NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

January 13, 2025

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

RE: Notice of Exempt Modification
864 Opening Hill Road, Madison CT
Latitude: 41.3573381
Longitude: -72.638773
T-Mobile Site#: CT11394A_Equipment Upgrade

Dear Ms. Bachman:
T-Mobile currently maintains (6) antenna at the 130-foot level of the existing 180-foot self-support tower located at 864 Opening Hill Road, Madison CT. The property and tower are both owned by North Madison Volunteer Fire Co. T-Mobile now intends to remove (3) existing antenna and replace with (3) new 600/700/1900/2100 MHz antenna. The new antennas would be installed at the 130-foot level of the existing tower. This modification includes B2, B5 hardware that is both 4G (LTE), and 5G capable.

T-Mobile Planned Modifications:
Remove: NONE

Remove and Replace:
(3) RR90 Antenna (Remove) – (3) HBXX-9014DS-A2M Antenna 1900/2100 MHz (Replace)
(3) Hybrid 6x12 Fiber lines (Remove) – (3) Hybrid 6x24 Hybrid line (Replace)

Install New:
(3) RRU 4460

Existing to Remain:
(6) 1-5/8" Coax Lines
(3) APXVAARR24_43-U-NA20 600/700 MHZ Antenna
(3) RRU 4449

NORTHEAST SITE SOLUTIONS
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This facility was approved by the Town of Madison Planning and Zoning Commission April 17, 1997. Please see attached.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies §16-50j-73, for construction that constitutes an exempt modification pursuant to R.C.S.A. § 16-50j-72(b)(2). In accordance with R.C.S.A. § 16-50j-73, a copy of this letter is being sent to Peggy Lyons, First Selectwoman and Erin Mannix, Town Planner for the Town of Madison, as well as the property owner and the tower owner.

1. The proposed modifications will not result in an increase in the height of the existing structure.

2. The proposed modifications will not require the extension of the site boundary.

3. The proposed modifications will not increase noise levels at the facility by six decibels or more, or to levels that exceed state and local criteria.

4. The operation of the replacement antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard.

5. The proposed modifications will not cause a change or alteration in the physical or environmental characteristics of the site.

6. The existing structure and its foundation can support the proposed loading.

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

Sincerely,

Denise Sabo
Mobile: 203-435-3640
Fax: 413-521-0558
Office: 4 Angelas Way, Burlington CT 06013
Email: denise@northeastsitesolutions.com

NORTHEAST SITE SOLUTIONS
Turnkey Wireless Development

Attachments:
cc:

Peggy Lyons, First Selectwoman
Town of Madison
8 Campus Drive, Madison CT 06443

Erin Mannix., Town Planner
Town of Madison
8 Campus Drive, Madison CT 06443

Madison Volunteer Fire Co, Tower and property owner
864 Opening Hill Road, Madison CT 06443

Exhibit A

Original Facility Approval

TOWN OF MADISON

CONNECTICUT

LAND USE OFFICE

8 CAMPUS DRIVE
MADISON, CONNECTICUT 06443-2563
(203) 245-5632
FAX (203) 245-5613

MADISON PLANNING AND ZONING COMMISSION

CERTIFICATION OF SPECIAL EXCEPTION PERMIT OR
MODIFICATION OF SPECIAL EXCEPTION PERMIT

APPL. NO.: 97-5D

DATE OF APPROVAL: April 17, 1997

This certifies that on the above date a MODIFICATION OF SPECIAL EXCEPTION PERMIT was granted by the Madison Planning and Zoning Commission to:

OWNER OF RECORD: North Madison Volunteer Fire Department

under the provisions of Sec. 4.7 of the Zoning Regulations of the Town of Madison on property located at:

STREET ADDRESS OR LOCATION: 864 OPENING HILL ROAD

TO ALLOW: Construction of a 180 ft. communications tower to replace existing tower, installation of equipment building and emergency back-up generator waiving requirements of 1) a traffic study; 2) a waste water report and engineering study; and 3) final floor plans for the equipment building. The temporary installation of the "Cell on Wheels" was also approved. This approval is conditioned on plastic slats being placed in the chain link fence to obscure the view of the materials enclosed.

In accordance with Section 4.6 of said Regulations, this approval and permit are conditioned upon completion of all proposed improvements in accordance with approved plans within five years from date of approval, and shall become null and void in the event of failure to complete such improvements within said five year period or any extension thereof granted by the Commission.

Appl.: Owner

William B. Bilcheck
Chairman, Planning and Zoning Commission

Received for Record _____, 19____

at _____ h _____ m

Signature of Town Clerk

FRM.SEPERMIT 6/91

Copy sent May 30, 1997

TOWN OF MADISON

CONNECTICUT

LAND USE OFFICE

8 CAMPUS DRIVE
MADISON, CONNECTICUT 06443-2563
(203) 245-5632
FAX (203) 245-5613

May 24, 1999

CERTIFIED MAIL

North Madison Volunteer Fire Company, Inc.
864 Opening Hill Road
Madison, CT 06443

Re: Application #99-26D: 864 OPENING HILL ROAD. Request for Modification of Special Exception Permit to allow relocation of the site for emergency generator, enlarge the fenced coumpound, change the style of the fence, add landscaping and permit Nextel Communications ands Sprint PCS to install radio equipment shelters inside the enlarged compound.

Gentlemen:

At their regular meeting on May 20, 1999, the Planning and Zoning Commission approved the application above referenced as presented at the meeting.

Before this Modification of Special Exception Permit will become effective, it is necessary to file a Certificate in the Land Records of the Town for which there is a $10.00 filing fee. At your earliest convenience, please forward this amount to our office so that we may file this Certificate in your behalf. Your check should be made payable to the Town of Madison.

When this Certificate is filed at the end of the appeal period, you may apply for building permits through normal Building Department procedures.

Very truly yours,

William McMinn
Planning and Zoning Administrator

: drk

Copy to: Ronald C. Clark, Nextel Communications

STATE OF CONNECTICUT
CONNECTICUT SITING COUNCIL
10 Franklin Square
New Britain, Connecticut 06051
Phone: (860) 827-2935
Fax: (860) 827-2950

July 1, 1997

Kenneth C. Baldwin
Robinson & Cole
One Commercial Plaza
280 Trumbull Street
Hartford, CT 06103-3597

Re: Cellco Partnership d/b/a Bell Atlantic NYNEX Mobile notice of intent to modify an existing telecommunications facility located at 864 Opening Hill Road in Madison, Connecticut.

Dear Mr. Baldwin:

At a public meeting held on June 30, 1997, the Connecticut Siting Council (Council) acknowledged your notice of intent to modify an existing telecommunications site in Madison, Connecticut, pursuant to Section 16-50j-73 of the Regulations of Connecticut State Agencies.

The proposed modifications are to be implemented as specified in your notice dated June 16, 1997. The modifications are in compliance with the exception criteria in Section 16-50j-72 (c)(1) of the Regulations of Connecticut State Agencies as changes to an existing non-facility site that would not cause a significant change or alteration in the physical and environmental characteristics of the site. This site has been carefully modeled to ensure that radio frequency emissions are conservatively below State and federal standards applicable to the frequency now used on this tower. Any additional change to this site will require explicit notice to this agency pursuant to Regulations of Connecticut State Agencies Section 16-50j-73. Such notice shall include all relevant information regarding the proposed change with cumulative worst-case modeling of radio frequency exposure at the closest point of uncontrolled access to the tower base, consistent with Federal Communications Commission, Office of Science and Technology, Bulletin No. 65. Any deviation from this format may result in the Council implementing enforcement proceedings pursuant to General Statutes § 16-50u including, without limitation, imposition of expenses resulting from such failure and of civil penalties in an amount not less than one thousand dollars per day for each day of construction or operation in material violation.

Thank you for your attention and cooperation.

Very truly yours,

Mortimer A. Gelston
Chairman

MAG/RKE/ss

c: Honorable Thomas Rylander, First Selectman, Town of Madison

Exhibit B

Property Card

864 OPENING HILL RD

Location	864 OPENING HILL RD	**MBLU**	134/ 17/ / /
Unique ID#	00665700	**Owner**	NORTH MADISON VOLUNTEER FIRE COMPANY INC
Assessment	$938,700	**Appraisal**	$1,341,000
PID	7027	**Building Count**	1
Dev. Map			

Current Value

Appraisal					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2021	$1,211,400	$0	$7,000	$122,600	$1,341,000

Assessment					
Valuation Year	**Building**	**Extra Features**	**Outbuildings**	**Land**	**Total**
2021	$848,000	$0	$4,900	$85,800	$938,700

Owner of Record

Owner	NORTH MADISON VOLUNTEER FIRE COMPANY INC	**Sale Price**	$0
Co-Owner		**Book & Page**	0044/0130
Care Of		**Sale Date**	

Ownership History

Ownership History			
Owner	**Sale Price**	**Book & Page**	**Sale Date**
NORTH MADISON VOLUNTEER FIRE COMPANY INC	$0	0044/0130	

Building Information

Building 1 : Section 1

Year Built: 1971
Living Area: 10,480

Building Attributes	
Field	**Description**

Style:	Fire Station
Model	Commercial
Grade	Average
Stories:	2
Occupancy	1.00
Exterior Wall 1	Brick Veneer
Exterior Wall 2	Vinyl Siding
Roof Structure	Gambrel
Roof Cover	Asphalt Shngl.
Interior Wall 1	Minim/Masonry
Interior Wall 2	Plywood Panel
Interior Floor 1	Concr-Finished
Interior Floor 2	Carpet
Heating Fuel	Oil
Heating Type	Hot Water
AC Type	None
Struct Class	
Bldg Use	Municipal Fire
Total Rooms	
Total Bedrms	00
Total Baths	0
Fireplace	
Xtra Fireplaces	
1st Floor Use:	903L
Heat/AC	None
Frame Type	Masonary
Baths/Plumbing	Average
Ceiling/Wall	None
Rooms/Prtns	Average
Wall Height	10.00
% Comn Wall	0.00

Building Photo

(https://images.vgsi.com/photos/MadisonCTPhotos//\01\01\79\69.jpg)

Building Sub-Areas (sq ft)			
Code	**Description**	**Gross Area**	**Living Area**
FUS	Finished Upper Story	6,000	6,000
BAS	First Floor	4,480	4,480
FGR	Garage	1,520	0
UGR	Basement Garage	1,520	0
		13,520	10,480

Extra Features

Extra Features
No Data for Extra Features

Land

Land Use

Use Code	903L
Description	Municipal Fire
Zone	RU-1

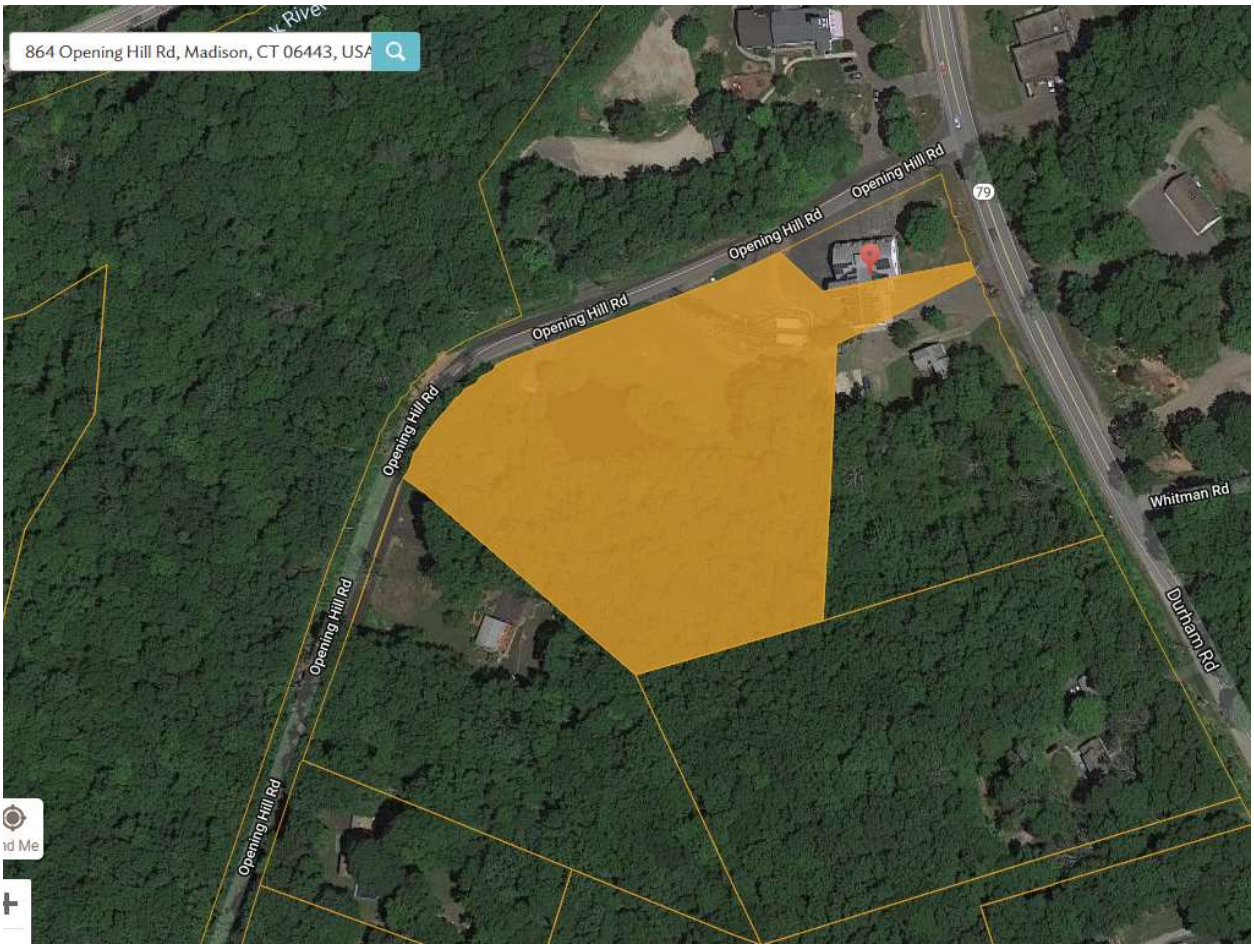
Land Line Valuation

Size (Acres)	0.38

lblIndfront

Outbuildings

Outbuildings						
Code	**Description**	**Sub Code**	**Sub Description**	**Size**	**Value**	**Bldg #**
PAV1	Paving Asphalt			10000.00 S.F.	$7,000	1



