



Northeast Site Solutions  
Victoria Masse  
5 Melrose Drive  
Farmington, CT 06032  
[victoria@northeastsitesolutions.com](mailto:victoria@northeastsitesolutions.com)

February 10, 2025

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

RE: Tower Share Application  
11 Munn Road, Colchester, CT 06415  
Latitude: 41.5925 N  
Longitude: -72.32111W  
Site#: CTNL251A\_Coverage Strategy

Dear Ms. Bachman:

This letter and attachments are submitted on behalf of T-Mobile. T-Mobile plans to install antennas and related equipment to the tower site located at 11 Munn Road, Colchester, Connecticut.

T-Mobile proposes to install six (6) 600/700/1900/2100/2500 5G MHz antenna and six (6) RRUs at the 210-foot level of the existing 320-foot self-support tower, two (2) hybrid cable will also be installed. T-Mobile equipment cabinets will be placed on a new 10'x14' concrete pad within the existing compound along with a 48kw diesel generator. Included are plans by Foresite, dated February 5, 2025, Exhibit C. Also included is a structural analysis prepared by Centek, dated November 20, 2024, confirming that the existing tower is structurally capable of supporting the proposed equipment. Attached as Exhibit D. This facility was approved by the Connecticut Siting Council on May 1, 1990. Please see attached Exhibit A.

Please accept this letter as notification pursuant to Regulations of Connecticut State Agencies 16-50aa, of T-Mobile intent to share a telecommunications facility pursuant to R.C.S.A. 16-50j-88. In accordance with R.C.S.A., a copy of this letter is being sent to Bernie Dennler, First Selectman, Nicole Haggerty, Planning Director, as well as the property owner and tower owner.

The planned modifications of the facility fall squarely within those activities explicitly provided for in R.C.S.A. 16-50j-89.

1. The proposed modifications will not result in an increase in the height of the existing structure. The top of the tower is 320-feet; T-Mobile proposed antennas will be located at a center line height of 210-feet.
2. The proposed modification will not result in the increase of the site boundary as depicted on the attached site plan.
3. The proposed modification will not increase the noise levels at the facility by six decibels or more, or to levels that exceed local and state criteria. The incremental effect of the proposed changes will be negligible.

5 Melrose Drive, Farmington CT 06032



4. The operation of the proposed antennas will not increase radio frequency emissions at the facility to a level at or above the Federal Communications Commission safety standard. As indicated in the attached power density calculations, the combined site operations will result in a total density of 2.91% as evidenced by Exhibit F.

Connecticut General Statutes 16-50-aa indicates that the Council must approve the shared use of a telecommunications facility provided it finds the shared use is technically, legally, environmentally, and economically feasible and meets public safety concerns. As demonstrated in this letter, T-Mobile respectfully indicates that the shared use of this facility satisfies these criteria.

A. Technical Feasibility. The existing self-support tower has been deemed structurally capable of supporting T-Mobile proposed loading. The structural analysis is included in Exhibit D.

B. Legal Feasibility. As referenced above, C.G.S. 16-50aa has been authorized to issue orders approving the shared use of an existing tower such as this self-support tower in Colchester. Under the authority granted to the Council, an order of the Council approving the requested shared use would permit T-Mobile to obtain a building permit for the proposed installation. Further, a letter of Authorization is included as Exhibit G, authorizing T-Mobile to file this application for shared use.

C. Environmental Feasibility. The proposed shared use of this facility would have a minimal environmental impact. The installation of T-Mobile equipment at the 210-foot level of the existing 320-foot self-support tower would have an insignificant visual impact on the area around the self-support tower. T-Mobile ground equipment would be installed within the existing facility compound. T-Mobile shared use would therefore not cause any significant alteration in the physical or environmental characteristics of the existing site. Additionally, as evidenced by Exhibit F, the proposed antennas would not increase radio frequency emissions to a level at or above the Federal Communications Commission safety standard.

D. Economic Feasibility. T-Mobile will be entering into an agreement with the owner of this facility to mutually agreeable terms. As previously mentioned, the Letter of Authorization has been provided by the owner to assist T-Mobile with this tower share application.

E. Public Safety Concerns. As discussed above, the tower is structurally capable of supporting T-Mobile proposed loading. T-Mobile is not aware of any public safety concerns relative to the proposed sharing of the existing self-support tower. T-Mobile intentions of providing new and improved wireless service through the shared use of this facility is expected to enhance the safety and welfare of local residents and individuals traveling through Colchester.

Sincerely,

Victoria Masse  
Mobile: 860-306-2326  
Fax: 413-521-0558  
Office: 5 Melrose Drive, Farmington, CT 06032  
Email: victoria@northeastsitesolutions.com



Attachments

Cc:

Bernie Dennler, First Selectman  
Town of Colchester  
127 Norwich Avenue  
Colchester, CT 06415

Nicole Haggerty, Planning Director  
Town of Colchester  
127 Norwich Avenue  
Colchester, CT 06415

State of Connecticut, Property and Tower Owner  
165 Capitol Ave  
Hartford, CT 06106

# Exhibit A

## **Original Facility Approval**





# STATE OF CONNECTICUT

## CONNECTICUT SITING COUNCIL

136 Main Street, Suite 401  
New Britain, Connecticut 06051  
Phone: 827-7682

Gloria Dibble Pond  
Chairperson

### COMMISSIONERS

Energy / Telecommunications

Peter G. Boucher  
Leslie Carothers

Hazardous Waste / Low-level  
Radioactive Waste

Frederick G. Adams  
Bernard R. Sullivan

### COUNCIL MEMBERS

Harry E. Covey  
Mortimer A. Gelston  
Daniel P. Lynch, Jr.  
Paulann H. Sheets  
William H. Smith  
Colin C. Tait

Joel M. Rinebold  
Executive Director

Stanley J. Modzelesky  
Executive Assistant

FILE  
COPY

May 1, 1990

Mr. David S. Malko, P.E.  
Manager, Engineering & Regulatory Services  
METRO MOBILE  
50 Rockland Road  
South Norwalk, CT 06854

RE: Metro Mobile CTS of New London, Inc., Notice of  
Intent to Install Cellular Antennas and Related  
Equipment on a tower Owned by the State of  
Connecticut, Department of Public Safety in the  
Town of Colchester, Connecticut.

Dear Mr. Malko:

At a meeting on April 30, 1990, the Connecticut Siting Council acknowledged your notice of intent to install cellular antennas and related equipment on an existing tower facility owned by the State of Connecticut, Department of Public Safety, in Colchester, Connecticut, pursuant to Section 16-50j-73 of the Regulations of State Agencies (RSA).

The proposed modifications are to be implemented as specified in your notices dated April 16 and 30, 1990. As proposed, the modifications are in compliance with the exception criteria specified in RSA 16-50j-72 as changes to an existing facility site that do not increase the tower height, extend the boundaries of the tower site, increase noise levels at the tower site boundary 6 decibels, and add radio frequency sending or receiving capability which increases the total radio frequency electromagnetic radiation power density measured at the tower site boundary to or above the standard adopted by the State Department of Environmental Protection pursuant to Section 22a-162 of the Connecticut General Statutes.

MR. DAVID S. MAIKO, P.E.  
May 1, 1990  
Page 2

The Council is pleased to note that the shared use of an existing tower meets the Council's long-term goal and the public interest to avoid proliferation of additional tower structures.

Please notify the Council upon completion of construction.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Gloria Dibble Pond", followed by a small mark that looks like a stylized "R" or a flourish.

Gloria Dibble Pond  
Chairperson

GDP/JMR/bd

4380E

# Exhibit B

## **Property Card**



# Town of Colchester, CT

## Property Report

Map Block Lot

06-04/010-000

PID 5602

Building # 1

Section # 1

Account

C0515000

### Property Information

Property Location	11 MUNN RD
Owner	CONNECTICUT STATE OF
Co-Owner	na
Mailing Address	165 CAPITOL AVE HARTFORD CT 06106
Land Use	901V State MDL-00
Land Class	E
Zoning Code	RU
Census Tract	

Neighborhood	
Acreage	0.53
Utilities	UNKNOWN
Lot Setting/Desc	UNKNOWN UNKNOWN
Additional Info	

### Photo



### Sketch



### Primary Construction Details

Year Built	0
Stories	
Building Style	UNKNOWN
Building Use	Vacant
Building Condition	
Interior Floors 1	
Interior Floors 2	NA
Total Rooms	0
Basement Garages	
Occupancy	
Building Grade	

Bedrooms	0
Full Bathrooms	0
Half Bathrooms	0
Extra Fixtures	0
Bath Style	
Kitchen Style	
Roof Style	
Roof Cover	
AC Type	
Fireplaces	0

Exterior Walls	
Exterior Walls 2	NA
Interior Walls	
Interior Walls 2	NA
Heating Type	
Heating Fuel	
Sq. Ft. Basement	
Fin BSMT Quality	
Extra Kitchens	

# Town of Colchester, CT

# Property Report

Map Block Lot

**06-04/010-000**

PID 5602

Building # 1

Section # **1**

Account

**C0515000**

**Valuation Summary** (Assessed value = 70% of Appraised Value)

Item	Appraised	Assessed
Buildings	0	0
Extras	0	0
Improvements		
Outbuildings	0	0
Land	62800	44000
Total	62800	44000

### Sub Areas

[illegible]

## Sales History

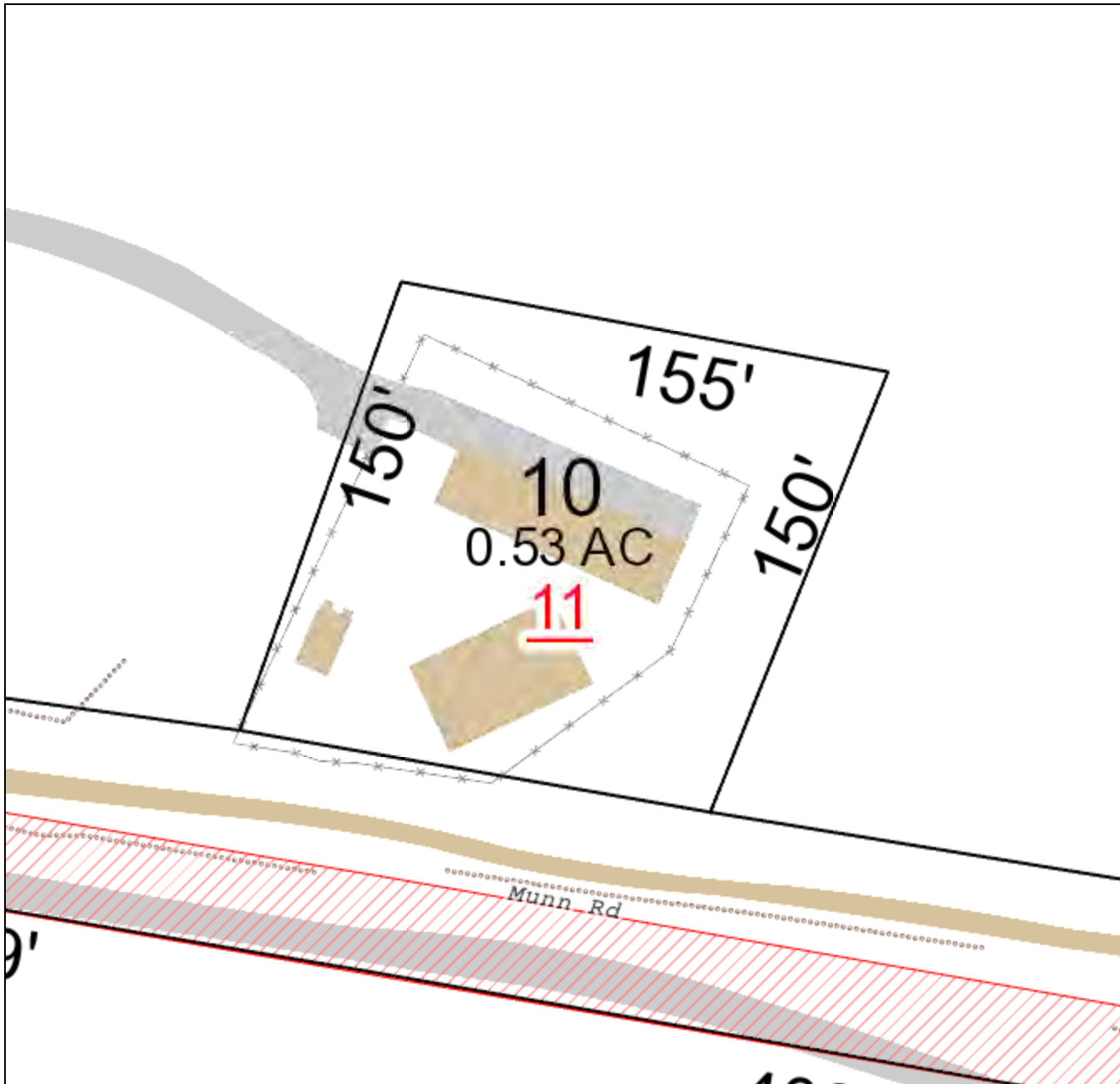
Owner of Record	Book/ Page	Sale Date	Sale Price
CONNECTICUT STATE OF	0082/0250	1/7/2022	0

# Town of Colchester

## Geographic Information System (GIS)

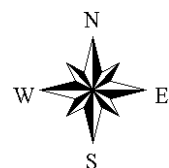


Date Printed: 2/5/2025

**MAP DISCLAIMER - NOTICE OF LIABILITY**

This map is for assessment purposes only. It is not for legal description or conveyances. All information is subject to verification by any user. The Town of Colchester and its mapping contractors assume no legal responsibility for the information contained herein.

Approximate Scale: 1 inch = 50 feet



# Exhibit C

## **Construction Drawings**



CO-LOCATION ON EXISTING WIRELESS FACILITY BY



T-MOBILE NORTHEAST LLC

PROJECT TYPE: NSD

SITE NUMBER: CTNL251A

SITE NAME: DEPT OF PUBLIC SAFETY

SITE ADDRESS: 11 MUNN RD

COLCHESTER, CT 06415

RF REV DATE: 01/26/2025

RF RAN TEMPLATE:

67E998E 6160

A&L TEMPLATE:

67E998E 10P+1QP

PROJECT NOTES:

1. THIS IS AN UNMANNED TELECOMMUNICATION FACILITY AND NOT FOR HUMAN HABITATION: HANDICAPPED ACCESS IS NOT REQUIRED. POTABLE WATER OR SANITARY SERVICE IS NOT REQUIRED. NO OUTDOOR STORAGE OR ANY SOLID WASTE RECEPTACLES REQUIRED.
2. APPLICABLE BUILDING CODES AND STANDARDS: ALL WORK AND MATERIALS SHALL BE PERFORMED AND INSTALLED IN ACCORDANCE WITH THE CURRENT EDITION OF THE FOLLOWING CODES AS ADOPTED BY THE GOVERNING LOCAL AUTHORITIES INCLUDING: CONNECTICUT STATE BUILDING CODE 2022. ANSI/TIA-222-H STRUCTURAL STANDARD FOR ANTENNA SUPPORTING STRUCTURES AND ANTENNAS. NFPA 70, NATIONAL ELECTRICAL CODE, OF THE NATIONAL FIRE PROTECTION ASSOCIATION INC 2020. AMERICAN CONCRETE INSTITUTE (ACI) 318, BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE. NATIONAL ELECTRIC CODE (NEC) 2017. OCCUPATIONAL SAFETY AND HEALTH ACT (OSHA).
3. CONTRACTOR SHALL VERIFY ALL PLANS, EXISTING AND PROPOSED DIMENSIONS, AND CONDITIONS ON THE JOB SITE. CONTRACTOR SHALL IMMEDIATELY NOTIFY THE ARCHITECT / ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK. FAILURE TO NOTIFY THE ARCHITECT / ENGINEER PLACES THE RESPONSIBILITY ON THE CONTRACTOR TO CORRECT THE DISCREPANCIES AT THE CONTRACTOR'S EXPENSE.
4. STRUCTURAL NOTE: PRIOR TO COMMENCEMENT OF WORK, CONTRACTOR SHALL REFER TO THE STRUCTURAL ANALYSIS REPORTS AND DRAWINGS PREPARED FOR THIS SITE, AND FULLY ADHERE TO ALL THE INSTRUCTIONS AND RECOMMENDATIONS THEREIN, INCLUDING BUT NOT LIMITED TO ANTENNA PLACEMENT, COAX ROUTING, STRUCTURAL IMPROVEMENTS, ETC. REFER TO STRUCTURAL ANALYSIS REPORT, PREPARED BY CENTEK ENGINEERING, INC. DATED NOVEMBER 20, 2024.
5. REFER TO SHEET N-1 FOR GENERAL NOTES AND N-2 FOR CONSTRUCTION NOTES
6. PRIOR TO COMMENCEMENT OF WORK LOCATE UNDERGROUND UTILITIES:



Connecticut - Call Before You Dig

811 or  
1-800-922-4455

Advance Notice:

Minimum of 2 working days in advance, no more than 30 days in advance.

