-6.61	70.17	-3.82	0.000%
32	3.82	-70.17	6.62	-3.82	70.17	-6.62	0.000%
33	0.00	-70.17	7.64	0.00	70.17	-7.64	0.000%
34	-3.82	-70.17	6.62	3.82	70.17	-6.62	0.000%
35	-6.61	-70.17	3.82	6.61	70.17	-3.82	0.000%
36	-7.63	-70.17	0.00	7.63	70.17	0.00	0.000%
37	-6.61	-70.17	-3.82	6.61	70.17	3.82	0.000%
38	-3.82	-70.17	-6.62	3.82	70.17	6.62	0.000%
39	0.00	-44.21	-6.09	0.00	44.21	6.09	0.000%
40	3.04	-44.21	-5.26	-3.04	44.21	5.26	0.000%
41	5.26	-44.21	-3.04	-5.26	44.21	3.04	0.000%
42	6.07	-44.21	0.00	-6.07	44.21	0.00	0.000%
43	5.27	-44.21	3.04	-5.27	44.21	-3.04	0.000%
44	3.04	-44.21	5.27	-3.04	44.21	-5.27	0.000%
45	0.00	-44.21	6.09	0.00	44.21	-6.09	0.000%
46	-3.04	-44.21	5.26	3.04	44.21	-5.26	0.000%
47	-5.26	-44.21	3.04	5.26	44.21	-3.04	0.000%
48	-6.07	-44.21	0.00	6.07	44.21	0.00	0.000%
49	-5.27	-44.21	-3.04	5.27	44.21	3.04	0.000%
50	-3.04	-44.21	-5.27	3.04	44.21	5.27	0.000%
51	0.00	-54.96	-1.33	0.00	54.96	1.33	0.000%
52	0.00	-37.88	-1.33	0.00	37.88	1.33	0.000%
53	0.66	-54.96	-1.15	-0.66	54.96	1.15	0.000%
54	0.66	-37.88	-1.15	-0.66	37.88	1.15	0.000%
55	1.15	-54.96	-0.66	-1.15	54.96	0.66	0.000%
56	1.15	-37.88	-0.66	-1.15	37.88	0.66	0.000%
57	1.33	-54.96	0.00	-1.33	54.96	0.00	0.000%
58	1.33	-37.88	0.00	-1.33	37.88	0.00	0.000%

Load Comb.	Sum of Applied Forces PX K	PY K	PZ K	Sum of Reactions PX K	PY K	PZ K	% Error
59	1.15	-54.96	0.66	-1.15	54.96	-0.66	0.000%
60	1.15	-37.88	0.66	-1.15	37.88	-0.66	0.000%
61	0.66	-54.96	1.15	-0.66	54.96	-1.15	0.000%
62	0.66	-37.88	1.15	-0.66	37.88	-1.15	0.000%
63	0.00	-54.96	1.33	0.00	54.96	-1.33	0.000%
64	0.00	-37.88	1.33	0.00	37.88	-1.33	0.000%
65	-0.66	-54.96	1.15	0.66	54.96	-1.15	0.000%
66	-0.66	-37.88	1.15	0.66	37.88	-1.15	0.000%
67	-1.15	-54.96	0.66	1.15	54.96	-0.66	0.000%
68	-1.15	-37.88	0.66	1.15	37.88	-0.66	0.000%
69	-1.33	-54.96	0.00	1.33	54.96	0.00	0.000%
70	-1.33	-37.88	0.00	1.33	37.88	0.00	0.000%
71	-1.15	-54.96	-0.66	1.15	54.96	0.66	0.000%
72	-1.15	-37.88	-0.66	1.15	37.88	0.66	0.000%
73	-0.66	-54.96	-1.15	0.66	54.96	1.15	0.000%
74	-0.66	-37.88	-1.15	0.66	37.88	1.15	0.000%

Non-Linear Convergence Results

Load Combination	Converged?	Number of Cycles	Displacement Tolerance	Force Tolerance
1	Yes	4	0.00000001	0.00000001
2	Yes	4	0.00000001	0.00007110
3	Yes	4	0.00000001	0.00004747
4	Yes	4	0.00000001	0.00098261
5	Yes	4	0.00000001	0.00064361
6	Yes	4	0.00000001	0.00087613
7	Yes	4	0.00000001	0.00057156
8	Yes	4	0.00000001	0.00025411
9	Yes	4	0.00000001	0.00016974
10	Yes	4	0.00000001	0.00083775
11	Yes	4	0.00000001	0.00054543
12	Yes	4	0.00000001	0.00082676
13	Yes	4	0.00000001	0.00053785
14	Yes	4	0.00000001	0.00007108
15	Yes	4	0.00000001	0.00004746
16	Yes	4	0.00000001	0.00081594
17	Yes	4	0.00000001	0.00053100
18	Yes	4	0.00000001	0.00088659
19	Yes	4	0.00000001	0.00057880
20	Yes	4	0.00000001	0.00025411
21	Yes	4	0.00000001	0.00016974
22	Yes	4	0.00000001	0.00095174
23	Yes	4	0.00000001	0.00062245
24	Yes	4	0.00000001	0.00098261
25	Yes	4	0.00000001	0.00064312
26	Yes	4	0.00000001	0.00000001
27	Yes	4	0.00000001	0.00042819
28	Yes	4	0.00000001	0.00045001
29	Yes	4	0.00000001	0.00044842
30	Yes	4	0.00000001	0.00042240
31	Yes	4	0.00000001	0.00044669
32	Yes	4	0.00000001	0.00044724
33	Yes	4	0.00000001	0.00042621
34	Yes	4	0.00000001	0.00044712
35	Yes	4	0.00000001	0.00044670

36	Yes	4	0.00000001	0.00042240
37	Yes	4	0.00000001	0.00044880
38	Yes	4	0.00000001	0.00045009
39	Yes	4	0.00000001	0.00008255
40	Yes	4	0.00000001	0.00001842
41	Yes	4	0.00000001	0.00001297
42	Yes	4	0.00000001	0.00001375
43	Yes	4	0.00000001	0.00001230
44	Yes	4	0.00000001	0.00001266
45	Yes	4	0.00000001	0.00008249
46	Yes	4	0.00000001	0.00001275
47	Yes	4	0.00000001	0.00001337
48	Yes	4	0.00000001	0.00001375
49	Yes	4	0.00000001	0.00001648
50	Yes	4	0.00000001	0.00001808
51	Yes	4	0.00000001	0.00000001
52	Yes	4	0.00000001	0.00000001
53	Yes	4	0.00000001	0.00000001
54	Yes	4	0.00000001	0.00000001
55	Yes	4	0.00000001	0.00000001
56	Yes	4	0.00000001	0.00000001
57	Yes	4	0.00000001	0.00000001
58	Yes	4	0.00000001	0.00000001
59	Yes	4	0.00000001	0.00000001
60	Yes	4	0.00000001	0.00000001
61	Yes	4	0.00000001	0.00000001
62	Yes	4	0.00000001	0.00000001
63	Yes	4	0.00000001	0.00000001
64	Yes	4	0.00000001	0.00000001
65	Yes	4	0.00000001	0.00000001
66	Yes	4	0.00000001	0.00000001
67	Yes	4	0.00000001	0.00000001
68	Yes	4	0.00000001	0.00000001
69	Yes	4	0.00000001	0.00000001
70	Yes	4	0.00000001	0.00000001
71	Yes	4	0.00000001	0.00000001
72	Yes	4	0.00000001	0.00000001
73	Yes	4	0.00000001	0.00000001
74	Yes	4	0.00000001	0.00000001

Maximum Tower Deflections - Service Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	158 - 131	9.632	50	0.5650	0.0038
L2	135 - 93.25	6.944	50	0.5303	0.0029
L3	98.75 - 46.3333	3.490	50	0.3619	0.0010
L4	53.6666 - 1	0.958	50	0.1696	0.0003

Critical Deflections and Radius of Curvature - Service Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
154.50	CCISeismic Tower Section 1 - 1	50	9.213	0.5620	0.0037	70241

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
146.00	CCISeismic Tower Section 1 - 2	50	8.203	0.5527	0.0034	29267
145.00	12' Platform w/Rail	50	8.086	0.5513	0.0033	27016
142.50	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (137ft to146ft)	50	7.795	0.5472	0.0032	22658
137.00	12' Triple T-Arms w/V-Brace Reinforcement	50	7.167	0.5356	0.0030	16842
136.00	CCISeismic Tower Section 1 - 3	50	7.055	0.5330	0.0029	16222
134.13	CCISeismic Tower Section 2 - 1	50	6.847	0.5277	0.0028	15422
133.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (127ft to137ft)	50	6.724	0.5243	0.0028	15131
132.50	CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (127ft to136ft)	50	6.669	0.5227	0.0027	15033
128.25	CCISeismic Tower Section 2 - 2	50	6.214	0.5075	0.0025	14506
123.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (117ft to127ft)	50	5.672	0.4855	0.0022	13962
118.25	CCISeismic Tower Section 2 - 3	50	5.202	0.4633	0.0020	13504
113.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (107ft to117ft)	50	4.706	0.4368	0.0017	13031
108.25	CCISeismic Tower Section 2 - 4	50	4.279	0.4119	0.0014	12631
103.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (97ft to107ft)	50	3.832	0.3841	0.0012	12217
98.25	CCISeismic Tower Section 2 - 5	50	3.451	0.3594	0.0010	11966
97.54	CCISeismic Tower Section 3 - 1	50	3.396	0.3558	0.0009	11958
93.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (87ft to97ft)	50	3.056	0.3332	0.0008	12014
91.33	CCISeismic Tower Section 3 - 2	50	2.937	0.3251	0.0008	12047
83.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (77ft to87ft)	50	2.380	0.2866	0.0006	12217
81.33	CCISeismic Tower Section 3 - 3	50	2.277	0.2792	0.0005	12252
73.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (67ft to77ft)	50	1.802	0.2438	0.0004	12428
71.33	CCISeismic Tower Section 3 - 4	50	1.716	0.2370	0.0004	12463
63.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (57ft to67ft)	50	1.321	0.2042	0.0003	12645
61.33	CCISeismic Tower Section 3 - 5	50	1.250	0.1978	0.0003	12682
53.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (47ft to57ft)	50	0.935	0.1672	0.0003	13145
52.33	CCISeismic Tower Section 4 - 1	50	0.912	0.1648	0.0003	13266
51.33	CCISeismic Tower Section 3 - 6	50	0.879	0.1613	0.0003	13482
46.00	CCISeismic Tower Section 4 - 2	50	0.719	0.1427	0.0003	15046
43.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (37ft to47ft)	50	0.638	0.1324	0.0002	16120
36.00	CCISeismic Tower Section 4 - 3	50	0.476	0.1091	0.0002	19344
33.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (27ft to37ft)	50	0.416	0.0993	0.0002	21158
26.00	CCISeismic Tower Section 4 - 4	50	0.296	0.0769	0.0002	27082
23.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (17ft	50	0.251	0.0675	0.0001	30775

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
	to27ft)					
16.00	CCISeismic Tower Section 4 - 5	50	0.160	0.0457	0.0001	45137
13.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (7ft to17ft)	50	0.125	0.0365	0.0001	56421
6.00	CCISeismic Tower Section 4 - 6	50	0.050	0.0152	0.0000	135410
4.50	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (0ft to7ft)	50	0.035	0.0106	0.0000	135410

Maximum Tower Deflections - Design Wind

Section No.	Elevation ft	Horz. Deflection in	Gov. Load Comb.	Tilt °	Twist °
L1	158 - 131	43.200	24	2.5338	0.0171
L2	135 - 93.25	31.150	24	2.3791	0.0128
L3	98.75 - 46.3333	15.658	24	1.6241	0.0044
L4	53.6666 - 1	4.295	24	0.7610	0.0013

Critical Deflections and Radius of Curvature - Design Wind

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
154.50	CCISeismic Tower Section 1 - 1	24	41.320	2.5204	0.0165	15793
146.00	CCISeismic Tower Section 1 - 2	24	36.795	2.4791	0.0150	6580
145.00	12' Platform w/Rail	24	36.270	2.4727	0.0148	6073
142.50	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (137ft to146ft)	24	34.965	2.4547	0.0144	5093
137.00	12' Triple T-Arms w/V-Brace Reinforcement	24	32.150	2.4029	0.0132	3785
136.00	CCISeismic Tower Section 1 - 3	24	31.648	2.3914	0.0130	3646
134.13	CCISeismic Tower Section 2 - 1	24	30.716	2.3677	0.0126	3465
133.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (127ft to137ft)	24	30.162	2.3522	0.0124	3399
132.50	CCISeismic (2) commscope 6x24 Hybrid From 0 to 136 (127ft to136ft)	24	29.918	2.3450	0.0122	3376
128.25	CCISeismic Tower Section 2 - 2	24	27.876	2.2771	0.0112	3255
123.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (117ft to127ft)	24	25.445	2.1786	0.0099	3129
118.25	CCISeismic Tower Section 2 - 3	24	23.338	2.0787	0.0087	3024
113.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (107ft to117ft)	24	21.112	1.9600	0.0075	2915
108.25	CCISeismic Tower Section 2 - 4	24	19.197	1.8482	0.0063	2823
103.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (97ft	24	17.192	1.7234	0.0052	2728

Elevation ft	Appurtenance	Gov. Load Comb.	Deflection in	Tilt °	Twist °	Radius of Curvature ft
	to107ft)					
98.25	CCISeismic Tower Section 2 - 5	24	15.482	1.6127	0.0044	2670
97.54	CCISeismic Tower Section 3 - 1	24	15.236	1.5965	0.0042	2668
93.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (87ft to97ft)	24	13.711	1.4952	0.0036	2680
91.33	CCISeismic Tower Section 3 - 2	24	13.175	1.4591	0.0033	2688
83.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (77ft to87ft)	24	10.678	1.2861	0.0025	2725
81.33	CCISeismic Tower Section 3 - 3	24	10.215	1.2529	0.0024	2732
73.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (67ft to77ft)	24	8.085	1.0939	0.0019	2771
71.33	CCISeismic Tower Section 3 - 4	24	7.696	1.0633	0.0018	2779
63.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (57ft to67ft)	24	5.926	0.9161	0.0015	2819
61.33	CCISeismic Tower Section 3 - 5	24	5.608	0.8877	0.0015	2827
53.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (47ft to57ft)	24	4.193	0.7502	0.0013	2930
52.33	CCISeismic Tower Section 4 - 1	24	4.092	0.7395	0.0013	2957
51.33	CCISeismic Tower Section 3 - 6	24	3.945	0.7236	0.0013	3005
46.00	CCISeismic Tower Section 4 - 2	24	3.223	0.6399	0.0012	3354
43.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (37ft to47ft)	24	2.863	0.5939	0.0011	3593
36.00	CCISeismic Tower Section 4 - 3	24	2.136	0.4892	0.0009	4312
33.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (27ft to37ft)	24	1.868	0.4453	0.0009	4716
26.00	CCISeismic Tower Section 4 - 4	24	1.327	0.3449	0.0007	6036
23.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (17ft to27ft)	24	1.127	0.3026	0.0006	6859
16.00	CCISeismic Tower Section 4 - 5	24	0.717	0.2051	0.0004	10060
13.00	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (7ft to17ft)	24	0.560	0.1638	0.0003	12575
6.00	CCISeismic Tower Section 4 - 6	24	0.226	0.0681	0.0001	30179
4.50	CCISeismic (2) general cable Hybrid Cable From 0 to 146 (0ft to7ft)	24	0.157	0.0476	0.0001	30179

Compression Checks

Pole Design Data

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L1	158 - 131 (1)	TP27.3567x18.5x0.1875	27.00	0.00	0.0	15.3882	-9.37	900.21	0.010
L2	131 - 93.25 (2)	TP39.3647x25.6696x0.375	41.75	0.00	0.0	44.2601	-16.24	2589.21	0.006

Section No.	Elevation ft	Size	L ft	L_u ft	Kl/r	A in^2	P_u K	ϕP_n K	Ratio $\frac{P_u}{\phi P_n}$
L3	93.25 - 46.3333 (3)	TP54.0045x36.8105x0.4375	52.42	0.00	0.0	71.0441	-29.98	4156.08	0.007
L4	46.3333 - 1 (4)	TP68x50.724x0.4735	52.67	0.00	0.0	101.4850	-53.04	5936.86	0.009

Pole Bending Design Data

Section No.	Elevation ft	Size	M_{ux} kip-ft	ϕM_{nx} kip-ft	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	M_{uy} kip-ft	ϕM_{ny} kip-ft	Ratio $\frac{M_{uy}}{\phi M_{ny}}$
L1	158 - 131 (1)	TP27.3567x18.5x0.1875	106.66	542.90	0.196	0.00	542.90	0.000
L2	131 - 93.25 (2)	TP39.3647x25.6696x0.375	656.10	2483.09	0.264	0.00	2483.09	0.000
L3	93.25 - 46.3333 (3)	TP54.0045x36.8105x0.4375	1517.94	5244.70	0.289	0.00	5244.70	0.000
L4	46.3333 - 1 (4)	TP68x50.724x0.4735	2806.50	9229.00	0.304	0.00	9229.00	0.000

Pole Shear Design Data

Section No.	Elevation ft	Size	Actual V_u K	ϕV_n K	Ratio $\frac{V_u}{\phi V_n}$	Actual T_u kip-ft	ϕT_n kip-ft	Ratio $\frac{T_u}{\phi T_n}$
L1	158 - 131 (1)	TP27.3567x18.5x0.1875	13.66	270.06	0.051	1.86	611.54	0.003
L2	131 - 93.25 (2)	TP39.3647x25.6696x0.375	16.78	776.76	0.022	1.86	2529.55	0.001
L3	93.25 - 46.3333 (3)	TP54.0045x36.8105x0.4375	21.55	1246.82	0.017	1.86	5586.36	0.000
L4	46.3333 - 1 (4)	TP68x50.724x0.4735	27.24	1781.06	0.015	1.86	10532.50	0.000

Pole Interaction Design Data

Section No.	Elevation ft	Ratio $\frac{P_u}{\phi P_n}$	Ratio $\frac{M_{ux}}{\phi M_{nx}}$	Ratio $\frac{M_{uy}}{\phi M_{ny}}$	Ratio $\frac{V_u}{\phi V_n}$	Ratio $\frac{T_u}{\phi T_n}$	Comb. Stress Ratio	Allow. Stress Ratio	Criteria
L1	158 - 131 (1)	0.010	0.196	0.000	0.051	0.003	0.210 ✔	1.000	✔
L2	131 - 93.25 (2)	0.006	0.264	0.000	0.022	0.001	0.271 ✔	1.000	✔
L3	93.25 - 46.3333 (3)	0.007	0.289	0.000	0.017	0.000	0.297 ✔	1.000	✔
L4	46.3333 - 1 (4)	0.009	0.304	0.000	0.015	0.000	0.313 ✔	1.000	✔

Section Capacity Table

Section No.	Elevation ft	Component Type	Size	Critical Element	P K	ϕP_{allow} K	% Capacity	Pass Fail
L1	158 - 131	Pole	TP27.3567x18.5x0.1875	1	-9.37	900.21	21.0	Pass
L2	131 - 93.25	Pole	TP39.3647x25.6696x0.375	2	-16.24	2589.21	27.1	Pass
L3	93.25 - 46.3333	Pole	TP54.0045x36.8105x0.4375	3	-29.98	4156.08	29.7	Pass
L4	46.3333 - 1	Pole	TP68x50.724x0.4735	4	-53.04	5936.86	31.3	Pass
							Summary	
							Pole (L4) 31.3	Pass
							RATING = 31.3	**Pass**

Seismic Analysis

Site Number:	CT54XC773
Order Number:	REV11
Date:	7/31/2024

Location

	Decimal Degrees		Deg	Min	Sec
Lat:	41.44939	+	41	26	57.80
Long:	-72.904572	-	72	54	16.46

Code and Site Parameters

Seismic Design Code:	TIA-222-H-1	
Site Soil:	D (Determined)	Stiff Soil (Default)
Risk Category:	II	

USGS Seismic Reference	S_S:	0.2020 g
	S_1:	0.0540 g
	T_L:	6 s

Seismic Design Category Determination

Importance Factor, I_e:	1
Acceleration-based site coefficient, F_a:	1.6000
Velocity-based site coefficient, F_v:	2.4000

Design spectral response acceleration short period, S_{DS}:	0.2155	g
Design spectral response acceleration 1 s period, S_{D1}:	0.0864	g
T_s:	0.4010	

Seismic Design Category Based on S_{DS}:	B
Seismic Design Category Based on S_{D1}:	B
Seismic Design Category Based on S_1:	N/A

Controlling Seismic Design Category:	B

Seismic Analysis

Site Number:	CT54XC773
Order Number:	REV11
Date:	7/31/2024

Tower Details

Tower Type:	Tapered Monopole		
Height, h:	157	ft	
Effective Seismic Weight, W:	44.21	kips	
Amplification Factor, A_s:	1.0		2.7.8.1

Seismic Base Shear

Response Modification Factor, R:	1.5		
Discrete Appurtenance Weight in Top 1/3 of Structure, W_u:	6.98518	kips	
W_L:	37.224068	kips	
E:	29000.0	ksi	
g:	386.088	in/s^2	
Average Moment of Inertia, I_{avg}:	18415.14214	in^4	
F_a:	0.385453884	hz	
Approximate Fundamental Period Monopole, T_a:	2.5943	s	2.7.7.1.3.3
Seismic Response Coefficient, C_s	0.1436		2.7.7.1.1
Seismic Response Coefficient Max 1, C_{smax}	0.0222		2.7.7.1.1
Seismic Response Coefficient Max 2, C_{smax}	N/A		2.7.7.1.1
	0.022202144		
Seismic Response Coefficient Min 1, C_{smin}	0.0300		2.7.7.1.1
Seismic Response Coefficient Min 2, C_{smin}	N/A		2.7.7.1.1
	0.0300		
Controlling Seismic Response Coefficient, C_{sc}	0.0300		
Seismic Base Shear, V	1.326	kips	2.7.7.1.1

Vertical Distribution Factors

Period Related Exponent, k:	2.000
Sum of $w_i h_i^k$	325433.91

Tower Section Loads								
Section Number	Length	Top Height	Mid Height, h_x	Section Weight, w_x	$w_x h_x^k$	C_{vx}	F_{xh}	F_{xv}
1 - 1	7.00	157.00	153.50	0.2759	6499.75	0.0200	0.0265	0.0119
1 - 2	10.00	150.00	145.00	0.4505	9472.59	0.0291	0.0386	0.0194
1 - 3	10.00	140.00	135.00	0.5170	9421.68	0.0290	0.0384	0.0223
2 - 1	1.75	134.00	133.13	0.1813	3213.23	0.0099	0.0131	0.0078
2 - 2	10.00	132.25	127.25	1.1141	18040.26	0.0554	0.0735	0.0480
2 - 3	10.00	122.25	117.25	1.2470	17142.64	0.0527	0.0699	0.0537
2 - 4	10.00	112.25	107.25	1.3798	15871.34	0.0488	0.0647	0.0595
2 - 5	10.00	102.25	97.25	1.5127	14306.07	0.0440	0.0583	0.0652
3 - 1	2.42	97.75	96.54	0.4199	3913.23	0.0120	0.0159	0.0181
3 - 2	10.00	95.33	90.33	1.8336	14962.23	0.0460	0.0610	0.0790
3 - 3	10.00	85.33	80.33	1.9886	12833.15	0.0394	0.0523	0.0857
3 - 4	10.00	75.33	70.33	2.1436	10603.75	0.0326	0.0432	0.0924
3 - 5	10.00	65.33	60.33	2.2986	8367.01	0.0257	0.0341	0.0991
3 - 6	10.00	55.33	50.33	2.4536	6215.94	0.0191	0.0253	0.1057
4 - 1	2.67	52.67	51.33	0.6912	1821.42	0.0056	0.0074	0.0298
4 - 2	10.00	50.00	45.00	2.6983	5464.10	0.0168	0.0223	0.1163
4 - 3	10.00	40.00	35.00	2.8661	3510.93	0.0108	0.0143	0.1235
4 - 4	10.00	30.00	25.00	3.0338	1896.13	0.0058	0.0077	0.1307
4 - 5	10.00	20.00	15.00	3.2016	720.35	0.0022	0.0029	0.1380
4 - 6	10.00	10.00	5.00	3.3693	84.23	0.0003	0.0003	0.1452
			Sum	33.6762	164360.04			