864 Opening Hill Rd, Madison, CT 06443

Exhibit C

Construction Drawings

T-MOBILE NORTHEAST LLC

RADIO UPGRADE 4460

SITE #: CT11394A
SITE NAME: NORTH MADISON
864 OPENING HILL ROAD
MADISON, CT 06443
NEW HAVEN COUNTY

CONSTRUCTION DRAWINGS
ALL SCALES RELATIVE TO 24"X36" PAGE SIZE

RAN CONFIGURATION: 67E998E 6160 (GSM ON 6630)

A&L CONFIGURATION: N/A

GENERAL NOTES

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 PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.

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.

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

SPECIAL STRUCTURAL NOTES

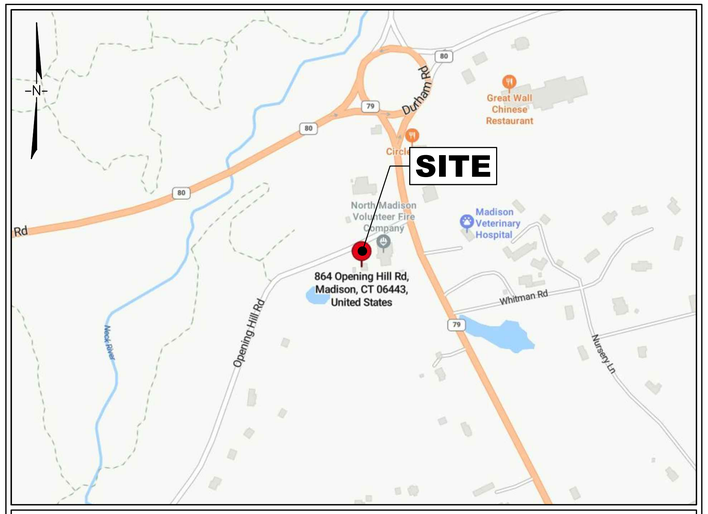
STRUCTURE OWNER SHALL BE RESPONSIBLE FOR GLOBAL STRUCTURAL STABILITY ANALYSIS OF EXISTING SUPPORT STRUCTURE. GENERAL CONTRACTOR SCOPE OF WORK SHALL INCLUDE ALL REQUIRED STRUCTURAL MODIFICATIONS, RE–BUNDLING OF COAXIAL CABLES OR OTHER SPECIAL MODIFICATIONS AS OUTLINED THEREIN.

STRUCTURAL DESIGNS AND DETAILS FOR ANTENNA MOUNTS COMPLETED BY ELEVATED ENGINEERING, PLLC ON BEHALF OF T–MOBILE ARE INCLUSIVE OF THE ENTIRE ANTENNA SUPPORT STRUCTURE (GLOBAL STRUCTURAL STABILITY ANALYSIS BY OTHERS), EXISTING PLATFORM, EXISTING ANTENNA MOUNTS, AND ALL OTHER ASPECTS OF THE STRUCTURE THAT WILL SUPPORT THE T–MOBILE EQUIPMENT DEPLOYMENT AS DEPICTED HEREIN.

ELEVATED ENGINEERING, PLLC ASSUMES THAT THE STRUCTURE IS PROPERLY CONSTRUCTED AND MAINTAINED. ALL STRUCTURAL MEMBERS AND THEIR CONNECTIONS ARE ASSUMED TO BE IN GOOD CONDITION AND ARE FREE FROM DEFECTS WITH NOT DETERIORATION TO IT'S MEMBER CAPACITIES.

APPROVALS

PROJECT MANAGER	DATE
CONSTRUCTION	DATE
RF ENGINEERING	DATE
ZONING / SITE ACQUISITION	DATE
OPERATIONS	DATE
OWNER	DATE



KEY MAP
SCALE = N.T.S.

UNDERGROUND SERVICE ALERT

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

CALL TOLL FREE: 800-922-4455

SITE LOCATION INFORMATION

SITE NUMBER:	CT11394A
SITE ADDRESS:	864 OPENING HILL ROAD MADISON, CT 06443
JURISDICTION:	TOWN OF MADISON
COUNTY:	NEW HAVEN
TOWER OWNER:	AMERICAN TOWER CORPORATION (SITE ID: 383660)
PROPERTY OWNER:	NORTH MADISON VOLUNTARY 1255 DURHAM RD. MADISON, CT 06443
APPLICANT:	T–MOBILE NORTHEAST LLC 35 GRIFFIN ROAD SOUTH BLOOMFIELD, CT 06002

SITE CHARACTERISTICS

LATITUDE:	41.357381°
LONGITUDE:	–72.638773°
STRUCTURE TYPE:	SELF SUPPORT TOWER
LOCATION OF EQUIPMENT:	CONCRETE PAD (AT GRADE)
STRUCTURE HEIGHT:	±197'–0" AGL (TOP OF HIGHEST APPURTENANCE)
ANTENNA (RAD CENTER)	ALPHA – ±130'–0" AGL BETA – ±130'–0" AGL GAMMA – ±130'–0" AGL

SHEET INDEX

T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

ELEVATED ENGINEERING
99 FANNY ROAD
BOONTON, NEW JERSEY 07005
862–242–8050

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3	12/24/24	REVISED PER CLIENT COMMENTS
2	12/09/24	REVISED PER SA
1	11/27/24	ISSUED AS FINALS
0	11/22/24	INITIAL SUBMISSION

DRAWN BY:	CJT
CHECKED BY:	NDB
SCALE:	AS NOTED
JOB NO:	24045-NSS

INFORMATION ON THIS SET OF DRAWINGS IS NOT FOR OFFICIAL USE UNLESS ACCOMPANIED BY THE STAMPED SEAL & SIGNATURE OF A PROFESSIONAL ENGINEER

STATE OF CONNECTICUT · NICHOLAS D. BARILE · No. 28643 · LICENSED PROFESSIONAL ENGINEER

NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

SITE ID: CT11394A
NORTH MADISON
864 OPENING HILL RD
MADISON, CT 06443
NEW HAVEN COUNTY

DRAWING TITLE:

TITLE SHEET

DRAWING SHEET:

T-1

GENERAL NOTES

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

   CONTRACTORS – TO BE DETERMINED
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – T–MOBILE

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 THE 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 PROVIDED BY THE SUBCONTRACTOR.

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

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSED AND ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY 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 THE EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTORS EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIAL SUCH AS COAXIAL CABLE AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNERS 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. TOUCH UP ALL SCRATCHED AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

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

17. SUBCONTRACTORS 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 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.

19. APPLICABLE BUILDING CODES:

    SUBCONTRACTORS 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: 2022 CONNECTICUT STATE BUILDING CODE
    - ELECTRICAL CODE: NFPA 70 NATIONAL ELECTRICAL CODE, 2017 EDITION
    - LIGHTNING CODE: NFPA 780–2014 LIGHTNING PROTECTION CODE

    SUBCONTRACTORS WORK SHALL COMPLY WITH THE LATEST EDITION OF THE FOLLOWING STANDARDS:

    - AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENT FOR STRUCTURAL CONCRETE
    - AMERICAN INSTITUTE FOR STEEL CONSTRUCTION (AISC)
    - MANUAL OF STEEL CONSTRUCTION, ASD, NINTH 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 A CONFLICT BETWEEN A GENERAL REQUIREMENT, THE SPECIFIC REQUIREMENT SHALL GOVERN.

ELECTRICAL & GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE SPECIFIC (UL, LPI, OR NFPA) LIGHTNING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

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

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL–OF–POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO THE BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATING (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON–ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURE WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50.

13. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.

14. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.

15. THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATIONS INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.

16. GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.

17. ELECTRICAL AND TELCO WIRING OUTSIDE A BUILDING AND EXPOSED TO WEATHER SHALL BE IN WATER TIGHT GALVANIZED RIGID STEEL CONDUITS OR SCHEDULE 80 PVC (AS PERMITTED BY CODE) AND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.

18. RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.

19. ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN OR THIN INSULATION.

20. RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL ROOM AND PROPOSED CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.

21. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A–1. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.

22. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.

23. GROUNDING SHALL COMPLY WITH NEW ART. 250.

24. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.

25. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON DRAWING.

26. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.

27. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.

28. CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PRODUCERS (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUND); (GROUNDING ELECTRODE RING OR BUILDING STEEL); NON–SURGING OBJECTS (EGB GROUND IN BTS UNIT)

29. CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.

30. BOND ANTENNA MOUNTING BRACKETS. COAXIAL CABLE GROUND KITS AND ALNA TO EGB PLACES NEAR THE ANTENNA LOCATION.

31. BOND ANTENNA EGB'S AND MGB TO WATER MAIN.

32. TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE–OUT DOCUMENTATION.

33. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.

34. VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.

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		

T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

ELEVATED ENGINEERING
99 FANNY ROAD
BOONTON, NEW JERSEY 07005
862–242–8050

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
6		
5		
4		
3	12/24/24	REVISED PER CLIENT COMMENTS
2	12/09/24	REVISED PER SA
1	11/27/24	ISSUED AS FINALS
0	11/22/24	INITIAL SUBMISSION

DRAWN BY:	CJT
CHECKED BY:	NDB
SCALE:	AS NOTED
JOB NO:	24045-NSS

INFORMATION ON THIS SET OF DRAWINGS IS NOT FOR OFFICIAL USE UNLESS ACCOMPANIED BY THE STAMPED SEAL & SIGNATURE OF A PROFESSIONAL ENGINEER