SATELLITE IMAGE:



SITE VICINITY :



PROJECT SUMMARY:

THE PROJECT SCOPE CONSISTS OF:  
CO-LOCATION OF T-MOBILE'S ANTENNAS ON AN EXISTING TOWER, EQUIPMENT CABINETS ON CONCRETE PAD WITHIN EXISTING FENCED AREA AT THE BASE OF TOWER.

PROJECT INFORMATION:

ADDRESS: 11 MUNN RD  
COLCHESTER, CT 06415  
SELF SUPPORT TOWER  
RU  
PID: 5602  
MAP BLOCK LOT: 06-04/010-000  
COORDINATES: 41° 35' 33.37" N, 72° 19' 16.26" W  
AVERAGE GROUND ELEV: 605± (AMSL)

PROJECT TEAM:

APPLICANT: T-MOBILE NORTHEAST, LLC.  
15 COMMERCE WAY, SUITE B  
NORTHON, MA 02766

PROPERTY OWNER: CONNECTICUT STATE OF  
165 CAPITOL AVE  
HARTFORD CT 06106

PROJECT MANAGER: NORTHEAST SITE SOLUTIONS  
5 MELROSE DRIVE  
FARMINGTON, CT 06032  
MATTHEW BANDLE  
MATT@NORTHEASTSITESOLUTIONS.COM  
508-642-8801

CONSULTANT: FORESITE LLC  
462 WALNUT ST  
NEWTON, MA 02460  
SAEED MOSSAVAT  
SMOSSAVAT@FORESITELLC.COM  
617-212-3123

SHEET INDEX:

T-1:	TITLE SHEET
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N-2:	CONSTRUCTION NOTES
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A-2:	SITE PLAN
A-3:	EQUIPMENT PLAN
A-4:	ELEVATION, ANTENNA PLAN AND SCHEDULE
A-5:	EQUIPMENT SPECIFICATIONS
A-6:	EQUIPMENT SPECIFICATIONS
A-7:	EQUIPMENT SPECIFICATIONS
A-8:	EQUIPMENT SPECIFICATIONS
A-9:	CONSTRUCTION DETAILS
A-10:	CONSTRUCTION DETAILS
A-11:	CONSTRUCTION DETAILS
A-12:	CONSTRUCTION DETAILS
E-1:	ELECTRICAL DETAILS
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E-3:	ELECTRICAL DETAILS
G-1:	GROUNDING DETAILS
G-2:	GROUNDING DETAILS
G-3:	GROUNDING DETAILS

APPLICANT:



T-MOBILE NORTHEAST LLC

15 COMMERCE WAY, SUITE B  
NORTHON, MA 02766

PROJECT MANAGER



5 MELROSE DR  
FARMINGTON, CT 06032

ENGINEERING CONSULTANT:

FORESITE LLC.

462 WALNUT STREET, SUITE 1  
NEWTON, MA 02460

PROFESSIONAL SEAL



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REV	DESCRIPTION	DATE
A	PRELIMINARY	10/07/24
0	ISSUED FOR PERMITTING	02/05/25

SITE NUMBER: CTNL251A

SITE NAME: DEPT OF PUBLIC SAFETY  
SITE ADDRESS:  
11 MUNN RD  
COLCHESTER, CT 06415

SHEET TITLE:

T-1: TITLE SHEET

APPROVALS:

FSA CM	DATE
RF ENGINEER	DATE
FOPS	DATE
T-MOBILE ENGINEERING AND DEVELOPMENT	DATE
	DATE
	DATE



CONTRACTOR'S NOTES:

1- THE CONTRACTOR SHALL GIVE ALL NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY, MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS, AND LOCAL AND STATE JURISDICTIONAL CODES BEARING ON THE PERFORMANCE OF THE WORK. THE WORK PERFORMED ON THE PROJECT AND THE MATERIALS INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES.

2- THE ARCHITECT / ENGINEER HAVE MADE EVERY EFFORT TO SET FORTH IN THE CONSTRUCTION AND CONTRACT DOCUMENTS THE COMPLETE SCOPE OF WORK. THE CONTRACTOR BIDDING THE JOB IS NEVERTHELESS CAUTIONED THAT MINOR OMISSIONS OR ERRORS IN THE DRAWINGS AND OR SPECIFICATIONS SHALL NOT EXCUSE SAID CONTRACTOR FROM COMPLETING THE PROJECT AND IMPROVEMENTS IN ACCORDANCE WITH THE INTENT OF THESE DOCUMENTS.

3- THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE T-MOBILE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF THE CONTRACTOR'S PROPOSAL OR PERFORMANCE OF WORK. IN THE EVENT OF DISCREPANCIES THE CONTRACTOR SHALL PRICE THE MORE COSTLY OR EXTENSIVE WORK, UNLESS DIRECTED IN WRITING OTHERWISE.

4- THE SCOPE OF WORK SHALL INCLUDE FURNISHING ALL MATERIALS, EQUIPMENT, LABOR AND ALL OTHER MATERIALS AND LABOR DEEMED NECESSARY TO COMPLETE THE WORK / PROJECT AS DESCRIBED HEREIN.

5- THE CONTRACTOR SHALL VISIT THE JOB SITE PRIOR TO THE SUBMISSION OF BIDS OR PERFORMING WORK TO FAMILIARIZE HIMSELF WITH THE FIELD CONDITIONS AND TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS.

6- THE CONTRACTOR SHALL OBTAIN AUTHORIZATION TO PROCEED WITH CONSTRUCTION PRIOR TO STARTING WORK ON ANY ITEM NOT CLEARLY DEFINED BY THE CONSTRUCTION DRAWINGS/CONTRACT DOCUMENTS.

7- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS ACCORDING TO THE MANUFACTURER'S / VENDOR'S SPECIFICATIONS UNLESS NOTED OTHERWISE OR WHERE LOCAL CODES OR ORDINANCES TAKE PRECEDENCE.

8- THE CONTRACTOR SHALL PROVIDE A FULL SET OF CONSTRUCTION DOCUMENTS AT THE SITE UPDATED WITH THE LATEST REVISIONS AND ADDENDUMS OR CLARIFICATIONS AVAILABLE FOR THE USE BY ALL PERSONNEL INVOLVED WITH THE PROJECT.

9- THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER CONTRACT.

10- THE CONTRACTOR IS RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.

11- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS WHICH MAY BE REQUIRED FOR THE WORK BY THE ARCHITECT / ENGINEER, THE STATE, COUNTY OR LOCAL GOVERNMENT AUTHORITY.

12- THE CONTRACTOR SHALL MAKE THE NECESSARY PROVISIONS TO PROTECT EXISTING IMPROVEMENTS, EASEMENTS, PAVING, CURBING, ETC. DURING CONSTRUCTION. UPON COMPLETION OF WORK, THE CONTRACTOR SHALL REPAIR ANY DAMAGE THAT MAY HAVE OCCURRED DUE TO CONSTRUCTION ON OR ABOUT THE PROPERTY.

13- THE CONTRACTOR SHALL KEEP THE GENERAL WORK AREA CLEAN AND HAZARD FREE DURING CONSTRUCTION AND DISPOSE OF ALL DIRT, DEBRIS, RUBBISH AND REMOVE EQUIPMENT NOT SPECIFIED AS REMAINING ON PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT, SPOTS, DUST, OR SMUDGES OF ANY NATURE.

14- THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.

15- THE CONTRACTOR SHALL NOTIFY THE PROJECT OWNER'S REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS.

16- THE CONTRACTOR IS NOT TO ORDER MATERIAL OR CONSTRUCT ANY PORTION OF THE WORK THAT IS IN CONFLICT UNTIL CONFLICT IS RESOLVED BY THE LESSEE / LICENSEE REPRESENTATIVE.

17- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.

18- ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL LOCATE ALL UNDERGROUND UTILITIES IN THE FIELD PRIOR TO ANY SITE WORK.

APPLICANT:  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**

15 COMMERCE WAY, SUITE B  
NORTHON, MA 02766

PROJECT MANAGER

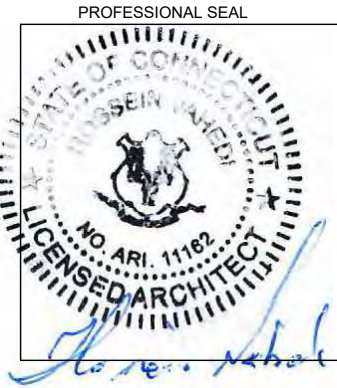


5 MELROSE DR  
FARMINGTON, CT 06032

ENGINEERING CONSULTANT:

**FORESITE LLC.**

462 WALNUT STREET, SUITE 1  
NEWTON, MA 02460



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**SITE NUMBER: CTNL251A**  
SITE NAME: DEPT OF PUBLIC SAFETY  
SITE ADDRESS:  
11 MUNN RD  
COLCHESTER, CT 06415

SHEET TITLE:  
N-1: GENERAL NOTES

FOUNDATION, EXCAVATION AND BACKFILL NOTES

1. ALL FINAL GRADED SLOPES SHALL BE A MAXIMUM OF 3 HORIZONTAL TO 1 VERTICAL.
2. ALL EXCAVATIONS PREPARED FOR PLACEMENT OF CONCRETE SHALL BE OF UNDISTURBED SOILS, SUBSTANTIALLY HORIZONTAL AND FREE FROM ANY LOOSE, UNSUITABLE MATERIAL OR FROZEN SOILS, AND WITHOUT THE PRESENCE OF POUNDING WATER. DEWATERING FOR EXCESS GROUND WATER SHALL BE PROVIDED WHEN REQUIRED. COMPACTION OF SOILS UNDER CONCRETE PAD FOUNDATIONS SHALL NOT BE LESS THAN 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY FOR THE SOIL IN ACCORDANCE WITH ASTM D1557.
3. CONCRETE FOUNDATIONS SHALL NOT BE PLACED ON ORGANIC OR UNSUITABLE MATERIAL. IF INADEQUATE BEARING CAPACITY IS REACHED AT THE DESIGNED EXCAVATION DEPTH, THE UNSATISFACTORY SOIL SHALL BE EXCAVATED TO ITS FULL DEPTH AND EITHER BE REPLACED WITH MECHANICALLY COMPACTED GRANULAR MATERIAL OR THE EXCAVATION SHALL BE FILLED WITH CONCRETE OF THE SAME TYPE SPECIFIED FOR THE FOUNDATION. CRUSHED STONE MAY BE USED TO STABILIZE THE BOTTOM OF THE EXCAVATION. ANY STONE SUB BASE MATERIAL, IF USED, SHALL NOT SUBSTITUTE FOR REQUIRED THICKNESS OF CONCRETE.
4. ALL EXCAVATIONS SHALL BE CLEAN OF UNSUITABLE MATERIAL SUCH AS VEGETATION, TRASH, DEBRIS, AND SO FORTH PRIOR TO BACK FILLING. BACK FILL SHALL CONSIST OF APPROVED MATERIALS SUCH AS EARTH, LOAM SANDY CLAY, SAND AND GRAVEL, OR SOFT SHALE, FREE FROM CLODS OR LARGE STONES OVER 2 1/2" MAX DIMENSIONS. ALL BACK FILL SHALL BE PLACED IN COMPACTED LAYERS.
5. ALL FILL MATERIALS AND FOUNDATION BACK FILL SHALL BE PLACED MAXIMUM 6" THICK LIFTS BEFORE COMPACTION. EACH LIFT SHALL BE WETTED IF REQUIRED AND COMPACTED TO NOT LESS THAN 95% OF THE MODIFIED PROCTOR MAXIMUM DRY DENSITY FOR SOIL IN ACCORDANCE WITH ASTM D1557.
6. NEWLY PLACED CONCRETE FOUNDATIONS SHALL CURE A MINIMUM OF 72 HRS PRIOR TO BACK FILLING.
7. FINISHED GRADING SHALL BE SLOPED TO PROVIDE POSITIVE DRAINAGE AND PREVENT STANDING WATER. THE FINAL (FINISH) ELEVATION OF SLAB FOUNDATIONS SHALL SLOPE AWAY IN ALL DIRECTIONS FROM THE CENTER. FINISH GRADE OF CONCRETE PADS SHALL BE A MAXIMUM OF 4 INCHES ABOVE FINAL FINISH GRADE ELEVATIONS. PROVIDE SURFACE FILL GRAVEL TO ESTABLISH SPECIFIED ELEVATIONS WHERE REQUIRED.
8. NEWLY GRADED SURFACE AREAS TO RECEIVE GRAVEL SHALL BE COVERED WITH GEOTEXTILE FABRIC TYPE: YPAR-3401 AS MANUFACTURED BY "CONSTRUCTION MATERIAL 1-800-239-3841" OR AN APPROVED EQUIVALENT, SHOWN ON PLANS. THE GEOTEXTILE FABRIC SHALL BE BLACK IN COLOR TO CONTROL THE RECURRENCE OF VEGETATIVE GROWTH AND EXTEND TO WITHIN 1 FOOT OUTSIDE THE SITE FENCING OR ELECTRICAL GROUNDING SYSTEM PERIMETER WHICH EVER IS GREATER. ALL FABRIC SHALL BE COVERED WITH A MINIMUM OF 4" DEEP COMPACTED STONE OR GRAVEL AS SPECIFIED. I.E. FDOT TYPE NO. 57 FOR FENCED COMPOUND; FDOT TYPE NO. 67 FOR ACCESS DRIVE AREA.
9. IN ALL AREAS TO RECEIVE FILL, REMOVE ALL VEGETATION, TOPSOIL, DEBRIS, WET AND UNSATISFACTORY SOIL MATERIALS, OBSTRUCTIONS, AND DELETERIOUS MATERIALS FROM GROUND SURFACE. PLOW STRIP OR BREAK UP SLOPED SURFACES STEEPER THAN 1 VERTICAL TO 4 HORIZONTAL SUCH THAT FILL MATERIAL WILL BIND WITH EXISTING/PREPARED SOIL SURFACE.
10. WHEN SUB GRADE OR PREPARED GROUND SURFACE HAS A DENSITY LESS THAN THAT REQUIRED FOR THE FILL MATERIAL, SCARIFY THE GROUND SURFACE TO DEPTH REQUIRED, PULVERIZE, MOISTURE-CONDITION AND/OR AERATE THE SOILS AND RE-COMPACT TO THE REQUIRED DENSITY PRIOR TO PLACEMENT OF FILLS.
11. IN AREAS WHICH EXISTING GRAVEL SURFACING IS REMOVED OR DISTURBED DURING CONSTRUCTION OPERATIONS, REPLACE GRAVEL SURFACING TO MATCH ADJACENT GRAVEL SURFACING AND RESTORED TO THE SAME THICKNESS AND COMPACTION AS SPECIFIED. ALL RESTORED GRAVEL SURFACING SHALL BE FREE FROM CORRUGATIONS AND WAVES.
12. EXISTING GRAVEL SURFACING MAY BE EXCAVATED SEPARATELY AND REUSED WITH THE CONDITION THAT ANY UNFAVORABLE AMOUNTS OF ORGANIC MATTER, OR OTHER DELETERIOUS MATERIALS ARE REMOVED PRIOR TO REUSE. FURNISH ANY ADDITIONAL GRAVEL RESURFACING MATERIAL AS NEEDED TO PROVIDE A FULL DEPTH COMPACTED SURFACE THROUGHOUT SITE.
13. GRAVEL SUB SURFACE SHALL BE PREPARED TO REQUIRED COMPACTION AND SUB GRADE ELEVATIONS BEFORE GRAVEL SURFACING IS PLACED AND/OR RESTORED. ANY LOOSE OR DISTURBED MATERIALS SHALL BE THOROUGHLY COMPACTED AND ANY DEPRESSIONS IN THE SUB GRADE SHALL BE FILLED AND COMPACTED WITH APPROVED SELECTED MATERIAL. GRAVEL SURFACING MATERIAL SHALL NOT BE USED FOR FILLING DEPRESSIONS IN THE SUB GRADE.
14. PROTECT EXISTING GRAVEL SURFACING AND SUB GRADE IN AREAS WHERE EQUIPMENT LOADS WILL OPERATE.
15. DAMAGE TO EXISTING STRUCTURES AND/OR UTILITIES RESULTING FROM CONTRACTORS NEGLIGENCE SHALL BE REPAIRED AND/OR REPLACED TO THE OWNERS SATISFACTION AT NO ADDITIONAL COST TO THE CONTRACT.
16. ALL SUITABLE BORROW MATERIAL FOR BACK FILL OF THE SITE SHALL BE INCLUDED IN THE BID. EXCESS TOPSOIL AND UNSUITABLE MATERIAL SHALL BE DISPOSED OF OFF SITE AT LOCATIONS APPROVED BY GOVERNING AGENCIES AT NO ADDITIONAL COST TO THE CONTRACT.