Discrete Loads						
Name	h_x	w_x	$w_x h_x^k$	C_{vx}	F_{xh}	F_{xv}
12' Platform w/Rail	144.00	1.5852	32870.29	0.1010	0.1340	0.0683
antel LPA-80080/4CF w/6' Mount Pipe	144.00	0.0300	622.08	0.0019	0.0025	0.0013
antel LPA-80080/4CF w/6' Mount Pipe	144.00	0.0300	622.08	0.0019	0.0025	0.0013
antel LPA-80080/4CF w/6' Mount Pipe	144.00	0.0300	622.08	0.0019	0.0025	0.0013
samsung RFV01U-D1A w/6' Mount Pipe	144.00	0.1200	2488.32	0.0076	0.0101	0.0052
samsung RFV01U-D1A w/6' Mount Pipe	144.00	0.1200	2488.32	0.0076	0.0101	0.0052
samsung RFV01U-D1A w/6' Mount Pipe	144.00	0.1200	2488.32	0.0076	0.0101	0.0052
commscope JAHH-65B-R3B	144.00	0.0600	1244.16	0.0038	0.0051	0.0026
commscope JAHH-65B-R3B	144.00	0.0600	1244.16	0.0038	0.0051	0.0026
commscope JAHH-65B-R3B	144.00	0.0600	1244.16	0.0038	0.0051	0.0026
tower mounts Side By Side w/10' Mount Pipe (SES)	144.00	0.0800	1658.88	0.0051	0.0068	0.0034
tower mounts Side By Side w/10' Mount Pipe (SES)	144.00	0.0800	1658.88	0.0051	0.0068	0.0034
tower mounts Side By Side w/10' Mount Pipe (SES)	144.00	0.0800	1658.88	0.0051	0.0068	0.0034
commscope JAHH-65B-R3B	144.00	0.0600	1244.16	0.0038	0.0051	0.0026
commscope JAHH-65B-R3B	144.00	0.0600	1244.16	0.0038	0.0051	0.0026
commscope JAHH-65B-R3B	144.00	0.0600	1244.16	0.0038	0.0051	0.0026
samsung MT6407-77A w/8' Mount Pipe	144.00	0.1300	2695.68	0.0083	0.0110	0.0056
samsung MT6407-77A w/8' Mount Pipe	144.00	0.1300	2695.68	0.0083	0.0110	0.0056
samsung MT6407-77A w/8' Mount Pipe	144.00	0.1300	2695.68	0.0083	0.0110	0.0056
antel LPA-80080/4CF w/6' Mount Pipe	144.00	0.0300	622.08	0.0019	0.0025	0.0013
antel LPA-80080/4CF w/6' Mount Pipe	144.00	0.0300	622.08	0.0019	0.0025	0.0013
antel LPA-80080/4CF w/6' Mount Pipe	144.00	0.0300	622.08	0.0019	0.0025	0.0013
commscope CBC78T-DS-43-2X	144.00	0.0200	414.72	0.0013	0.0017	0.0009
commscope CBC78T-DS-43-2X	144.00	0.0200	414.72	0.0013	0.0017	0.0009
commscope CBC78T-DS-43-2X	144.00	0.0200	414.72	0.0013	0.0017	0.0009
samsung RFV01U-D2A	144.00	0.0800	1658.88	0.0051	0.0068	0.0034
samsung RFV01U-D2A	144.00	0.0800	1658.88	0.0051	0.0068	0.0034
samsung RFV01U-D2A	144.00	0.0800	1658.88	0.0051	0.0068	0.0034
raycap RRFDC-3315-PF-48 w/6' Mount Pipe	144.00	0.0500	1036.80	0.0032	0.0042	0.0022
raycap RRFDC-3315-PF-48	144.00	0.0300	622.08	0.0019	0.0025	0.0013
12' Triple T-Arms w/V-Brace Reinforcement	136.00	1.6300	30148.48	0.0926	0.1229	0.0702
rfs APXVLL19P_43-C-A20 w/8' Mount Pipe	136.00	0.0900	1664.64	0.0051	0.0068	0.0039
rfs APXVLL19P_43-C-A20 w/8' Mount Pipe	136.00	0.0900	1664.64	0.0051	0.0068	0.0039
rfs APXVLL19P_43-C-A20 w/8' Mount Pipe	136.00	0.0900	1664.64	0.0051	0.0068	0.0039
rfs APXVAALL24_43-U-A20 w/8' Mount Pipe	136.00	0.1900	3514.24	0.0108	0.0143	0.0082
rfs APXVAALL24_43-U-A20 w/8' Mount Pipe	136.00	0.1900	3514.24	0.0108	0.0143	0.0082
rfs APXVAALL24_43-U-A20 w/8' Mount Pipe	136.00	0.1900	3514.24	0.0108	0.0143	0.0082
tower mounts 8'x2" Pipe Mount	136.00	0.0300	554.88	0.0017	0.0023	0.0013
tower mounts 8'x2" Pipe Mount	136.00	0.0300	554.88	0.0017	0.0023	0.0013
tower mounts 8'x2" Pipe Mount	136.00	0.0300	554.88	0.0017	0.0023	0.0013
ericsson AIR 6419 B41 w/8' Mount Pipe	136.00	0.1300	2404.48	0.0074	0.0098	0.0056
ericsson AIR 6419 B41 w/8' Mount Pipe	136.00	0.1300	2404.48	0.0074	0.0098	0.0056
ericsson AIR 6419 B41 w/8' Mount Pipe	136.00	0.1300	2404.48	0.0074	0.0098	0.0056
ericsson 4460 B25/B66 RRU	136.00	0.1100	2034.56	0.0063	0.0083	0.0047
ericsson 4460 B25/B66 RRU	136.00	0.1100	2034.56	0.0063	0.0083	0.0047
ericsson 4460 B25/B66 RRU	136.00	0.1100	2034.56	0.0063	0.0083	0.0047
ericsson 4449 B71/B85 RRU	136.00	0.0700	1294.72	0.0040	0.0053	0.0030
ericsson 4449 B71/B85 RRU	136.00	0.0700	1294.72	0.0040	0.0053	0.0030
ericsson 4449 B71/B85 RRU	136.00	0.0700	1294.72	0.0040	0.0053	0.0030
	Sum	6.9852	137027.09			

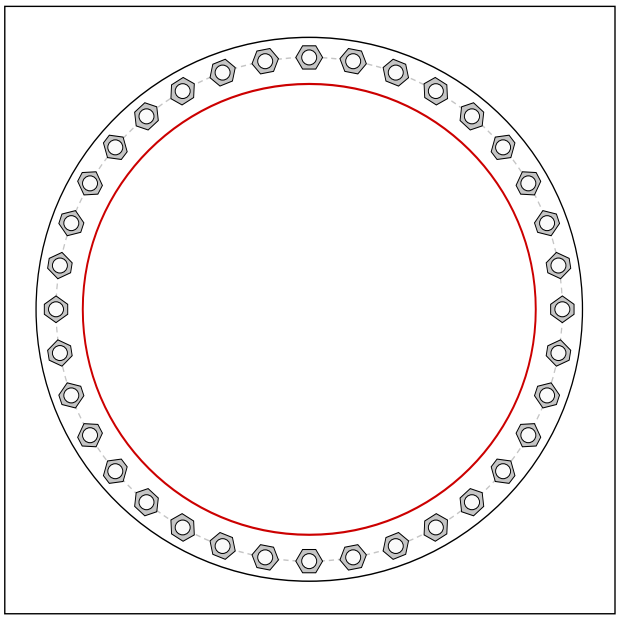
Linear Loads								
Name	Start Height	End Height	h_x	w_x	$w_x h_x^k$	C_{vx}	F_{xh}	F_{xv}
(2) general cable Hybrid Cable From 0 to 146	137.00	146.00	141.50	0.0320	641.51	0.0020	0.0026	0.0014
(2) general cable Hybrid Cable From 0 to 146	127.00	137.00	132.00	0.0356	620.29	0.0019	0.0025	0.0015
(2) general cable Hybrid Cable From 0 to 146	117.00	127.00	122.00	0.0356	529.87	0.0016	0.0022	0.0015
(2) general cable Hybrid Cable From 0 to 146	107.00	117.00	112.00	0.0356	446.57	0.0014	0.0018	0.0015
(2) general cable Hybrid Cable From 0 to 146	97.00	107.00	102.00	0.0356	370.38	0.0011	0.0015	0.0015
(2) general cable Hybrid Cable From 0 to 146	87.00	97.00	92.00	0.0356	301.32	0.0009	0.0012	0.0015
(2) general cable Hybrid Cable From 0 to 146	77.00	87.00	82.00	0.0356	239.37	0.0007	0.0010	0.0015
(2) general cable Hybrid Cable From 0 to 146	67.00	77.00	72.00	0.0356	184.55	0.0006	0.0008	0.0015
(2) general cable Hybrid Cable From 0 to 146	57.00	67.00	62.00	0.0356	136.85	0.0004	0.0006	0.0015
(2) general cable Hybrid Cable From 0 to 146	47.00	57.00	52.00	0.0356	96.26	0.0003	0.0004	0.0015
(2) general cable Hybrid Cable From 0 to 146	37.00	47.00	42.00	0.0356	62.80	0.0002	0.0003	0.0015
(2) general cable Hybrid Cable From 0 to 146	27.00	37.00	32.00	0.0356	36.45	0.0001	0.0001	0.0015
(2) general cable Hybrid Cable From 0 to 146	17.00	27.00	22.00	0.0356	17.23	0.0001	0.0001	0.0015
(2) general cable Hybrid Cable From 0 to 146	7.00	17.00	12.00	0.0356	5.13	0.0000	0.0000	0.0015
(2) general cable Hybrid Cable From 0 to 146	0.00	7.00	3.50	0.0249	0.31	0.0000	0.0000	0.0011
(12) general cable 1 5/8" Coax From 0 to 146	137.00	146.00	141.50	0.1123	2248.90	0.0069	0.0092	0.0048
(12) general cable 1 5/8" Coax From 0 to 146	127.00	137.00	132.00	0.1248	2174.52	0.0067	0.0089	0.0054
(12) general cable 1 5/8" Coax From 0 to 146	117.00	127.00	122.00	0.1248	1857.52	0.0057	0.0076	0.0054
(12) general cable 1 5/8" Coax From 0 to 146	107.00	117.00	112.00	0.1248	1565.49	0.0048	0.0064	0.0054
(12) general cable 1 5/8" Coax From 0 to 146	97.00	107.00	102.00	0.1248	1298.42	0.0040	0.0053	0.0054
(12) general cable 1 5/8" Coax From 0 to 146	87.00	97.00	92.00	0.1248	1056.31	0.0032	0.0043	0.0054
(12) general cable 1 5/8" Coax From 0 to 146	77.00	87.00	82.00	0.1248	839.16	0.0026	0.0034	0.0054
(12) general cable 1 5/8" Coax From 0 to 146	67.00	77.00	72.00	0.1248	646.96	0.0020	0.0026	0.0054
(12) general cable 1 5/8" Coax From 0 to 146	57.00	67.00	62.00	0.1248	479.73	0.0015	0.0020	0.0054
(12) general cable 1 5/8" Coax From 0 to 146	47.00	57.00	52.00	0.1248	337.46	0.0010	0.0014	0.0054
(12) general cable 1 5/8" Coax From 0 to 146	37.00	47.00	42.00	0.1248	220.15	0.0007	0.0009	0.0054
(12) general cable 1 5/8" Coax From 0 to 146	27.00	37.00	32.00	0.1248	127.80	0.0004	0.0005	0.0054
(12) general cable 1 5/8" Coax From 0 to 146	17.00	27.00	22.00	0.1248	60.40	0.0002	0.0002	0.0054
(12) general cable 1 5/8" Coax From 0 to 146	7.00	17.00	12.00	0.1248	17.97	0.0001	0.0001	0.0054
(12) general cable 1 5/8" Coax From 0 to 146	0.00	7.00	3.50	0.0874	1.07	0.0000	0.0000	0.0038
(2) commscope 6x24 Hybrid From 0 to 136	127.00	136.00	131.50	0.0399	690.06	0.0021	0.0028	0.0017
(2) commscope 6x24 Hybrid From 0 to 136	117.00	127.00	122.00	0.0443	659.96	0.0020	0.0027	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	107.00	117.00	112.00	0.0443	556.20	0.0017	0.0023	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	97.00	107.00	102.00	0.0443	461.31	0.0014	0.0019	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	87.00	97.00	92.00	0.0443	375.29	0.0012	0.0015	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	77.00	87.00	82.00	0.0443	298.14	0.0009	0.0012	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	67.00	77.00	72.00	0.0443	229.86	0.0007	0.0009	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	57.00	67.00	62.00	0.0443	170.44	0.0005	0.0007	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	47.00	57.00	52.00	0.0443	119.90	0.0004	0.0005	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	37.00	47.00	42.00	0.0443	78.22	0.0002	0.0003	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	27.00	37.00	32.00	0.0443	45.40	0.0001	0.0002	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	17.00	27.00	22.00	0.0443	21.46	0.0001	0.0001	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	7.00	17.00	12.00	0.0443	6.38	0.0000	0.0000	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	0.00	7.00	3.50	0.0310	0.38	0.0000	0.0000	0.0013
(2) commscope 6x24 Hybrid From 0 to 136	127.00	136.00	131.50	0.0399	690.06	0.0021	0.0028	0.0017
(2) commscope 6x24 Hybrid From 0 to 136	117.00	127.00	122.00	0.0443	659.96	0.0020	0.0027	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	107.00	117.00	112.00	0.0443	556.20	0.0017	0.0023	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	97.00	107.00	102.00	0.0443	461.31	0.0014	0.0019	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	87.00	97.00	92.00	0.0443	375.29	0.0012	0.0015	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	77.00	87.00	82.00	0.0443	298.14	0.0009	0.0012	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	67.00	77.00	72.00	0.0443	229.86	0.0007	0.0009	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	57.00	67.00	62.00	0.0443	170.44	0.0005	0.0007	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	47.00	57.00	52.00	0.0443	119.90	0.0004	0.0005	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	37.00	47.00	42.00	0.0443	78.22	0.0002	0.0003	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	27.00	37.00	32.00	0.0443	45.40	0.0001	0.0002	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	17.00	27.00	22.00	0.0443	21.46	0.0001	0.0001	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	7.00	17.00	12.00	0.0443	6.38	0.0000	0.0000	0.0019
(2) commscope 6x24 Hybrid From 0 to 136	0.00	7.00	3.50	0.0310	0.38	0.0000	0.0000	0.0013
			Sum	3.5479	24046.77			

Monopole Base Plate Connection

Site Info	
Site Number:	CT54XC773
Order Number:	REV11
Date:	7/31/2024

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	2.25

Applied Loads	
Moment (kip-ft)	2806.5
Axial Force (kips)	53.0
Shear Force (kips)	27.2



Connection Properties

Anchor Rod Data

(36) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 76" BC

Base Plate Data

82" OD x 3" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Stiffener Data

N/A

Pole Data

68" x 0.4735" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_t = 47.75	ϕPn_t = 243.75	**Stress Rating**
Vu = 0.76	ϕVn = 149.1	**19.6%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	9.27	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**20.6%**	**Pass**

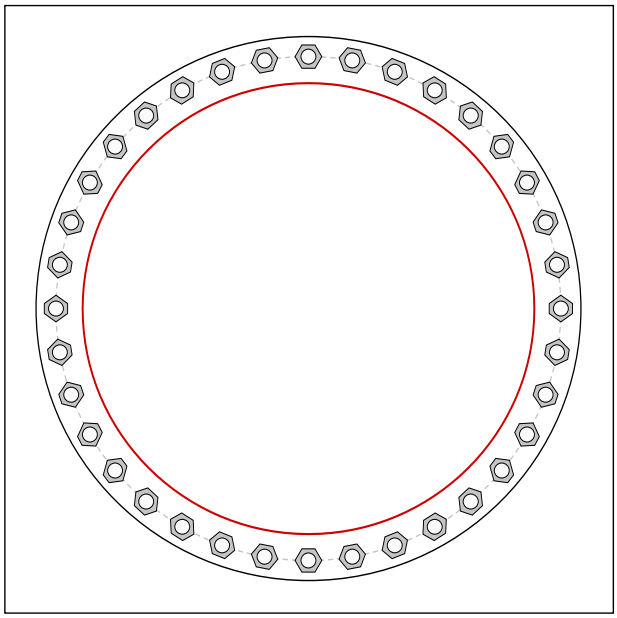
Monopole Base Plate Connection - Seismic

Site Info	
Site Number:	CT54XC773
Order Number:	REV11
Date:	7/31/2024

Analysis Considerations	
TIA-222 Revision	H
Grout Considered:	No
l_{ar} (in)	2.25

Applied Loads	
Moment (kip-ft)	158.8
Axial Force (kips)	55.0
Shear Force (kips)	1.3

**1.5 Overstrength Factor Applied*



Connection Properties

Anchor Rod Data

(36) 2-1/4" ø bolts (A615-75 N; Fy=75 ksi, Fu=100 ksi) on 76" BC

Base Plate Data

82" OD x 3" Plate (A572-50; Fy=50 ksi, Fu=65 ksi)

Stiffener Data

N/A

Pole Data

68" x 0.4735" 18-sided pole (A572-65; Fy=65 ksi, Fu=80 ksi)

Analysis Results

Anchor Rod Summary *(units of kips, kip-in)*

Pu_c = 5.7	ϕPn_c = 268.39	**Stress Rating**
Vu = 0.06	ϕVn = 120.77	**2.1%**
Mu = n/a	ϕMn = n/a	**Pass**

Base Plate Summary

Max Stress (ksi):	0.79	(Flexural)
Allowable Stress (ksi):	45	
Stress Rating:	**1.8%**	**Pass**

Drilled Pier Foundation

Site Number:	CT54XC773
Order Number:	REV11
Date:	7/31/2024
TIA-222 Revison:	H
Tower Type:	Monopole

Mapped Foundation?:	N

Applied Loads

	Comp.	Uplift
Moment (kip-ft)	2806.5	
Axial Force (kips)	53.0	
Shear Force (kips)	27.2	

Material Properties

Concrete Strength, f'c:	4	ksi
Rebar Strength, Fy:	60	ksi
Tie Yield Strength, Fyt:	60	ksi

Pier Design Data

Depth	47	ft
Ext. Above Grade	1	ft
Pier Section 1		
From 1' above grade to 0.75' below grade		
Pier Diameter	8	ft
Rebar Quantity	58	
Rebar Size	8	
Clear Cover to Ties	4	in
Tie Size	5	
Tie Spacing	6	in

Rebar & Pier Options

Embedded Pole Inputs

Belled Pier Inputs

Pier Section 2

From 0.75' below grade to 47' below grade		
Pier Diameter	8	ft
Rebar Quantity	58	
Rebar Size	8	
Clear Cover to Ties	4	in
Tie Size	5	
Tie Spacing	12	in

Analysis Results

Soil Lateral Check	*Compression*	*Uplift*
$D_{v=0}$ (ft from TOC)	11.06	-
Soil Safety Factor	20.86	-
Max Moment (kip-ft)	3020.01	-
Rating	*6.4%*	-
Soil Vertical Check	*Compression*	*Uplift*
Skin Friction (kips)	1135.73	-
End Bearing (kips)	665.49	-
Weight of Concrete (kips)	313.79	-
Total Capacity (kips)	1801.22	-
Axial (kips)	366.79	-
Rating	*20.4%*	-
Reinforced Concrete Flexure	*Compression*	*Uplift*
Critical Depth (ft from TOC)	10.68	-
Critical Moment (kip-ft)	3019.63	-
Critical Moment Capacity	8562.35	-
Rating	*35.3%*	-
Reinforced Concrete Shear	*Compression*	*Uplift*
Critical Depth (ft from TOC)	32.30	-
Critical Shear (kip)	166.53	-
Critical Shear Capacity	818.11	-
Rating	*20.4%*	-

Structural Foundation Rating	**35.3%**
Soil Interaction Rating	**20.4%**

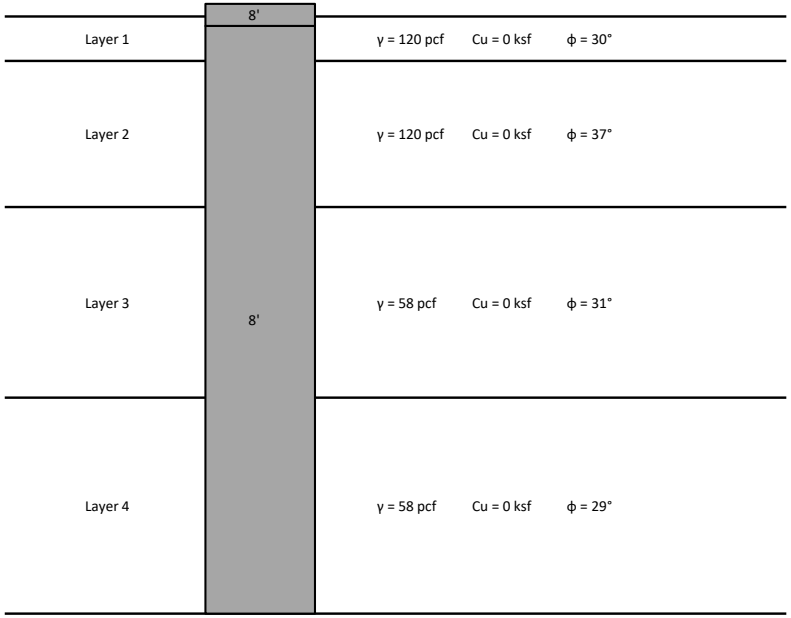
Check Limitation	
Apply TIA-222-H Section 15.5:	☐
N/A	☐
Additional Longitudinal Rebar	
Input Effective Depths (else Actual):	☐
Shear Design Options	
Check Shear along Depth of Pier:	☑
Utilize Shear-Friction Methodology:	☐
Override Critical Depth:	☐

Go to Soil Calculations

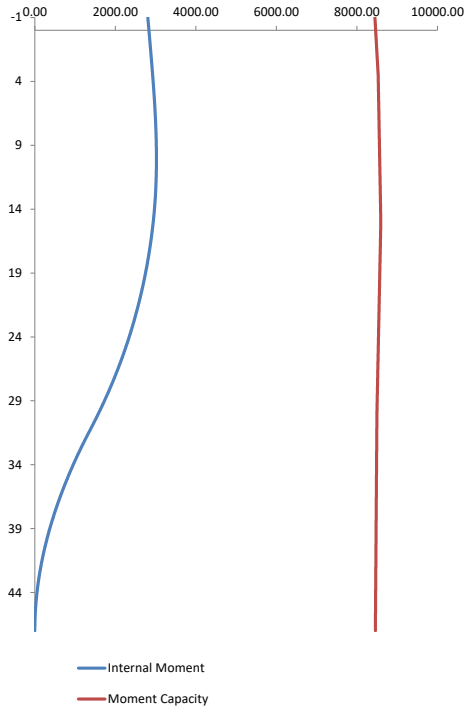
Soil Profile

Groundwater Depth	15	# of Layers	4

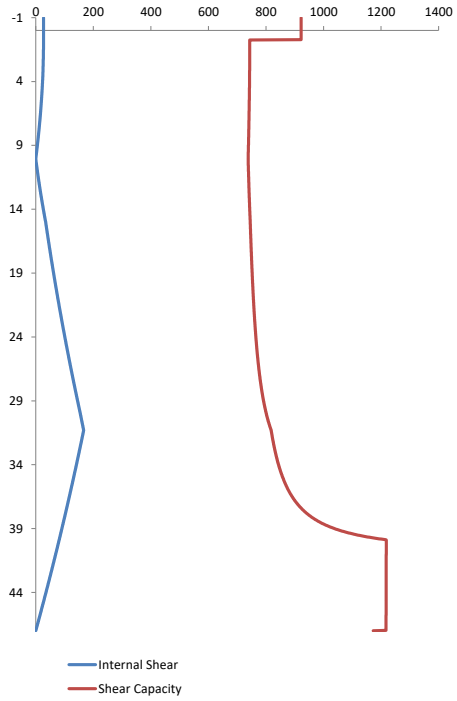
Layer	Top (ft)	Bottom (ft)	Thickness (ft)	γ_{soil} (pcf)	$\gamma_{concrete}$ (pcf)	Cohesion (ksf)	Angle of Friction (degrees)	Calculated Ultimate Skin Friction Comp (ksf)	Calculated Ultimate Skin Friction Uplift (ksf)	Ultimate Skin Friction Comp Override (ksf)	Ultimate Skin Friction Uplift Override (ksf)	Ult. Net Bearing Capacity (ksf)	SPT Blow Count	Soil Type
1	0	3.5	3.5	120	150	0	30	0.000	0.000	0.00	0.00			Cohesionless
2	3.5	15	11.5	120	150	0	37	1.209	1.209				35	Cohesionless
3	15	30	15	58	87.6	0	31	1.665	1.665				13	Cohesionless
4	30	47	17	58	87.6	0	29	1.257	1.257			12	9	Cohesionless



Moment Diagrams - Compression



Shear Diagrams - Compression



Site ID:	CT54XC773
Site Name:	US-CT-5019
Engineer:	NDW
Date:	7/26/2024

Exposure Determination

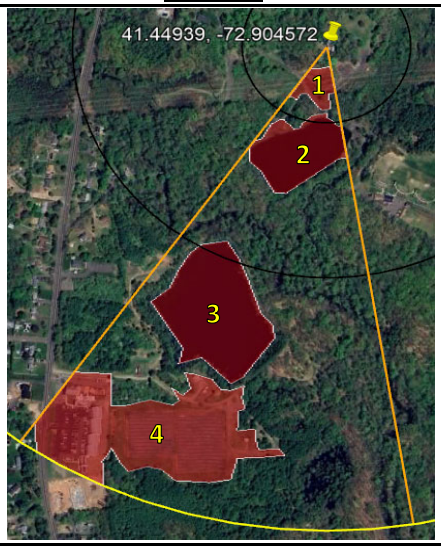
per Section C26.7 in ASCE7

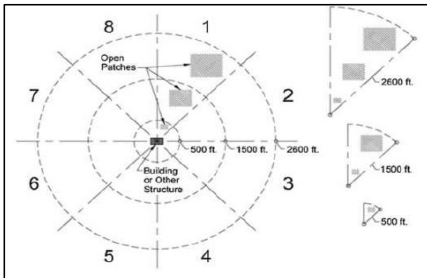
Tower Height	158 ft
Radius	3,160 ft

Result:
Use Exposure C
50.0% of the 500ft Radius Sector Area.