STATE OF CONNECTICUT · NICHOLAS D. BARILE · 28643 · REGISTERED PROFESSIONAL ENGINEER

NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

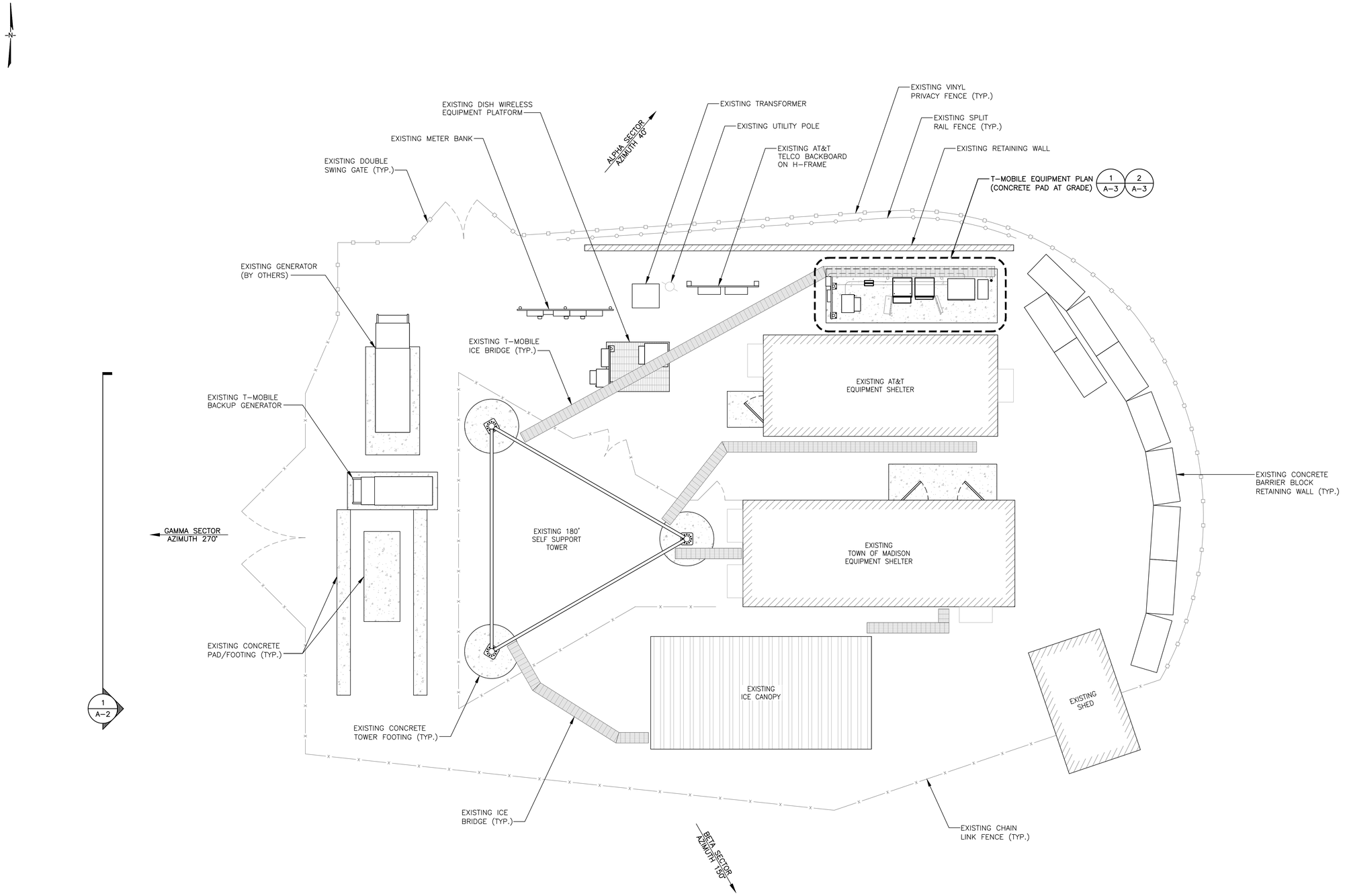
SITE ID: CT11394A
NORTH MADISON
864 OPENING HILL RD
MADISON, CT 06443
NEW HAVEN COUNTY

DRAWING TITLE:

GENERAL NOTES

DRAWING SHEET:

GN-1



1/A-1 COMPOUND PLAN
SCALE: 3/16"=1'-0"

LOADING SHOWN WITHIN THIS SET OF DRAWINGS IS BASED ON THE STRUCTURAL ANALYSIS PERFORMED BY ELEVATED ENGINEERING, DATED DECEMBER 9, 2024. CONTRACTOR TO NOTIFY ENGINEER AND CARRIER IN THE EVENT SITE CONDITIONS DIFFER FROM WHAT IS REPRESENTED IN THE ANALYSIS. NO SUBSTITUTIONS ARE PERMITTED WITHOUT ADDITIONAL ANALYSIS.

T-Mobile

T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

ELEVATED ENGINEERING
99 FANNY ROAD
BOONTON, NEW JERSEY 07005
862-242-8050

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STATE OF CONNECTICUT · NICHOLAS D. BARILE · No. 28643 · LICENSED PROFESSIONAL ENGINEER

NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

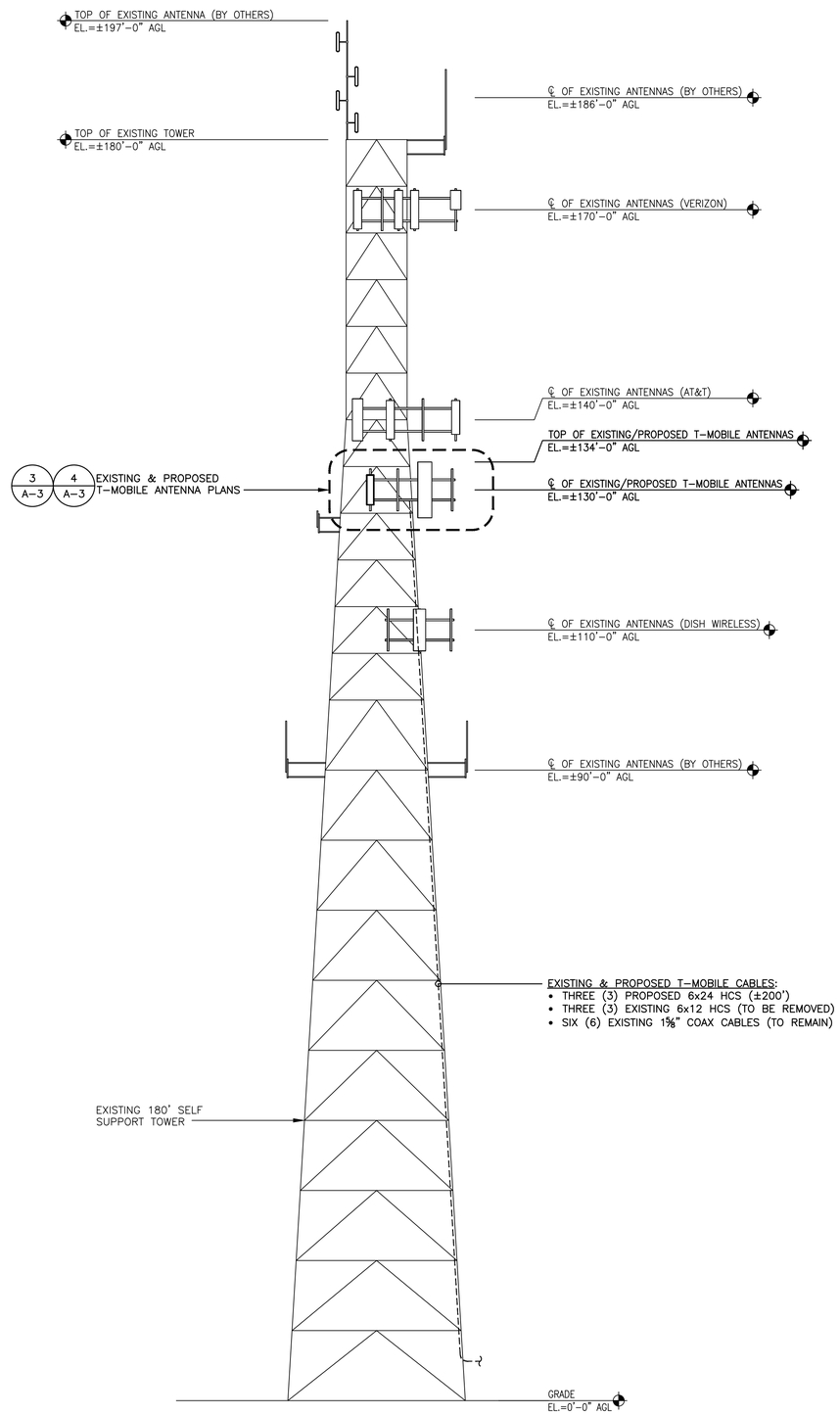
SITE ID: CT11394A
NORTH MADISON
864 OPENING HILL RD
MADISON, CT 06443
NEW HAVEN COUNTY

DRAWING TITLE:

COMPOUND PLAN

DRAWING SHEET:

A-1



1 A-2 ELEVATION
SCALE: 1"=10'-0"

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BLOOMFIELD, CT 06002

ELEVATED ENGINEERING
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862-242-8050

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STATE OF CONNECTICUT · NICHOLAS D. BARILE · No. 28643 · LICENSED PROFESSIONAL ENGINEER

NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

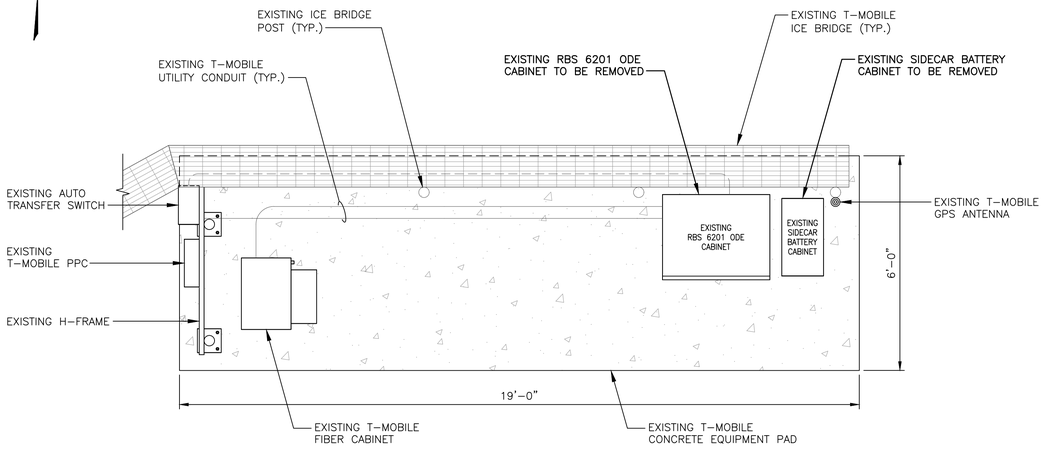
SITE ID: CT11394A
NORTH MADISON
864 OPENING HILL RD
MADISON, CT 06443
NEW HAVEN COUNTY

DRAWING TITLE:

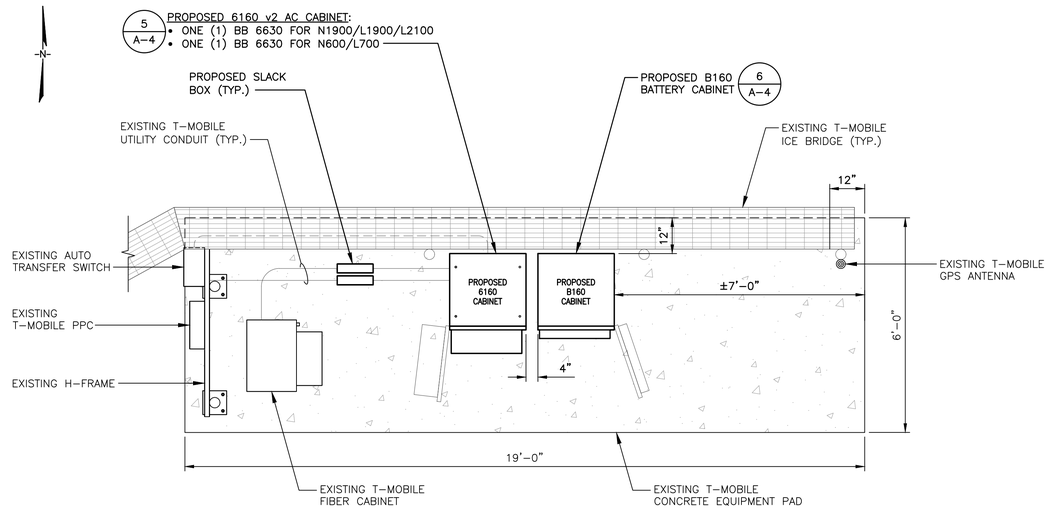
ELEVATION

DRAWING SHEET:

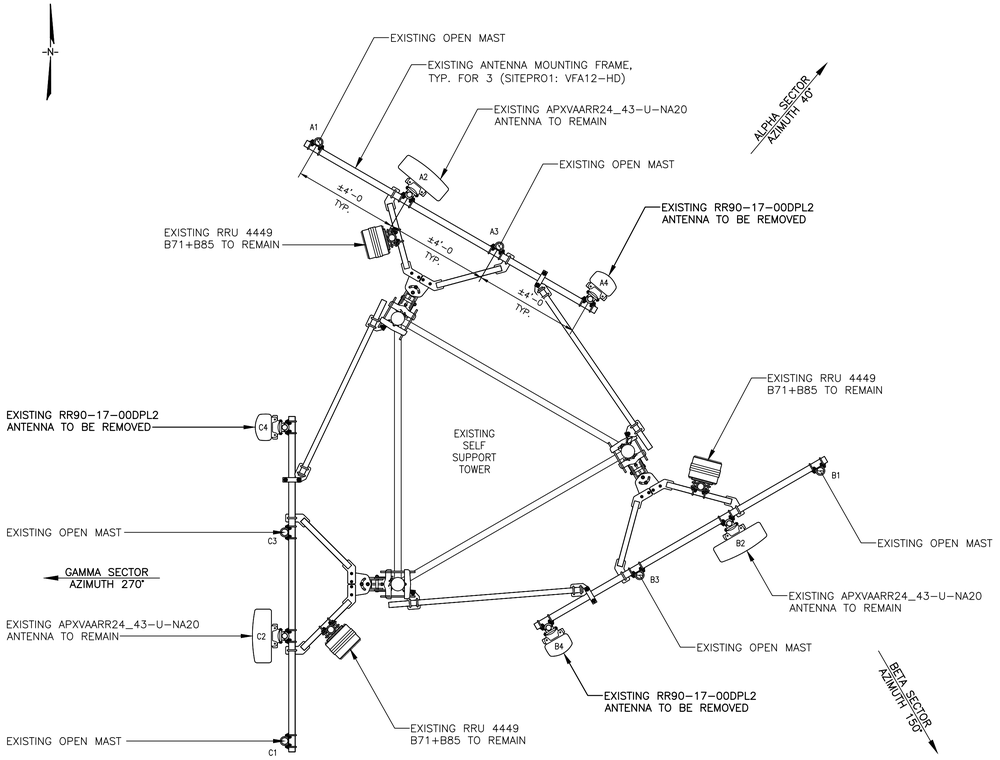
A-2



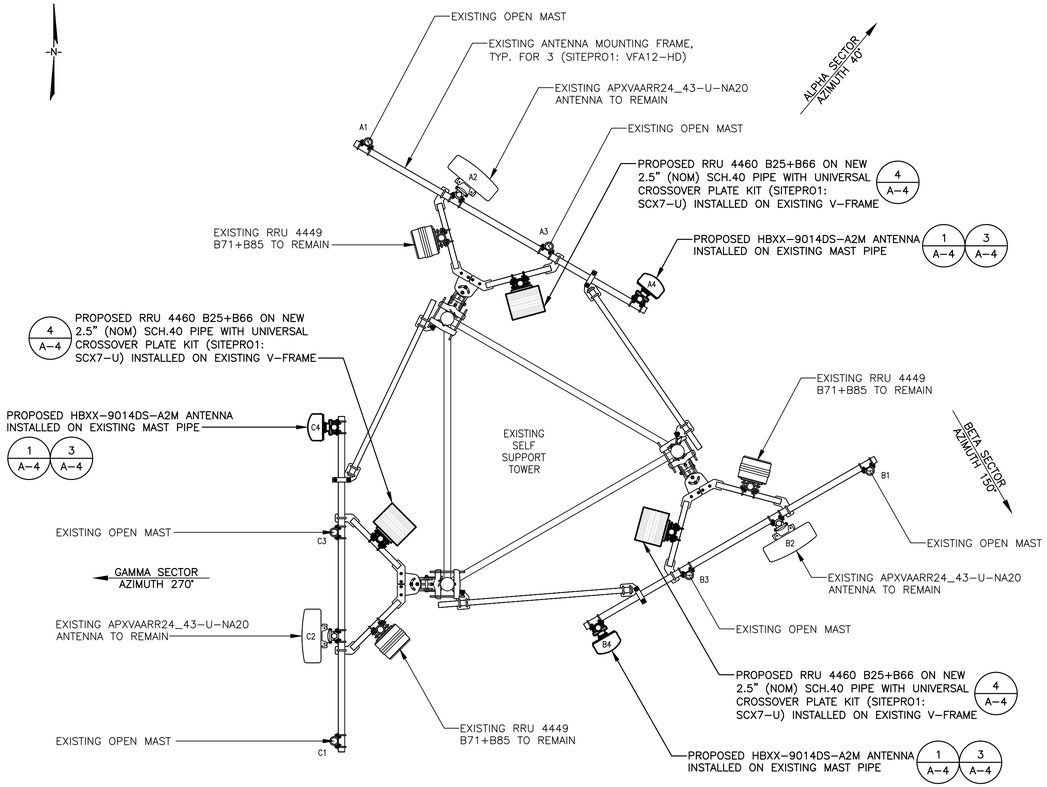
1 / A–3 EXISTING EQUIPMENT PLAN
SCALE: 1/2"=1'–0"



2 / A–3 FINAL EQUIPMENT PLAN
SCALE: 1/2"=1'–0"



3 / A–3 EXISTING ANTENNA PLAN
SCALE: 3/8"=1'–0"



4 / A–3 FINAL ANTENNA PLAN
SCALE: 3/8"=1'–0"

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T-Mobile
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99 FANNY ROAD
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NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

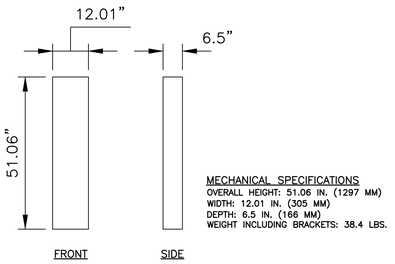
SITE ID: CT11394A
NORTH MADISON
864 OPENING HILL RD
MADISON, CT 06443
NEW HAVEN COUNTY

DRAWING TITLE:

EXISTING/FINAL EQUIPMENT PLAN & EXISTING/FINAL ANTENNA PLANS

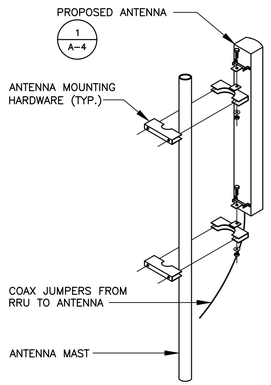
DRAWING SHEET:

A-3

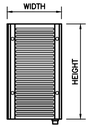


1 / A-4 COMMSCOPE: HBXX-9014DS-A2M
SCALE: N.T.S.

2 / A-4 DETAIL NOT USED
SCALE: N.T.S.

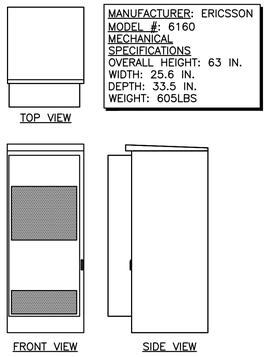


3 / A-4 TYPICAL ANTENNA INSTALLATION DETAIL
SCALE: N.T.S.

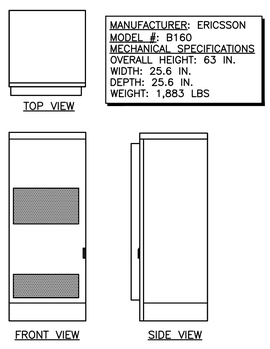


RRH	HEIGHT	WIDTH	DEPTH	WEIGHT
RADIO 4460 B25+B66	17.0"	15.1"	11.9"	104 LBS.

4 / A-4 RRU DETAILS
SCALE: N.T.S.



5 / A-4 ERICSSON: 6160 CABINET
SCALE: N.T.S.



6 / A-4 ERICSSON: B160 CABINET
SCALE: N.T.S.

ANTENNA INFORMATION

SECTOR	POSITION (FROM REAR LEFT TO RIGHT)	EXISTING MODEL	EXISTING QTY.	PROPOSED MODEL	ANT. C.L.	SECTOR MARK	QTY.	E-TILT	M-TILT	RRU MODEL/QUANTITY	COAX/ FIBER QUANTITY	COAX/ FIBER SIZE	COAX/ FIBER LENGTH	HCS QTY / SIZE / LENGTH
ALPHA 40°	R1	–	–	–	–	–	–	–	–	–	–	–	–	–
	R2	APXVAARR24_43-U-NA20	1	APXVAARR24_43-U-NA20	130'-0"	N600/L700/ L1900/G1900	1	2/2/2/2	0	(1) 4449 B71+B85	4 2	COAX JUMPER FIBER JUMPER	15' 15'	–
	R3	–	–	–	–	–	–	–	–	–	–	–	–	–
	R4	RR90-17-00DPL2	1	**HBXX-9014DS-A2M**	130'-0"	N1900/L1900/ L2100	1	0/0	0	(1) 4460 B25+B66	4 2	COAX JUMPER FIBER JUMPER	15' 15'	(1) 6x24 HCS (200')
BETA 150°	W1	–	–	–	–	–	–	–	–	–	–	–	–	–
	W2	APXVAARR24_43-U-NA20	1	APXVAARR24_43-U-NA20	130'-0"	N600/L700/ L1900/G1900	1	2/2/2/2	0	(1) 4449 B71+B85	4 2	COAX JUMPER FIBER JUMPER	15' 15'	–
	W3	–	–	–	–	–	–	–	–	–	–	–	–	–
	W4	RR90-17-00DPL2	1	**HBXX-9014DS-A2M**	130'-0"	N1900/L1900/ L2100	1	0/0	0	(1) 4460 B25+B66	4 2	COAX JUMPER FIBER JUMPER	15' 15'	(1) 6x24 HCS (200')
GAMMA 270°	B1	–	–	–	–	–	–	–	–	–	–	–	–	–
	B2	APXVAARR24_43-U-NA20	1	APXVAARR24_43-U-NA20	130'-0"	N600/L700/ L1900/G1900	1	2/2/2/2	0	(1) 4449 B71+B85	4 2	COAX JUMPER FIBER JUMPER	15' 15'	–
	B3	–	–	–	–	–	–	–	–	–	–	–	–	–
	B4	RR90-17-00DPL2	1	**HBXX-9014DS-A2M**	130'-0"	N1900/L1900/ L2100	1	0/0	0	(1) 4460 B25+B66	4 2	COAX JUMPER FIBER JUMPER	15' 15'	(1) 6x24 HCS (200')

AT TIME OF CONSTRUCTION, CONTRACTOR TO VERIFY AZIMUTHS OF EXISTING ANTENNAS. IF DIFFERENT FROM RFDS, PLEASE NOTIFY THE RF ENGINEER AND CONSTRUCTION MANAGER WITH ACTUAL AZIMUTH TO ENSURE T-MOBILE'S DATABASE IS ACCURATE AND UP-TO-DATE.

ANTENNA LOCATIONS TO BE VERIFIED IN FIELD. RFDS TO BE REDLINED ACCORDINGLY.

INFORMATION SHOWN PROVIDED ON T-MOBILE RFDS DATED 10/31/24.

T-MOBILE NORTHEAST LLC
35 GRIFFIN ROAD SOUTH
BLOOMFIELD, CT 06002

ELEVATED ENGINEERING
99 FANNY ROAD
BOONTON, NEW JERSEY 07005
862-242-8050

SCHEDULE OF REVISIONS

REV. NO.	DATE	DESCRIPTION OF CHANGES
7		
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DRAWN BY:	CJT
CHECKED BY:	NDB
SCALE:	AS NOTED
JOB NO:	24045-NSS

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STATE OF CONNECTICUT · NICHOLAS D. BARILE · No. 28643 · LICENSED PROFESSIONAL ENGINEER

NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

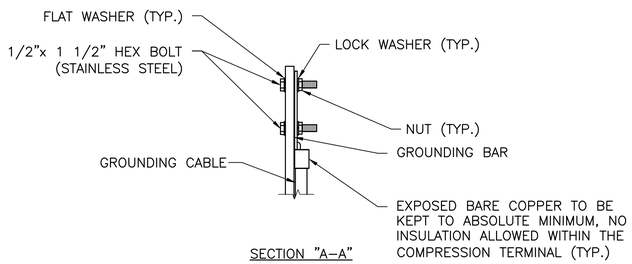
SITE ID: CT11394A
NORTH MADISON
864 OPENING HILL RD
MADISON, CT 06443
NEW HAVEN COUNTY

DRAWING TITLE:

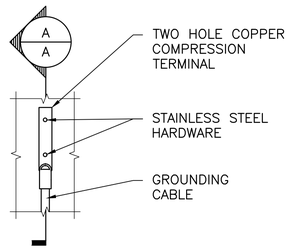
DETAILS

DRAWING SHEET:

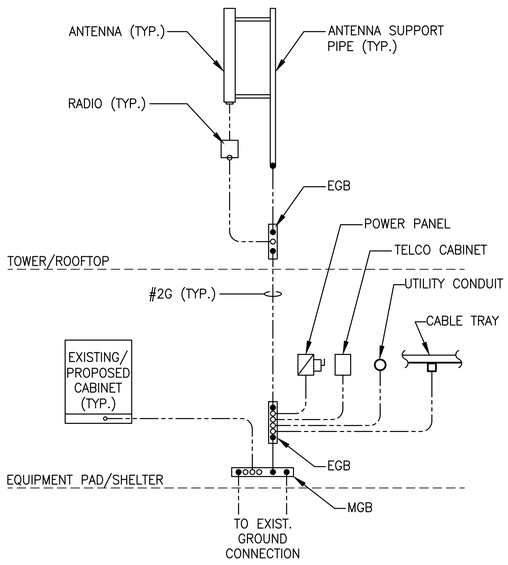
A-4



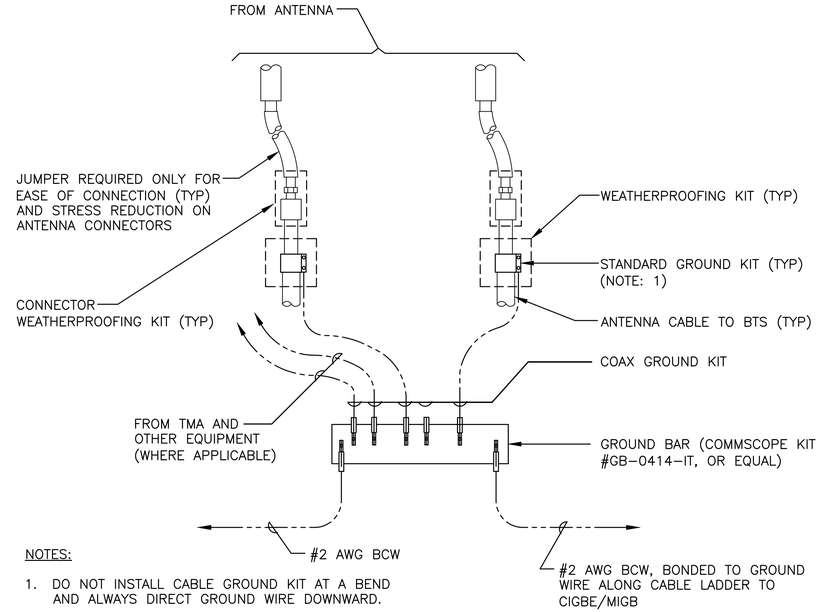
NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.
2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.