STRUCTURAL STEEL NOTES

1. ALL STEEL WORK SHALL BE IN ACCORDANCE WITH THE LATEST EDITION OF THE AISC MANUAL OF STEEL CONSTRUCTION. STEEL SECTIONS SHALL BE IN ACCORDANCE WITH ASTM AS INDICATED BELOW:  
ANGLES, BARS, CHANNELS, PLATES: ASTM A36, 36 KSI  
HSS SECTIONS: ASTM 500, 46 KSI  
PIPE SECTIONS: ASTM A53-E, 35 KSI
2. ALL EXTERIOR EXPOSED STEEL AND HARDWARE SHALL BE HOT DIPPED GALVANIZED.
3. ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP. ALL WELDING SHALL BE PERFORMED IN AN APPROVED SHOP.
4. ALL BOLTS FOR STEEL TO STEEL CONNECTIONS TO BE PER ASTM A325. HOLES TO BE 1/16" DIA. LARGER THAN BOLT, U.N.O.
5. FIELD MODIFICATIONS ARE TO BE COATED WITH ZINC ENRICHED PAINT.

SITE WORK NOTES

1. DO NOT EXCAVATE OR DISTURB BEYOND THE PROPERTY LINES OR LEASE LINES, UNLESS OTHERWISE NOTED.
2. DO NOT SCALE BUILDING DIMENSIONS FROM DRAWING.
3. SIZE, LOCATION AND TYPE OF ANY UNDERGROUND UTILITIES OR IMPROVEMENTS SHALL BE ACCURATELY NOTED AND PLACED ON AS-BUILT DRAWINGS BY GENERAL CONTRACTOR AND ISSUED TO ARCHITECT/ENGINEER AT COMPLETION OF PROJECT.
4. ALL EXISTING UTILITIES, FACILITIES, CONDITIONS AND THEIR DIMENSIONS SHOWN ON PLANS HAVE BEEN PLOTTED FROM AVAILABLE RECORDS. THE ENGINEER AND OWNER ASSUME NOT RESPONSIBILITY WHATSOEVER AS TO THE SUFFICIENCY OR ACCURACY OF THE INFORMATION SHOWN ON THE PLANS OR THE MANNER OF THEIR REMOVAL OR ADJUSTMENT. CONTRACTOR SHALL BE RESPONSIBLE FOR DETERMINING EXACT LOCATION OF ALL EXISTING UTILITIES AND FACILITIES PRIOR TO START OF CONSTRUCTION. CONTRACTOR SHALL ALSO OBTAIN FROM EACH UTILITY COMPANY DETAILED INFORMATION RELATIVE TO WORKING SCHEDULES AND METHODS OF REMOVING OR ADJUSTING EXISTING UTILITIES.
5. CONTRACTOR SHALL VERIFY ALL EXISTING UTILITIES BOTH HORIZONTALLY AND VERTICALLY PRIOR TO START OF CONSTRUCTION. ANY DISCREPANCIES OR DOUBTS AS TO THE INTERPRETATION OF PLANS SHALL BE IMMEDIATELY REPORTED TO THE ARCHITECT/ENGINEER FOR RESOLUTION AND INSTRUCTION, AND NO FURTHER WORK SHALL BE PERFORMED UNTIL THE DISCREPANCY IS CHECKED AND CORRECTED BY THE ARCHITECT/ENGINEER. FAILURE TO SECURE SUCH INSTRUCTION MEANS CONTRACTOR WILL HAVE WORKED AT HIS/HER OWN RISK AND EXPENSE.
6. CONTRACTOR SHALL CALL LOCAL DIGGER HOT LINE FOR UTILITY LOCATIONS 48 HOURS PRIOR TO START OF CONSTRUCTION.
7. ALL NEW AND EXISTING UTILITY STRUCTURES ON SITE AND IN AREAS TO BE DISTURBED BY CONSTRUCTION SHALL BE ADJUSTED TO FINISH ELEVATIONS PRIOR TO FINAL INSPECTION OF WORK.
8. GRADING OF THE SITE WORK AREA IS TO BE SMOOTH AND CONTINUOUS IN SLOPE AND IS TO FEATHER INTO EXISTING GRADES AT THE GRADING LIMITS.
9. ALL TEMPORARY EXCAVATIONS FOR THE INSTALLATION OF FOUNDATIONS, UTILITIES, ETC., SHALL BE PROPERL

STRUCTURAL CONCRETE NOTES

1. ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 318-19 AND THE SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
2. ALL CONCRETE FOR SLABS ON GRADE, SHELTER FOUNDATION, AND PIER FOUNDATIONS FOR FENCES, ICE BRIDGE, AND H-FRAME SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH FC'=4,000 PSI AT 28 DAYS UNLESS NOTED OTHERWISE. SPECIAL INSPECTION REQUIRED AS NOTED.
3. REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE. SPLICES CLASS "B" AND ALL HOOKS SHALL BE STANDARD UNLESS NOTED OTHERWISE.
4. THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:  
CONCRETE CAST AGAINST EARTH.....3 IN.  
CONCRETE EXPOSED TO EARTH OR WEATHER:  
#6 AND LARGER.....2 IN.  
#5 AND SMALLER & WWF.....1 1/2 IN.  
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:  
SLAB AND WALL.....3/4 IN.  
BEAMS AND COLUMNS.....1 1/2 IN.
5. A 3/4" CHAMFER SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE U.N.O. IN ACCORDANCE WITH ACI 301, LATEST EDITION, SECTION 4.
6. HOLES TO RECEIVE EXPANSION/WEDGE ANCHORS SHALL BE 1/8" LARGER IN DIAMETER THAN THE ANCHOR BOLT, DOWEL OR ROD AND SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. LOCATE AND AVOID CUTTING EXISTING REBAR WHEN DRILLING HOLES IN ELEVATED CONCRETE SLABS.
7. USE AND INSTALLATION OF CONCRETE ADHESIVE AND EXPANSION/WEDGE ANCHORS SHALL BE PER ICC & MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURES.
8. FOUNDATION DESIGN IS BASED ON PRESUMPTIVE SOIL PARAMETERS. IT IS STRONGLY RECOMMENDED THAT INDEPENDENT SOILS TESTING BE PERFORMED BY A LICENSED GEOTECHNICAL ENGINEER TO VERIFY SOIL BEARING CAPACITY, SLOPE STABILITY, AND ALL OTHER RELATED SOIL PARAMETERS.  
POST-INSTALLED ANCHORS  
1. USE, INSTALLATION, EMBEDMENT DEPTH, AND DIAMETER OF ADHESIVE ANCHORS IN HARDENED CONCRETE SHALL CONFORM TO ICC REPORT & MANUFACTURER'S RECOMMENDATIONS.
2. MAINTAIN CRITICAL EDGE DISTANCE SPECIFIED IN ICC REPORT AS A MINIMUM, U.N.O. IN THESE DRAWINGS.
3. LOCATE AND AVOID CUTTING EXISTING REBAR OR TENDONS WHEN DRILLING HOLES IN ELEVATED CONCRETE SLABS.


SPECIAL INSPECTION NOTES

1. CONTRACTOR SHALL PROVIDE REQUIRED SPECIAL INSPECTIONS PERFORMED BY AN INDEPENDENT INSPECTOR, APPROVED BY CARRIER AND THE LOCAL JURISDICTION, AS REQUIRED BY IBC SECTION 1704 AND 1705 FOR THE FOLLOWING:  
A. STRUCTURAL STEEL:  
I. ALL HIGH STRENGTH BOLT INSTALLATIONS; BOLTING INSPECTION TASKS SHALL BE IN ACCORDANCE WITH TABLES N5.6-1, N5.6-2, AND N5.6-3 PER AISC 360-10.  
II. FIELD WELDING (IF UTILIZED).  
B. BOLTS, REBAR, AND ANCHORS IN CONCRETE:  
I. RETROFIT ANCHORS IN CONCRETE (ASHESIVE/EPOXY, EXPANSION, WEDGE, OR SCREW TYPE ANCHORS): INSPECT SIZE, LENGTH, CLEANLINESS, AND INSTALLATION PER MANUFACTURER'S RECOMMENDATIONS.  
SPECIAL INSPECTION NOTES  
C. CONCRETE CONSTRUCTION:  
I. VERIFICATION AND INSPECTION OF CONCRETE CONSTRUCTION SHALL BE IN ACCORDANCE WITH IBC SECTION 1705, TABLE 1705.3.  
2. PROVIDE SPECIAL INSPECTIONS FOR OTHER ITEMS NOTED ON DRAWINGS TO CONFIRM COMPLIANCE WITH CONTRACT DOCUMENTS.  
3. THE SPECIAL INSPECTOR SHALL PROVIDE A COPY OF THE REPORT TO THE OWNER, ARCHITECT, STRUCTURAL ENGINEER, CONTRACTOR, AND BUILDING OFFICIAL.

APPLICANT:  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
  
15 COMMERCE WAY, SUITE B  
NORTHON, MA 02766

PROJECT MANAGER  
  
5 MELROSE DR  
FARMINGTON, CT 06032

ENGINEERING CONSULTANT:  
**FORESITE LLC.**  
  
462 WALNUT STREET, SUITE 1  
NEWTON, MA 02460

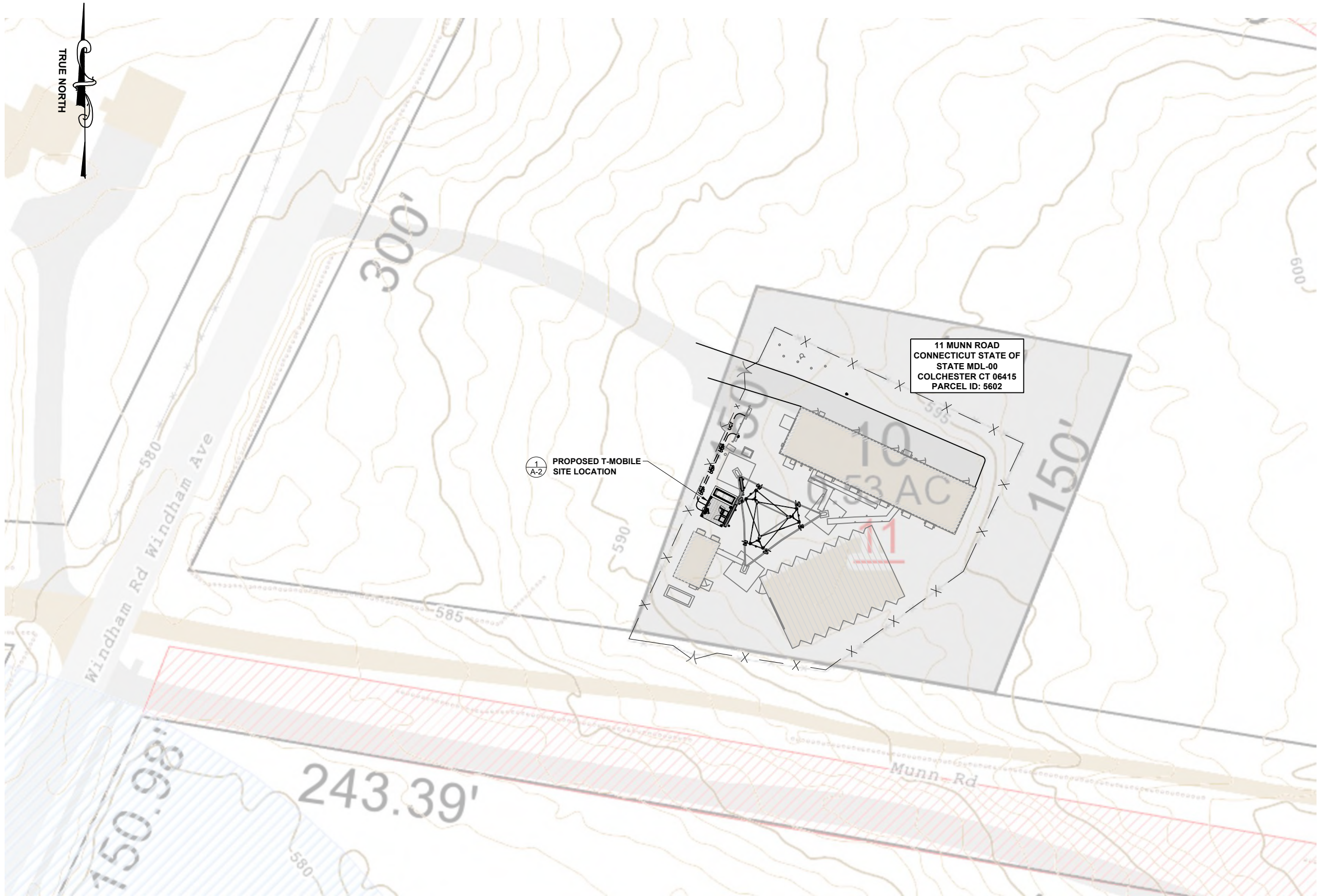
PROFESSIONAL SEAL  
  
  
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0	ISSUED FOR PERMITTING	02/05/25