Open Areas (Exp C)	Open Area (x1000 ft^2)	Length (ft)	Distance From Tower (ft)	Width (ft) *(equivalent)*	**Defined as "Open Patch":**
1	**43**	**221**	**147**	**195**	**Yes: Open Patch**
2	**190**	**479**	**500**	**397**	**Yes: Open Patch**
3	**396**	**659**	**1,463**	**601**	**Yes: Open Patch**
4	**664**	**706**	**2,273**	**941**	**Yes: Open Patch**

Southwest

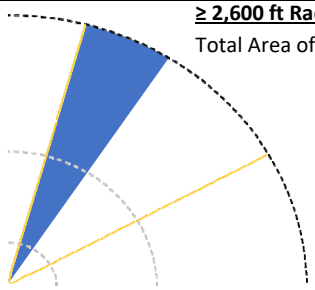




Notes

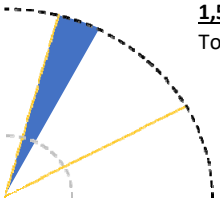
1. For each selected wind direction at which the wind loads are to be determined, the exposure of the building or structure shall be determined for the two upwind sectors extending 45° either side of the selected wind direction.
2. Consider open patches of sizes equal to or greater than the areas given in Figure C26.7-4 per Commentary Section C26.7.
3. Determine the proportion of open patches in any 45-degree sector within radii of 500 ft, 1,500 ft, or the greater of 2,600 ft or 20 times the height of the structure.
4. If the proportion of open patch within any of the three radii above is less than 25% of the sector area, the sector is considered to meet the requirements for Exposure B. Where the proportion within any of the three radii above exceeds 25% of the sector area but is not greater than 50%, the values of K_z are taken as the average of the Exposure B and C values within 100 ft height above grade. Above 100 ft, Exposure B values shall still apply. Where the proportion of open patches within any of the three radii of the structure exceeds 50%, the values of K_z shall be based on Exposure C.
5. Apply the exposure requirements of Section 26.7.4 once the directional exposures are determined for each sector. See Commentary Section C26.7.4.

FIGURE C26.7-3 Exposure B with Upwind Open Patches Sector Analysis



≥ 2,600 ft Radius

Total Area of Open Patches:
1,293,000 ft^2
33% of Sector



1,500 ft Radius

Total Area of Open Patches:
248,000 ft^2
28% of Sector

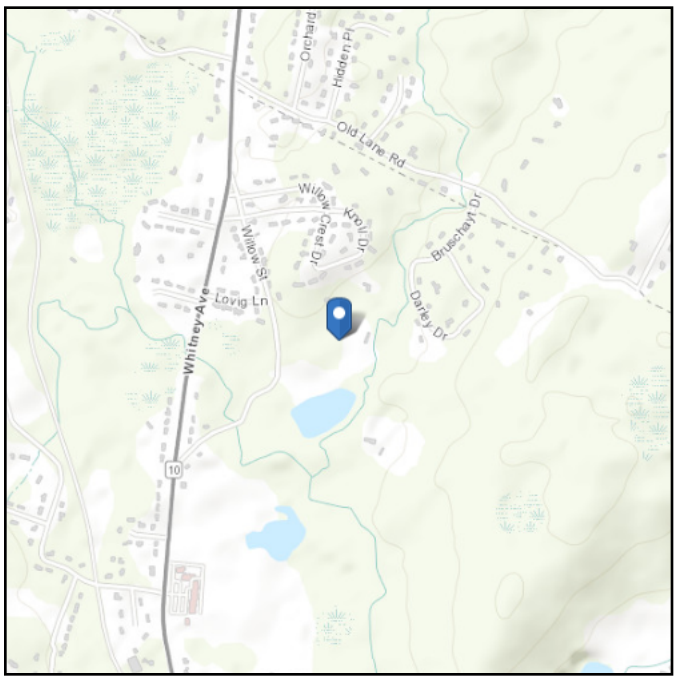
500 ft Radius

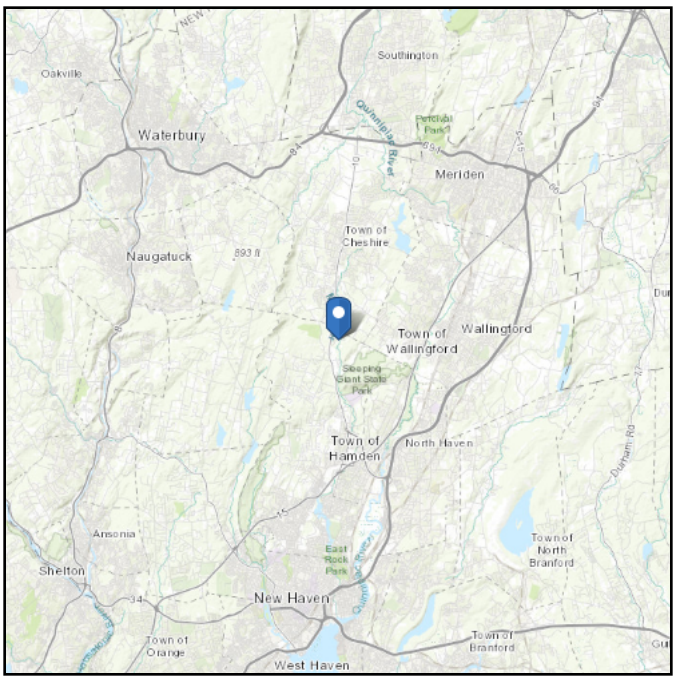
Total Area of Open Patches:
49,000 ft^2
50% of Sector

ASCE Hazards Report

Address:
No Address at This Location

Standard:	ASCE/SEI 7-16	**Latitude:**	41.44939
Risk Category:	II	**Longitude:**	-72.904572
Soil Class:	D - Stiff Soil	**Elevation:**	125.71281424918789 ft (NAVD 88)





Wind

Results:

Wind Speed	~~119~~ Vmph	120 Vmph - per 2022 Connecticut State Building Code (w/ Errata #1) Amendments to the 2021 International Building Code
10-year MRI	75 Vmph	
25-year MRI	84 Vmph	
50-year MRI	90 Vmph	
100-year MRI	98 Vmph	

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Fri Jul 26 2024

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

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

Seismic

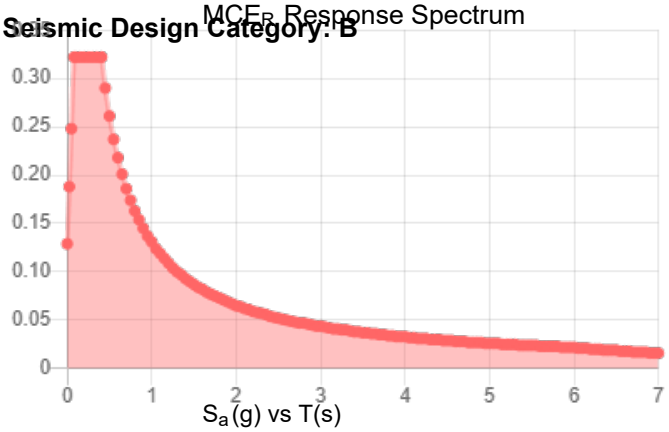
Site Soil Class: D - Stiff Soil

Results:

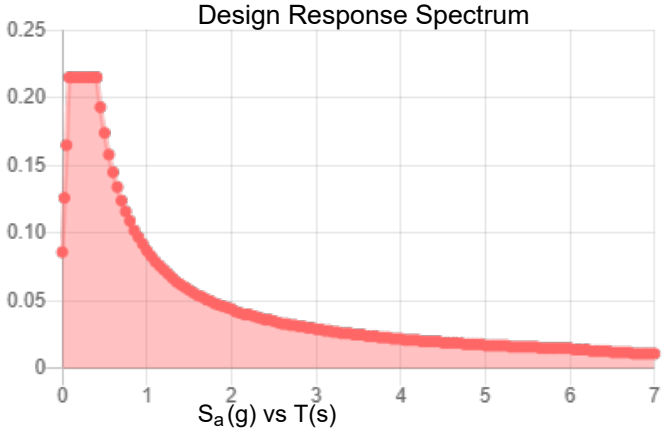
S_S :	~~0.201~~ 0.202	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.112
F_v :	2.4	PGA_M :	0.176
S_{MS} :	0.322	F_{PGA} :	1.576
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.215	C_v :	0.702

Seismic Design Category: B

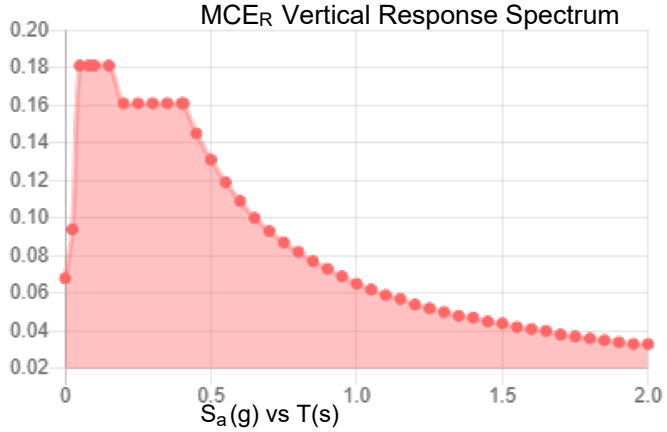
MCE_R Response Spectrum



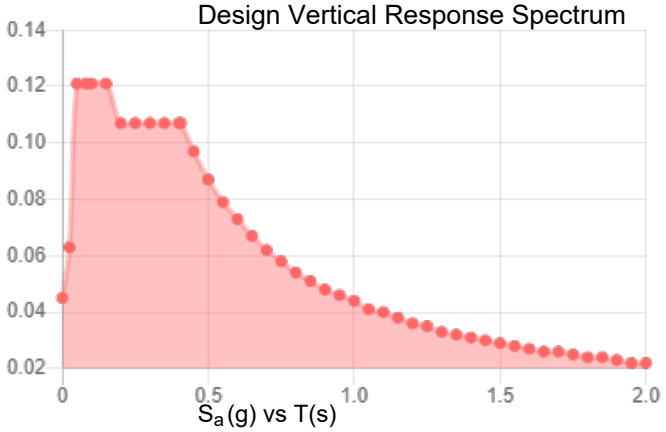
Design Response Spectrum



MCE_R Vertical Response Spectrum



Design Vertical Response Spectrum



Data Accessed: **Fri Jul 26 2024**

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Fri Jul 26 2024

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

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

Municipality	Basic Design Wind Speeds, V (mph)				Allowable Stress Design Wind Speeds, V_{asd} (mph)				Ground Snow Load p_g (psf)	MCE Ground Accelerations		Wind-Borne Debris Region[1]		Hurricane-Prone Region
	Risk Cat. I	Risk Cat. II	Risk Cat. III	Risk Cat. IV	Risk Cat. I	Risk Cat. II	Risk Cat. III	Risk Cat. IV		S_S (g)	S_1 (g)	Risk Cat. III Occup. I-2	Risk Cat. IV	
Cornwall	105	115	125	130	81	89	97	101	40	0.172	0.054			
Coventry	110	120	130	135	85	93	101	105	30	0.188	0.055			Yes
Cromwell	110	120	130	135	85	93	101	105	30	0.207	0.056			Yes
Danbury	110	120	125	130	85	93	97	101	30	0.225	0.056			Yes
Darien	110	120	130	135	85	93	101	105	30	0.250	0.057		Type B	Yes
Deep River	115	125	135	140	89	97	105	108	30	0.210	0.054			Yes
Derby	110	120	130	135	85	93	101	105	30	0.202	0.054			Yes
Durham	110	120	130	135	85	93	101	105	30	0.211	0.055			Yes
East Granby	110	120	125	130	85	93	97	101	35	0.173	0.054			Yes
East Haddam	115	125	135	135	89	97	105	105	30	0.214	0.056			Yes
East Hampton	110	125	130	135	85	97	101	105	30	0.210	0.056			Yes
East Hartford	110	120	130	135	85	93	101	105	30	0.191	0.055			Yes
East Haven	110	125	135	135	85	97	105	105	30	0.200	0.053	Type B	Type B	Yes
East Lyme	120	130	135	140	93	101	105	108	30	0.198	0.053	Type B	Type B	Yes
East Windsor	110	120	130	135	85	93	101	105	30	0.177	0.055			Yes
Eastford	110	120	130	135	85	93	101	105	40	0.180	0.055			Yes
Easton	110	120	130	135	85	93	101	105	30	0.218	0.055			Yes
Ellington	110	120	130	135	85	93	101	105	35	0.178	0.055			Yes
Enfield	110	120	125	130	85	93	97	101	35	0.172	0.055			Yes
Essex	115	125	135	140	89	97	105	108	30	0.207	0.054			Yes
Fairfield	110	120	130	135	85	93	101	105	30	0.219	0.055		Type B	Yes
Farmington	110	120	130	135	85	93	101	105	35	0.188	0.055			Yes
Franklin	115	125	135	140	89	97	105	108	30	0.195	0.054			Yes
Glastonbury	110	120	130	135	85	93	101	105	30	0.200	0.055			Yes
Goshen	110	115	125	130	85	89	97	101	40	0.172	0.054			
Granby	110	120	125	130	85	93	97	101	35	0.171	0.054			Yes
Greenwich	110	120	130	135	85	93	101	105	30	0.274	0.059		Type B	Yes
Griswold	120	125	135	140	93	97	105	108	30	0.189	0.054			Yes
Groton	120	130	140	140	93	101	108	108	30	0.190	0.052	Type B	Type A	Yes
Guilford	115	125	135	140	89	97	105	108	30	0.204	0.054	Type B	Type B	Yes
Haddam	115	125	135	135	89	97	105	105	30	0.214	0.055			Yes
Hamden	110	120	130	135	85	93	101	105	30	0.202	0.054			Yes

CENTERLINE

EXHIBIT F

Mount Analysis Report

Date: **June 12, 2024**

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

P. Marshall & Associates, LLC
1000 Holcomb Woods Pkwy, Suite 210
Roswell, GA 30076
(678) 280-2325

Subject:	**Mount Analysis Report**	
Carrier Designation:	**T-Mobile Co-Locate**	
	Carrier Site Number:	**CTNH442A**
	Carrier Site Name:	**Hamden**
Engineering Firm Designation:	**PM&A Report Designation:**	**CTNH442A**
Site Data:	**150 Willow Street**	
	Hamden, New Haven County, CT 06518	
	Latitude 41°26'57.91", Longitude -72°54'16.79"	
Structure Information:	**Tower Height & Type:**	**157 ft Monopole**
	Mount Elevation:	**137 ft**
	Mount Type:	**12.5 ft T-Arm Mount**

PM&A is pleased to submit this **"Mount Analysis Report"** to determine the structural integrity of T-Mobile's antenna mounting system with the proposed appurtenance and equipment addition on the abovementioned supporting tower structure. Analysis of the existing supporting tower structure is to be completed by others and therefore is not part of this analysis. Analysis of the antenna mounting system as a tie-off point for fall protection or rigging is not part of this document.

Based upon our analysis, we have determined the adequacy of the antenna mounting system that will support the existing and proposed loading to be:

T-Arm (typical) **Sufficient Capacity***

This analysis has been performed in accordance with the 2021 International Building Code based upon an ultimate 3-second gust wind speed of 120 mph. Applicable Standard references and design criteria are listed in Section 2 - Analysis Criteria.

We at PM&A appreciate the opportunity of providing our continuing professional services to you and T-Mobile. If you have any questions or need further assistance on this or any other projects, please give us a call.

Mount analysis prepared by: Ashim Pant
Respectfully Submitted by:

Derek Creaser, P.E.
Connecticut Professional Engineer
License Number: PEN.0028551

TABLE OF CONTENTS

1) INTRODUCTION

This is an existing 3-sector 12.5 ft T-Arm Mounts.

2) ANALYSIS CRITERIA

Building Code:	2021 IBC
TIA-222 Revision:	TIA-222-H
Risk Category:	II
Wind Speed:	120 mph
Exposure Category:	C
Topographic Factor at Base:	1.000
Topographic Factor at Mount:	1.000
Ice Thickness:	1 in
Wind Speed with Ice:	50 mph
Seismic Ss:	0.202
Seismic S1:	0.054
Live Loading Wind Speed:	30 mph
Man Live Load at Mid/End-Points:	250 lbs
Man Live Load at Mount Pipes:	500 lbs

Table 1 - Proposed Equipment Loading Information

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Model Notes
137.0	137.0	3	ERICSSON	AIR 6419 B41_TMO	Existing T-Arm Mounts
		3	RFS/CELWAVE	APXVLL19P_43-C-A20_TMO	
		3	ERICSSON	4460 B25/B66	

Table 2 - Existing and Reserved Equipment Loading Information

Mount Centerline (ft)	Antenna Centerline (ft)	Number of Antennas	Antenna Manufacturer	Antenna Model	Model Notes
137.0	137.0	3	RFS/CELWAVE	APXVAALL24_43-U-NA20	Existing T-Arm Mounts
		3	ERICSSON	RADIO 4449 B71 B85A	

3) ANALYSIS PROCEDURE

Table 3 - Documents Provided

Document	Remarks	Reference	Source
Mount Mapping	Site ID#CTNH442A	06/05/2024	Structural Components
Construction Drawings	Site ID#CTNH442A	04/29/2024	Centerline

3.1) Analysis Method

RISA 3D (version 21.0.4), a commercially available analysis software package, was used to create a three-dimensional model of the antenna mounting system and calculate member stresses for various loading cases.

3.2) Assumptions

1) The antenna mounting system was properly fabricated, installed and maintained in good condition in accordance with its original design and manufacturer's specifications.
2) The configuration of antennas, mounts, and other appurtenances are as specified in Tables 1 and 2 and the referenced documents.
3) All member connections are assumed to have been designed to meet or exceed the load carrying capacity of the connected member unless otherwise specified in this report.
4) Serviceability with respect to antenna twist, tilt, roll, or lateral translation, is not checked as a part of this analysis.
5) The use of this report shall be limited to the purpose of which it was commissioned and may not be used for any other purposes without the written consent of PM&A.
6) The analysis of this report does not include climbing facility or construction lift loading or structural evaluations.
7) Steel grades have been assumed as follows, unless noted otherwise:

Channel, Solid Round, Angle, Plate	ASTM A36 (GR 36)
HSS (Rectangular)	ASTM A500 (GR B-46)
Pipe	ASTM A53 (GR 35)
Connection Bolts	ASTM A325

This analysis may be affected if any assumptions are not valid or have been made in error. PM&A should be notified to determine the effect on the structural integrity of the antenna mounting system.

4) ANALYSIS RESULTS

Table 4 - Mount Component Stresses vs. Capacity (T-Arm, Typical)

Notes	Component	Mount Centerline (ft)	% Capacity	Pass / Fail
2, 3	Mount-to-Collar Connection	137.0	25.7	Pass
1, 3	Mount Pipes	137.0	91.7	Pass
1, 3	Face Horizontal	137.0	42.4	Pass
1, 3	Standoff Members	137.0	47.5	Pass
1, 3	Bracing Members	137.0	26.6	Pass
1, 3	Support Rail	137.0	59.4	Pass

Structure Rating (max from all components) =	91.7%

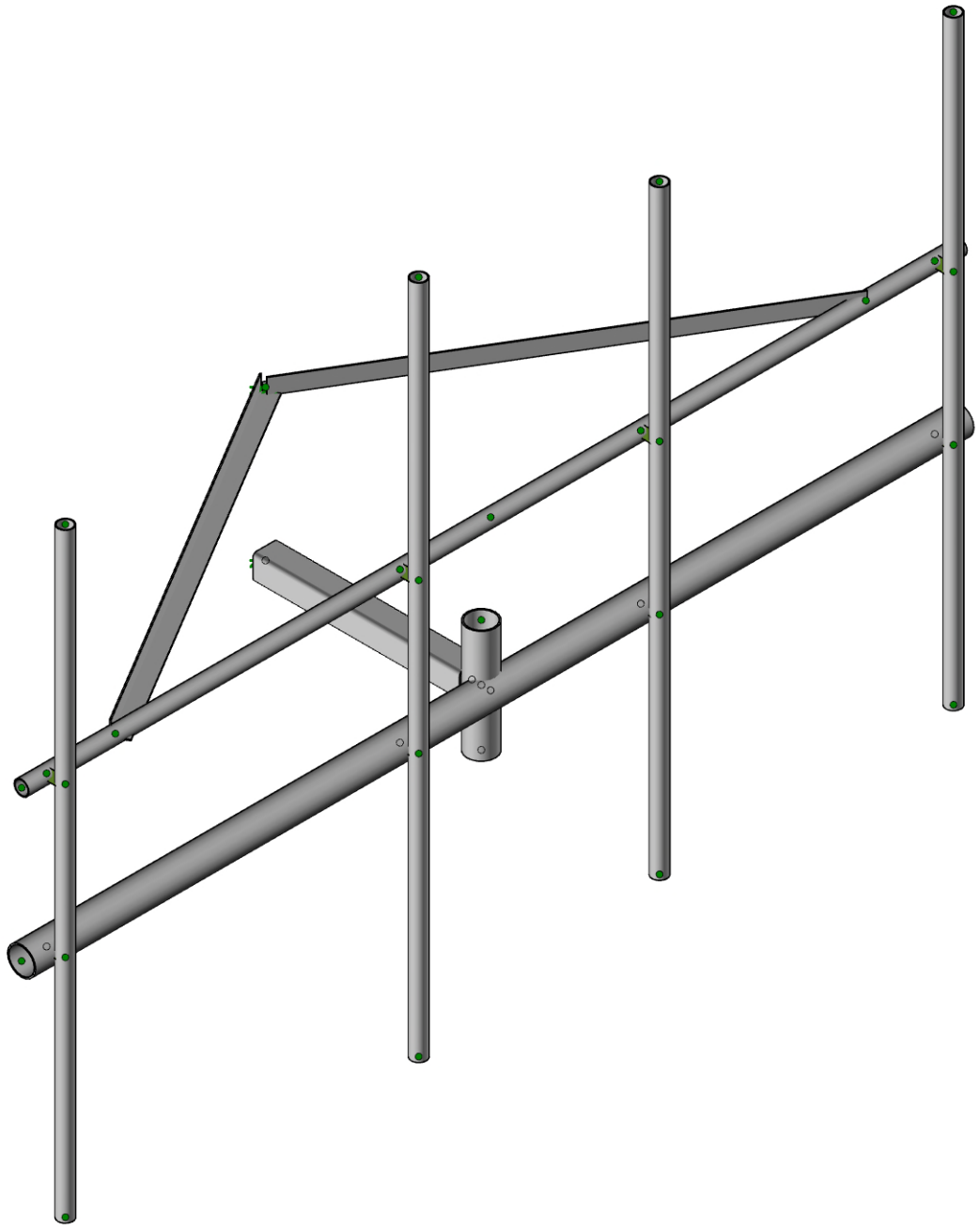
Notes:
1) See additional documentation in "Appendix C – Software Analysis Output" for calculations supporting the % capacity consumed.
2) See additional documentation in "Appendix D – Additional Calculations" for detailed mount connection calculations.
3) All sectors are typical.