1 E–1 TYPICAL GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.

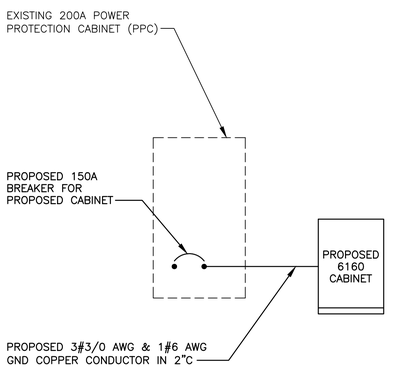


2 E–1 GROUNDING RISER DIAGRAM
SCALE: N.T.S.



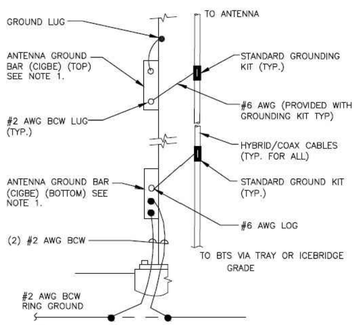
NOTES:
1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWNWARD.

3 E–1 GROUND WIRE TO GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.



EXISTING ELECTRIC FEEDERS AND CONDUIT TO BE UPGRADED AS REQUIRED, CONDUIT AND WIRE LENGTH/SIZE TO BE VERIFIED BY LICENSED ELECTRICIAN

4 E–1 ONE LINE DIAGRAM
SCALE: 1/4"=1'–0"



NOTE:
1. NUMBER OF GROUND BARS MAY VARY DEPENDING ON THE TYPE OF TOWER, ANTENNA LOCATION AND CONNECTION ANTENNA LOCATION AND CONNECTION ORIENTATION. PROVIDE AS REQUIRED.
2. A SEPARATE GROUND BAR TO BE USED FOR GPS ANTENNA IF REQUIRED.

ELECTRICAL LEGEND

A	AMPERE
V	VOLT
KWH	KILOWATT – HOUR
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
G	GROUND
⏚	GROUND
MGB	MASTER GROUND BAR — ○ MECHANICAL CONNECTION ● CADWELD CONNECTION
EGB	EQUIPMENT GROUND BAR
G	GROUND COPPER WIRE, SIZE AS NOTED
	EXPOSED WIRING
	COAXIAL CABLE
⊙	5/8"x8" COPPER CLAD STAINLESS STEEL GROUND ROD
	● EXOTHERMIC (CAD WELD) OR ○ MECHANICAL (COMPRESSION TYPE) CONNECTION
PPC	POWER PROTECTION CABINET
⊠	OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL

5 E–1 ANTENNA CABLE GROUNDING
SCALE: N.T.S.

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BLOOMFIELD, CT 06002

ELEVATED ENGINEERING
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862–242–8050

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DRAWN BY:	CJT
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NICHOLAS D. BARILE
PROFESSIONAL ENGINEER, CT LIC. No. 28643

SITE ID: CT11394A
NORTH MADISON
864 OPENING HILL RD
MADISON, CT 06443
NEW HAVEN COUNTY

DRAWING TITLE:

GROUNDING DETAILS & NOTES

DRAWING SHEET:

E-1

Exhibit D

Structural Analysis Report

ELEVATED ENGINEERING
99 Fanny Road, Boonton, NJ 07005
State of NJ Certificate of Authorization #24GA28326800

CT11394A - NORTH MADISON

864 Opening Hill Road, Madison, CT 06443
(New Haven County)

Structural Analysis

December 9, 2024

Item	Pass/Fail	Capacity
Tower - Leg	Pass	30.6%
Tower - Diagonal	Pass	52.9%
Tower - Horizontal	Pass	51.6%
Anchor Bolts	Pass	23.4%
Concrete Pier	Pass	1.4%
Soil	Pass	26.8%

Nicholas D. Barile, PE
CT PE License No.: 28643
Elevated Engineering Project No.: 24045-NSS

ELEVATED ENGINEERING

99 Fanny Road, Boonton, NJ 07005
State of NJ Certificate of Authorization #24GA28326800

Summary

At the request of T-Mobile, Elevated Engineering has performed a structural analysis of the self-support tower for the equipment loading under the *2022 Connecticut Building Code, ASCE 7, ANSI/TIA-222-H, and AISC (LRFD14)*. Information pertaining to the tower, and its foundation was obtained from:

- Mount analysis by CLS Engineering dated 07/03/2019.
- Structural report by Matec Network Solution dated 10/18/2023.
- RFDS Version-7 last modified 10/331/2024.
- Design visit notes by Elevated Engineering dated 11/27/2024.
- Construction drawings by Elevated Engineering dated 11/27/2024.

Loading Criteria

	Wind Factors		
	Basic Wind Speed; Vult	131	mph
	Risk Category	II	
	Exposure	B	
	Flat Terrain		
	Ground Elevation to Sea Level	316	ft
	Ice Thickness	1”	
	Wi	50	mph
	Seismic Factors		
	Ss:	0.209	
	S1:	0.054	
	Loading Combinations at (12) 30° Intervals		

Conclusions

Per our analysis, the self-support tower can support proposed loading under the *2022 Connecticut Building Code.*

General Comments

If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, ELEVATED ENGINEERING should be notified immediately to perform a revised analysis. This report is not a condition assessment and assumes good workmanship will be used and systems will be properly maintained.

Limitations

All opinions and conclusions are considered accurate to a reasonable degree of engineering certainty based upon the evidence available at the time of this report. All opinions and conclusions are subject to revision based upon receipt of new or additional/updated information. All services are provided exercising a level of care and diligence equivalent to the standard and care of our profession. No other warranty or guarantee, expressed or implied, is offered. Our services are confidential in nature, and we will not release this report to any other party without the client’s consent. The use of this engineering work is limited to the express purpose for which it was commissioned, and it may not be reused, copied, or distributed for any other purpose without the written consent of ELEVATED ENGINEERING.

ELEVATED
ENGINEERING
99 Fanny Road, Boonton, NJ 07005
State of NJ Certificate of Authorization #24GA28326800

Attachment A
Final Equipment Configuration

Final Alpha Sector Antenna Configuration

Rad Center 130'-0"

(1) RFS APXVAARR24_43-C-NA20 Antenna
(1) CommScope HBXX-9014DS-A2M Antenna
(1) Ericsson Radio 4449 B71+B85 RRU
(1) Ericsson Radio 4460 B25+B66 RRU

Final Beta Sector Antenna Configuration

Rad Center 130'-0"

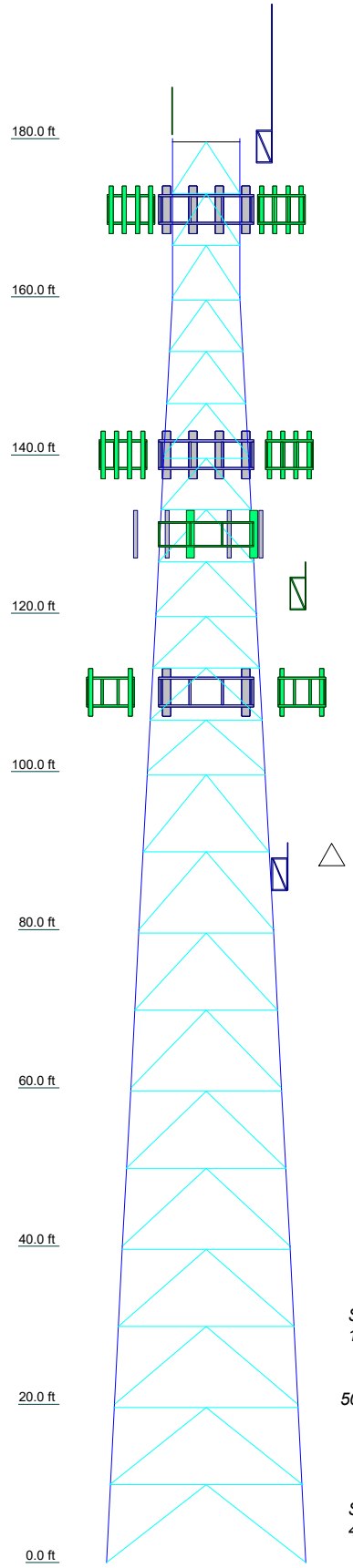
(1) RFS APXVAARR24_43-C-NA20 Antenna
(1) CommScope HBXX-9014DS-A2M Antenna
(1) Ericsson Radio 4449 B71+B85 RRU
(1) Ericsson Radio 4460 B25+B66 RRU

Final Gamma Sector Antenna Configuration

Rad Center 130'-0"

(1) RFS APXVAARR24_43-C-NA20 Antenna
(1) CommScope HBXX-9014DS-A2M Antenna
(1) Ericsson Radio 4449 B71+B85 RRU
(1) Ericsson Radio 4460 B25+B66 RRU

Section	T1	T2	T3	T4	T5	T6	T7	T8	T9		
Legs	P3x.216	P4x.337	P5x.375	P6x0.340	ROHN 8 EHS	P8x.5		P10x.5			1.2
Leg Grade	A618-50										
Diagonals	P2x.154		P2.5x.203		P3x.216				P3x.3		1.7
Diagonal Grade	A618-50										
Top Girts	ROHN 1.5 STD				N.A.						2.1
Horizontals	ROHN 1.5 STD		L2x2x1/8		P2x.154		P2.5x.203		P3x.216		2.9
Inner Bracing						L2 1/2x2 1/2x3/16	L3x3x3/16	L3 1/2x3 1/2x1/4			3.6
Face Width (ft)	8.54		10.64	12.74	14.84	16.94	19.03	21.13	23.23	25.23	4.4
# Panels @ (ft)	12 @ 6.52778						10 @ 9.79167				4.8
Weight (K)	1.2	1.7	2.1	2.9	3.6	4.4	4.8	5.8	6.7	33.2	



MATERIAL STRENGTH

GRADE	Fy	Fu	GRADE	Fy	Fu
A618-50	50 ksi	70 ksi			

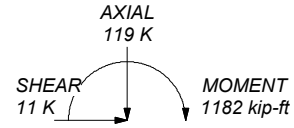
TOWER DESIGN NOTES

1. Tower is located in New Haven County, Connecticut.
2. Tower designed for Exposure B to the TIA-222-H Standard.
3. Tower designed for a 131 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 III.
7. Topographic Category 1 with Crest Height of 0.000 ft
8. TOWER RATING: 52.9%

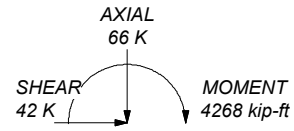
ALL REACTIONS ARE FACTORED

MAX. CORNER REACTIONS AT BASE:
DOWN: 217 K
SHEAR: 25 K

UPLIFT: -179 K
SHEAR: 22 K



TORQUE 11 kip-ft
50 mph WIND - 1.000 in ICE



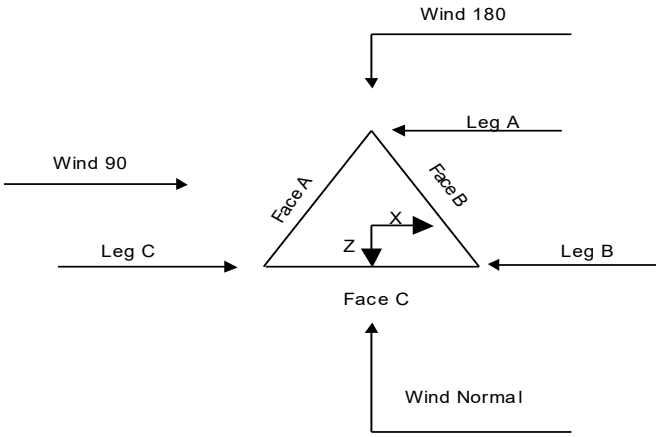
TORQUE 33 kip-ft
REACTIONS - 131 mph WIND

Phone: FAX:	Job: **24045-NSS**		
	Project: **Self-Standing Tower**		
	Client: Elevated Engineering	Drawn by:	App'd:
	Code: TIA-222-H	Date: 12/09/24	Scale: NTS
	Path:		Dwg No. E-1

Tower Input Data

The main tower is a 3x free standing tower with an overall height of 180.000 ft above the ground line.
The base of the tower is set at an elevation of 0.000 ft above the ground line.
The face width of the tower is 8.540 ft at the top and 25.230 ft at the base.
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: 316.000 ft.
Basic wind speed of 131 mph.
Risk Category III.
Exposure Category B.
Simplified Topographic Factor Procedure for wind speed-up calculations is used.
Topographic Category: 1.
Crest Height: 0.000 ft.
Nominal ice thickness of 1.000 in.
Ice thickness is considered to increase with height.
Ice density of 57 pcf.
A wind speed of 50 mph is used in combination with ice.
Temperature drop of 15 °F.
Deflections calculated using a wind speed of 60 mph.
A non-linear (P-delta) analysis was used.
Pressures are calculated at each section.
Stress ratio used in tower member design is 1.
Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.