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SITE ADDRESS:  
11 MUNN RD  
COLCHESTER, CT 06415

SHEET TITLE:  
  
N-2: GENERAL NOTES





GIS MAP  
SCALE: 1"=40'

1  
A-1

APPLICANT:  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
15 COMMERCE WAY, SUITE B  
NORTHON, MA 02766

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**NORTHEAST**  
SITE SOLUTIONS  
Zachary Winslow Development  
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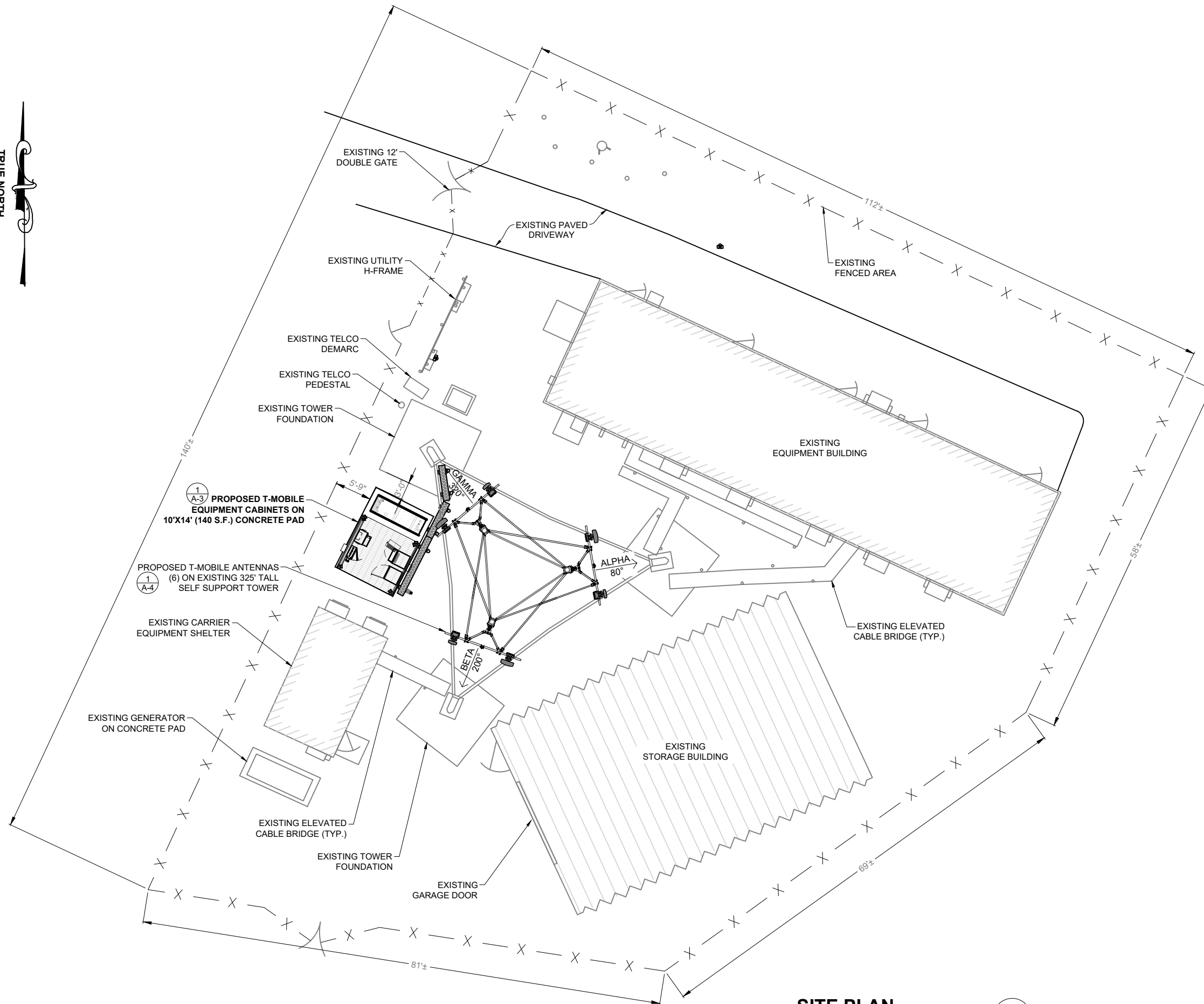
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COLCHESTER, CT 06415

SHEET TITLE:  
A-1: GIS MAP





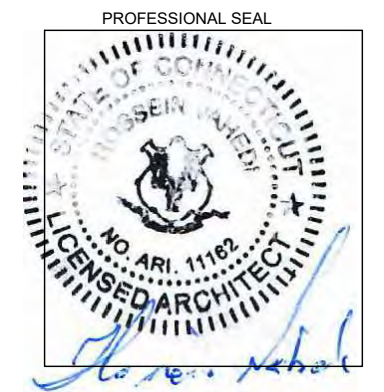
**SITE PLAN**  
**SCALE: 1/16"=1'-0"**

1  
A-2

APPLICANT:  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
15 COMMERCE WAY, SUITE B  
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Zachary Winslow Development  
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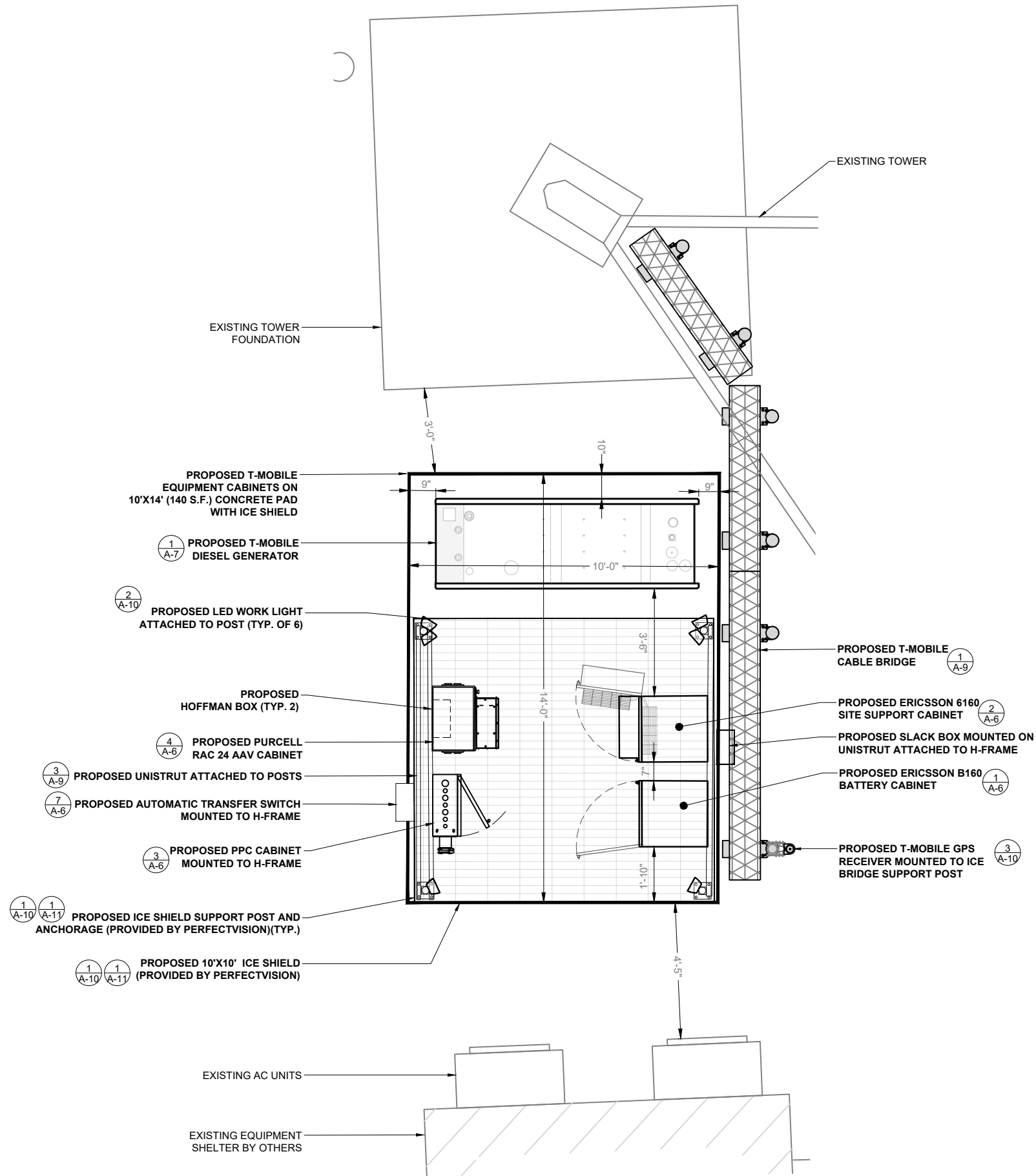


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SHEET TITLE:  
A-2: SITE PLAN



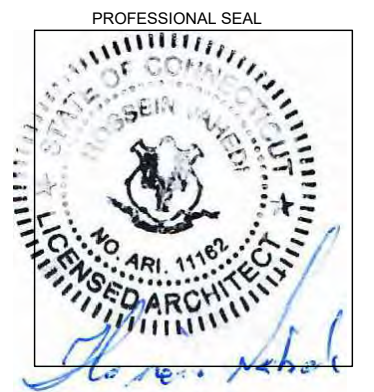
**EQUIPMENT PLAN**  
SCALE: 1/4" = 1'-0"

1  
A-3

APPLICANT:  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
15 COMMERCE WAY, SUITE B  
NORTHON, MA 02766

PROJECT MANAGER  
**NORTHEAST**  
SITE SOLUTIONS  
Dedicated Wireless Development  
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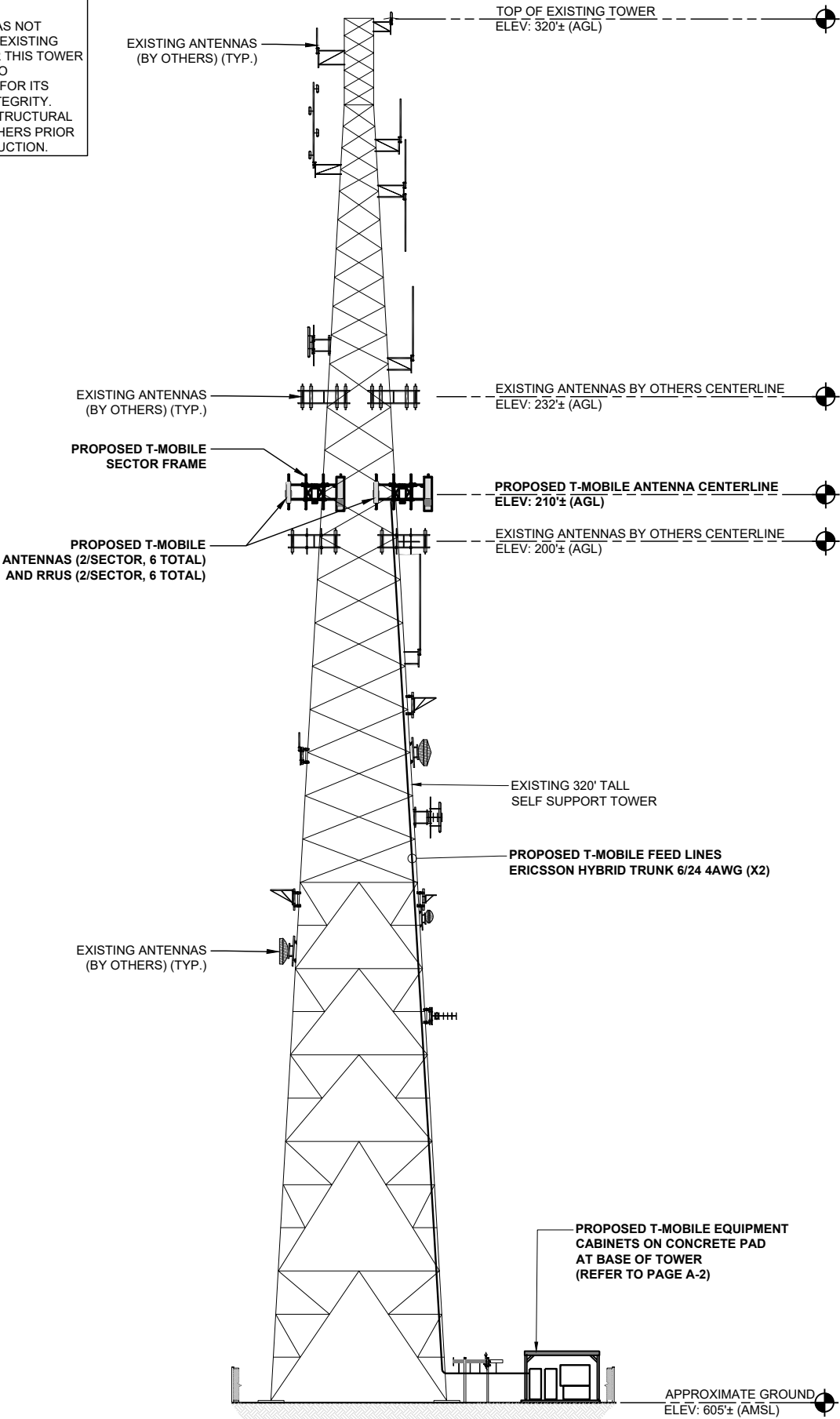
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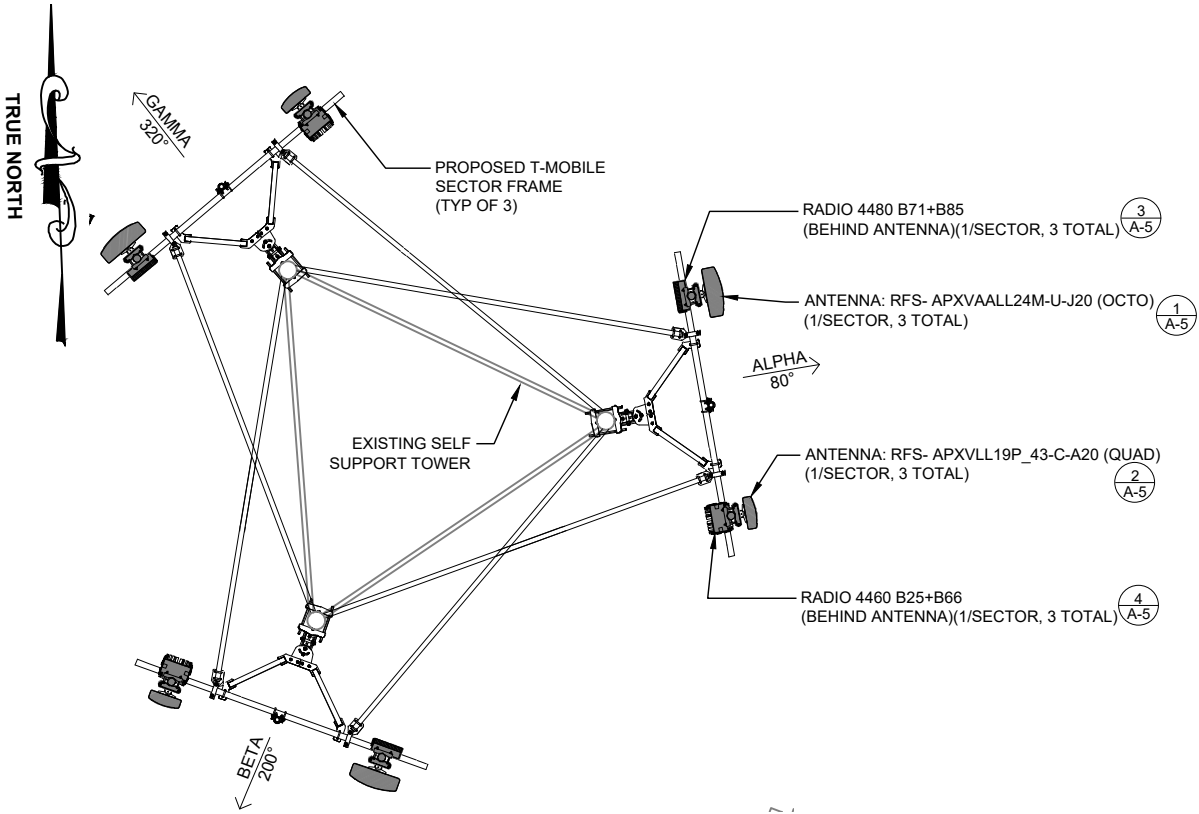
SHEET TITLE:  
A-3: COMPOUND PLAN

NOTES:  
FORESITE LLC HAS NOT EVALUATED THE EXISTING STRUCTURE FOR THIS TOWER AND ASSUMES NO RESPONSIBILITY FOR ITS STRUCTURAL INTEGRITY. REFER TO THE STRUCTURAL ANALYSIS BY OTHERS PRIOR TO ANY CONSTRUCTION.