4.1) Recommendations

The mount has sufficient capacity to carry the existing and proposed loading. No modifications are required at this time.

APPENDIX A

WIRE FRAME AND RENDERED MODELS



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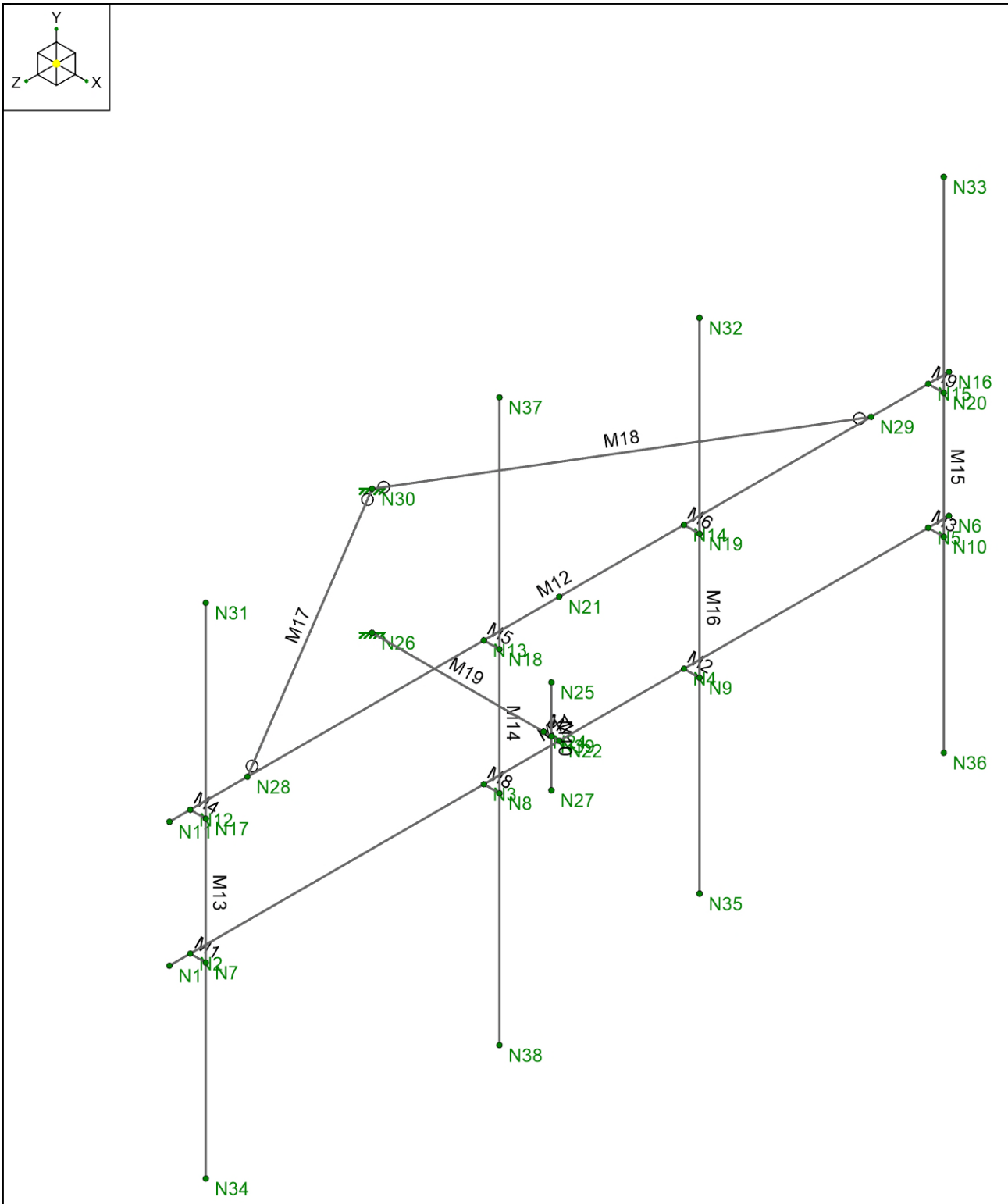

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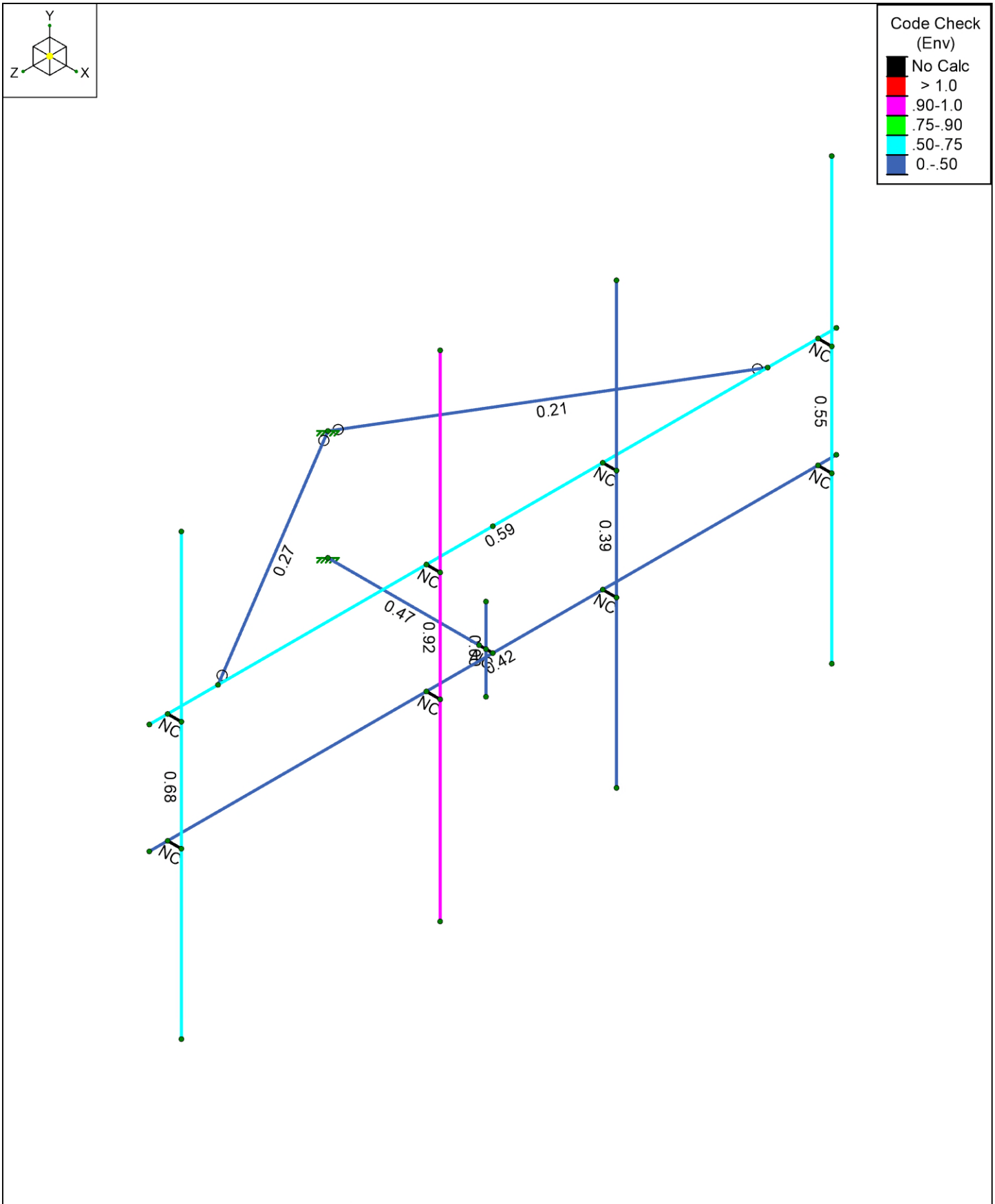

Member Code Checks Displayed (Enveloped)

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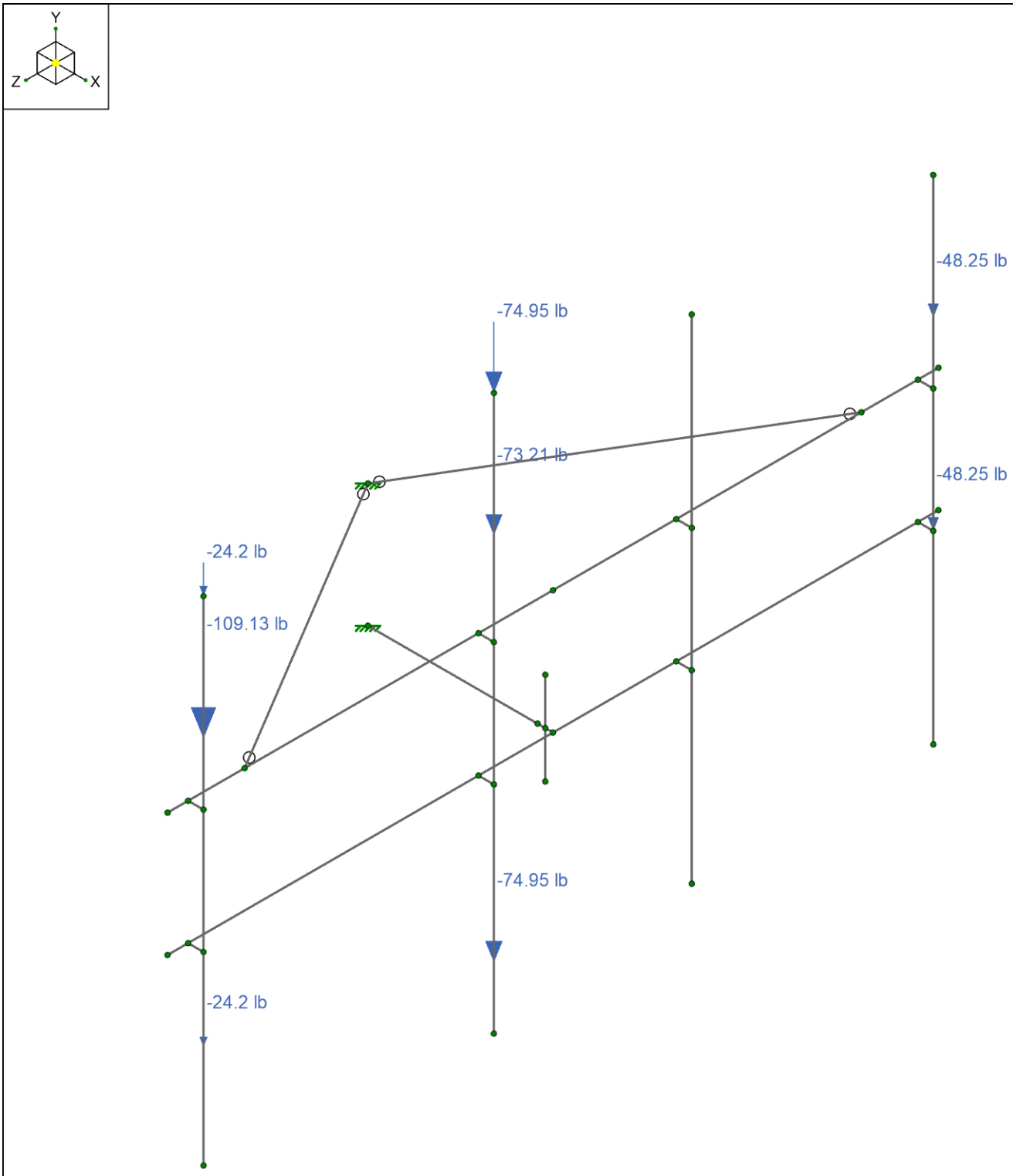

Loads: BLC 1, Dead

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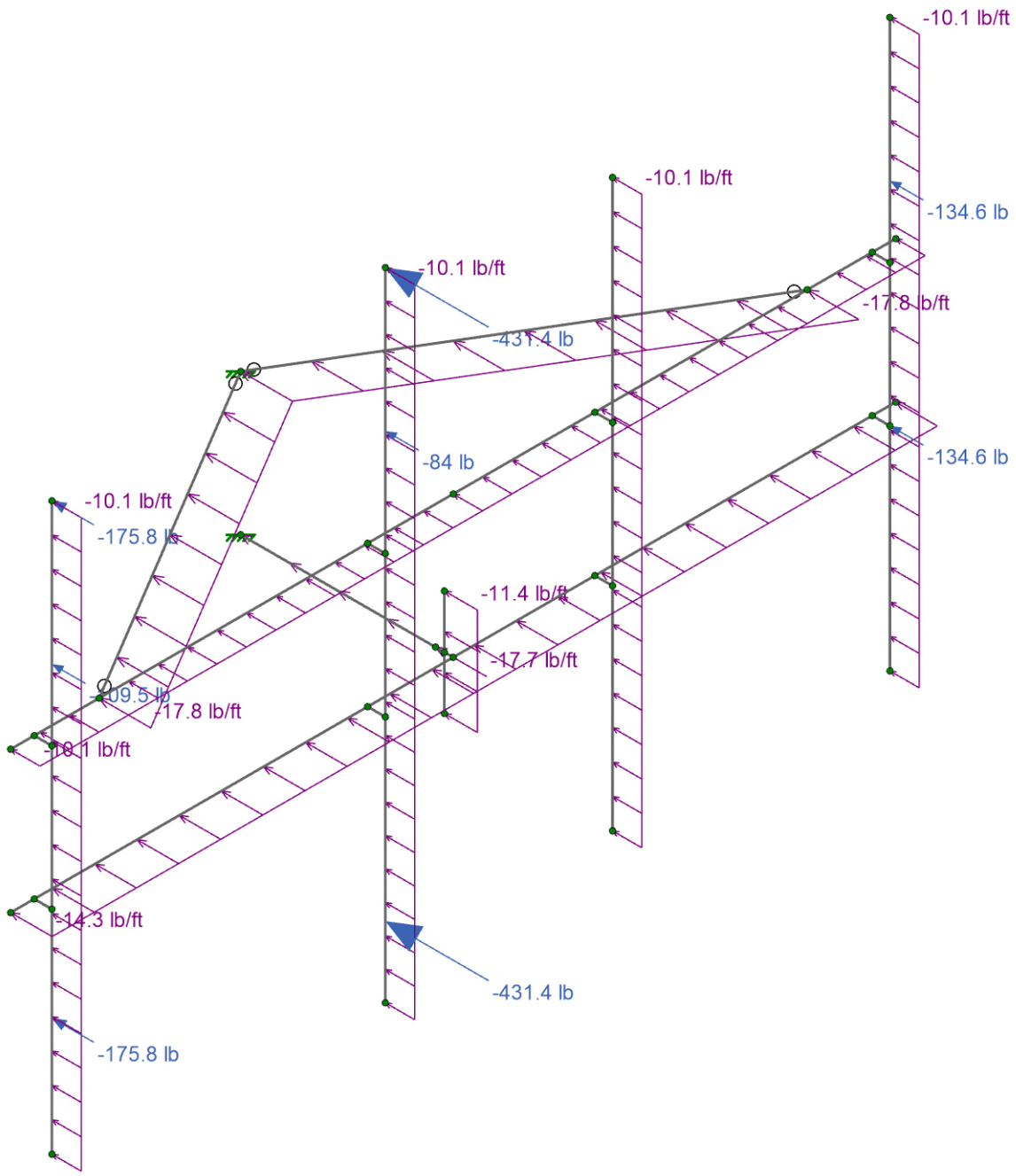

Loads: BLC 3, Wind 0

IRISA A NEMETSCHEK COMPANY	PM&A	CTNH442A	SK-5
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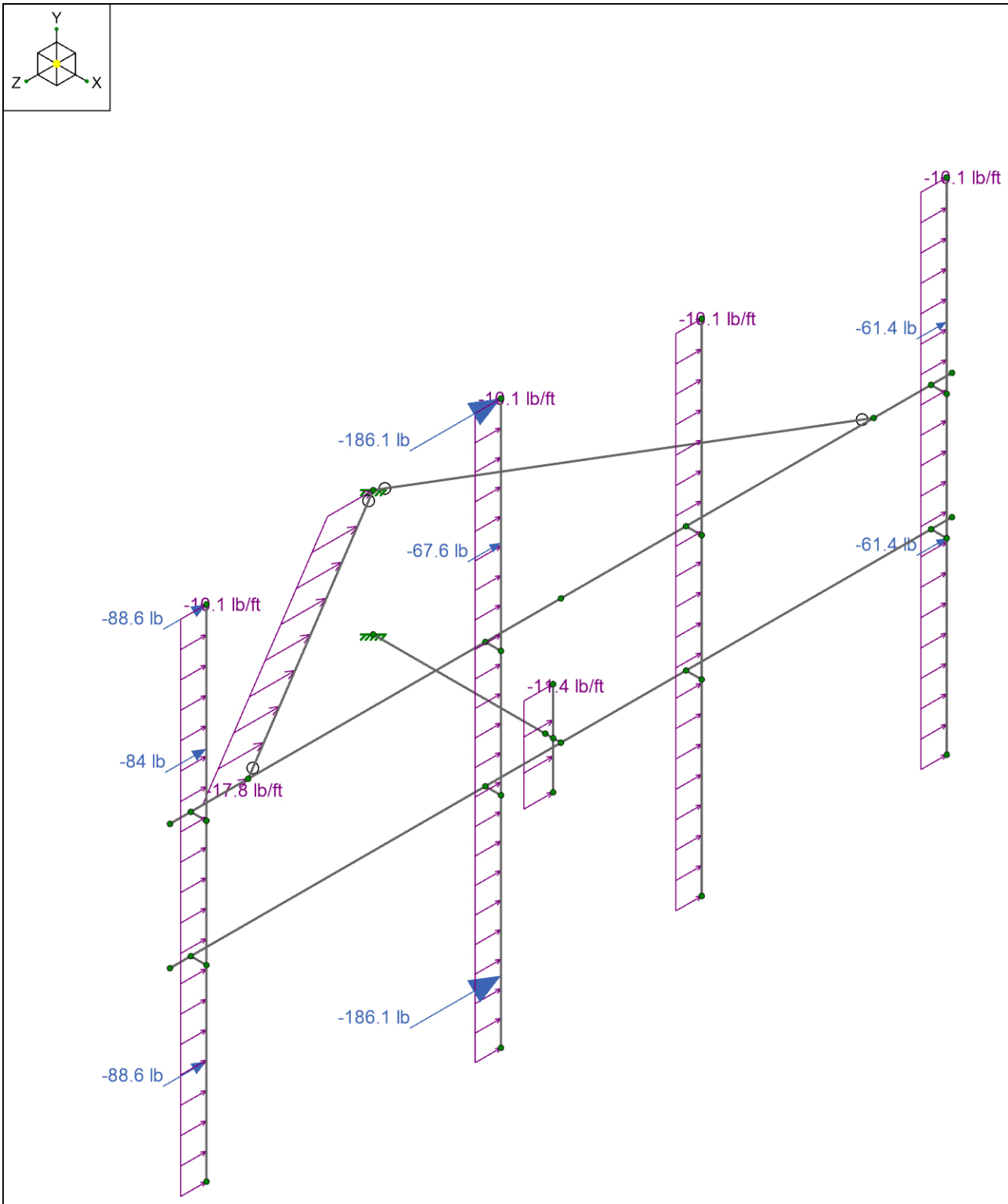


Loads: BLC 6, Wind 90

IRISA A NEMETSCHEK COMPANY	PM&A	CTNH442A	SK-6
	AP		Jun 12, 2024 at 10:29 AM
	-		CTNH442A.r3d

APPENDIX B

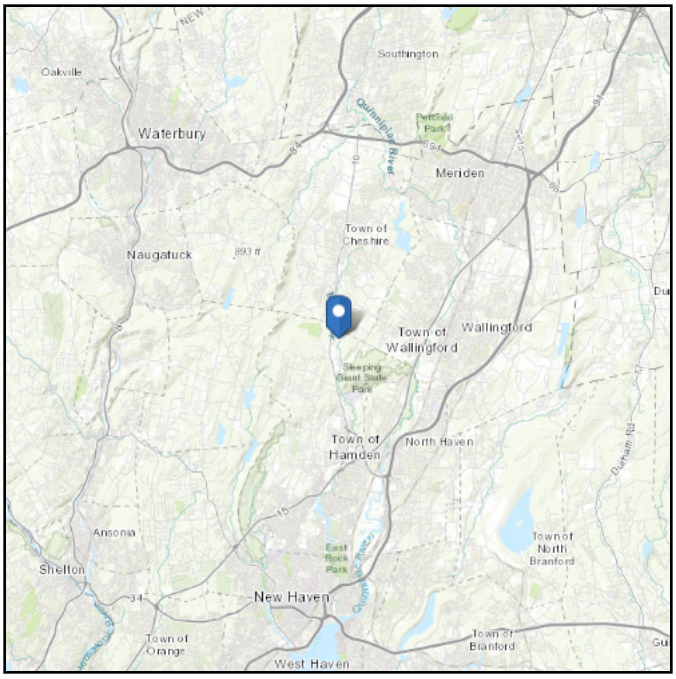
SOFTWARE INPUT CALCULATIONS

ASCE Hazards Report

Address:
No Address at This Location

Standard: ASCE/SEI 7-16
Risk Category: II
Soil Class: D - Stiff Soil

Latitude: 41.449422
Longitude: -72.904664
Elevation: 124.91113957458415 ft (NAVD 88)



Wind

Results:

Wind Speed	~~110 Vmph~~	120 mph
10-year MRI	75 Vmph	
25-year MRI	84 Vmph	
50-year MRI	90 Vmph	
100-year MRI	98 Vmph	

Data Source: ASCE/SEI 7-16, Fig. 26.5-1B and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Thu Jun 06 2024