Triangular Tower

ASCE Hazards Report

Address:
864 Opening Hill Rd
Madison, Connecticut
06443

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

Latitude: 41.357564
Longitude: -72.638304
Elevation: 316.05428670822505 ft (NAVD 88)

Wind

Results:

Wind Speed	131 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	93 Vmph
100-year MRI	100 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1C and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Tue Nov 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 3% probability of exceedance in 50 years (annual exceedance probability = 0.000588, MRI = 1,700 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.

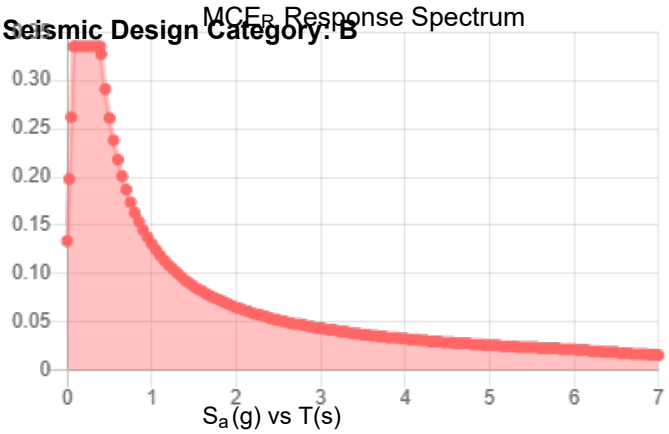
Seismic

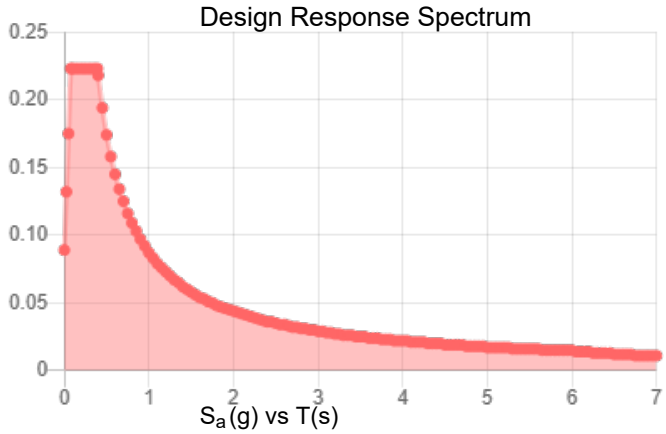
Site Soil Class: D - Stiff Soil

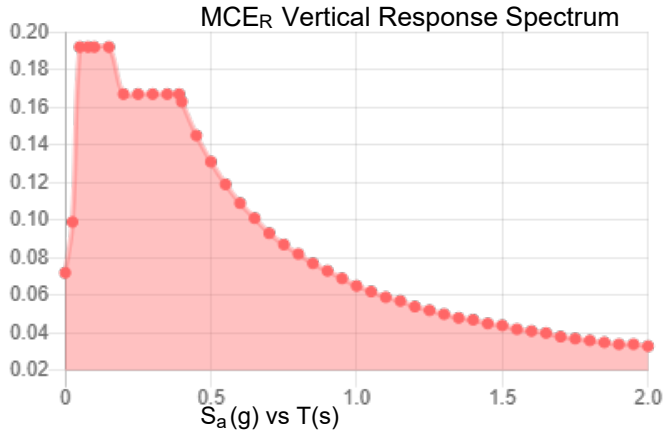
Results:

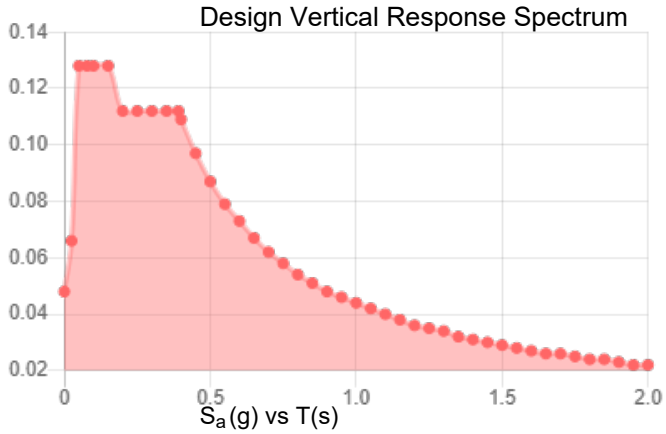
S_S :	0.209	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.117
F_v :	2.4	PGA_M :	0.184
S_{MS} :	0.335	F_{PGA} :	1.565
S_{M1} :	0.131	I_e :	1.25
S_{DS} :	0.223	C_v :	0.718

Seismic Design Category: B









Data Accessed: **Tue Nov 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:	Tue Nov 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.

Exhibit E

Mount Analysis

ELEVATED ENGINEERING
99 Fanny Road, Boonton, NJ 07005
State of NJ Certificate of Authorization #24GA28326800

CT11394A - NORTH MADISON

864 Opening Hill Road, Madison, CT 06443
(New Haven County)

Mount Analysis

November 27, 2024

Item	Pass/Fail	Capacity
Antenna Mount	Pass	28.2%
Antenna Pipes	Pass	31.9%

Nicholas D. Barile, PE
CT PE License No.: 28643
Elevated Engineering Project No.: 24045-NSS

ELEVATED ENGINEERING
99 Fanny Road, Boonton, NJ 07005
State of NJ Certificate of Authorization #24GA28326800

Summary

At the request of T-Mobile, Elevated Engineering has performed a structural analysis of the antenna mounting system for the antenna equipment loading under the *2022 Connecticut Building Code, ASCE 7, ANSI/TIA-222-H, and AISC (LRFD14).* Information pertaining to the antenna mounts was obtained from:

- Mount analysis by CLS Engineering dated 07/03/2019.
- Structural report by Matec Network Solution dated 10/18/2023.
- RFDS Version-7 last modified 10/331/2024.
- Design visit notes by Elevated Engineering dated 11/27/2024.
- Construction drawings by Elevated Engineering dated 11/27/2024.

Loading Criteria

	Wind Factors		
	Basic Wind Speed; Vult	131	mph
	Risk Category	III	
	Exposure	B	
	Flat Terrain		
	Ground Elevation to Sea Level	316	ft
	Ice Thickness	1”	
	Wi	50	mph
	Seismic Factors		
	Ss:	0.209	
	S1:	0.054	
	Loading Combinations at (12) 30° Intervals		

Conclusions

Per our analysis, the antenna mounting system can support proposed loading under the *2022 Connecticut Building Code;* however, steel grating needs structural reinforcement.

General Comments

If there are substantial modifications to be made or the assumptions made in this analysis are not accurate, ELEVATED ENGINEERING should be notified immediately to perform a revised analysis. This report is not a condition assessment and assumes good workmanship will be used and systems will be properly maintained.

Limitations

ELEVATED
ENGINEERING
99 Fanny Road, Boonton, NJ 07005
State of NJ Certificate of Authorization #24GA28326800

Attachment A
Final Equipment Configuration

Final Alpha Sector Antenna Configuration

Rad Center 130'-0"

(1) RFS APXVAARR24_43-C-NA20 Antenna
(1) CommScope HBXX-9014DS-A2M Antenna
(1) Ericsson Radio 4449 B71+B85 RRU
(1) Ericsson Radio 4460 B25+B66 RRU

Final Beta Sector Antenna Configuration

Rad Center 130'-0"

(1) RFS APXVAARR24_43-C-NA20 Antenna
(1) CommScope HBXX-9014DS-A2M Antenna
(1) Ericsson Radio 4449 B71+B85 RRU
(1) Ericsson Radio 4460 B25+B66 RRU

Final Gamma Sector Antenna Configuration

Rad Center 130'-0"

(1) RFS APXVAARR24_43-C-NA20 Antenna
(1) CommScope HBXX-9014DS-A2M Antenna
(1) Ericsson Radio 4449 B71+B85 RRU
(1) Ericsson Radio 4460 B25+B66 RRU

Wind Analysis F = qz x Gh x (EPA) per TIA-222-H

Kz=2.01 (Z/Zg)^(2/α) =	1.065		
Zg =	1200	Table 2-4	Exposure B
Alpha (α) =	7	Table 2-4	
Z=	130	ft	
Terrain Category	I		
Kzt = (1+KcKt/Kh)^2	1.00	for Category I	
Kc=	1.00	Table 2-4	
Kt=	0.53	Table 2-5	
Kh=e^(f * Z/H) =	0.000	for H=0	
f=	2.00	Table 2-5	
H =Height of Crest Surrounding Terrain	0.00	ft	
Kz =	1.065		
Kzt =	1.0		
Kd =	0.95		
Importance Factor Table 2-3 = I =	1.0	Use Class III	
Zs =	**316**	ft	
Ke= e^(-0.0000362xZs) =	**0.99**		
Vult =	131	mph	
qz=0.00256xKzxKztxKdxKsxKexV^2xI =	43.9	psf	
Gh =	1.00		
qz Gh =	**43.9**	**psf**	

	Equipment Loading	CaAa (sf or sf/lf)	Wind (psf)	Ka	Wind Load (lb)	Weight (lb)
F_{N1}	APXVAARR24_43-C-NA20	17.140	43.9	0.9	678.0	114.7
F_{N2}	HBXX-9014DS-A2M	5.44	43.9	0.9	215.2	38.4
F_{N3}	4460 B71+B85 RRU	2.140	43.9	0.9	84.6	104
F_{N4}	4449 B25+B66 RRU	1.97	43.9	0.9	77.9	75
	2"Φ Pipe	0.238	43.9	0.9	9.4	
	2-1/2"Φ Pipe	0.288	43.9	0.9	11.4	
	SR-5/8	0.063	43.9	0.9	2.5	
	SR-3/4	0.075	43.9	0.9	3.0	
F_{T1}	APXVAARR24_43-C-NA20	8.740	43.9	0.9	345.7	114.7
F_{T2}	HBXX-9014DS-A2M	3.29	43.9	0.9	130.1	38.4
F_{T3}	4460 RRU	1.690	43.9	0.9	66.8	104
F_{T4}	4449 RRU	1.60	43.9	0.9	63.3	75

1" Ice 50mph - Wind Analysis F = qz x Gh x (EPA) per TIA-222-H

Kz=2.01 (Z/Zg)^(2/α) =	1.065		
Zg =	1200	Table 2-4	Exposure B
Alpha (α) =	7	Table 2-4	
Z=	130	ft	
Terrain Category	I		
Kzt = (1+KcKt/Kh)^2	1.00	for Category I	
Kc=	1.00	Table 2-4	
Kt=	0.53	Table 2-5	
Kh=e^(f * Z/H) =	0.000	for H=0	
f=	2.00	Table 2-5	
H =Height of Crest Surrounding Terrain	0.00	ft	
Kz =	1.065		
Kzt =	1.0		
Kd =	0.95		
Importance Factor Table 2-3 = I =	1.0	Use Class III	
Zs =	**316**	ft	
Ke= e^(-0.0000362xZs) =	**0.99**		
Vult =	50	mph	
qz=0.00256xKzxKztxKdxKsxKexV^2xI =	6.4	psf	
Gh =	1.00		
qz Gh =	**6.4**	**psf**	