**TOWER ELEVATION**  
NO SCALE

1  
A-4



**ANTENNA ORIENTATION PLAN**  
NO SCALE

2  
A-4

ANTENNA SCHEDULE							
SECTOR	POSITION	ANTENNA MODEL	RAD	AZIMUTH	RRU	CABLES	LENGTH
ALPHA	A1	RFS - APXVAALL24M-U-J20 (OCTO)	210'	80°	RADIO 4480 B71+B85	HYBRID TRUNK 6/24 4AWG	260'±
ALPHA	A2	EMPTY MOUNT	-	-	-		
ALPHA	A3	RFS - APXVLL19P_43-C-A20 (QUAD)	210'	80°	RADIO 4460 B25+B66		
BETA	B1	RFS - APXVAALL24M-U-J20 (OCTO)	210'	200°	RADIO 4480 B71+B85	HYBRID TRUNK 6/24 4AWG	260'±
BETA	B2	EMPTY MOUNT	-	-	-		
BETA	B3	RFS - APXVLL19P_43-C-A20 (QUAD)	210'	200°	RADIO 4460 B25+B66		
GAMMA	C1	RFS - APXVAALL24M-U-J20 (OCTO)	210'	320°	RADIO 4480 B71+B85		
GAMMA	C2	EMPTY MOUNT	-	-	-		
GAMMA	C3	RFS - APXVLL19P_43-C-A20 (QUAD)	210'	320°	RADIO 4460 B25+B66		

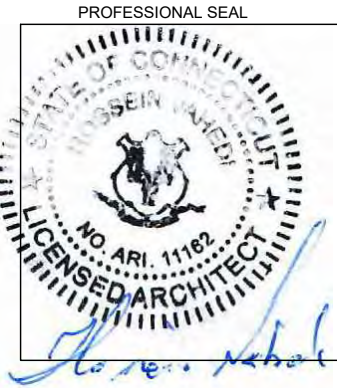
**ANTENNA SCHEDULE**  
N.T.S

3  
A-4

APPLICANT:  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
15 COMMERCE WAY, SUITE B  
NORTHON, MA 02766

PROJECT MANAGER  
**NORTHEAST**  
SITE SOLUTIONS  
5 MELROSE DR  
FARMINGTON, CT 06032

ENGINEERING CONSULTANT:  
**FORESITE LLC.**  
462 WALNUT STREET, SUITE 1  
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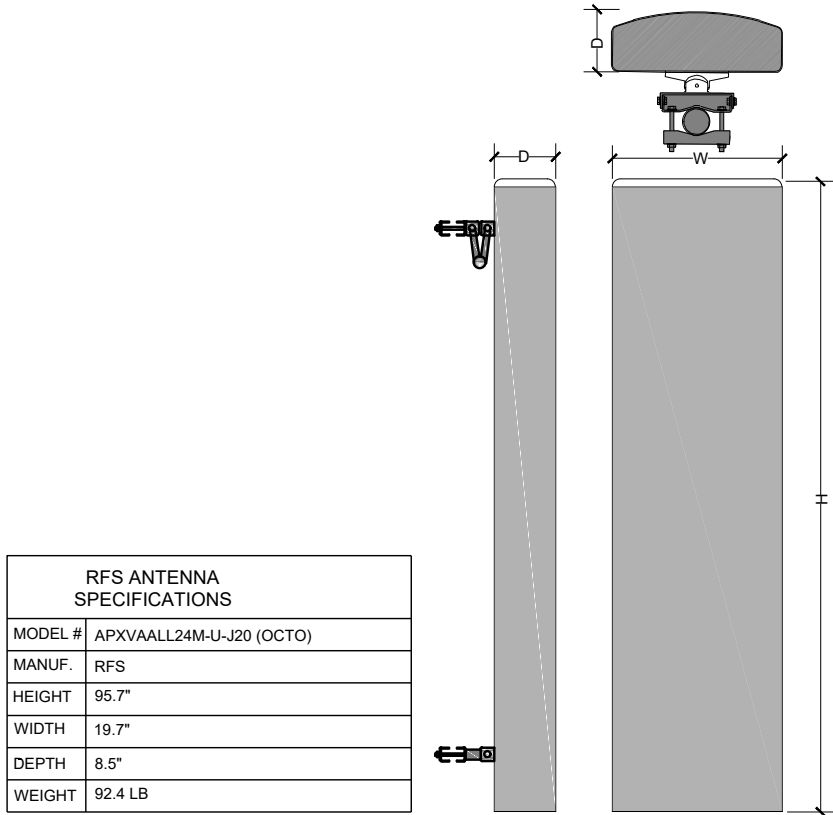
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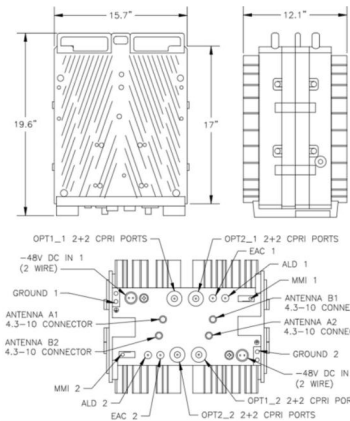
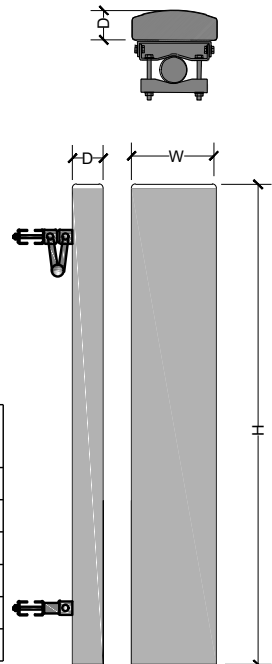
SHEET TITLE:  
A-4: ELEVATION, ANTENNA PLAN AND  
ANTENNA SCHEDULE



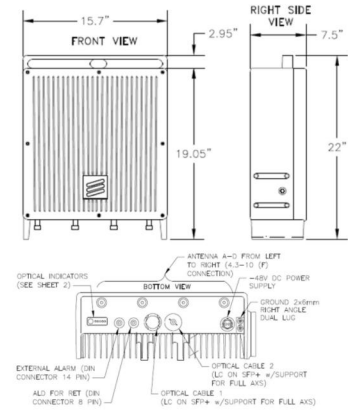


RFS ANTENNA SPECIFICATIONS	
MODEL #	APXVAALL24M-U-J20 (OCTO)
MANUF.	RFS
HEIGHT	95.7"
WIDTH	19.7"
DEPTH	8.5"
WEIGHT	92.4 LB

RFS ANTENNA SPECIFICATIONS	
MODEL #	APXVLL19P_43-C-A20 (QUAD)
MANUF.	RFS
HEIGHT	75.8"
WIDTH	11.3"
DEPTH	4.2"
WEIGHT	50.4 LB



RRU SPECIFICATIONS	
MODEL#	4460 B25+B66
MANUF.	ERICSSON
LENGTH	19.6"
WIDTH	15.7"
DEPTH	12.1"
WEIGHT	109 LB



RRU SPECIFICATIONS	
MODEL#	4480 B71+B85
MANUF.	ERICSSON
LENGTH	22.0"
WIDTH	15.7"
DEPTH	7.5"
WEIGHT	93.0 LB

RFS APXVAALL24\_43-U-NA20  
N.T.S

1  
A-5

RFS APXVLL19P\_43-C-A20  
N.T.S

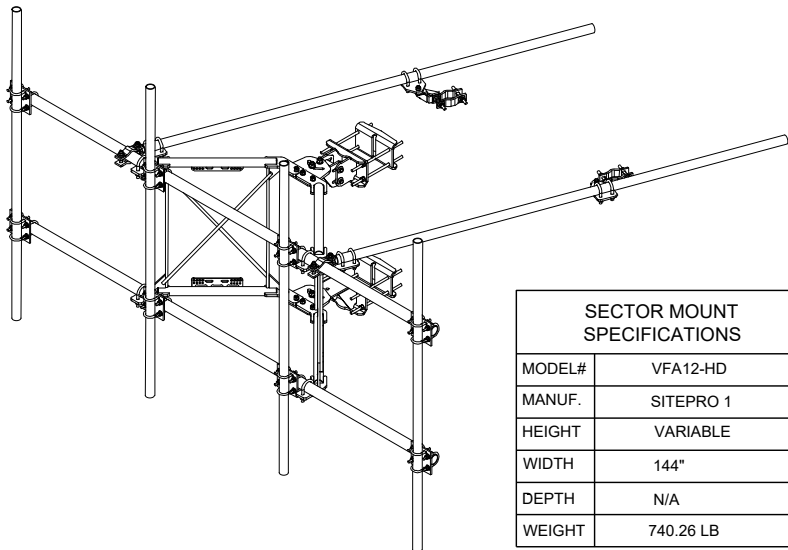
2  
A-5

RRU 4460 B25+B66  
N.T.S

3  
A-5

RRU 4480 B71+B85  
N.T.S

4  
A-5

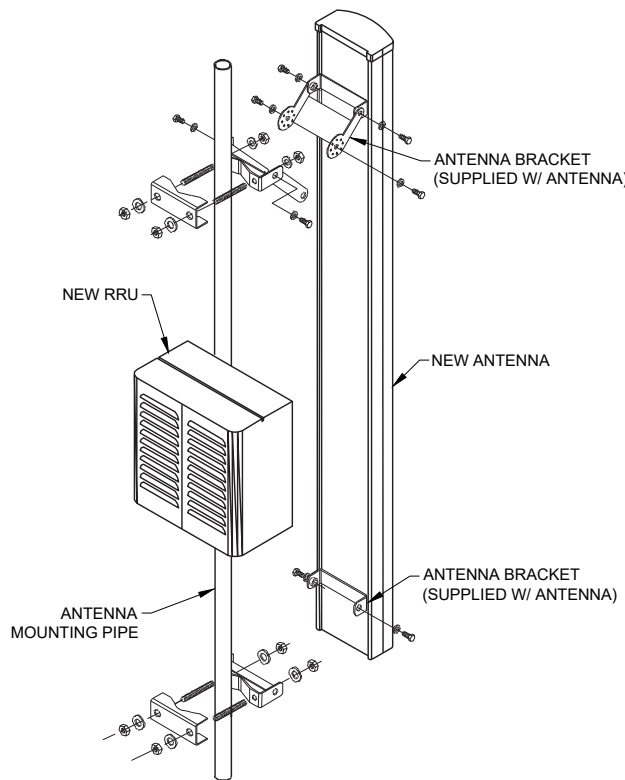


SECTOR MOUNT SPECIFICATIONS	
MODEL#	VFA12-HD
MANUF.	SITEPRO 1
HEIGHT	VARIABLE
WIDTH	144"
DEPTH	N/A
WEIGHT	740.26 LB

VERIFICATION OF MOUNT CAPACITY TO SUPPORT THE PROPOSED LOADING BY OTHERS

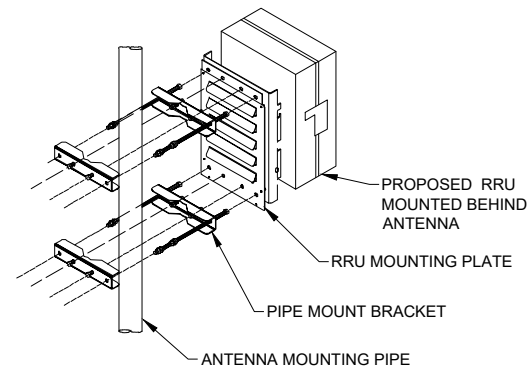
ANTENNA MOUNTING DETAIL  
N.T.S

5  
A-5



ANTENNA MOUNTING DETAIL  
N.T.S

6  
A-5



RRU MOUNTING DETAIL  
N.T.S

7  
A-5

APPLICANT:  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
15 COMMERCE WAY, SUITE B  
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5 MELROSE DR  
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462 WALNUT STREET, SUITE 1  
NEWTON, MA 02460