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

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

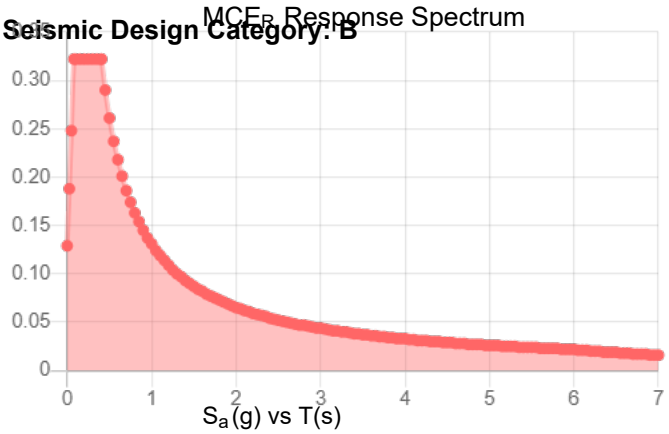
Seismic

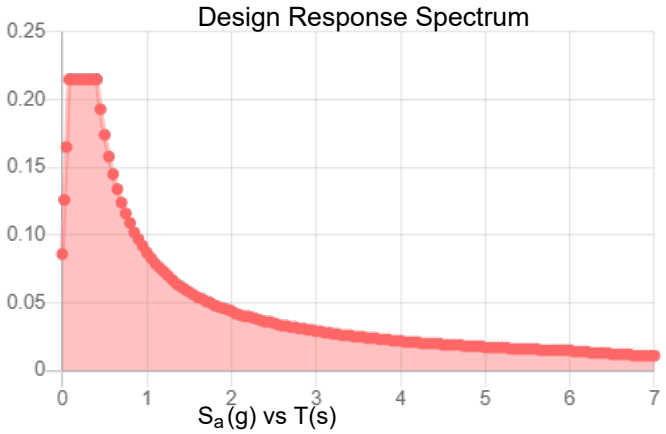
Site Soil Class: D - Stiff Soil

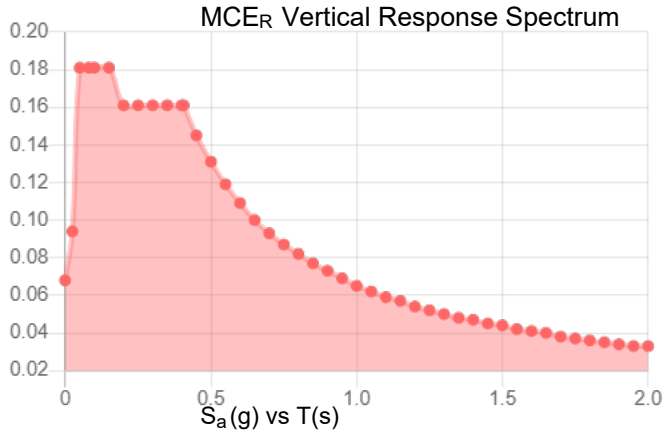
Results:

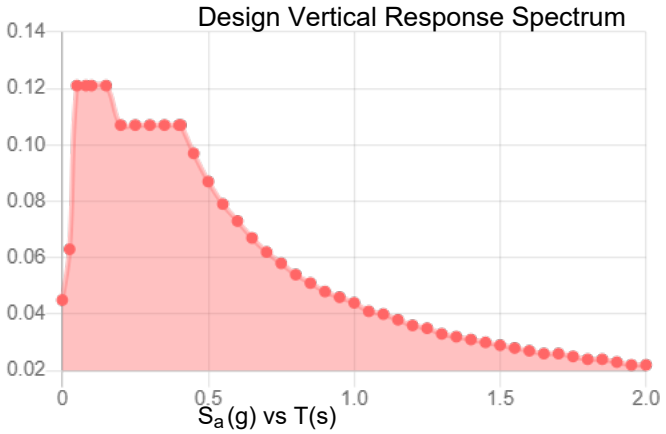
S_S :	~~0.201~~ 0.202	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.112
F_v :	2.4	PGA_M :	0.176
S_{MS} :	0.322	F_{PGA} :	1.576
S_{M1} :	0.131	I_e :	1
S_{DS} :	0.215	C_v :	0.702

Seismic Design Category: B









Data Accessed: Thu Jun 06 2024

Date Source:

USGS Seismic Design Maps based on ASCE/SEI 7-16 and ASCE/SEI 7-16 Table 1.5-2. Additional data for site-specific ground motion procedures in accordance with ASCE/SEI 7-16 Ch. 21 are available from USGS.

Ice

Results:

Ice Thickness:	1.00 in.
Concurrent Temperature:	15 F
Gust Speed	50 mph
Data Source:	Standard ASCE/SEI 7-16, Figs. 10-2 through 10-8
Date Accessed:	Thu Jun 06 2024

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

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

APPURTENANCE FORCE SUMMARY

P. Marshall Associates, LLC
1000 Holcomb Woods Pkwy, Suite 210
Roswell, GA 30076
(678) 280-2325

Wind Analysis Criteria	
Ultimate Wind Speed, Vult	120 mph
Antenna Rad Center, z	137.0 ft
Risk Category	II
Exposure Category	C
Mean Elevation Above Sea Level, zs	124.0 ft
Topographic Category	1

Seismic Analysis Criteria	
Seismic, S_s	0.202
Seismic, S_1	0.054
Soil Type	D (Default)
Amplification Factor, A_s	1.00
Response Coefficient, R	2.00

Ice Criteria & Summary	
Basic Wind Speed with Ice, Vi	50 mph
Design Radial Ice Thickness, ti	1.00 in
Wind Pressure (Ice), q_{zi}	8.22 psf
Factored Radial Ice Thickness, t_{iz}	1.15 in
Importance Factor Wind on Ice, I_{wi}	1.00
Importance Factor Ice, I_i	1.00

Live Load Criteria	
Structure Live Load	250 lbs
Maintenance Live Load	500 lbs
Maintenance Wind Speed	30 mph

Wind Force Summary	
Importance Factor Wind, I_w	1.00
Topographic Factor at Base, K_{zt}	1.00
Topographic Factor at z, K_{zt}	1.00
Velocity Pressure Coefficient, K_z	1.35
Wind Direction Factor, K_d	0.95
Gust Effect Factor, G	1.00
Shielding Factor, K_a	0.90
Wind Pressure, q_z	47.36 psf
Ground Elevation Factor, K_e	1.00

Seismic Force Summary	
Importance Factor Seismic, I_e	1.000
Site Coefficient, F_a	1.600
Site Coefficient, F_v	2.400
Design Spectra Response, S_{ds}	0.215
Design Spectra Response, S_{d1}	0.086
Seismic Response Coefficient, C_s	0.108
Total Seismic Shear Force, V_s	97 lbs
Appurtenance Total Weight	477 lbs
Structure Total Weight	421 lbs
Total Weight	898 lbs
Vertical Load Effect, E_v	39 lbs
Horizontal Load Effect, E_h	97 lbs

Appurtenance Information							Wind Force - No Ice				Escalated Ice Load				Wind Force - With Ice			
Dimensions & Shape							Front		Side		Appurtenance Ice Information				Front		Side	
Appurtenance Name	*Height (in)*	*Width (in)*	*Depth (in)*	*Weight (lb)*	*Member Label*	*Flat or Round (F/R)*	*EPA (ft^2)*	*Design Wind Force (lb), F_A*	*EPA (ft^2)*	*Design Wind Force (lb), F_A*	*Height w/ Ice (in)*	*Width w/ Ice (in)*	*Depth w/ Ice (in)*	*Ice Weight, (lb)*	*EPA (ft^2)*	*Design Wind Force (lb), F_A*	*EPA (ft^2)*	*Design Wind Force (lb), F_A*
ERICSSON AIR 6419 B41_TMO	36.25	20.91	9.02	96.5	M15	F	6.32	269.20	2.88	122.70	38.56	23.22	11.33	106.98	6.98	51.70	3.36	24.90
RFS/CELWAVE APXVAALL24_43-U-NA20_TMO	95.9	24	8.5	149.9	M14	F	20.24	862.80	8.73	372.20	98.21	26.31	10.81	270.68	21.48	159.00	9.77	72.30
RFS/CELWAVE APXVLL19P_43-C-A20_TMO	75.8	11.3	4.6	48.39	M13	F	8.25	351.60	4.15	177.10	78.11	13.61	6.91	110.15	9.10	67.30	4.92	36.40
ERICSSON RADIO 4449 B71 B85A_T-MOBILE	17.91	13.2	10.63	73.21	M14	F	1.97	84.00	1.59	67.60	20.22	15.51	12.94	49.97	2.34	17.30	1.93	14.30
ERICSSON 4460 B25/B66	19.57	15.75	12.09	109.13	M13	F	2.57	109.50	1.97	84.00	21.88	18.06	14.40	63.51	2.99	22.10	2.35	17.40

***Appurtenance Wind and Ice forces were calculated based on EPA's provided and as required by the tower owner (highlighted in green). Values highlighted in white are per applicable TIA-222.**

Appurtenance Structure Forces									
Member Information[1]					Wind Force - No Ice		Member Ice	Wind Force - With Ice	
Member Set	*Flat / Round*	*Weight (lb/ft)*	*Depth / Diameter (in)*	*Width (in)*	*Ca*	*Design Wind Force (lb/ft), F_A*	*Ice Weight (lb/ft)*	*Ca*	*Design Wind Force (lb/ft), F_A*
PIPE_4.0	R	10.8	4.5	–	0.89	14.29	8.00	1.13	4.09
PIPE_2.0	R	3.66	2.38	–	1.20	10.14	5.00	1.20	3.47
L2.5X2.5X3	F	3.07	2.5	2.5	2.00	17.76	6.60	1.20	4.79
HSS4X4X4	HSS	12.21	4	4	1.25	17.73	9.60	0.76	4.16

1. Values shown in this table are the maximum forces applied to similar member types. This is not an exhaustive list. Wind load on members can fluctuate due to force coefficients being a function of length.

APPENDIX C

SOFTWARE ANALYSIS OUTPUT

Model Settings

Number of Reported Sections	5
Number of Internal Sections	100
Member Area Load Mesh Size (in^2)	144
Consider Shear Deformation	Yes
Consider Torsional Warping	Yes
Approximate Mesh Size (in)	24
Transfer Forces Between Intersecting Wood Walls	Yes
Increase Wood Wall Nailing Capacity for Wind Loads	Yes
Include P-Delta for Walls	Yes
Optimize Masonry and Wood Walls	Yes
Maximum Number of Iterations	3
Single	No
Multiple (Optimum)	Yes
Maximum	No

Global Axis corresponding to vertical direction	Y
Convert Existing Data	Yes
Default Global Plane for z-axis	XZ
Plate Local Axis Orientation	Global

Hot Rolled Steel	AISC 15th (360-16): LRFD
Stiffness Adjustment	Yes (Iterative)
Notional Annex	None
Connections	AISC 15th (360-16): LRFD
Cold Formed Steel	AISI S100-16: LRFD
Stiffness Adjustment	Yes (Iterative)
Wood	AWC NDS-18 / SDPWS-15 LRFD
Temperature	< 100F
Concrete	ACI 318-19
Masonry	TMS 402-16: Strength
Aluminum	AA ADM1-15: LRFD
Structure Type	Building
Stiffness Adjustment	Yes (Iterative)
Stainless	AISC 14th (360-10): LRFD
Stiffness Adjustment	Yes (Iterative)

Compression Stress Block	Rectangular Stress Block
Analyze using Cracked Sections	Yes
Leave room for horizontal rebar splices (2*d bar spacing)	No
List forces which were ignored for design in the Detail Report	Yes

Column Min Steel	1
Column Max Steel	8
Rebar Material Spec	ASTM A615
Warn if beam-column framing arrangement is not understood	No
Number of Shear Regions	4
Region 2 & 3 Spacing Increase Increment (in)	4

Code	ASCE 7-16
Risk Category	I or II
Drift Cat	Other

Model Settings (Continued)

Base Elevation (ft)	
Include the weight of the structure in base shear calcs	Yes
S_1 (g)	1
SD_1 (g)	1
SD_S (g)	1
T_L (sec)	5
T Z (sec)	
T X (sec)	
C_tZ	0.02
C_tX	0.02
C_tExp. Z	0.75
C_tExp. X	0.75
R Z	3
R X	3
Ω_0Z	1
Ω_0X	1
C_dZ	4
C_dX	4
ρ Z	1
ρ X	1

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [lb/ft³]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	490	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	490	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	490	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	527	42	1.4	58	1.3
5	A500 Gr.B RECT	29000	11154	0.3	0.65	527	46	1.4	58	1.3
6	A500 Gr.C RND	29000	11154	0.3	0.65	527	46	1.4	62	1.3
7	A500 Gr.C RECT	29000	11154	0.3	0.65	527	50	1.4	62	1.3
8	A53 Gr.B	29000	11154	0.3	0.65	490	35	1.6	60	1.2
9	A1085	29000	11154	0.3	0.65	490	50	1.4	65	1.3
10	A913 Gr.65	29000	11154	0.3	0.65	490	65	1.1	80	1.1

Node Boundary Conditions

	Node Label	X [k/in]	Y [k/in]	Z [k/in]	X Rot [k-ft/rad]	Y Rot [k-ft/rad]	Z Rot [k-ft/rad]
1	N30	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction
2	N26	Reaction	Reaction	Reaction	Reaction	Reaction	Reaction

Hot Rolled Steel Section Sets

	Label	Shape	Type	Design List	Material	Design Rule	Area [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Pipe_4.0	PIPE_4.0	Beam	Pipe	A53 Gr.B	Typical	2.96	6.82	6.82	13.6
2	Pipe_2.0	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
3	L2.5x2.5x3	L2.5X2.5X3	Column	Pipe	A36 Gr.36	Typical	0.901	0.535	0.535	0.011
4	HSS4x4x4	HSS4X4X4	Column	Tube	A500 Gr.B RECT	Typical	3.37	7.8	7.8	12.8

Member Primary Data

	Label	I Node	J Node	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N2	N7	RIGID	None	None	RIGID	Typical
2	M2	N4	N9	RIGID	None	None	RIGID	Typical
3	M3	N5	N10	RIGID	None	None	RIGID	Typical
4	M4	N12	N17	RIGID	None	None	RIGID	Typical
5	M5	N13	N18	RIGID	None	None	RIGID	Typical
6	M6	N14	N19	RIGID	None	None	RIGID	Typical
7	M7	N24	N22	RIGID	None	None	RIGID	Typical
8	M8	N3	N8	RIGID	None	None	RIGID	Typical
9	M9	N15	N20	RIGID	None	None	RIGID	Typical
10	M10	N25	N27	Pipe_4.0	Beam	Pipe	A53 Gr.B	Typical
11	M11	N1	N6	Pipe_4.0	Beam	Pipe	A53 Gr.B	Typical
12	M12	N11	N16	Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
13	M13	N31	N34	Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
14	M14	N37	N38	Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
15	M15	N33	N36	Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
16	M16	N32	N35	Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
17	M17	N28	N30	L2.5x2.5x3	Column	Pipe	A36 Gr.36	Typical
18	M18	N29	N30	L2.5x2.5x3	Column	Pipe	A36 Gr.36	Typical
19	M19	N24	N26	HSS4x4x4	Column	Tube	A500 Gr.B RECT	Typical

Member Advanced Data

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
1	M1			Yes	** NA **	None
2	M2			Yes	** NA **	None

Member Advanced Data (Continued)

	Label	I Release	J Release	Physical	Deflection Ratio Options	Seismic DR
3	M3			Yes	** NA **	None
4	M4			Yes	** NA **	None
5	M5			Yes	** NA **	None
6	M6			Yes	** NA **	None
7	M7			Yes	** NA **	None
8	M8			Yes	** NA **	None
9	M9			Yes	** NA **	None
10	M10			Yes	Default	None
11	M11			Yes	Default	None
12	M12			Yes	Default	None
13	M13			Yes	Default	None
14	M14			Yes	Default	None
15	M15			Yes	Default	None
16	M16			Yes	Default	None
17	M17	BenPIN	BenPIN	Yes	** NA **	None
18	M18	BenPIN	BenPIN	Yes	** NA **	None
19	M19			Yes	** NA **	None

Hot Rolled Steel Design Parameters

	Label	Shape	Length [in]	Lcomp top [in]	Channel Conn.	a [in]	Function
1	M10	Pipe_4.0	18	Lbyy	N/A	N/A	Lateral
2	M11	Pipe_4.0	150	Lbyy	N/A	N/A	Lateral
3	M12	Pipe_2.0	150	Lbyy	N/A	N/A	Lateral
4	M13	Pipe_2.0	96	Lbyy	N/A	N/A	Lateral
5	M14	Pipe_2.0	108	Lbyy	N/A	N/A	Lateral
6	M15	Pipe_2.0	96	Lbyy	N/A	N/A	Lateral
7	M16	Pipe_2.0	96	Lbyy	N/A	N/A	Lateral
8	M17	L2.5x2.5x3	69.971	Lbyy	N/A	N/A	Lateral
9	M18	L2.5x2.5x3	69.971	Lbyy	N/A	N/A	Lateral
10	M19	HSS4x4x4	33	Lbyy	N/A	N/A	Lateral

Member Point Loads (BLC 1 : Dead)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	Y	-48.25	24
2	M14	Y	-74.95	0
3	M13	Y	-24.2	0
4	M14	Y	-73.21	24
5	M13	Y	-109.13	24
6	M15	Y	-48.25	60
7	M14	Y	-74.95	96
8	M13	Y	-24.2	76
9	M14	Y	0	0
10	M13	Y	0	0

Member Point Loads (BLC 2 : Ice)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	Y	-53.49	24
2	M14	Y	-135.34	0
3	M13	Y	-55.08	0
4	M14	Y	-49.97	24
5	M13	Y	-63.51	24
6	M15	Y	-53.49	60

Member Point Loads (BLC 2 : Ice) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
7	M14	Y	-135.34	96
8	M13	Y	-55.08	76
9	M14	Y	0	0
10	M13	Y	0	0

Member Point Loads (BLC 3 : Wind 0)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	X	-134.6	24
2	M14	X	-431.4	0
3	M13	X	-175.8	0
4	M14	X	-84	24
5	M13	X	-109.5	24
6	M15	X	-134.6	60
7	M14	X	-431.4	96
8	M13	X	-175.8	76
9	M14	X	0	0
10	M13	X	0	0
11	M15	Z	0	24
12	M14	Z	0	0
13	M13	Z	0	0
14	M14	Z	0	24
15	M13	Z	0	24
16	M15	Z	0	60
17	M14	Z	0	96
18	M13	Z	0	76
19	M14	Z	0	0
20	M13	Z	0	0

Member Point Loads (BLC 4 : Wind 30)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	X	-100.7	24
2	M14	X	-320.5	0
3	M13	X	-133.4	0
4	M14	X	-69.2	24
5	M13	X	-89.3	24
6	M15	X	-100.7	60
7	M14	X	-320.5	96
8	M13	X	-133.4	76
9	M14	X	0	0
10	M13	X	0	0
11	M15	Z	-58.1	24
12	M14	Z	-185	0
13	M13	Z	-77	0
14	M14	Z	-40	24
15	M13	Z	-51.6	24
16	M15	Z	-58.1	60
17	M14	Z	-185	96
18	M13	Z	-77	76
19	M14	Z	0	0
20	M13	Z	0	0

Member Point Loads (BLC 5 : Wind 60)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	X	-39.8	24
2	M14	X	-123.7	0
3	M13	X	-55.2	0
4	M14	X	-35.9	24
5	M13	X	-45.2	24
6	M15	X	-39.8	60
7	M14	X	-123.7	96
8	M13	X	-55.2	76
9	M14	X	0	0
10	M13	X	0	0
11	M15	Z	-69	24
12	M14	Z	-214.3	0
13	M13	Z	-95.6	0
14	M14	Z	-62.1	24
15	M13	Z	-78.3	24
16	M15	Z	-69	60
17	M14	Z	-214.3	96
18	M13	Z	-95.6	76
19	M14	Z	0	0
20	M13	Z	0	0

Member Point Loads (BLC 6 : Wind 90)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	X	0	24
2	M14	X	0	0
3	M13	X	0	0
4	M14	X	0	24
5	M13	X	0	24
6	M15	X	0	60
7	M14	X	0	96
8	M13	X	0	76
9	M14	X	0	0
10	M13	X	0	0
11	M15	Z	-61.4	24
12	M14	Z	-186.1	0
13	M13	Z	-88.6	0
14	M14	Z	-67.6	24
15	M13	Z	-84	24
16	M15	Z	-61.4	60
17	M14	Z	-186.1	96
18	M13	Z	-88.6	76
19	M14	Z	0	0
20	M13	Z	0	0

Member Point Loads (BLC 7 : Wind 120)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	X	39.8	24
2	M14	X	123.7	0
3	M13	X	55.2	0
4	M14	X	35.9	24
5	M13	X	45.2	24
6	M15	X	39.8	60

Member Point Loads (BLC 7 : Wind 120) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
7	M14	X	123.7	96
8	M13	X	55.2	76
9	M14	X	0	0
10	M13	X	0	0
11	M15	Z	-69	24
12	M14	Z	-214.3	0
13	M13	Z	-95.6	0
14	M14	Z	-62.1	24
15	M13	Z	-78.3	24
16	M15	Z	-69	60
17	M14	Z	-214.3	96
18	M13	Z	-95.6	76
19	M14	Z	0	0
20	M13	Z	0	0

Member Point Loads (BLC 8 : Wind 150)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	X	100.7	24
2	M14	X	320.5	0
3	M13	X	133.4	0
4	M14	X	69.2	24
5	M13	X	89.3	24
6	M15	X	100.7	60
7	M14	X	320.5	96
8	M13	X	133.4	76
9	M14	X	0	0
10	M13	X	0	0
11	M15	Z	-58.1	24
12	M14	Z	-185	0
13	M13	Z	-77	0
14	M14	Z	-40	24
15	M13	Z	-51.6	24
16	M15	Z	-58.1	60
17	M14	Z	-185	96
18	M13	Z	-77	76
19	M14	Z	0	0
20	M13	Z	0	0

Member Point Loads (BLC 9 : Wind Ice 0)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	X	-25.9	24
2	M14	X	-79.5	0
3	M13	X	-33.7	0
4	M14	X	-17.3	24
5	M13	X	-22.1	24
6	M15	X	-25.9	60
7	M14	X	-79.5	96
8	M13	X	-33.7	76
9	M14	X	0	0
10	M13	X	0	0
11	M15	Z	0	24
12	M14	Z	0	0
13	M13	Z	0	0

Member Point Loads (BLC 9 : Wind Ice 0) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
14	M14	Z	0	24
15	M13	Z	0	24
16	M15	Z	0	60
17	M14	Z	0	96
18	M13	Z	0	76
19	M14	Z	0	0
20	M13	Z	0	0

Member Point Loads (BLC 10 : Wind Ice 30)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	X	-19.5	24
2	M14	X	-59.5	0
3	M13	X	-25.8	0
4	M14	X	-14.3	24
5	M13	X	-18.1	24
6	M15	X	-19.5	60
7	M14	X	-59.5	96
8	M13	X	-25.8	76
9	M14	X	0	0
10	M13	X	0	0
11	M15	Z	-11.3	24
12	M14	Z	-34.3	0
13	M13	Z	-14.9	0
14	M14	Z	-8.3	24
15	M13	Z	-10.5	24
16	M15	Z	-11.3	60
17	M14	Z	-34.3	96
18	M13	Z	-14.9	76
19	M14	Z	0	0
20	M13	Z	0	0

Member Point Loads (BLC 11 : Wind Ice 60)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	X	-7.9	24
2	M14	X	-23.5	0
3	M13	X	-11	0
4	M14	X	-7.5	24
5	M13	X	-9.3	24
6	M15	X	-7.9	60
7	M14	X	-23.5	96
8	M13	X	-11	76
9	M14	X	0	0
10	M13	X	0	0
11	M15	Z	-13.7	24
12	M14	Z	-40.7	0
13	M13	Z	-19.1	0
14	M14	Z	-13	24
15	M13	Z	-16.1	24
16	M15	Z	-13.7	60
17	M14	Z	-40.7	96
18	M13	Z	-19.1	76
19	M14	Z	0	0
20	M13	Z	0	0