	Equipment Loading	CaAa (sf or sf/lf)	Wind (psf)	Ka	Wind Load (lb)	Weight (lb)
F_{N1}	APXVAARR24_43-C-NA20	19.280	6.4	0.9	111.1	317.4
F_{N2}	HBXX-9014DS-A2M	6.60	6.4	0.9	38.0	114
F_{N3}	4460 B25+B66 RRU	2.710	6.4	0.9	15.6	148.4
F_{N4}	4449 B71+B85 RRU	2.51	6.4	0.9	14.5	114.6
	2"Φ Pipe	0.438	6.4	0.9	2.5	
	2-1/2"Φ Pipe	0.488	6.4	0.9	2.8	
	SR-5/8	0.263	6.4	0.9	1.5	
	SR-3/4	0.275	6.4	0.9	1.6	
F_{T1}	APXVAARR24_43-C-NA20	11.030	6.4	0.9	63.6	317.4
F_{T2}	HBXX-9014DS-A2M	4.47	6.4	0.9	25.8	114
F_{T3}	4460 B25+B66 RRU	2.190	6.4	0.9	12.6	148.4
F_{T4}	4449 B71+B85 RRU	2.08	6.4	0.9	12.0	114.6

ASCE Hazards Report

Address:
864 Opening Hill Rd
Madison, Connecticut
06443

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

Latitude: 41.357564
Longitude: -72.638304
Elevation: 316.05428670822505 ft (NAVD 88)

Wind

Results:

Wind Speed	131 Vmph
10-year MRI	75 Vmph
25-year MRI	85 Vmph
50-year MRI	93 Vmph
100-year MRI	100 Vmph

Data Source: ASCE/SEI 7-16, Fig. 26.5-1C and Figs. CC.2-1–CC.2-4, and Section 26.5.2
Date Accessed: Tue Nov 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 3% probability of exceedance in 50 years (annual exceedance probability = 0.000588, MRI = 1,700 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.

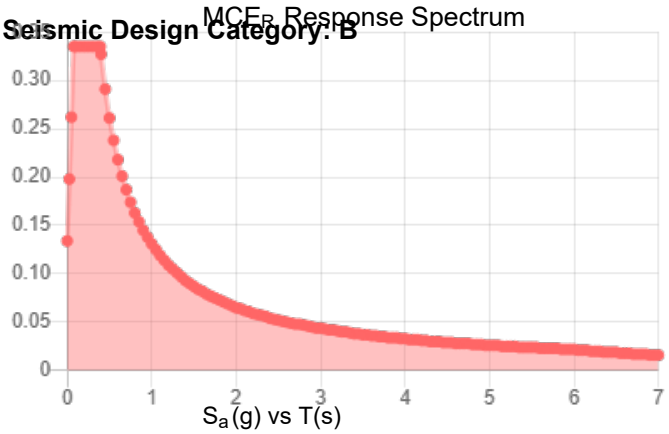
Seismic

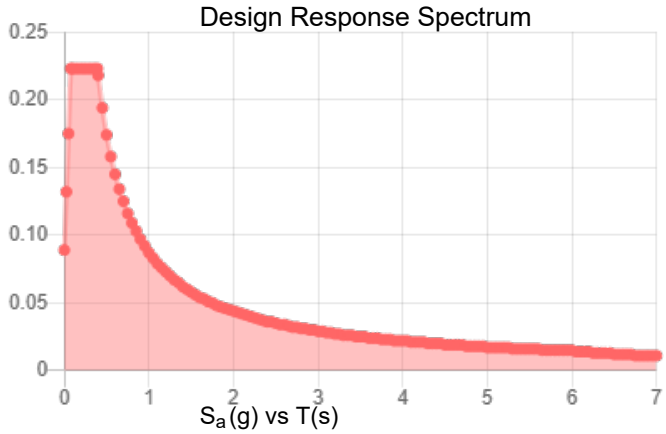
Site Soil Class: D - Stiff Soil

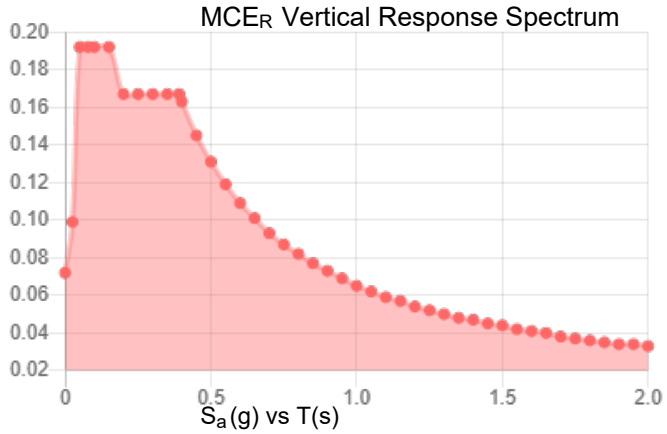
Results:

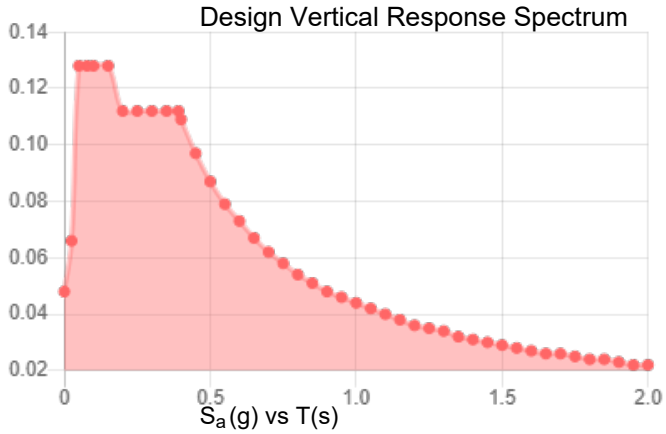
S_S :	0.209	S_{D1} :	0.087
S_1 :	0.054	T_L :	6
F_a :	1.6	PGA :	0.117
F_v :	2.4	PGA_M :	0.184
S_{MS} :	0.335	F_{PGA} :	1.565
S_{M1} :	0.131	I_e :	1.25
S_{DS} :	0.223	C_v :	0.718

Seismic Design Category: B









Data Accessed: **Tue Nov 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:	Tue Nov 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.

Exhibit F

Power Density/RF Emissions Report

FOX HILL TELECOM

Radio Frequency Emissions Analysis Report

T-Mobile

Site ID: CT11394A

North Madison
864 Opening Hill Road
Madison, CT 06443

December 4, 2024

Fox Hill Telecom Project Number: 240275

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	14.16 %

FOX HILL TELECOM

December 4, 2024

T-MOBILE
Attn: RF Manager
35 Griffin Road South
Bloomfield, CT 06009

Emissions Analysis for Site: **CT11394A – North Madison**

Fox Hill Telecom, Inc ("Fox Hill") was directed to analyze the proposed upgrades to the T-MOBILE facility located at **864 Opening Hill Road, Madison, CT**, for the purpose of determining whether the emissions from the Proposed T-MOBILE Antenna Installation located on this property are within specified federal limits.

All information used in this report was analyzed as a percentage of current Maximum Permissible Exposure (% MPE) as listed in the FCC OET Bulletin 65 Edition 97-01and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter (µW/cm2). The number of $\mu W/cm^2$ calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

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

Additional details can be found in FCC OET 65.

CALCULATIONS

Calculations were performed for the proposed upgrades to the T-MOBILE antenna facility located at **864 Opening Hill Road, Madison, CT**, using the equipment information listed below. All calculations were performed per the specifications under FCC OET 65 for far field modeling calculations.

In OET-65, plane wave power densities in the Far Field of an antenna are calculated by considering antenna gain and reflective waves that would contribute to exposure.

Since the radiation pattern of an antenna has developed in the **Far Field** region the power gain in specific directions needs to be considered in exposure predictions to yield an Effective Radiated Power (ERP) in each specific direction from the antenna. Also, since the vertical radiation pattern of the antenna is considered, the exposure calculations would most likely be reduced significantly at ground level, resulting in a more realistic estimate of the actual exposure levels. To determine a worst-case scenario at each point along the calculation radials, each point was calculated using the antenna gain value at each angle of incident and compared against the result using an isotropic radiator at the antenna height with the greater of the two used to yield the more pessimistic far field value for each point along the calculation radial.

Additionally, to model a truly "worst case" prediction of exposure levels at or near a surface, such as at ground-level or on a rooftop, reflection off the surface of antenna radiation power can be assumed, resulting in a potential 1.6 times increase in power density in calculating far field power density values.

With these factors Considered, the worst case **Far Field prediction model** utilized in this analysis is determined by the following equation:

Equation 9 per FCC OET65 for Far Field Modeling

$$S = \frac{33.4\ ERP}{R^2}$$

S = Power Density (in μw/cm^2)
ERP = Effective Radiated Power from antenna (watts)
R = Distance from the antenna (meters)

Predicted far field power density values for all carriers identified in this report were calculated 6 feet above the ground level and are displayed as a percentage of the applicable FCC standards. All emissions values for other carriers were calculated using the same Far Field model outlined above, using industry standard radio configurations and frequency band selection based upon available licenses in this geographic area for emissions contribution estimates.

For each T-Mobile sector the following channel counts, frequency bands and power levels were utilized as shown in *Table 1*:

Technology	Frequency Band	Channel Count	Transmit Power per Channel (W)
LTE / 5G NR	600 MHz	4	40
LTE	700 MHz	2	20
GSM	1900 MHz (PCS)	2	10
LTE	1900 MHz (PCS)	4	35
5G	1900 MHz (PCS)	4	40
LTE	2100 MHz (AWS)	4	60

Table 1: Channel Data Table

The following T-Mobile antennas listed in *Table 2* were used in the modeling for transmission in the 600 MHz, 700 MHz, 1900 MHz (PCS) and 2100 MHz (AWS) frequency bands. This is based on feedback from the carrier with regards to anticipated antenna selection. Maximum gain values for all antennas are listed in the Inventory and Power Data table below.

Sector	Antenna Number	Antenna Make / Model	Antenna Centerline (ft)
A	1	RFS APXVAARR24_43-U-NA20	130
A	2	Commscope HBXX-9014DS-A2M	130
B	1	RFS APXVAARR24_43-U-NA20	130
B	2	Commscope HBXX-9014DS-A2M	130
C	1	RFS APXVAARR24_43-U-NA20	130
C	2	Commscope HBXX-9014DS-A2M	130

Table 2: Antenna Data

All calculations were done with respect to uncontrolled / general population threshold limits.

RESULTS

Per the calculations completed for the proposed T-MOBILE configurations *Table 3* shows resulting emissions power levels and percentages of the FCC's allowable general population limit.

Antenna ID	Antenna Make / Model	Frequency Bands	Antenna Gain (dBd)	Channel Count	Total TX Power (W)	ERP (W)	MPE %
Antenna A1	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	6	200	4,020.96	1.14
Antenna A2	Commscope HBXX-9014DS-A2M	1900 MHz (PCS) / 2100 MHz (AWS)	13.85 / 14.05	14	556	13,766.42	1.31
						Sector A Composite MPE%	**2.45**
Antenna B1	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	6	200	4,020.96	1.14
Antenna B2	Commscope HBXX-9014DS-A2M	1900 MHz (PCS) / 2100 MHz (AWS)	13.85 / 14.05	14	556	13,766.42	1.31
						Sector B Composite MPE%	**2.45**
Antenna C1	RFS APXVAARR24_43-U-NA20	600 MHz / 700 MHz	12.95 / 13.35	6	200	4,020.96	1.14
Antenna C2	Commscope HBXX-9014DS-A2M	1900 MHz (PCS) / 2100 MHz (AWS)	13.85 / 14.05	14	556	13,766.42	1.31
						Sector C Composite MPE%	**2.45**

Table 3: T-MOBILE Emissions Levels

The Following table (*table 4*) shows all additional identified carriers on site and their emissions contribution estimates, along with the newly calculated maximum T-MOBILE MPE contributions per this report. FCC OET 65 specifies that for carriers utilizing directional antennas that the highest recorded sector value be used for composite site MPE values due to their greatly reduced emissions contributions in the directions of the adjacent sectors. For this site, all three T-Mobile sectors have the same configuration yielding the same results on all three sectors. *Table 5* below shows a summary for each T-MOBILE Sector as well as the composite estimated MPE value for the site.