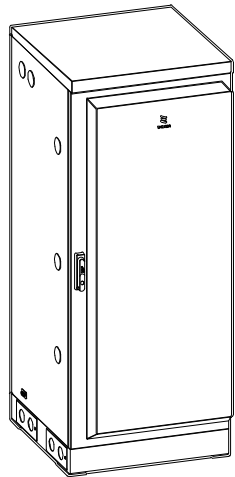


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COLCHESTER, CT 06415

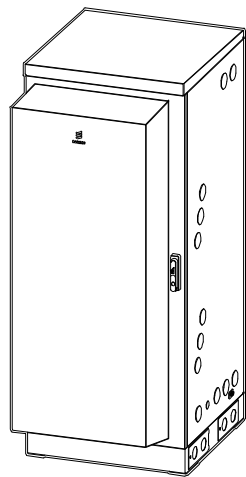
SHEET TITLE:  
A-5: EQUIPMENT SPECIFICATIONS



BATTERY CABINET SPECIFICATIONS	
MODEL#	B160
MANUF.	ERICSSON
HEIGHT	63"
WIDTH	25.6"
DEPTH	29.5"
WEIGHT	1883 lbs

**BATTERY CABINET**  
N.T.S.

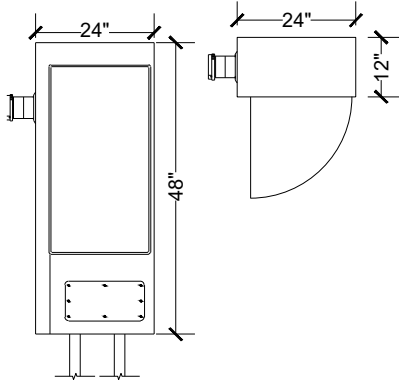
1  
A-6



SITE SUPPORT CABINET SPECIFICATIONS	
MODEL#	6160
MANUF.	ERICSSON
HEIGHT	63"
WIDTH	25.6"
DEPTH	33.5"
WEIGHT	373 lbs

**SITE SUPPORT CABINET**  
N.T.S.

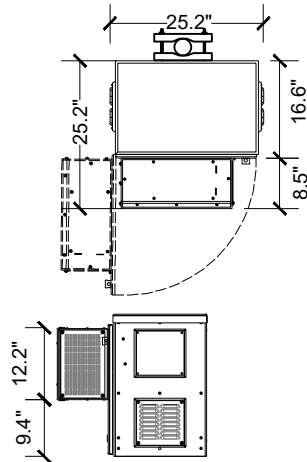
2  
A-6



PPC CABINET SPECIFICATIONS	
MODEL#	CS2S2-W736 OR EQUAL
MANUF.	ERICSSON
HEIGHT	48"
WIDTH	24"
DEPTH	12"
WEIGHT	150 lbs

**PPC CABINET**  
N.T.S.

3  
A-6

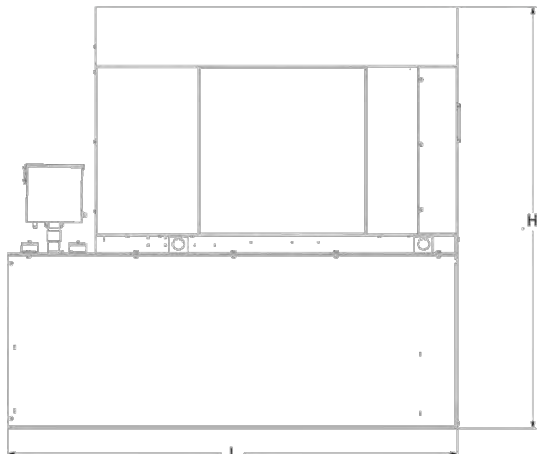
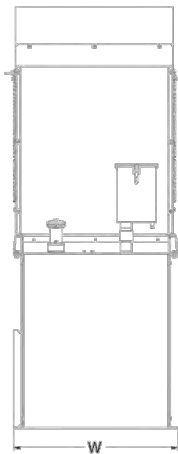


AAV CABINET SPECIFICATIONS	
MODEL#	COMPACT RAC 2416
MANUF.	ERICSSON
HEIGHT	21.6"
WIDTH	25.2"
DEPTH	25.2"
WEIGHT	64 lbs

**AAV CABINET**  
N.T.S.

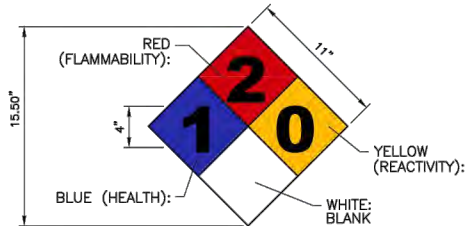
4  
A-6

GENERATOR SPECIFICATIONS	
MODEL#	RD048 - 48 KW AC DIESEL
MANUF.	GENERAC
HEIGHT	90"
WIDTH	103.5"
DEPTH	35"
WEIGHT	2954 lbs



**GENERATOR**  
N.T.S.

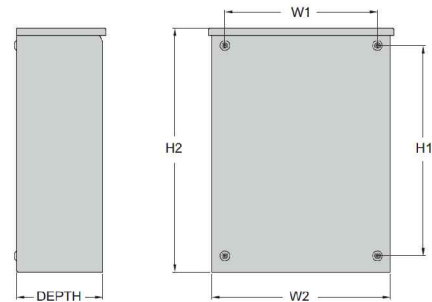
5  
A-6



SIGN NAME:	REGULATORY, NFPA 704 HAZARD ID
DESCRIPTION:	MOUNT ON GENERATOR ACCESS DOOR. CONSULT WITH GENERATOR MANUFACTURER MSDS SHEET FOR BLUE AND RED POSITIONS
NOTES:	1) SIGNS EXPOSED TO WEATHER SHOULD BE CHECKED ANNUALLY FOR READABILITY. 2) SIGNS MUST BE UPDATED IF CHEMICAL STORAGE OR HAZARD INFORMATION FOR THE LOCATION CHANGES. 3) THE GC MUST REVIEW WITH LOCAL JURISDICTION WHEN FILLING FOR PERMITS, AS EACH JURISDICTION MAY HAVE DIFFERENT REQUIREMENTS AND COMPLY WITH POSTING REQUIREMENTS OR DIRECTIVES FROM THE LOCAL JURISDICTION.

**GENERATOR SIGNAGE**  
N.T.S.

6  
A-6



AUTOMATIC TRANSFER SWITCH SPECIFICATIONS	
MODEL#	RXSW
MANUF.	GENERAC
HEIGHT	20"
WIDTH	14.6"
DEPTH	7.1"
WEIGHT	1883 lbs



**AUTOMATIC TRANSFER SWITCH**  
N.T.S.

7  
A-6

APPLICANT:  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
15 COMMERCE WAY, SUITE B  
NORTHON, MA 02766

PROJECT MANAGER  
**NORTHEAST**  
SITE SOLUTIONS  
Zachary Winton-Development  
5 MELROSE DR  
FARMINGTON, CT 06032

ENGINEERING CONSULTANT:  
**FORESITE LLC.**  
462 WALNUT STREET, SUITE 1  
NEWTON, MA 02460



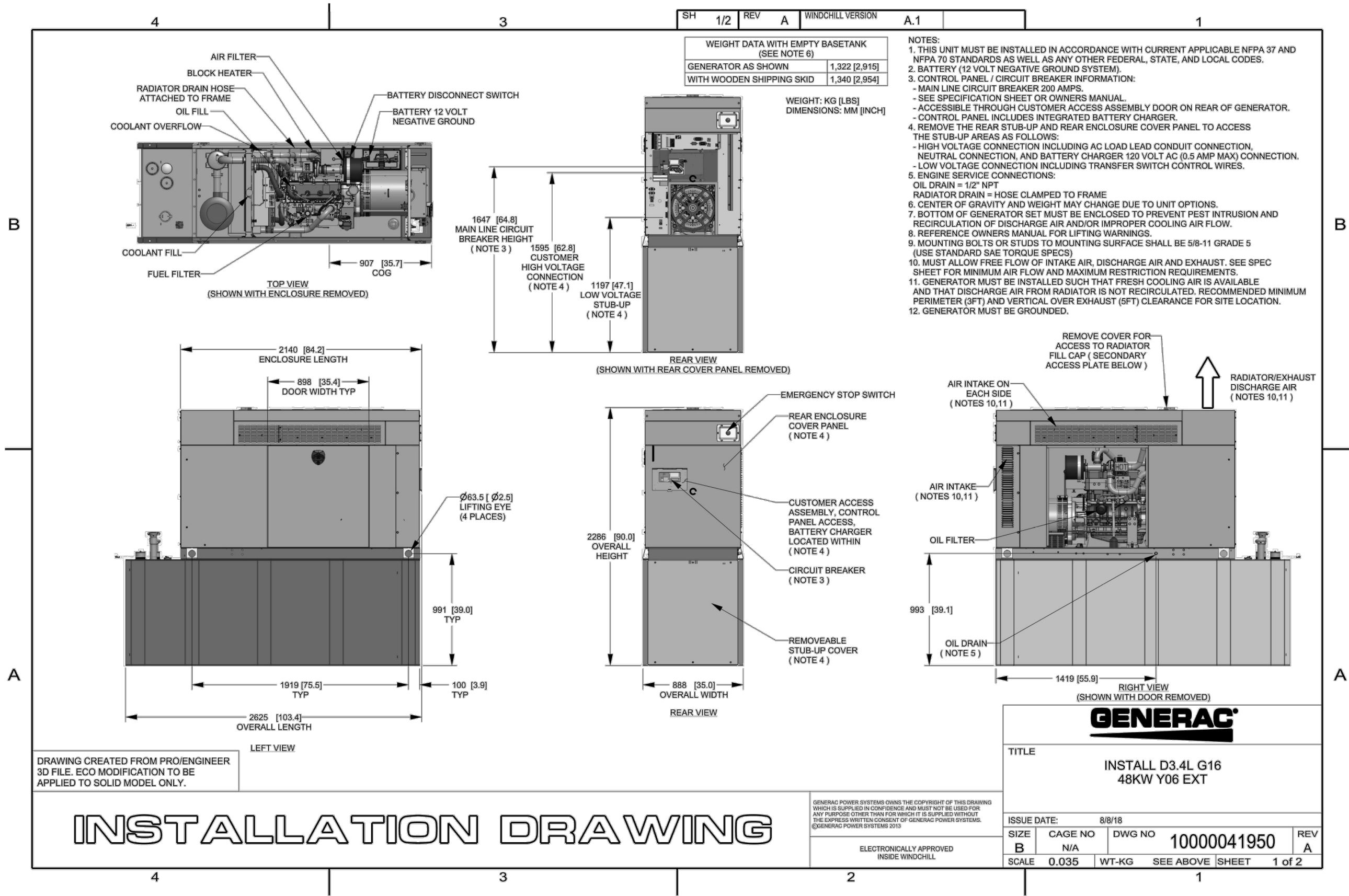
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REV	DESCRIPTION	DATE
A	PRELIMINARY	10/07/24
0	ISSUED FOR PERMITTING	02/05/25

SITE NUMBER: CTNL251A  
SITE NAME: DEPT OF PUBLIC SAFETY  
SITE ADDRESS:  
11 MUNN RD  
COLCHESTER, CT 06415

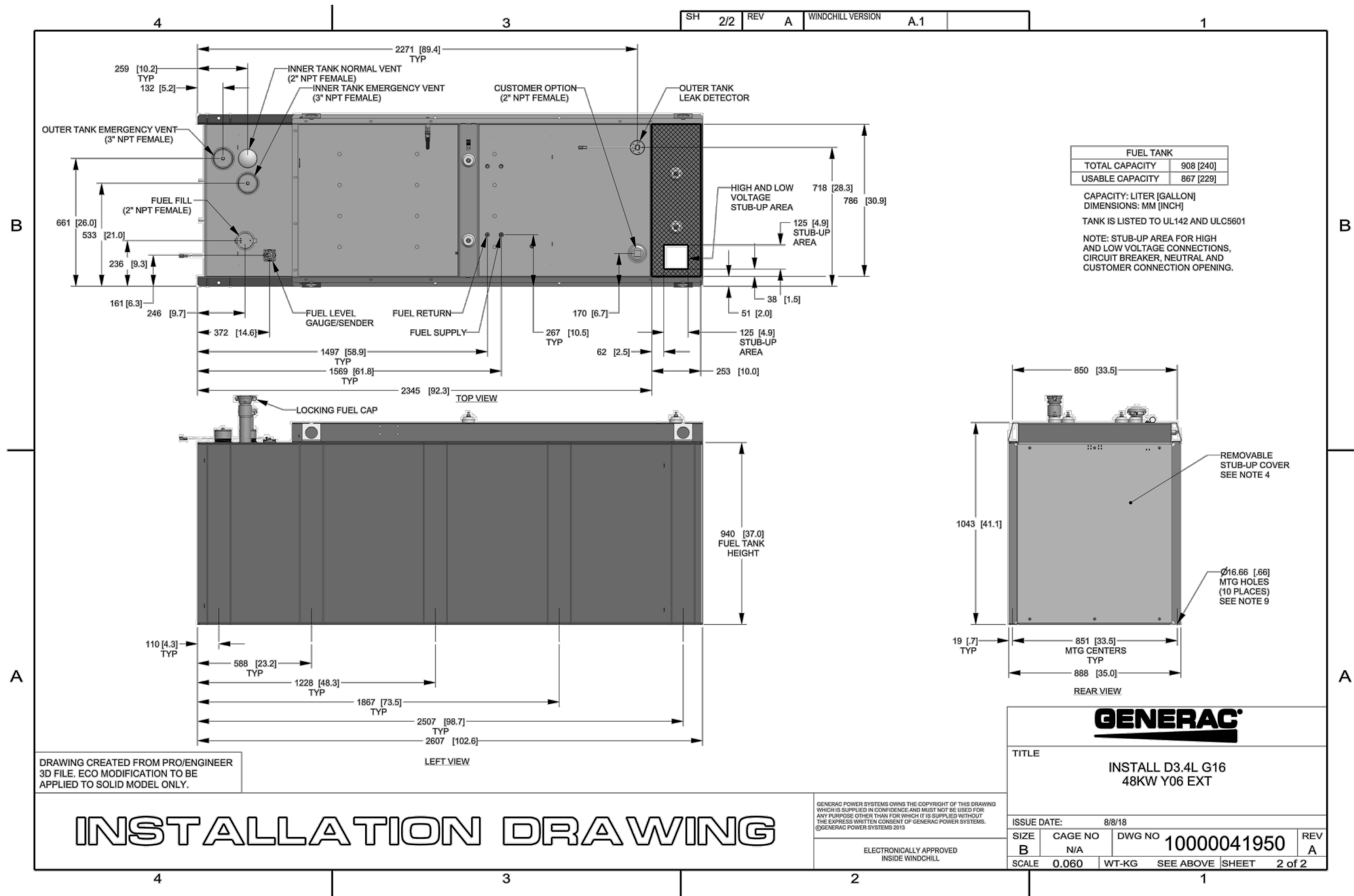
SHEET TITLE:  
A-6: EQUIPMENT SPECIFICATIONS





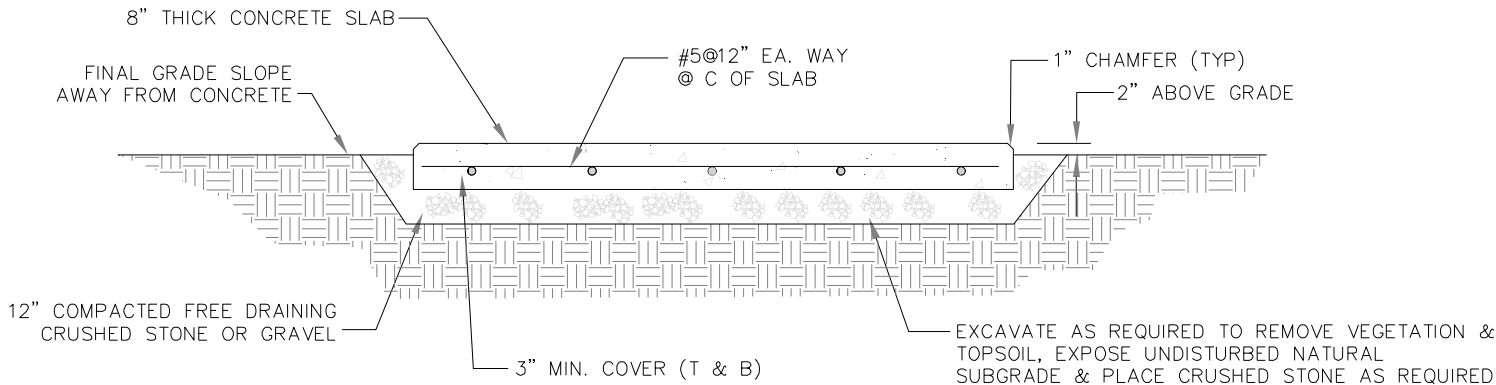
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A-8: EQUIPMENT SPECIFICATIONS