Member Point Loads (BLC 12 : Wind Ice 90)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	X	0	24
2	M14	X	0	0
3	M13	X	0	0
4	M14	X	0	24
5	M13	X	0	24
6	M15	X	0	60
7	M14	X	0	96
8	M13	X	0	76
9	M14	X	0	0
10	M13	X	0	0
11	M15	Z	-12.5	24
12	M14	Z	-36.2	0
13	M13	Z	-18.2	0
14	M14	Z	-14.3	24
15	M13	Z	-17.4	24
16	M15	Z	-12.5	60
17	M14	Z	-36.2	96
18	M13	Z	-18.2	76
19	M14	Z	0	0
20	M13	Z	0	0

Member Point Loads (BLC 13 : Wind Ice 120)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	X	7.9	24
2	M14	X	23.5	0
3	M13	X	11	0
4	M14	X	7.5	24
5	M13	X	9.3	24
6	M15	X	7.9	60
7	M14	X	23.5	96
8	M13	X	11	76
9	M14	X	0	0
10	M13	X	0	0
11	M15	Z	-13.7	24
12	M14	Z	-40.7	0
13	M13	Z	-19.1	0
14	M14	Z	-13	24
15	M13	Z	-16.1	24
16	M15	Z	-13.7	60
17	M14	Z	-40.7	96
18	M13	Z	-19.1	76
19	M14	Z	0	0
20	M13	Z	0	0

Member Point Loads (BLC 14 : Wind Ice 150)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	X	19.5	24
2	M14	X	59.5	0
3	M13	X	25.8	0
4	M14	X	14.3	24
5	M13	X	18.1	24
6	M15	X	19.5	60

Member Point Loads (BLC 14 : Wind Ice 150) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
7	M14	X	59.5	96
8	M13	X	25.8	76
9	M14	X	0	0
10	M13	X	0	0
11	M15	Z	-11.3	24
12	M14	Z	-34.3	0
13	M13	Z	-14.9	0
14	M14	Z	-8.3	24
15	M13	Z	-10.5	24
16	M15	Z	-11.3	60
17	M14	Z	-34.3	96
18	M13	Z	-14.9	76
19	M14	Z	0	0
20	M13	Z	0	0

Member Point Loads (BLC 15 : Live Load Point (1))

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M11	Y	-250	0

Member Point Loads (BLC 16 : Live Load Point (2))

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M11	Y	-250	%50

Member Point Loads (BLC 17 : Live Load Point (3))

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M11	Y	-250	%100

Member Point Loads (BLC 51 : Horizontal Seismic Load Effect,)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	X	-48.3	24
2	M14	X	-75	0
3	M13	X	-24.2	0
4	M14	X	-73.2	24
5	M13	X	-109.1	24
6	M15	X	-48.3	60
7	M14	X	-75	96
8	M13	X	-24.2	76
9	M14	X	0	0
10	M13	X	0	0

Member Point Loads (BLC 52 : Horizontal Seismic Load Effect,)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
1	M15	Z	-48.3	24
2	M14	Z	-75	0
3	M13	Z	-24.2	0
4	M14	Z	-73.2	24
5	M13	Z	-109.1	24
6	M15	Z	-48.3	60
7	M14	Z	-75	96

Member Point Loads (BLC 52 : Horizontal Seismic Load Effect,) (Continued)

	Member Label	Direction	Magnitude [lb, lb-ft]	Location [(in, %)]
8	M13	Z	-24.2	76
9	M14	Z	0	0
10	M13	Z	0	0

Member Distributed Loads (BLC 2 : Ice)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M10	Y	-8	-8	0	%100
2	M11	Y	-8	-8	0	%100
3	M12	Y	-5	-5	0	%100
4	M13	Y	-5	-5	0	%100
5	M14	Y	-5	-5	0	%100
6	M15	Y	-5	-5	0	%100
7	M16	Y	-5	-5	0	%100
8	M17	Y	-6.6	-6.6	0	%100
9	M18	Y	-6.6	-6.6	0	%100
10	M19	Y	-9.6	-9.6	0	%100

Member Distributed Loads (BLC 3 : Wind 0)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M10	X	-11.4	-11.4	0	%100
2	M11	X	-14.3	-14.3	0	%100
3	M12	X	-10.1	-10.1	0	%100
4	M13	X	-10.1	-10.1	0	%100
5	M14	X	-10.1	-10.1	0	%100
6	M15	X	-10.1	-10.1	0	%100
7	M16	X	-10.1	-10.1	0	%100
8	M17	X	-17.8	-17.8	0	%100
9	M18	X	-17.8	-17.8	0	%100
10	M19	X	-17.7	-17.7	0	%100
11	M10	Z	0	0	0	%100
12	M11	Z	0	0	0	%100
13	M12	Z	0	0	0	%100
14	M13	Z	0	0	0	%100
15	M14	Z	0	0	0	%100
16	M15	Z	0	0	0	%100
17	M16	Z	0	0	0	%100
18	M17	Z	0	0	0	%100
19	M18	Z	0	0	0	%100
20	M19	Z	0	0	0	%100

Member Distributed Loads (BLC 4 : Wind 30)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M10	X	-9.9	-9.9	0	%100
2	M11	X	-12.4	-12.4	0	%100
3	M12	X	-8.8	-8.8	0	%100
4	M13	X	-8.8	-8.8	0	%100
5	M14	X	-8.8	-8.8	0	%100
6	M15	X	-8.8	-8.8	0	%100
7	M16	X	-8.8	-8.8	0	%100
8	M17	X	-15.4	-15.4	0	%100
9	M18	X	-15.4	-15.4	0	%100
10	M19	X	-15.4	-15.4	0	%100

Member Distributed Loads (BLC 4 : Wind 30) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
11	M10	Z	-5.7	-5.7	0	%100
12	M11	Z	0	0	0	%100
13	M12	Z	0	0	0	%100
14	M13	Z	-5.1	-5.1	0	%100
15	M14	Z	-5.1	-5.1	0	%100
16	M15	Z	-5.1	-5.1	0	%100
17	M16	Z	-5.1	-5.1	0	%100
18	M17	Z	-8.9	-8.9	0	%100
19	M18	Z	0	0	0	%100
20	M19	Z	0	0	0	%100

Member Distributed Loads (BLC 5 : Wind 60)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M10	X	-5.7	-5.7	0	%100
2	M11	X	-7.1	-7.1	0	%100
3	M12	X	-5.1	-5.1	0	%100
4	M13	X	-5.1	-5.1	0	%100
5	M14	X	-5.1	-5.1	0	%100
6	M15	X	-5.1	-5.1	0	%100
7	M16	X	-5.1	-5.1	0	%100
8	M17	X	-8.9	-8.9	0	%100
9	M18	X	-8.9	-8.9	0	%100
10	M19	X	-8.9	-8.9	0	%100
11	M10	Z	-9.9	-9.9	0	%100
12	M11	Z	0	0	0	%100
13	M12	Z	0	0	0	%100
14	M13	Z	-8.8	-8.8	0	%100
15	M14	Z	-8.8	-8.8	0	%100
16	M15	Z	-8.8	-8.8	0	%100
17	M16	Z	-8.8	-8.8	0	%100
18	M17	Z	-15.4	-15.4	0	%100
19	M18	Z	0	0	0	%100
20	M19	Z	0	0	0	%100

Member Distributed Loads (BLC 6 : Wind 90)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M10	X	0	0	0	%100
2	M11	X	0	0	0	%100
3	M12	X	0	0	0	%100
4	M13	X	0	0	0	%100
5	M14	X	0	0	0	%100
6	M15	X	0	0	0	%100
7	M16	X	0	0	0	%100
8	M17	X	0	0	0	%100
9	M18	X	0	0	0	%100
10	M19	X	0	0	0	%100
11	M10	Z	-11.4	-11.4	0	%100
12	M11	Z	0	0	0	%100
13	M12	Z	0	0	0	%100
14	M13	Z	-10.1	-10.1	0	%100
15	M14	Z	-10.1	-10.1	0	%100
16	M15	Z	-10.1	-10.1	0	%100
17	M16	Z	-10.1	-10.1	0	%100

Member Distributed Loads (BLC 6 : Wind 90) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
18	M17	Z	-17.8	-17.8	0	%100
19	M18	Z	0	0	0	%100
20	M19	Z	0	0	0	%100

Member Distributed Loads (BLC 7 : Wind 120)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M10	X	5.7	5.7	0	%100
2	M11	X	7.1	7.1	0	%100
3	M12	X	5.1	5.1	0	%100
4	M13	X	5.1	5.1	0	%100
5	M14	X	5.1	5.1	0	%100
6	M15	X	5.1	5.1	0	%100
7	M16	X	5.1	5.1	0	%100
8	M17	X	8.9	8.9	0	%100
9	M18	X	8.9	8.9	0	%100
10	M19	X	8.9	8.9	0	%100
11	M10	Z	-9.9	-9.9	0	%100
12	M11	Z	0	0	0	%100
13	M12	Z	0	0	0	%100
14	M13	Z	-8.8	-8.8	0	%100
15	M14	Z	-8.8	-8.8	0	%100
16	M15	Z	-8.8	-8.8	0	%100
17	M16	Z	-8.8	-8.8	0	%100
18	M17	Z	-15.4	-15.4	0	%100
19	M18	Z	0	0	0	%100
20	M19	Z	0	0	0	%100

Member Distributed Loads (BLC 8 : Wind 150)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M10	X	9.9	9.9	0	%100
2	M11	X	12.4	12.4	0	%100
3	M12	X	8.8	8.8	0	%100
4	M13	X	8.8	8.8	0	%100
5	M14	X	8.8	8.8	0	%100
6	M15	X	8.8	8.8	0	%100
7	M16	X	8.8	8.8	0	%100
8	M17	X	15.4	15.4	0	%100
9	M18	X	15.4	15.4	0	%100
10	M19	X	15.4	15.4	0	%100
11	M10	Z	-5.7	-5.7	0	%100
12	M11	Z	0	0	0	%100
13	M12	Z	0	0	0	%100
14	M13	Z	-5.1	-5.1	0	%100
15	M14	Z	-5.1	-5.1	0	%100
16	M15	Z	-5.1	-5.1	0	%100
17	M16	Z	-5.1	-5.1	0	%100
18	M17	Z	-8.9	-8.9	0	%100
19	M18	Z	0	0	0	%100
20	M19	Z	0	0	0	%100

Member Distributed Loads (BLC 9 : Wind Ice 0)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M10	X	-3.1	-3.1	0	%100
2	M11	X	-4.1	-4.1	0	%100
3	M12	X	-3.5	-3.5	0	%100
4	M13	X	-3.3	-3.3	0	%100
5	M14	X	-3.5	-3.5	0	%100
6	M15	X	-3.3	-3.3	0	%100
7	M16	X	-3.3	-3.3	0	%100
8	M17	X	-4.5	-4.5	0	%100
9	M18	X	-4.8	-4.8	0	%100
10	M19	X	-4.2	-4.2	0	%100
11	M10	Z	0	0	0	%100
12	M11	Z	0	0	0	%100
13	M12	Z	0	0	0	%100
14	M13	Z	0	0	0	%100
15	M14	Z	0	0	0	%100
16	M15	Z	0	0	0	%100
17	M16	Z	0	0	0	%100
18	M17	Z	0	0	0	%100
19	M18	Z	0	0	0	%100
20	M19	Z	0	0	0	%100

Member Distributed Loads (BLC 10 : Wind Ice 30)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M10	X	-2.7	-2.7	0	%100
2	M11	X	-3.5	-3.5	0	%100
3	M12	X	-3	-3	0	%100
4	M13	X	-2.8	-2.8	0	%100
5	M14	X	-3	-3	0	%100
6	M15	X	-2.9	-2.9	0	%100
7	M16	X	-2.9	-2.9	0	%100
8	M17	X	-3.9	-3.9	0	%100
9	M18	X	-4.1	-4.1	0	%100
10	M19	X	-3.6	-3.6	0	%100
11	M10	Z	-1.5	-1.5	0	%100
12	M11	Z	0	0	0	%100
13	M12	Z	0	0	0	%100
14	M13	Z	-1.6	-1.6	0	%100
15	M14	Z	-1.7	-1.7	0	%100
16	M15	Z	-1.7	-1.7	0	%100
17	M16	Z	-1.7	-1.7	0	%100
18	M17	Z	-2.2	-2.2	0	%100
19	M18	Z	0	0	0	%100
20	M19	Z	0	0	0	%100

Member Distributed Loads (BLC 11 : Wind Ice 60)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M10	X	-1.5	-1.5	0	%100
2	M11	X	-2	-2	0	%100
3	M12	X	-1.7	-1.7	0	%100
4	M13	X	-1.6	-1.6	0	%100
5	M14	X	-1.7	-1.7	0	%100
6	M15	X	-1.7	-1.7	0	%100

Member Distributed Loads (BLC 11 : Wind Ice 60) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
7	M16	X	-1.7	-1.7	0	%100
8	M17	X	-2.2	-2.2	0	%100
9	M18	X	-2.4	-2.4	0	%100
10	M19	X	-2.1	-2.1	0	%100
11	M10	Z	-2.7	-2.7	0	%100
12	M11	Z	0	0	0	%100
13	M12	Z	0	0	0	%100
14	M13	Z	-2.8	-2.8	0	%100
15	M14	Z	-3	-3	0	%100
16	M15	Z	-2.9	-2.9	0	%100
17	M16	Z	-2.9	-2.9	0	%100
18	M17	Z	-3.9	-3.9	0	%100
19	M18	Z	0	0	0	%100
20	M19	Z	0	0	0	%100

Member Distributed Loads (BLC 12 : Wind Ice 90)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M10	X	0	0	0	%100
2	M11	X	0	0	0	%100
3	M12	X	0	0	0	%100
4	M13	X	0	0	0	%100
5	M14	X	0	0	0	%100
6	M15	X	0	0	0	%100
7	M16	X	0	0	0	%100
8	M17	X	0	0	0	%100
9	M18	X	0	0	0	%100
10	M19	X	0	0	0	%100
11	M10	Z	-3.1	-3.1	0	%100
12	M11	Z	0	0	0	%100
13	M12	Z	0	0	0	%100
14	M13	Z	-3.3	-3.3	0	%100
15	M14	Z	-3.5	-3.5	0	%100
16	M15	Z	-3.3	-3.3	0	%100
17	M16	Z	-3.3	-3.3	0	%100
18	M17	Z	-4.5	-4.5	0	%100
19	M18	Z	0	0	0	%100
20	M19	Z	0	0	0	%100

Member Distributed Loads (BLC 13 : Wind Ice 120)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M10	X	1.5	1.5	0	%100
2	M11	X	2	2	0	%100
3	M12	X	1.7	1.7	0	%100
4	M13	X	1.6	1.6	0	%100
5	M14	X	1.7	1.7	0	%100
6	M15	X	1.7	1.7	0	%100
7	M16	X	1.7	1.7	0	%100
8	M17	X	2.2	2.2	0	%100
9	M18	X	2.4	2.4	0	%100
10	M19	X	2.1	2.1	0	%100
11	M10	Z	-2.7	-2.7	0	%100
12	M11	Z	0	0	0	%100
13	M12	Z	0	0	0	%100

Member Distributed Loads (BLC 13 : Wind Ice 120) (Continued)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
14	M13	Z	-2.8	-2.8	0	%100
15	M14	Z	-3	-3	0	%100
16	M15	Z	-2.9	-2.9	0	%100
17	M16	Z	-2.9	-2.9	0	%100
18	M17	Z	-3.9	-3.9	0	%100
19	M18	Z	0	0	0	%100
20	M19	Z	0	0	0	%100

Member Distributed Loads (BLC 14 : Wind Ice 150)

	Member Label	Direction	Start Magnitude [lb/ft, F, psf, lb-ft/in]	End Magnitude [lb/ft, F, psf, lb-ft/in]	Start Location [(in, %)]	End Location [(in, %)]
1	M10	X	2.7	2.7	0	%100
2	M11	X	3.5	3.5	0	%100
3	M12	X	3	3	0	%100
4	M13	X	2.8	2.8	0	%100
5	M14	X	3	3	0	%100
6	M15	X	2.9	2.9	0	%100
7	M16	X	2.9	2.9	0	%100
8	M17	X	3.9	3.9	0	%100
9	M18	X	4.1	4.1	0	%100
10	M19	X	3.6	3.6	0	%100
11	M10	Z	-1.5	-1.5	0	%100
12	M11	Z	0	0	0	%100
13	M12	Z	0	0	0	%100
14	M13	Z	-1.6	-1.6	0	%100
15	M14	Z	-1.7	-1.7	0	%100
16	M15	Z	-1.7	-1.7	0	%100
17	M16	Z	-1.7	-1.7	0	%100
18	M17	Z	-2.2	-2.2	0	%100
19	M18	Z	0	0	0	%100
20	M19	Z	0	0	0	%100

Diaphragm Distributed Loads

No Data to Print...

Basic Load Cases

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed
1	Dead	None		-1.05			10	
2	Ice	None					10	10
3	Wind 0	None					20	20
4	Wind 30	None					20	20
5	Wind 60	None					20	20
6	Wind 90	None					20	20
7	Wind 120	None					20	20
8	Wind 150	None					20	20
9	Wind Ice 0	None					20	20
10	Wind Ice 30	None					20	20
11	Wind Ice 60	None					20	20
12	Wind Ice 90	None					20	20
13	Wind Ice 120	None					20	20
14	Wind Ice 150	None					20	20
15	Live Load Point (1)	None					1	
16	Live Load Point (2)	None					1	
17	Live Load Point (3)	None					1	

Basic Load Cases (Continued)

	BLC Description	Category	X Gravity	Y Gravity	Z Gravity	Nodal	Point	Distributed
18	Live Load Point (4)	None						
19	Live Load Point (5)	None						
20	Live Load Point (6)	None						
21	Live Load Point (7)	None						
22	Live Load Point (8)	None						
23	Live Load Point (9)	None						
24	Live Load Point (10)	None						
25	Live Load Point (11)	None						
26	Live Load Point (12)	None						
27	Live Load Point (13)	None						
28	Live Load Point (14)	None						
29	Live Load Point (15)	None						
30	Live Load Point (16)	None						
31	Live Load Point (17)	None						
32	Live Load Point (18)	None						
33	Live Load Point (19)	None						
34	Live Load Point (20)	None						
35	Live Load Point (21)	None						
36	Live Load Point (22)	None						
37	Live Load Point (23)	None						
38	Live Load Point (24)	None						
39	Live Load Point (25)	None						
40	Live Load Point (26)	None						
41	Live Load Point (27)	None						
42	Live Load Point (28)	None						
43	Live Load Point (29)	None						
44	Live Load Point (30)	None						
45	Maintenance Load (1)	None				1		
46	Maintenance Load (2)	None				1		
47	Maintenance Load (3)	None				1		
48	Maintenance Load (4)	None				1		
49	Maintenance Load (5)	None						
50	Maintenance Load (6)	None						
51	Horizontal Seismic Load Effect,	None	-1				10	
52	Horizontal Seismic Load Effect,	None			-1		10	