Site Composite MPE%	
Carrier	**MPE%**
T-MOBILE – Max Per Sector Value	**2.45 %**
Verizon Wireless	2.54 %
AT&T	5.03 %
Dish Wireless	3.14 %
Town Fire (180')	0.06 %
Town Police (180')	0.04 %
Unknown Omni Antennas (90')	0.90 %
Site Total MPE %:	**14.16 %**

Table 4: All Carrier MPE Contributions

T-MOBILE Sector A Total:	2.45 %
T-MOBILE Sector B Total:	2.45 %
T-MOBILE Sector C Total:	2.45 %
Site Total:	14.16 %

Table 5: Site MPE Summary

Table 6 below details a breakdown by frequency band and technology for the MPE power values for the maximum calculated T-MOBILE sector(s). For this site, all three T-Mobile sectors have the same configuration yielding the same results on all three sectors.

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ($\mu W/cm^2$)	Frequency (MHz)	Allowable MPE ($\mu W/cm^2$)	Calculated % MPE
T-Mobile 600 MHz LTE / 5G NR	4	788.97	130	3.76	600 MHz	400	0.94%
T-Mobile 700 MHz LTE	2	432.54	130	0.93	700 MHz	467	0.20%
T-Mobile 1900 MHz (PCS) GSM	2	242.66	130	0.50	1900 MHz (PCS)	1000	0.05%
T-Mobile 1900 MHz (PCS) LTE	4	825.05	130	3.30	1900 MHz (PCS)	1000	0.33%
T-Mobile 1900 MHz (PCS) 5G	4	970.64	130	3.70	1900 MHz (PCS)	1000	0.37%
T-Mobile 2100 MHz (AWS) LTE	4	1,524.58	130	5.60	2100 MHz (AWS)	1000	0.56%
						Total:	**2.45 %**

Table 6: T-MOBILE Maximum Sector MPE Power Values

Summary

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

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

T-MOBILE Sector	Power Density Value (%)
Sector A:	2.45 %
Sector B:	2.45 %
Sector C:	2.45 %
T-MOBILE Maximum Total (per sector):	2.45 %
Site Total:	14.16 %
Site Compliance Status:	**COMPLIANT**

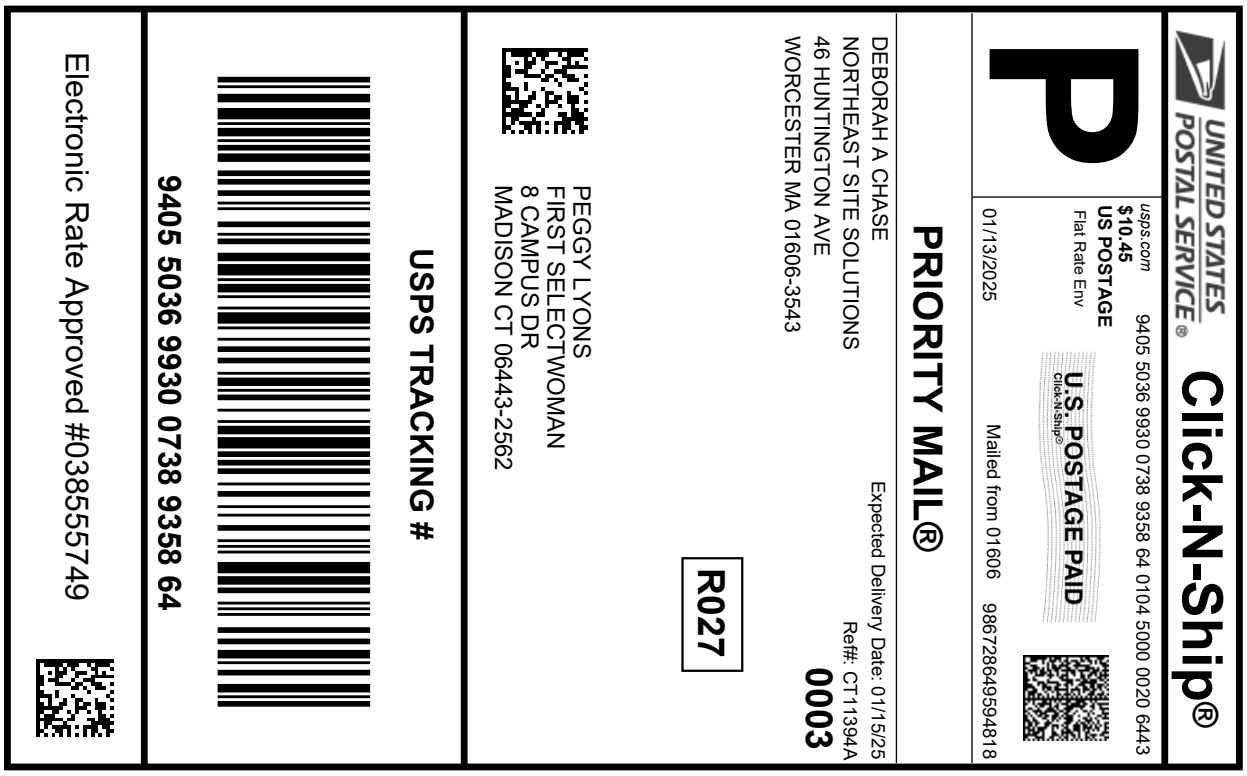
The estimated composite MPE value for this site assuming all carriers present is **14.16 %** of the allowable FCC established general population limit sampled at the ground level. This is based upon the far field calculations performed for all carriers identified in this report.

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

Scott Heffernan
Principal RF Engineer
Fox Hill Telecom, Inc
Worcester, MA 01609
(978)660-3998

Exhibit G

Recipient Mailings



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Priority Mail® Postage:	**$10.45**
Total:	**$10.45**

From: DEBORAH A CHASE
NORTHEAST SITE SOLUTIONS
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WORCESTER MA 01606-3543

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To: PEGGY LYONS
FIRST SELECTWOMAN
8 CAMPUS DR
MADISON CT 06443-2562

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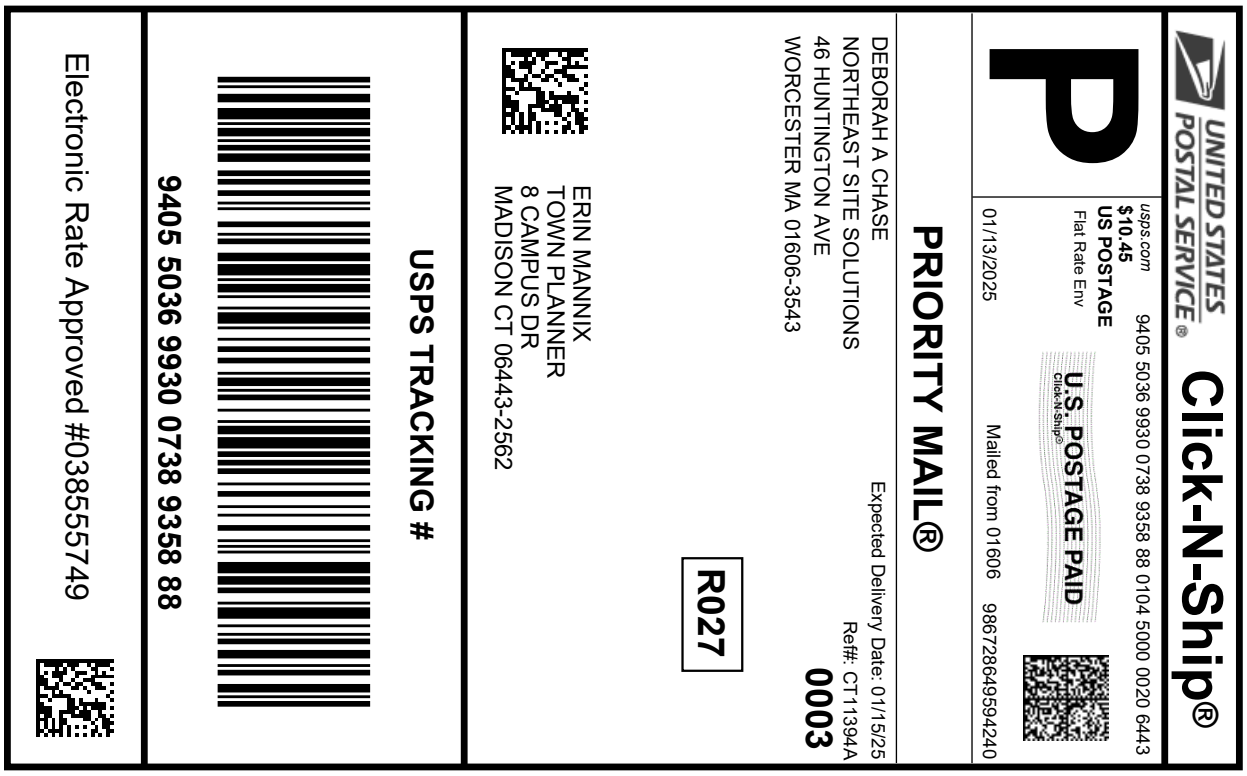

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Print Date:	01/13/2025
Ship Date:	01/13/2025
Expected Delivery Date:	01/15/2025

Priority Mail® Postage:	**$10.45**
Total:	**$10.45**

From: DEBORAH A CHASE
NORTHEAST SITE SOLUTIONS
46 HUNTINGTON AVE
WORCESTER MA 01606-3543

Ref#: CT11394A

To: ERIN MANNIX
TOWN PLANNER
8 CAMPUS DR
MADISON CT 06443-2562

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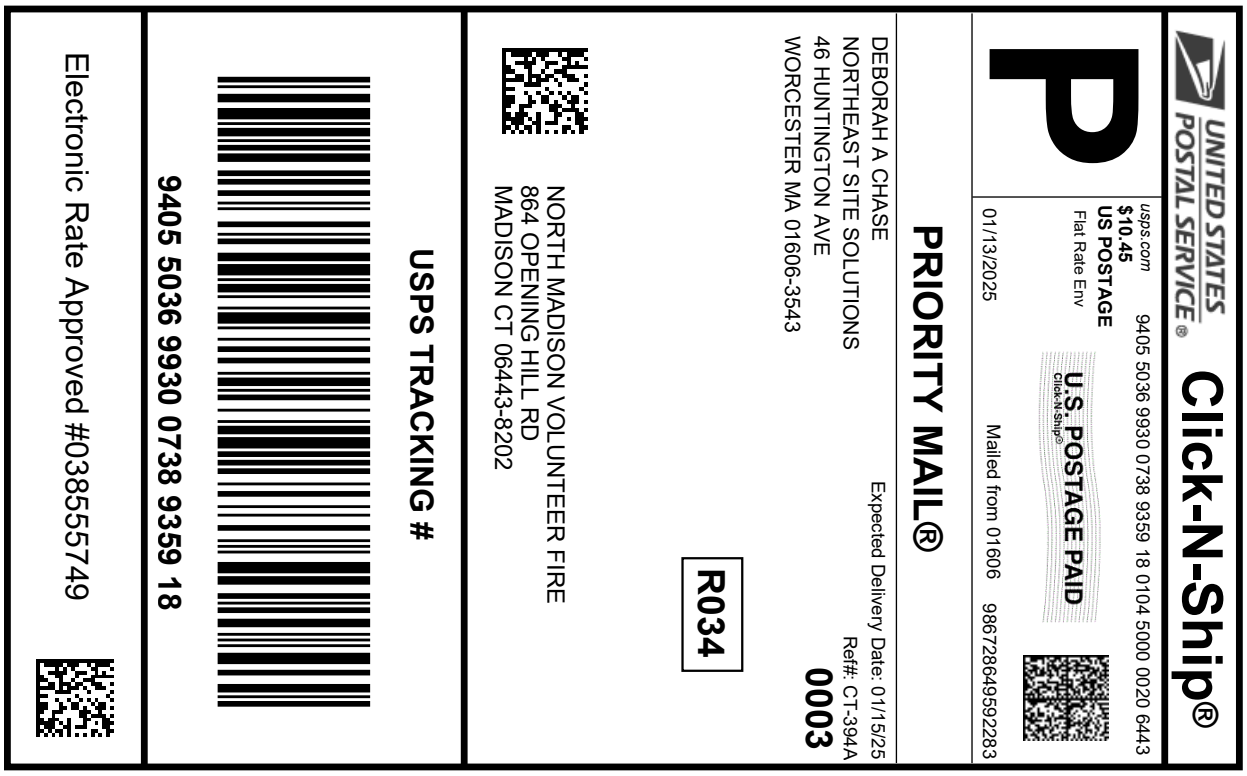

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USPS TRACKING # :
9405 5036 9930 0738 9359 18

Trans. #:	607496241
Print Date:	01/13/2025
Ship Date:	01/13/2025
Expected Delivery Date:	01/15/2025

Priority Mail® Postage:	**$10.45**
Total:	**$10.45**

From: DEBORAH A CHASE
NORTHEAST SITE SOLUTIONS
46 HUNTINGTON AVE
WORCESTER MA 01606-3543
Ref#: CT-394A

To: NORTH MADISON VOLUNTEER FIRE DEPARTMENT
864 OPENING HILL RD
MADISON CT 06443-8202

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