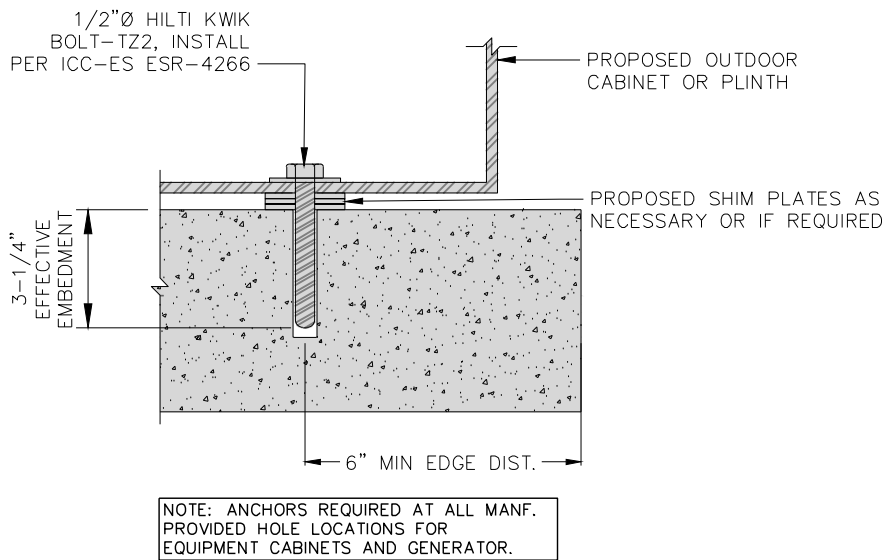




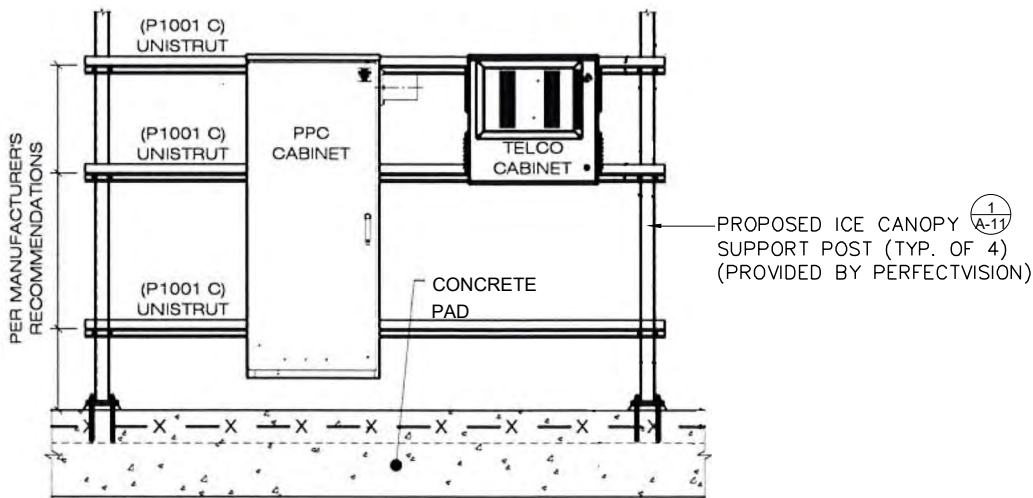
- NOTES:
1. CONCRETE TOP SURFACE TO BE LIGHT BROOM FINISH AND SLOPED 1/4" PER FOOT MINIMUM TO ALLOW WATER TO SHED WITHOUT PONDING.
  2. INSTALL CONTROL JOINTS AT MAXIMUM 10'-0" O.C.



CONCRETE PAD DETAILS 1  
N.T.S. A-9



EQUIPMENT ANCHORAGE DETAILS 2  
N.T.S. A-9



H-FRAME DETAILS- PPC 3  
N.T.S. A-9

APPLICANT:  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
15 COMMERCE WAY, SUITE B  
NORTHON, MA 02766

PROJECT MANAGER  
**NORTHEAST**  
SITE SOLUTIONS  
Zachary Winslow Development  
5 MELROSE DR  
FARMINGTON, CT 06032

ENGINEERING CONSULTANT:  
**FORESITE LLC.**  
462 WALNUT STREET, SUITE 1  
NEWTON, MA 02460



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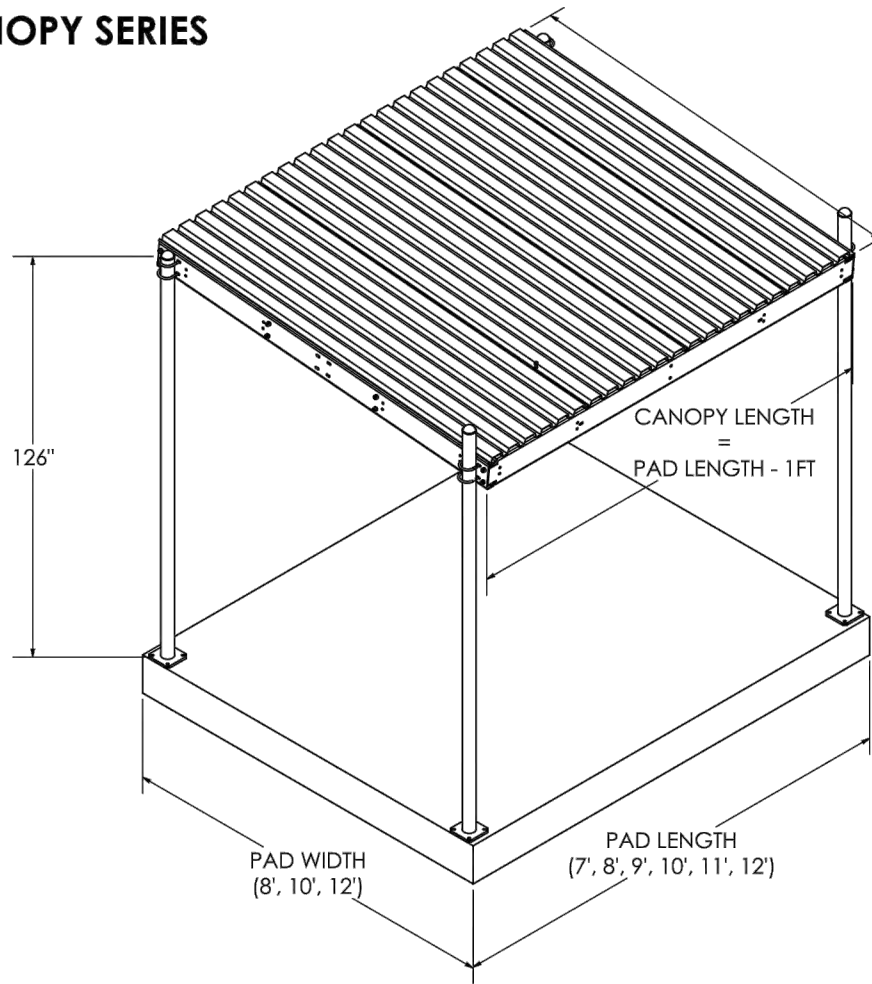
SITE NUMBER: CTNL251A  
SITE NAME: DEPT OF PUBLIC SAFETY  
SITE ADDRESS:  
11 MUNN RD  
COLCHESTER, CT 06415

SHEET TITLE:  
A-9: CONSTRUCTION DETAILS

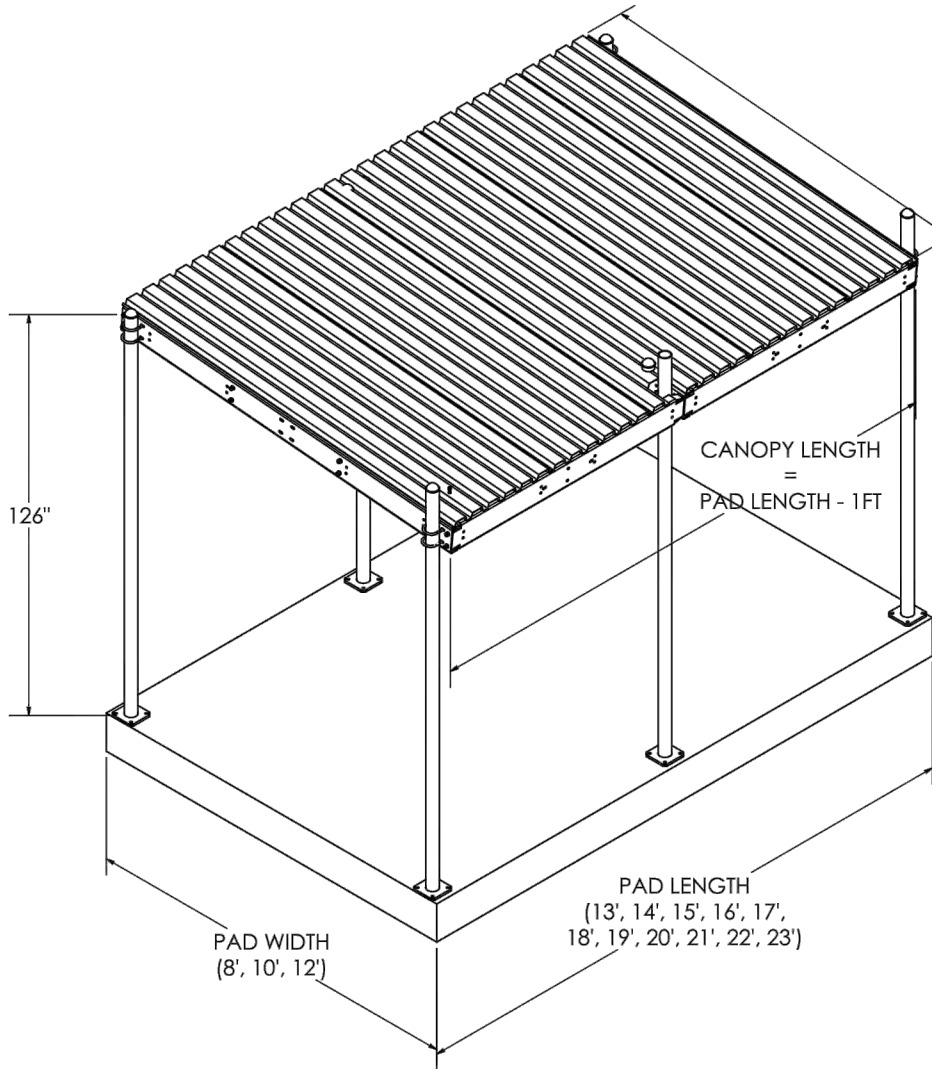
SHEET TITLE:  
A-10: CONSTRUCTION DETAILS

WEATHER CANOPY SERIES

SERIES OVERVIEW



4 POST WEATHER CANOPY



6 POST WEATHER CANOPY

Weather Canopy Size Options							
		Pad Width (Roof Slope Direction)					
		8'		10'		12'	
Pad Length	7 '	PV-WC0807-B	655 lbs	PV-WC1007-B	830 lbs	PV-WC1207-B	1005 lbs
	8 '	PV-WC0808-B	735 lbs	PV-WC1008-B	930 lbs	PV-WC1208-B	1125 lbs
	9 '	PV-WC0809-B	815 lbs	PV-WC1009-B	1035 lbs	PV-WC1209-B	1255 lbs
	10 '	PV-WC0810-B	895 lbs	PV-WC1010-B	1135 lbs	PV-WC1210-B	1375 lbs
	11 '	PV-WC0811-B	975 lbs	PV-WC1011-B	1235 lbs	PV-WC1211-B	1495 lbs
	12 '	PV-WC0812-B	1055 lbs	PV-WC1012-B	1340 lbs	PV-WC1212-B	1625 lbs
	13 '	PV-WC0813-B	1221 lbs	PV-WC1013-B	1549 lbs	PV-WC1213-B	1878 lbs
	14 '	PV-WC0814-B	1229 lbs	PV-WC1014-B	1649 lbs	PV-WC1214-B	1999 lbs
	15 '	PV-WC0815-B	1382 lbs	PV-WC1015-B	1755 lbs	PV-WC1215-B	2128 lbs
	16 '	PV-WC0816-B	1460 lbs	PV-WC1016-B	1854 lbs	PV-WC1216-B	2249 lbs
	17 '	PV-WC0817-B	1538 lbs	PV-WC1017-B	1954 lbs	PV-WC1217-B	2370 lbs
	18 '	PV-WC0818-B	1620 lbs	PV-WC1018-B	2059 lbs	PV-WC1218-B	2499 lbs
	19 '	PV-WC0819-B	1698 lbs	PV-WC1019-B	2159 lbs	PV-WC1219-B	2619 lbs
	20 '	PV-WC0820-B	1776 lbs	PV-WC1020-B	2258 lbs	PV-WC1220-B	2741 lbs
	21 '	PV-WC0821-B	1859 lbs	PV-WC1021-B	2364 lbs	PV-WC1221-B	2869 lbs
	22 '	PV-WC0822-B	1937 lbs	PV-WC1022-B	2464 lbs	PV-WC1222-B	2991 lbs
	23 '	PV-WC0823-B	2016 lbs	PV-WC1023-B	2564 lbs	PV-WC1223-B	3113 lbs

SHEET 1 OF 12	THIRD ANGLE PROJECTION 	CATEGORY 07_Equipment Platforms & Canopies		6	ADDED DECK HEIGHT RANGE TABLE INFO	11/18/19	
		SERIES 01_Equipment Platforms & Canopies		5	UPDATED MEMBER LAYOUT, ADDED PLATFORM SIZES, ADDED JACK LEG	2/15/18	
5/5/2021	SCALE 1:40	TYPE PV-WC / PV-EQ Series		4	EQ USABLE AREA TABLE	2/02/17	EQUIPMENT PLATFORM AND CANOPY
DIMENSIONS ARE IN INCHES TOLERANCES U.N.O. HOLES: +1/16", -1/32" ANGULAR: PROFILE ±1/4", BEND ±2° ALL OTHERS: ±1/16"		BY DJN		3	ADDED PV-EQ-STEP	1/25/17	
CHECKED SJS		STATUS APPROVED		2	UPDATED PV-WC-BRACE	9/19/16	DOCUMENT NUMBER
				REV	DESCRIPTION	DATE	REV
							WCEQ-ENG-01-R6
							6

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NOTE: VERIFICATION OF CANOPY AND ANCHORAGE CAPACITY BY OTHERS.

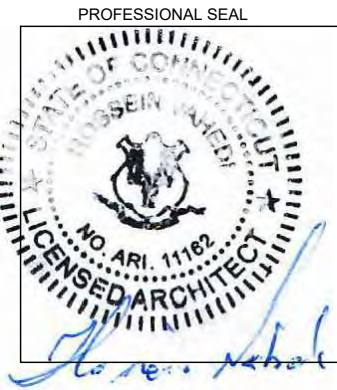
ICE CANOPY DETAILS  
N.T.S.