Load Combinations

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
1	1.4 D	Yes	Y	1	1.4						
2	1.2 D + 1.0 W 0	Yes	Y	1	1.2	3	1				
3	1.2 D + 1.0 W 30	Yes	Y	1	1.2	4	1				
4	1.2 D + 1.0 W 60	Yes	Y	1	1.2	5	1				
5	1.2 D + 1.0 W 90	Yes	Y	1	1.2	6	1				
6	1.2 D + 1.0 W 120	Yes	Y	1	1.2	7	1				
7	1.2 D + 1.0 W 150	Yes	Y	1	1.2	8	1				
8	1.2 D + 1.0 W 180	Yes	Y	1	1.2	3	-1				
9	1.2 D + 1.0 W 210	Yes	Y	1	1.2	4	-1				
10	1.2 D + 1.0 W 240	Yes	Y	1	1.2	5	-1				
11	1.2 D + 1.0 W 270	Yes	Y	1	1.2	6	-1				
12	1.2 D + 1.0 W 300	Yes	Y	1	1.2	7	-1				
13	1.2 D + 1.0 W 330	Yes	Y	1	1.2	8	-1				
14	1.2 D + 1.0 I + 1.0 W/I 0	Yes	Y	1	1.2	2	1	9	1		
15	1.2 D + 1.0 I + 1.0 W/I 30	Yes	Y	1	1.2	2	1	10	1		
16	1.2 D + 1.0 I + 1.0 W/I 60	Yes	Y	1	1.2	2	1	11	1		
17	1.2 D + 1.0 I + 1.0 W/I 90	Yes	Y	1	1.2	2	1	12	1		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
18	1.2 D + 1.0 I + 1.0 W/I 120	Yes	Y	1	1.2	2	1	13	1		
19	1.2 D + 1.0 I + 1.0 W/I 150	Yes	Y	1	1.2	2	1	14	1		
20	1.2 D + 1.0 I + 1.0 W/I 180	Yes	Y	1	1.2	2	1	9	-1		
21	1.2 D + 1.0 I + 1.0 W/I 210	Yes	Y	1	1.2	2	1	10	-1		
22	1.2 D + 1.0 I + 1.0 W/I 240	Yes	Y	1	1.2	2	1	11	-1		
23	1.2 D + 1.0 I + 1.0 W/I 270	Yes	Y	1	1.2	2	1	12	-1		
24	1.2 D + 1.0 I + 1.0 W/I 300	Yes	Y	1	1.2	2	1	13	-1		
25	1.2 D + 1.0 I + 1.0 W/I 330	Yes	Y	1	1.2	2	1	14	-1		
26	1.2 D + 1.5 LV1	Yes	Y	1	1.2	15	1.5				
27	1.2 D + 1.5 LV2	Yes	Y	1	1.2	16	1.5				
28	1.2 D + 1.5 LV3	Yes	Y	1	1.2	17	1.5				
29	1.2 D + 1.5 LV4	Yes	Y	1	1.2	18	1.5				
30	1.2 D + 1.5 LV5	Yes	Y	1	1.2	19	1.5				
31	1.2 D + 1.5 LV6	Yes	Y	1	1.2	20	1.5				
32	1.2 D + 1.5 LV7	Yes	Y	1	1.2	21	1.5				
33	1.2 D + 1.5 LV8	Yes	Y	1	1.2	22	1.5				
34	1.2 D + 1.5 LV9	Yes	Y	1	1.2	23	1.5				
35	1.2 D + 1.5 LV10	Yes	Y	1	1.2	24	1.5				
36	1.2 D + 1.5 LV11	Yes	Y	1	1.2	25	1.5				
37	1.2 D + 1.5 LV12	Yes	Y	1	1.2	26	1.5				
38	1.2 D + 1.5 LV13	Yes	Y	1	1.2	27	1.5				
39	1.2 D + 1.5 LV14	Yes	Y	1	1.2	28	1.5				
40	1.2 D + 1.5 LV15	Yes	Y	1	1.2	29	1.5				
41	1.2 D + 1.5 LV16	Yes	Y	1	1.2	30	1.5				
42	1.2 D + 1.5 LV17	Yes	Y	1	1.2	31	1.5				
43	1.2 D + 1.5 LV18	Yes	Y	1	1.2	32	1.5				
44	1.2 D + 1.5 LV19	Yes	Y	1	1.2	33	1.5				
45	1.2 D + 1.5 LV20	Yes	Y	1	1.2	34	1.5				
46	1.2 D + 1.5 LV21	Yes	Y	1	1.2	35	1.5				
47	1.2 D + 1.5 LV22	Yes	Y	1	1.2	36	1.5				
48	1.2 D + 1.5 LV23	Yes	Y	1	1.2	37	1.5				
49	1.2 D + 1.5 LV24	Yes	Y	1	1.2	38	1.5				
50	1.2 D + 1.5 LV25	Yes	Y	1	1.2	39	1.5				
51	1.2 D + 1.5 LV26	Yes	Y	1	1.2	40	1.5				
52	1.2 D + 1.5 LV27	Yes	Y	1	1.2	41	1.5				
53	1.2 D + 1.5 LV28	Yes	Y	1	1.2	42	1.5				
54	1.2 D + 1.5 LV29	Yes	Y	1	1.2	43	1.5				
55	1.2 D + 1.5 LV30	Yes	Y	1	1.2	44	1.5				
56	1.2 D + 1.5 LM1 + 1.0 W 0 (Maintenance)	Yes	Y	1	1.2	45	1.5	3	0.063		
57	1.2 D + 1.5 LM1 + 1.0 W 30 (Maintenance)	Yes	Y	1	1.2	45	1.5	4	0.063		
58	1.2 D + 1.5 LM1 + 1.0 W 60 (Maintenance)	Yes	Y	1	1.2	45	1.5	5	0.063		
59	1.2 D + 1.5 LM1 + 1.0 W 90 (Maintenance)	Yes	Y	1	1.2	45	1.5	6	0.063		
60	1.2 D + 1.5 LM1 + 1.0 W 120 (Maintenance)	Yes	Y	1	1.2	45	1.5	7	0.063		
61	1.2 D + 1.5 LM1 + 1.0 W 150 (Maintenance)	Yes	Y	1	1.2	45	1.5	8	0.063		
62	1.2 D + 1.5 LM1 + 1.0 W 180 (Maintenance)	Yes	Y	1	1.2	45	1.5	3	-0.063		
63	1.2 D + 1.5 LM1 + 1.0 W 210 (Maintenance)	Yes	Y	1	1.2	45	1.5	4	-0.063		
64	1.2 D + 1.5 LM1 + 1.0 W 240 (Maintenance)	Yes	Y	1	1.2	45	1.5	5	-0.063		
65	1.2 D + 1.5 LM1 + 1.0 W 270 (Maintenance)	Yes	Y	1	1.2	45	1.5	6	-0.063		
66	1.2 D + 1.5 LM1 + 1.0 W 300 (Maintenance)	Yes	Y	1	1.2	45	1.5	7	-0.063		
67	1.2 D + 1.5 LM1 + 1.0 W 330 (Maintenance)	Yes	Y	1	1.2	45	1.5	8	-0.063		
68	1.2 D + 1.5 LM2 + 1.0 W 0 (Maintenance)	Yes	Y	1	1.2	46	1.5	3	0.063		
69	1.2 D + 1.5 LM2 + 1.0 W 30 (Maintenance)	Yes	Y	1	1.2	46	1.5	4	0.063		
70	1.2 D + 1.5 LM2 + 1.0 W 60 (Maintenance)	Yes	Y	1	1.2	46	1.5	5	0.063		
71	1.2 D + 1.5 LM2 + 1.0 W 90 (Maintenance)	Yes	Y	1	1.2	46	1.5	6	0.063		
72	1.2 D + 1.5 LM2 + 1.0 W 120 (Maintenance)	Yes	Y	1	1.2	46	1.5	7	0.063		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
73	1.2 D + 1.5 LM2 + 1.0 W 150 (Maintenance)	Yes	Y	1	1.2	46	1.5	8	0.063		
74	1.2 D + 1.5 LM2 + 1.0 W 180 (Maintenance)	Yes	Y	1	1.2	46	1.5	3	-0.063		
75	1.2 D + 1.5 LM2 + 1.0 W 210 (Maintenance)	Yes	Y	1	1.2	46	1.5	4	-0.063		
76	1.2 D + 1.5 LM2 + 1.0 W 240 (Maintenance)	Yes	Y	1	1.2	46	1.5	5	-0.063		
77	1.2 D + 1.5 LM2 + 1.0 W 270 (Maintenance)	Yes	Y	1	1.2	46	1.5	6	-0.063		
78	1.2 D + 1.5 LM2 + 1.0 W 300 (Maintenance)	Yes	Y	1	1.2	46	1.5	7	-0.063		
79	1.2 D + 1.5 LM2 + 1.0 W 330 (Maintenance)	Yes	Y	1	1.2	46	1.5	8	-0.063		
80	1.2 D + 1.5 LM3 + 1.0 W 0 (Maintenance)	Yes	Y	1	1.2	47	1.5	3	0.063		
81	1.2 D + 1.5 LM3 + 1.0 W 30 (Maintenance)	Yes	Y	1	1.2	47	1.5	4	0.063		
82	1.2 D + 1.5 LM3 + 1.0 W 60 (Maintenance)	Yes	Y	1	1.2	47	1.5	5	0.063		
83	1.2 D + 1.5 LM3 + 1.0 W 90 (Maintenance)	Yes	Y	1	1.2	47	1.5	6	0.063		
84	1.2 D + 1.5 LM3 + 1.0 W 120 (Maintenance)	Yes	Y	1	1.2	47	1.5	7	0.063		
85	1.2 D + 1.5 LM3 + 1.0 W 150 (Maintenance)	Yes	Y	1	1.2	47	1.5	8	0.063		
86	1.2 D + 1.5 LM3 + 1.0 W 180 (Maintenance)	Yes	Y	1	1.2	47	1.5	3	-0.063		
87	1.2 D + 1.5 LM3 + 1.0 W 210 (Maintenance)	Yes	Y	1	1.2	47	1.5	4	-0.063		
88	1.2 D + 1.5 LM3 + 1.0 W 240 (Maintenance)	Yes	Y	1	1.2	47	1.5	5	-0.063		
89	1.2 D + 1.5 LM3 + 1.0 W 270 (Maintenance)	Yes	Y	1	1.2	47	1.5	6	-0.063		
90	1.2 D + 1.5 LM3 + 1.0 W 300 (Maintenance)	Yes	Y	1	1.2	47	1.5	7	-0.063		
91	1.2 D + 1.5 LM3 + 1.0 W 330 (Maintenance)	Yes	Y	1	1.2	47	1.5	8	-0.063		
92	1.2 D + 1.5 LM4 + 1.0 W 0 (Maintenance)	Yes	Y	1	1.2	48	1.5	3	0.063		
93	1.2 D + 1.5 LM4 + 1.0 W 30 (Maintenance)	Yes	Y	1	1.2	48	1.5	4	0.063		
94	1.2 D + 1.5 LM4 + 1.0 W 60 (Maintenance)	Yes	Y	1	1.2	48	1.5	5	0.063		
95	1.2 D + 1.5 LM4 + 1.0 W 90 (Maintenance)	Yes	Y	1	1.2	48	1.5	6	0.063		
96	1.2 D + 1.5 LM4 + 1.0 W 120 (Maintenance)	Yes	Y	1	1.2	48	1.5	7	0.063		
97	1.2 D + 1.5 LM4 + 1.0 W 150 (Maintenance)	Yes	Y	1	1.2	48	1.5	8	0.063		
98	1.2 D + 1.5 LM4 + 1.0 W 180 (Maintenance)	Yes	Y	1	1.2	48	1.5	3	-0.063		
99	1.2 D + 1.5 LM4 + 1.0 W 210 (Maintenance)	Yes	Y	1	1.2	48	1.5	4	-0.063		
100	1.2 D + 1.5 LM4 + 1.0 W 240 (Maintenance)	Yes	Y	1	1.2	48	1.5	5	-0.063		
101	1.2 D + 1.5 LM4 + 1.0 W 270 (Maintenance)	Yes	Y	1	1.2	48	1.5	6	-0.063		
102	1.2 D + 1.5 LM4 + 1.0 W 300 (Maintenance)	Yes	Y	1	1.2	48	1.5	7	-0.063		
103	1.2 D + 1.5 LM4 + 1.0 W 330 (Maintenance)	Yes	Y	1	1.2	48	1.5	8	-0.063		
104	1.2 D + 1.5 LM5 + 1.0 W 0 (Maintenance)	Yes	Y	1	1.2	49	1.5	3	0.063		
105	1.2 D + 1.5 LM5 + 1.0 W 30 (Maintenance)	Yes	Y	1	1.2	49	1.5	4	0.063		
106	1.2 D + 1.5 LM5 + 1.0 W 60 (Maintenance)	Yes	Y	1	1.2	49	1.5	5	0.063		
107	1.2 D + 1.5 LM5 + 1.0 W 90 (Maintenance)	Yes	Y	1	1.2	49	1.5	6	0.063		
108	1.2 D + 1.5 LM5 + 1.0 W 120 (Maintenance)	Yes	Y	1	1.2	49	1.5	7	0.063		
109	1.2 D + 1.5 LM5 + 1.0 W 150 (Maintenance)	Yes	Y	1	1.2	49	1.5	8	0.063		
110	1.2 D + 1.5 LM5 + 1.0 W 180 (Maintenance)	Yes	Y	1	1.2	49	1.5	3	-0.063		
111	1.2 D + 1.5 LM5 + 1.0 W 210 (Maintenance)	Yes	Y	1	1.2	49	1.5	4	-0.063		
112	1.2 D + 1.5 LM5 + 1.0 W 240 (Maintenance)	Yes	Y	1	1.2	49	1.5	5	-0.063		
113	1.2 D + 1.5 LM5 + 1.0 W 270 (Maintenance)	Yes	Y	1	1.2	49	1.5	6	-0.063		
114	1.2 D + 1.5 LM5 + 1.0 W 300 (Maintenance)	Yes	Y	1	1.2	49	1.5	7	-0.063		
115	1.2 D + 1.5 LM5 + 1.0 W 330 (Maintenance)	Yes	Y	1	1.2	49	1.5	8	-0.063		
116	1.2 D + 1.5 LM6 + 1.0 W 0 (Maintenance)	Yes	Y	1	1.2	50	1.5	3	0.063		
117	1.2 D + 1.5 LM6 + 1.0 W 30 (Maintenance)	Yes	Y	1	1.2	50	1.5	4	0.063		
118	1.2 D + 1.5 LM6 + 1.0 W 60 (Maintenance)	Yes	Y	1	1.2	50	1.5	5	0.063		
119	1.2 D + 1.5 LM6 + 1.0 W 90 (Maintenance)	Yes	Y	1	1.2	50	1.5	6	0.063		
120	1.2 D + 1.5 LM6 + 1.0 W 120 (Maintenance)	Yes	Y	1	1.2	50	1.5	7	0.063		
121	1.2 D + 1.5 LM6 + 1.0 W 150 (Maintenance)	Yes	Y	1	1.2	50	1.5	8	0.063		
122	1.2 D + 1.5 LM6 + 1.0 W 180 (Maintenance)	Yes	Y	1	1.2	50	1.5	3	-0.063		
123	1.2 D + 1.5 LM6 + 1.0 W 210 (Maintenance)	Yes	Y	1	1.2	50	1.5	4	-0.063		
124	1.2 D + 1.5 LM6 + 1.0 W 240 (Maintenance)	Yes	Y	1	1.2	50	1.5	5	-0.063		
125	1.2 D + 1.5 LM6 + 1.0 W 270 (Maintenance)	Yes	Y	1	1.2	50	1.5	6	-0.063		
126	1.2 D + 1.5 LM6 + 1.0 W 300 (Maintenance)	Yes	Y	1	1.2	50	1.5	7	-0.063		
127	1.2 D + 1.5 LM6 + 1.0 W 330 (Maintenance)	Yes	Y	1	1.2	50	1.5	8	-0.063		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
128	1.2 D + 1.0 Ev + 1.0 Eh 0	Yes	Y	1	1.2	1	0.043	51	0.108	52	
129	1.2 D + 1.0 Ev + 1.0 Eh 30	Yes	Y	1	1.2	1	0.043	51	0.093	52	0.054
130	1.2 D + 1.0 Ev + 1.0 Eh 60	Yes	Y	1	1.2	1	0.043	51	0.054	52	0.093
131	1.2 D + 1.0 Ev + 1.0 Eh 90	Yes	Y	1	1.2	1	0.043	51		52	0.108
132	1.2 D + 1.0 Ev + 1.0 Eh 120	Yes	Y	1	1.2	1	0.043	51	-0.054	52	0.093
133	1.2 D + 1.0 Ev + 1.0 Eh 150	Yes	Y	1	1.2	1	0.043	51	-0.093	52	0.054
134	1.2 D + 1.0 Ev + 1.0 Eh 180	Yes	Y	1	1.2	1	0.043	51	-0.108	52	
135	1.2 D + 1.0 Ev + 1.0 Eh 210	Yes	Y	1	1.2	1	0.043	51	-0.093	52	-0.054
136	1.2 D + 1.0 Ev + 1.0 Eh 240	Yes	Y	1	1.2	1	0.043	51	-0.054	52	-0.093
137	1.2 D + 1.0 Ev + 1.0 Eh 270	Yes	Y	1	1.2	1	0.043	51		52	-0.108
138	1.2 D + 1.0 Ev + 1.0 Eh 300	Yes	Y	1	1.2	1	0.043	51	0.054	52	-0.093
139	1.2 D + 1.0 Ev + 1.0 Eh 330	Yes	Y	1	1.2	1	0.043	51	0.093	52	-0.054
140	0.9 D - 1.0 Ev + 1.0 Eh 0	Yes	Y	1	0.9	1	-0.043	51	0.108	52	
141	0.9 D - 1.0 Ev + 1.0 Eh 30	Yes	Y	1	0.9	1	-0.043	51	0.093	52	0.054
142	0.9 D - 1.0 Ev + 1.0 Eh 60	Yes	Y	1	0.9	1	-0.043	51	0.054	52	0.093
143	0.9 D - 1.0 Ev + 1.0 Eh 90	Yes	Y	1	0.9	1	-0.043	51		52	0.108
144	0.9 D - 1.0 Ev + 1.0 Eh 120	Yes	Y	1	0.9	1	-0.043	51	-0.054	52	0.093
145	0.9 D - 1.0 Ev + 1.0 Eh 150	Yes	Y	1	0.9	1	-0.043	51	-0.093	52	0.054
146	0.9 D - 1.0 Ev + 1.0 Eh 180	Yes	Y	1	0.9	1	-0.043	51	-0.108	52	
147	0.9 D - 1.0 Ev + 1.0 Eh 210	Yes	Y	1	0.9	1	-0.043	51	-0.093	52	-0.054
148	0.9 D - 1.0 Ev + 1.0 Eh 240	Yes	Y	1	0.9	1	-0.043	51	-0.054	52	-0.093
149	0.9 D - 1.0 Ev + 1.0 Eh 270	Yes	Y	1	0.9	1	-0.043	51		52	-0.108
150	0.9 D - 1.0 Ev + 1.0 Eh 300	Yes	Y	1	0.9	1	-0.043	51	0.054	52	-0.093
151	0.9 D - 1.0 Ev + 1.0 Eh 330	Yes	Y	1	0.9	1	-0.043	51	0.093	52	-0.054

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

	Member	Shape	Code Check	Loc[in]	LC	Shear Check	Loc[in]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
0	M10	PIPE_4.0	0	9	25	0	9		10	92571.332	93240	10631.25	10631.25	1	H1-1b*
1	M11	PIPE_4.0	0.424	75	103	0.133	75		103	56563.475	93240	10631.25	10631.25	1	H1-1b
2	M12	PIPE_2.0	0.594	60.938	8	0.294	98.438		2	6295.422	32130	1871.625	1871.625	1	H3-6
3	M13	PIPE_2.0	0.68	60	92	0.112	36		103	14916.096	32130	1871.625	1871.625	1	H1-1b
4	M14	PIPE_2.0	0.917	41.625	8	0.142	42.75		99	12143.947	32130	1871.625	1871.625	1	H1-1b
5	M15	PIPE_2.0	0.554	60	62	0.101	60		56	14916.096	32130	1871.625	1871.625	1	H1-1b
6	M16	PIPE_2.0	0.394	60	67	0.175	60		2	14916.096	32130	1871.625	1871.625	1	H1-1b
7	M17	L2.5X2.5X3	0.266	35.715	2	0.024	69.971	z	13	9658.669	29192.4	872.574	1544.939	1.136	H2-1
8	M18	L2.5X2.5X3	0.213	35.715	2	0.015	69.971	y	100	9658.669	29192.4	872.574	1544.939	1.136	H2-1
9	M19	HSS4X4X4	0.475	33	7	0.284	33	y	103	135171.43	139518	16180.5	16180.5	1.591	H1-1b

Envelope Node Reactions

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
0	N30	max	1667.981	2	68.436	20	804.021	57	1.194	61	0	151	2.088	8
1		min	-2039.821	8	13.239	2	-1057.025	99	-1.568	103	0	1	-1.744	2
2	N26	max	920.826	2	2019.422	14	1205.424	6	2289.522	61	4805.246	12	5585.484	20
3		min	-548.975	8	723.778	147	-942.978	12	-3253.649	103	-4789.495	6	1960.993	140
4	Totals:	max	2588.807	2	2081.166	18	1293.246	6						
5		min	-2588.796	8	740.59	150	-1293.248	12						

APPENDIX D

ADDITIONAL CALCULATIONS

P. Marshall Associates, LLC
1000 Holcomb Woods Pkwy, Suite 210
Roswell, GA 30076
(678) 280-2325

Outrigger Connection Check

Location: **Outrigger Arm Connection at 137 ft**
Code: **ANSI/TIA-222-H**
Bolt Info: **(4) 0.625 in. dia. bolts, grade A325N**
Plate Info: **8 in. x 8 in. x 0.75 in., 36/58 ksi steel plate**

Maximum Connection Reactions

Tension	549	lbs
Vertical Shear	2022	lbs
Horizontal Shear	1205	lbs
Torsion	3254	lb-ft
Vertical Moment	5585	lb-ft
Horizontal Moment	4805	lb-ft

Combined Tension & Shear

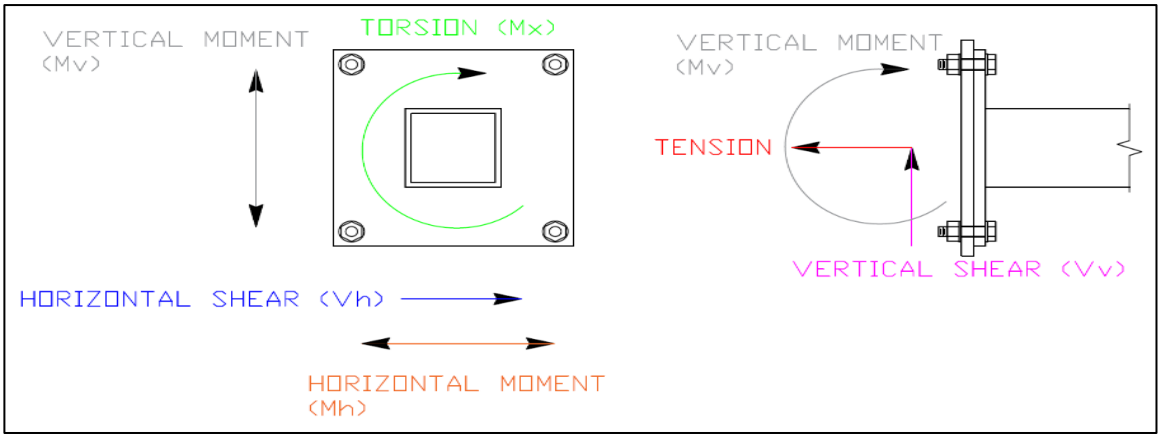
φR_{nt}	21.18	kips/bolt
φR_{nv}	27.63	kips/bolt
Capacity	25.7%	

Block Shear Strength

φ Rn (Vertical)	134.24	kips
φ Rn (Horizontal)	134.24	kips
Capacity	1.5%	

Bearing Strength

φ Rn	102.77	kips
Lc	0.66	in
Capacity	2.0%	



Overall Capacity Usage: 25.7% PASS

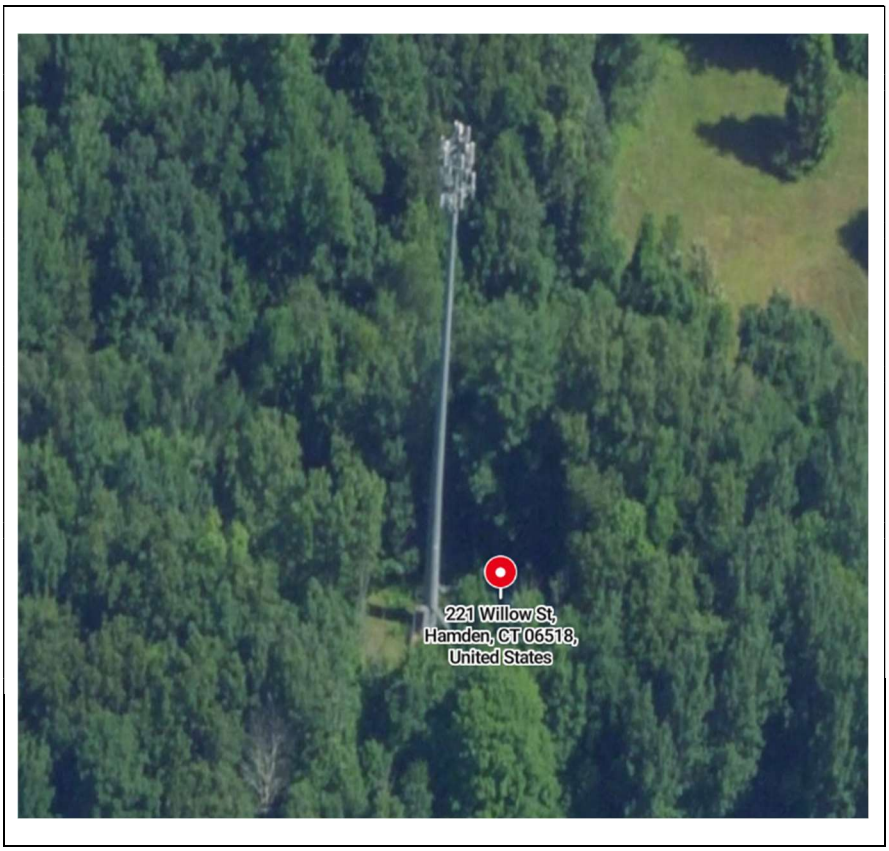
CENTERLINE

EXHIBIT G

Power Density/RF Emissions Report

Radio Frequency – Electromagnetic Energy (RF-EME) Site Compliance Report

T-Mobile Monopole Facility
September 11, 2024
Analysis Format: Theoretical Calculations



Statement of Compliance

T-Mobile will be compliant with FCC Regulations once the mitigation measures recommended in this report are implemented.

Site ID: CTNH442A
Site Name: CTNH442A replacement for CTNH221A
150 Willow St, Hamden, CT 06518

Table of Contents

1. Overview

Centerline has been contracted to provide a Radio Frequency (RF) analysis for the following T-Mobile facility to certify compliance with federal standards and regulations regarding RF exposure. This analysis includes theoretical exposure calculations for all existing and/or proposed equipment for T-Mobile and any other licensees based on the provided data.

Analysis Site Data

Site ID:	CTNH442A
Site Name:	CTNH442A replacement for CTNH221A
Site Address:	150 Willow St, Hamden, CT 06518
Site Latitude:	41.449392
Site Longitude:	-72.904572
Facility Type:	Monopole

Compliance Summary

Status:	Compliant upon mitigation
Maximum Calculated T-Mobile MPE Level on Site (General Population Limit):	2.32%
Maximum Calculated Composite MPE Level on Site (General Population Limit):	2.32%
Maximum Calculated T-Mobile MPE Level at Ground (General Population Limit):	2.32%
Maximum Calculated Composite MPE Level at Ground (General Population Limit):	2.32%

Site Data Information

CD:	CTNH442A_A and E_CDs_Anchor_CD_REV0_06122024
RFDS:	CTNH442A_RF_PRELIM_RFDS_67D5D998E_Anchor_5_draft_2024-04-05

2. Site Antenna Data Table

Antenna ID	Operator	Antenna Make	Antenna Model	Tech & Frequency Band (MHz)	TX Power (watts)	TX #	Gain (dBd)	ERP (watts)	Az (°)	Antenna Centerline Height (ft)
1	T-Mobile	ERICSSON	SON_AIR6419	N2500	40	2	15.55	2153.53	0	137
1	T-Mobile	ERICSSON	SON_AIR6419	N2500	120	2	22.05	28858.42	0	137
2	T-Mobile	RFS	APXVAALL24 43-U-NA20	L700	40	4	13.65	3707.83	0	137
2	T-Mobile	RFS	APXVAALL24 43-U-NA20	N600	40	4	12.95	3155.88	0	137
3	T-Mobile	RFS	APXVLL19P_43-C-A20	G1900	10	2	16.24	841.45	0	137
3	T-Mobile	RFS	APXVLL19P_43-C-A20	L1900	35	4	16.24	5890.17	0	137
3	T-Mobile	RFS	APXVLL19P_43-C-A20	N1900	40	4	16.24	6731.63	0	137
3	T-Mobile	RFS	APXVLL19P_43-C-A20	L2100	60	4	17.33	12978.10	0	137
4	T-Mobile	ERICSSON	SON_AIR6419	N2500	40	2	15.55	2153.53	120	137
4	T-Mobile	ERICSSON	SON_AIR6419	N2500	120	2	22.05	28858.42	120	137
5	T-Mobile	RFS	APXVAALL24 43-U-NA20	L700	40	4	13.65	3707.83	120	137
5	T-Mobile	RFS	APXVAALL24 43-U-NA20	N600	40	4	12.95	3155.88	120	137
6	T-Mobile	RFS	APXVLL19P_43-C-A20	G1900	10	2	16.24	841.45	120	137
6	T-Mobile	RFS	APXVLL19P_43-C-A20	L1900	35	4	16.24	5890.17	120	137
6	T-Mobile	RFS	APXVLL19P_43-C-A20	N1900	40	4	16.24	6731.63	120	137
6	T-Mobile	RFS	APXVLL19P_43-C-A20	L2100	60	4	17.33	12978.10	120	137
7	T-Mobile	ERICSSON	SON_AIR6419	N2500	40	2	15.55	2153.53	240	137
7	T-Mobile	ERICSSON	SON_AIR6419	N2500	120	2	22.05	28858.42	240	137
8	T-Mobile	RFS	APXVAALL24 43-U-NA20	L700	40	4	13.65	3707.83	240	137
8	T-Mobile	RFS	APXVAALL24 43-U-NA20	N600	40	4	12.95	3155.88	240	137
9	T-Mobile	RFS	APXVLL19P_43-C-A20	G1900	10	2	16.24	841.45	240	137
9	T-Mobile	RFS	APXVLL19P_43-C-A20	L1900	35	4	16.24	5890.17	240	137
9	T-Mobile	RFS	APXVLL19P_43-C-A20	N1900	40	4	16.24	6731.63	240	137
9	T-Mobile	RFS	APXVLL19P_43-C-A20	L2100	60	4	17.33	12978.10	240	137
10	Verizon	AMPHENOL	LPA-80080-4CF	850	0	0	12.5	0 (Not in Use)	0	145
11	Verizon	COMMSCOPE	JAHH-65B-R3B	700	40	2	12.11	1300.44	0	145
11	Verizon	COMMSCOPE	JAHH-65B-R3B	850	40	2	12.81	1527.88	0	145
11	Verizon	COMMSCOPE	JAHH-65B-R3B	1900	40	4	15.72	5972.00	0	145
12	Verizon	COMMSCOPE	JAHH-65B-R3B	700	40	2	12.11	1300.44	0	145
12	Verizon	COMMSCOPE	JAHH-65B-R3B	850	40	2	12.81	1527.88	0	145
12	Verizon	COMMSCOPE	JAHH-65B-R3B	2100	40	4	15.71	5958.27	0	145
13	Verizon	AMPHENOL	LPA-80080-4CF	850	0	0	12.5	0 (Not in Use)	0	145
14	Verizon	Samsung	SON_MT6407	3700	100	2	23.45	44261.89	0	145
15	Verizon	AMPHENOL	LPA-80080-4CF	850	0	0	12.5	0 (Not in Use)	120	145
16	Verizon	COMMSCOPE	JAHH-65B-R3B	700	40	2	12.11	1300.44	120	145
16	Verizon	COMMSCOPE	JAHH-65B-R3B	850	40	2	12.81	1527.88	120	145
16	Verizon	COMMSCOPE	JAHH-65B-R3B	1900	40	4	15.72	5972.00	120	145
17	Verizon	COMMSCOPE	JAHH-65B-R3B	700	40	2	12.11	1300.44	120	145

17	Verizon	COMMSCOPE	JAHH-65B-R3B	850	40	2	12.81	1527.88	120	145
17	Verizon	COMMSCOPE	JAHH-65B-R3B	2100	40	4	15.71	5958.27	120	145
18	Verizon	AMPHENOL	LPA-80080-4CF	850	0	0	12.5	0 (Not in Use)	120	145
19	Verizon	Samsung	SON_MT6407	3700	100	2	23.45	44261.89	120	145
20	Verizon	AMPHENOL	LPA-80080-4CF	850	0	0	12.5	0 (Not in Use)	240	145
21	Verizon	COMMSCOPE	JAHH-65B-R3B	700	40	2	12.11	1300.44	240	145
21	Verizon	COMMSCOPE	JAHH-65B-R3B	850	40	2	12.81	1527.88	240	145
21	Verizon	COMMSCOPE	JAHH-65B-R3B	1900	40	4	15.72	5972.00	240	145
22	Verizon	COMMSCOPE	JAHH-65B-R3B	700	40	2	12.11	1300.44	240	145
22	Verizon	COMMSCOPE	JAHH-65B-R3B	850	40	2	12.81	1527.88	240	145
22	Verizon	COMMSCOPE	JAHH-65B-R3B	2100	40	4	15.71	5958.27	240	145
23	Verizon	AMPHENOL	LPA-80080-4CF	850	0	0	12.5	0 (Not in Use)	240	145
24	Verizon	Samsung	SON_MT6407	3700	100	2	23.45	44261.89	240	145

The 2500 frequencies are calculated using the input powers listed above with a 75% duty cycle applied.

3. RF Exposure Diagrams

Ground (0ft.)

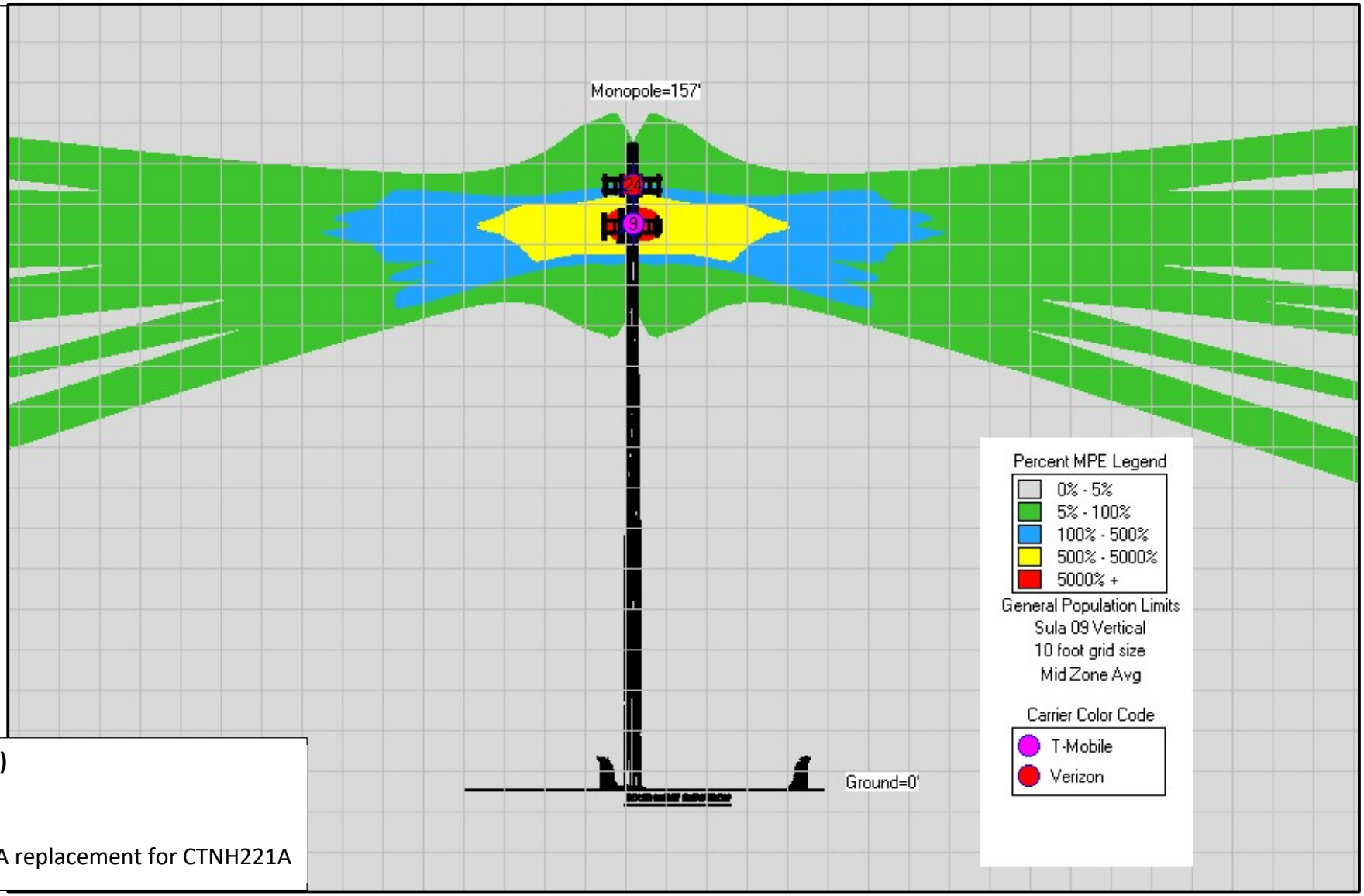
Exposure Thresholds for:

CTNH442A / CTNH442A replacement for CTNH221A

Antenna Level (134ft.)

Exposure Thresholds for:

CTNH442A / CTNH442A replacement for CTNH221A



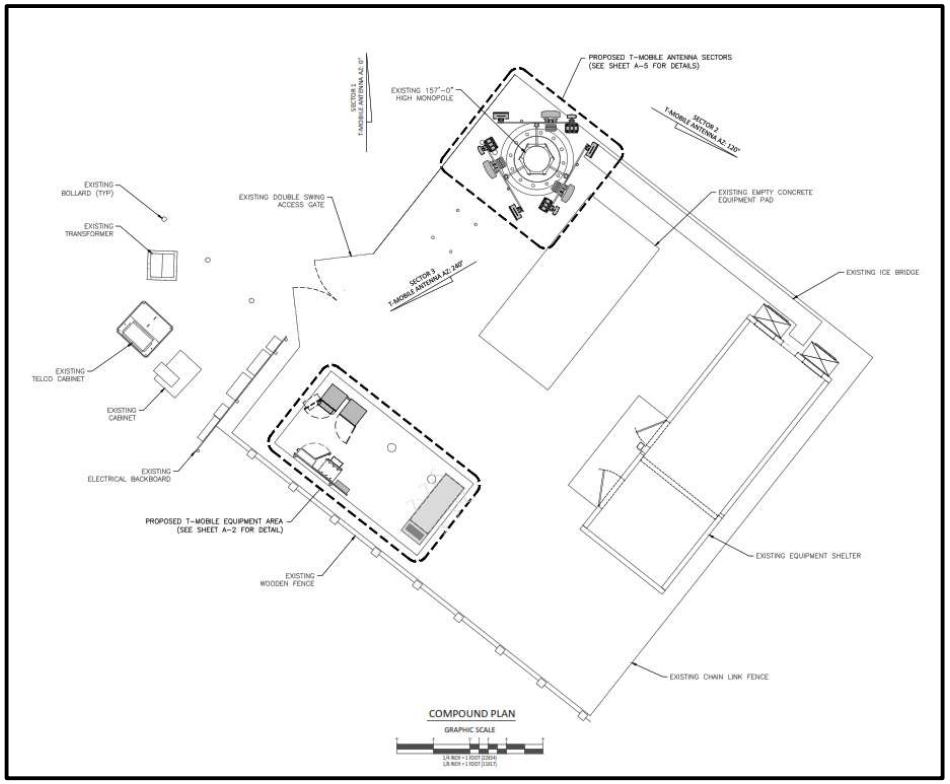
Elevation View (134ft.)

Exposure Thresholds for:

CTNH442A / CTNH442A replacement for CTNH221A

4. Mitigation Diagram

Monopole Base



Existing Item

Proposed Item

Signage Count									
	1		0		1		0		1

Signage Diagram

Signage for:

CTNH442A / CTNH442A replacement for CTNH221A

5. Results

Calculations performed based upon the data provided for this facility have produced the results shown below:

Maximum Calculated T-Mobile MPE Level on Site:	% of MPE Limit:
Accessible **General Population** MPE Limits:	**2.32%**
Accessible **Occupational** MPE Limits:	**0.46%**

Maximum Calculated Composite MPE Level on Site:	% of MPE Limit:
Accessible **General Population** MPE Limits:	**2.32%**
Accessible **Occupational** MPE Limits:	**0.46%**

Maximum Calculated T-Mobile MPE Level at Ground:	% of MPE Limit:
Accessible **General Population** MPE Limits:	**2.32%**
Accessible **Occupational** MPE Limits:	**0.46%**

Maximum Calculated Composite MPE Level at Ground:	% of MPE Limit:
Accessible **General Population** MPE Limits:	**2.32%**
Accessible **Occupational** MPE Limits:	**0.46%**

6. Compliance Actions

Access	• Install (1) Guideline sign at the base of the monopole. • Install (1) Caution sign at the base of the monopole. • Install (1) Emergency sign at the base of the monopole.
Alpha Sector	• No Action Needed.
Beta Sector	• No Action Needed.
Gamma Sector	• No Action Needed.
Notes	• If there is a fixed climbing point located on this site, a Guideline, Emergency and Caution sign should be installed at that location.

Appendix A: RF Signage Description Table

Sign	Description
	**RF Guideline Sign** Gives guidelines on how to proceed in areas that may exceed either the FCC's General Population or Occupational exposure limits.
	**Information Sign** Informational Sign to be posted at access points.
	**Blue Notice Sign** Used to inform individuals that they are entering an area that may exceed the FCC's General Population limits. It must be placed so it is visible from all approachable sides. It must also be just outside of the area predicted to exceed the MPE limits so it can be read without standing within the affected area.
	**Yellow Caution Sign** Used to inform individuals that they are entering an area that may exceed either the FCC's General Population or Occupational exposure limits. It must be placed so it is visible from all approachable sides. It must also be just outside of the area predicted to exceed the MPE limits so it can be read without standing within the affected area.
	**Orange Warning Sign** Used to inform individuals that they are entering an area that may exceed 10x the FCC's Occupational exposure limit. It must be placed so it is visible from all approachable sides. It must also be just outside of the area predicted to exceed the MPE limits so it can be read without standing within the affected area.

Appendix B: FCC Guidelines and Exposure Threshold Limits

All information used in this report was analyzed as a percentage of the Maximum Permissible Exposure (% MPE) limits as detailed in 47 CFR § 1.1310 as well as Federal Communications Commission (FCC) OET Bulletin 65 Edition 97-01. The FCC MPE limits are typically expressed in units of milliwatts per square centimeter (mW/cm^2) or microwatts per square centimeter ($\mu W/cm^2$). The exposure limits vary depending upon the frequencies being utilized. The General Population/Uncontrolled MPE limit (in mW/cm^2) for frequencies between 300 and 1500 is defined as frequency (in MHz) divided by 1500 ($f_{MHz}/1500$). Frequencies between 1500 and 100,000 MHz have a General Population/Uncontrolled MPE limit of 1 mW/cm^2 (1000 $\mu W/cm^2$). The calculated power density at each sample point divided by the limit at each calculated frequency provides a result in % MPE. Summing the calculated % MPE from all contributors provides a cumulative % MPE at a particular sample point. Because exposure limits may vary for each frequency band, it is necessary to report % MPE rather than power density.

All results were compared to the FCC radio frequency exposure rules as detailed in 47 CFR § 1.1307(b) to determine compliance with the 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.

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, 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.

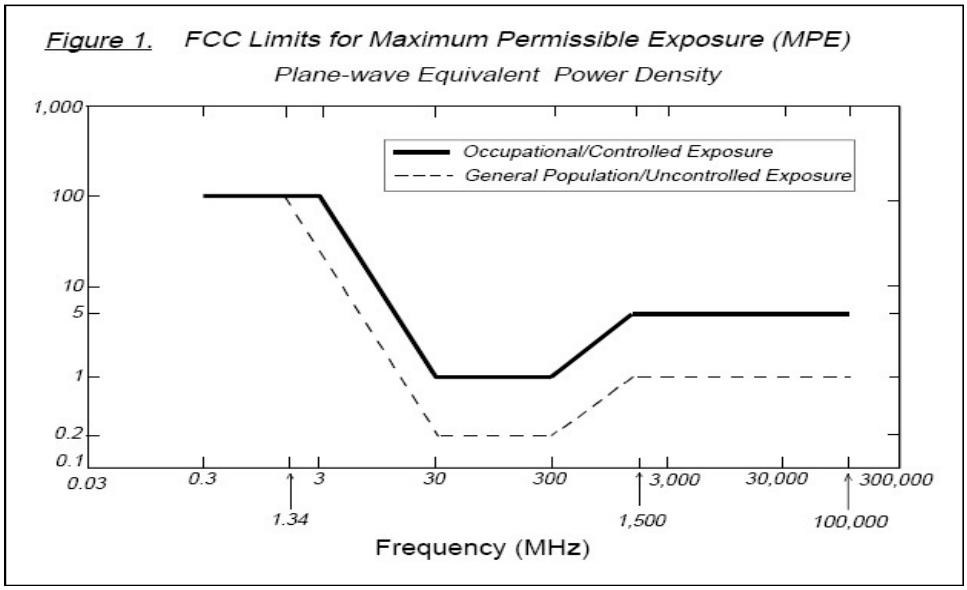
The FCC mandates that if a site is found to be out of compliance with regard to exposure, any system operator contributing 5% or more to areas exceeding the FCC's allowable limits will be responsible for bringing the site into compliance.

Additional details can be found in FCC OET 65.

Limits for Maximum Permissible Exposure (MPE)				
(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Public/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)

* Plane-wave equivalent power density



Appendix C: Calculation Methodology

Centerline has performed theoretical modeling using Waterford Consultants' RoofMaster™ 2020 Version 40.12.23.2022 which uses a cylindrical model for conservative power density predictions within the near field of the antenna where the antenna pattern has not truly formed yet. Within this area power density values tend to decrease based upon an inverse distance function. At the point where it is appropriate for modeling to change from near-field calculations to far-field calculations the power decreases inversely with the square of the distance. This modeling technique is accurate with low antenna centerlines, such as rooftops, where persons can get close to the antennas and pass through fields in close proximity.

The modeling is based on worst-case assumptions for the number of antennas and transmitter power. No losses were included in the power calculations unless they were specifically provided for the project.

Appendix D: Certifications

I, Michelle Stone, preparer of this report certify that I am fully trained and aware of the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I have been trained in the procedures and requirements outlined in T-Mobile's FCC Regulatory Compliance Manual.

Michelle Stone

9/11/2024

I, Michael Fox, reviewer and approver of this report certify that I am fully trained and aware of the Rules and Regulations of both the Federal Communications Commissions (FCC) and the Occupational Safety and Health Administration (OSHA) with regard to Human Exposure to Radio Frequency Radiation. I have been trained in the procedures and requirements outlined in T-Mobile's FCC Regulatory Compliance Manual.

Michael Fox

9/11/2024

Appendix E: Proprietary Statement

This report was prepared for the use of T-Mobile to meet requirements specified in T-Mobile's corporate RF safety guidelines. It was performed in accordance with generally accepted industry practices. The conclusions provided by Centerline are based solely on the information provided by T-Mobile or its representatives, and all observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to Centerline so that this analysis may be revised, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

CENTERLINE

EXHIBIT H

Mailing Receipts/Proof of Notice

C/O CULLEN MORGAN
9415497263
CENTERLINE COMMUNICATIONS LLC
12579 SAGEWOOD DRIVE
VENICE FL 34293

2 LBS **1 OF 1**

SHIP TO:
HAMDEN FISH & GAME PROTECTIVE ASSN
155 WILLOW STREET
HAMDEN CT 06518-1314

CT 065 2-03

UPS GROUND
TRACKING #: 1Z 9Y4 503 03 1652 9315

BILLING: P/P

Reference # 1: CTNH442A Prop Owner CC

CS 24.9.00. MACNV50 40.0A 09/2024*

TM

Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030316529315
Date: Wednesday, October 9, 2024 at 1:04:46 PM Eastern Daylight Time
From: UPS <pkginfo@ups.com>
To: Cullen Morgan <CMORGAN@CLINELLC.COM>

Hello, your package has been delivered.

Delivery Date: Wednesday, 10/09/2024
Delivery Time: 12:49 PM

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030316529315
Ship To:	HAMDEN FISH & GAME PROTECTIVE ASSN 3000 WHITNEY AVE HAMDEN, CT 06518 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.5 LBS
Reference Number:	CTNH442A PROP OWNER CC

C/O CULLEN MORGAN
941-549-7263
CENTERLINE COMMUNICATIONS LLC
12579 SAGEWOOD DRIVE
VENICE FL 34293

2 LBS **1 OF 1**

SHIP TO:
VERTICAL BRIDGE
SUITE 200
750 PARK OF COMMERCE DRIVE
BOCA RATON FL 33487-3650

FL 332 6-07

UPS GROUND
TRACKING #: 1Z 9Y4 503 03 0326 6301

BILLING: P/P

Reference # 1: CTNH442A Tower Owner CC

CS 24.9.00. MACNV50 40.0A 09/2024*

Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030303266301
Date: Tuesday, October 1, 2024 at 10:13:26 AM Eastern Daylight Time
From: UPS <pkginfo@ups.com>
To: Cullen Morgan <CMORGAN@CLINELLC.COM>

Hello, your package has been delivered.

Delivery Date: Tuesday, 10/01/2024
Delivery Time: 10:11 AM
Signed by: ZANE

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030303266301
Ship To:	VERTICAL BRIDGE 750 PARK OF COMMERCE DRIVE SUITE 200 BOCA RATON, FL 334873650 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.5 LBS
Reference Number:	CTNH442A TOWER OWNER CC

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Read Compass Online

C/O CULLEN MORGAN
9415497263
CENTERLINE COMMUNICATIONS LLC
12579 SAGEWOOD DRIVE
VENICE FL 34293

2 LBS **1 OF 1**

SHIP TO:
ATTN: MAYOR & BUILDING OFFICIAL
TOWN OF HAMDEN
2750 DIXWELL AVENUE
HAMDEN CT 06518-3320

CT 065 2-03

UPS GROUND
TRACKING #: 1Z 9Y4 503 03 0239 4326

BILLING: P/P

Reference # 1: CTNH442A Town & Bldg Offcl CC

CS 24.9.00. MACNV50 40.0A 09/2024*

Subject: UPS Delivery Notification, Tracking Number 1Z9Y45030302394326
Date: Thursday, October 3, 2024 at 2:34:15 PM Eastern Daylight Time
From: UPS <pkginfo@ups.com>
To: Cullen Morgan <CMORGAN@CLINELLC.COM>

Hello, your package has been delivered.

Delivery Date: Thursday, 10/03/2024
Delivery Time: 2:32 PM
Signed by: MAILROOM

CENTERLINE SITE ACQUISITION

Tracking Number:	1Z9Y45030302394326
Ship To:	TOWN OF HAMDEN 2750 DIXWELL AVENUE HAMDEN, CT 065183320 US
Number of Packages:	1
UPS Service:	UPS Ground
Package Weight:	1.5 LBS
Reference Number:	CTNH442A TOWN & BLDG OFFCL CC

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Read Compass Online