1  
A-11

APPLICANT:  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
15 COMMERCE WAY, SUITE B  
NORTHON, MA 02766

PROJECT MANAGER  
  
5 MELROSE DR  
FARMINGTON, CT 06032

ENGINEERING CONSULTANT:  
**FORESITE LLC.**  
462 WALNUT STREET, SUITE 1  
NEWTON, MA 02460



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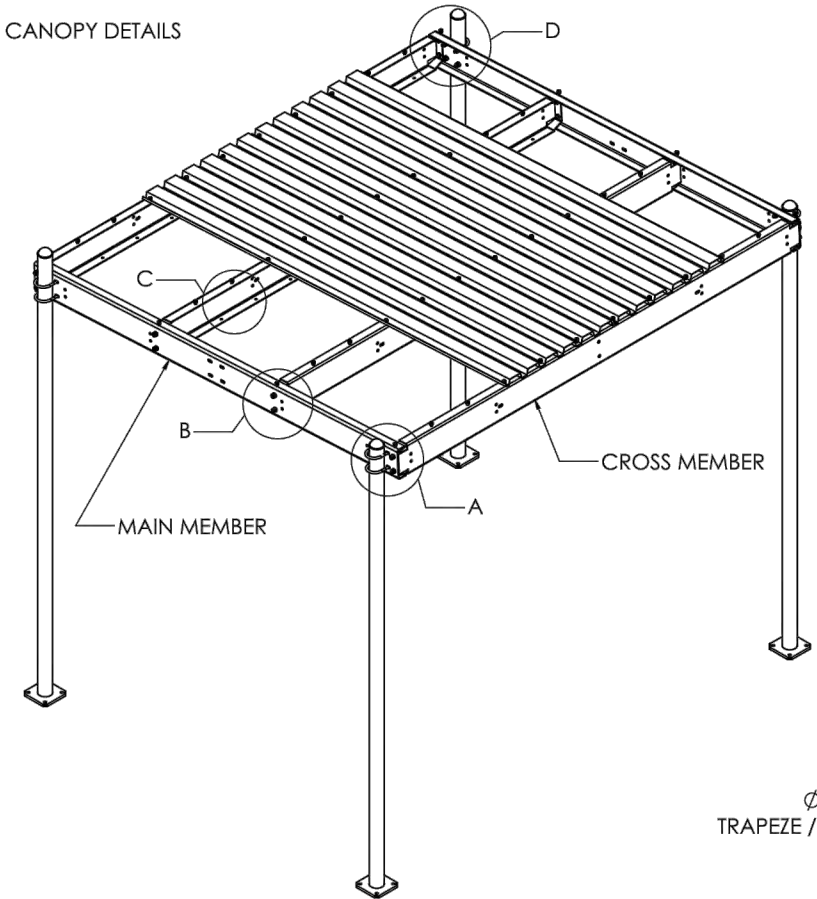
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SITE NAME: DEPT OF PUBLIC SAFETY  
SITE ADDRESS:  
11 MUNN RD  
COLCHESTER, CT 06415

SHEET TITLE:  
A-11: CONSTRUCTION DETAILS

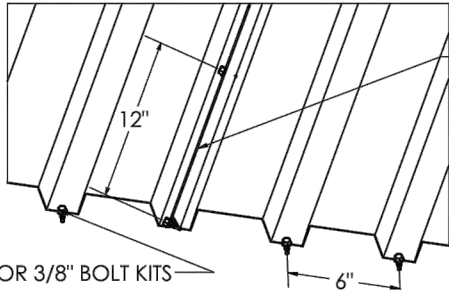


WEATHER CANOPY SERIES

CANOPY DETAILS



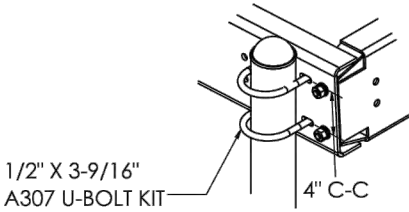
WEATHER CANOPY  
ROOF DECKING HIDDEN



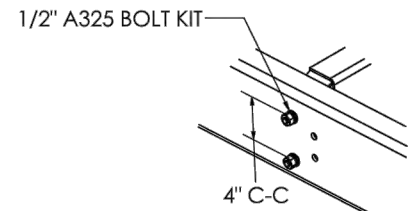
OPTIONAL SEALANT  
TAPE ALONG SPLICE

- 6" C-C MAX SPACING ALONG ALL CROSS MEMBERS
- 12" C-C MAX SPACING ALONG EXTERIOR MAIN MEMBERS
- 12" C-C MAX SPACING ALONG SPLICES

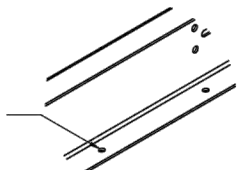
ROOF DECKING DETAIL  
SCALE 1 : 8



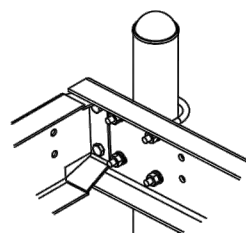
DETAIL A  
SCALE 1 : 12



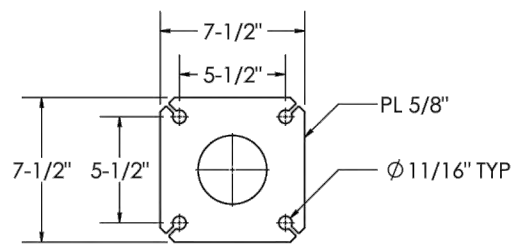
DETAIL B  
SCALE 1 : 12



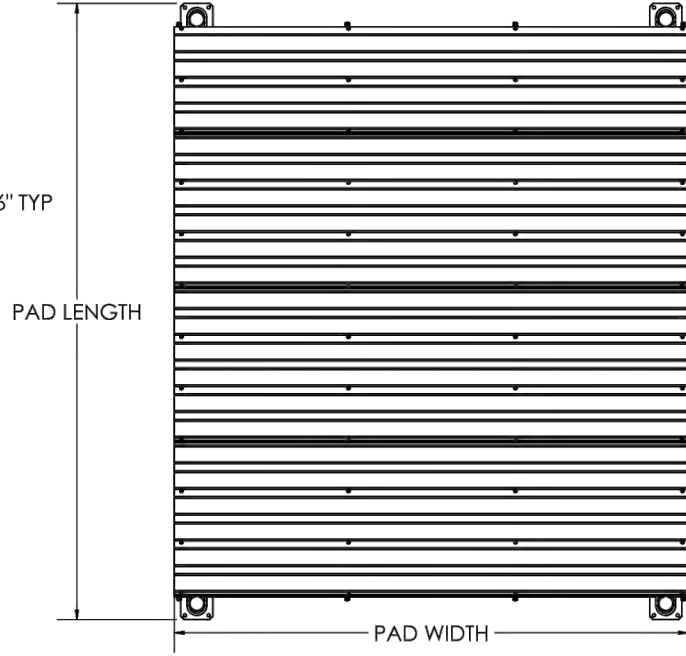
DETAIL C  
SCALE 1 : 12



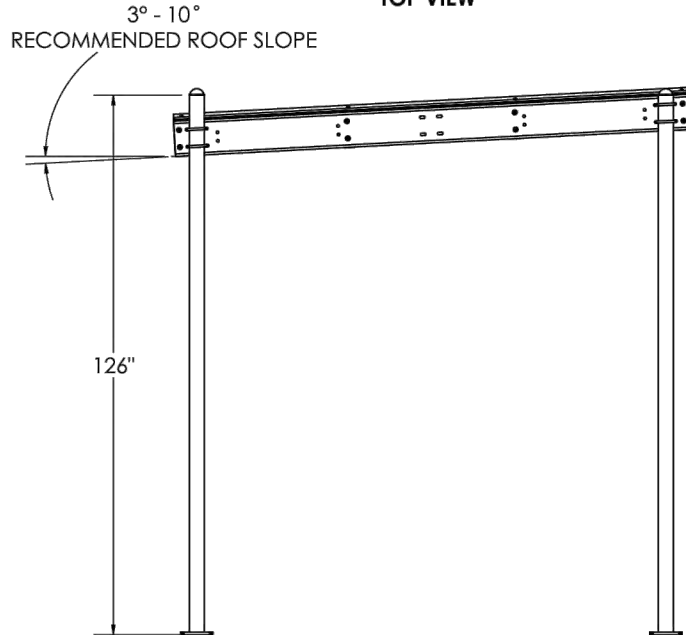
DETAIL D  
SCALE 1 : 12




BASEPLATE DETAILS  
SCALE 1 : 8



TOP VIEW



ELEVATION VIEW

SHEET  2 OF 12	<div>THIRD ANGLE PROJECTION</div> 	CATEGORY	07_Equipment Platforms & Canopies	6	ADDED DECK HEIGHT RANGE TABLE INFO	11/18/19	<div>PERFECTVISION®</div>	
		SERIES	01_Equipment Platforms & Canopies	5	UPDATED MEMBER LAYOUT, ADDED PLATFORM SIZES, ADDED JACK LEG	2/15/18		
5/5/2021	SCALE 1:36	TYPE	PV-WC / PV-EQ Series	4	EQ USABLE AREA TABLE	2/02/17		
<div>DIMENSIONS ARE IN INCHES</div> <div>TOLERANCES U.N.O.</div> <div>HOLES: +1/16", -1/32"</div> <div>ANGULAR: PROFILE ±1/4°, BEND ±2°</div> <div>ALL OTHERS: ±1/16"</div>		BY	DJN	3	ADDED PV-EQ-STEP	1/25/17	EQUIPMENT PLATFORM AND CANOPY	
		CHECKED	SJS	2	UPDATED PV-WC-BRACE	9/19/16	DOCUMENT NUMBER	REV
		STATUS	APPROVED	REV	DESCRIPTION	DATE	WCEQ-ENG-01-R6	6

ICE CANOPY DETAILS  
N.T.S.

1  
A-12

APPLICANT:  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
15 COMMERCE WAY, SUITE B  
NORTHON, MA 02766

PROJECT MANAGER  
**NORTHEAST SITE SOLUTIONS**  
5 MELROSE DR  
FARMINGTON, CT 06032

ENGINEERING CONSULTANT:  
**FORESITE LLC.**  
462 WALNUT STREET, SUITE 1  
NEWTON, MA 02460

PROFESSIONAL SEAL

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A	PRELIMINARY	10/07/24
0	ISSUED FOR PERMITTING	02/05/25

SITE NUMBER: CTNL251A  
SITE NAME: DEPT OF PUBLIC SAFETY  
SITE ADDRESS:  
11 MUNN RD  
COLCHESTER, CT 06415

SHEET TITLE:  
A-12: CONSTRUCTION DETAILS

NOTE: VERIFICATION OF CANOPY AND ANCHORAGE CAPACITY BY OTHERS.

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ELECTRICAL & GROUNDING NOTES

1. ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES INCLUDING LATEST EDITIONS OF:

2020 NFPA 70, NATIONAL ELECTRICAL CODE, OF THE NATIONAL FIRE PROTECTION ASSOCIATION INC.  
UL - UNDERWRITERS LABORATORIES  
MANUFACTURERS ASSOCIATION  
OSHA - OCCUPATIONAL SAFETY AND HEALTH ACT

2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PRODUCED PER SPECIFICATION REQUIREMENTS.

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

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

5. 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) ND WHERE REQUIRED IN LIQUID TIGHT FLEXIBLE METAL OR NONMETALLIC CONDUITS.

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

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

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

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

10. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NAME 3R ENCLOSURE.

11. GROUNDING SHALL COMPLY WITH NEC ART. 250.

12. GROUNDING COAX CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURES COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.

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

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

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

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

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

18. APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTION.

19. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.

20. TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.

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

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

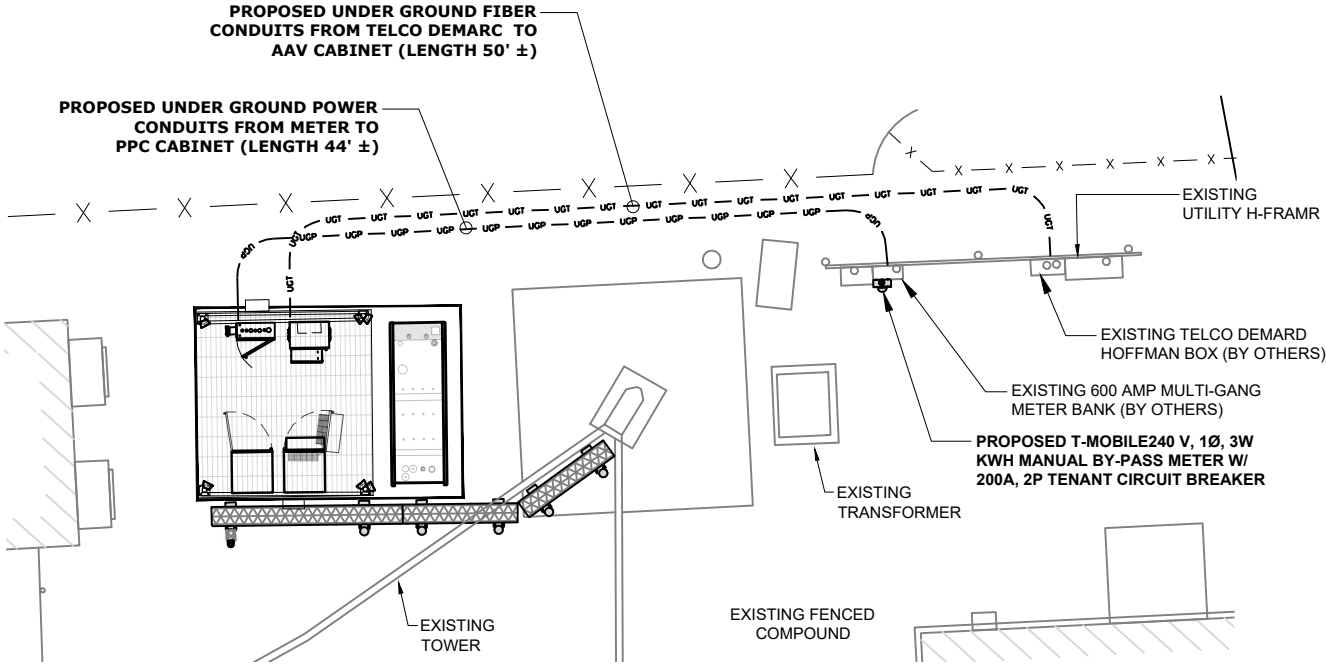
23. EXISTING UNDERGROUND UTILITY LOCATIONS ARE UNKNOWN. GENERAL CONTRACTOR SHALL HAND-EXCAVATE TO REQUIRED SUB-GRADE DEPTH, SUFFICIENT TEST HOLES OR AS DIRECTED / REQUIRED BY CONSTRUCTION MANAGER. ALL PROPOSED UNDERGROUND UTILITY TRENCHES SHALL BE HAND-EXCAVATE AS REQUIRED. GENERAL CONTRACTOR IS RESPONSIBLE FOR ANY REQUIRED SPECIAL TEMPORARY PROTECTION OF, PHYSICAL DAMAGE TO, OR REPAIR OF EXISTING UNDERGROUND CONDUIT INCLUDING RESTORATION OF SERVICE.

SPECIAL CONTRACTOR'S NOTES:

1. CONTRACTOR TO VERIFY THE POWER FEED & PHASE OF METER BANK AND THAT THE EXISTING AND PROPOSED CONDUITS AND WIRE SIZES ARE ADEQUATE FOR THE PROPOSED LOADING IN ACCORDANCE WITH THE NEC AND INCLUDE ELECTRICAL UPGRADES IN THE SCOPE OF WORK AS REQUIRED.

2. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.

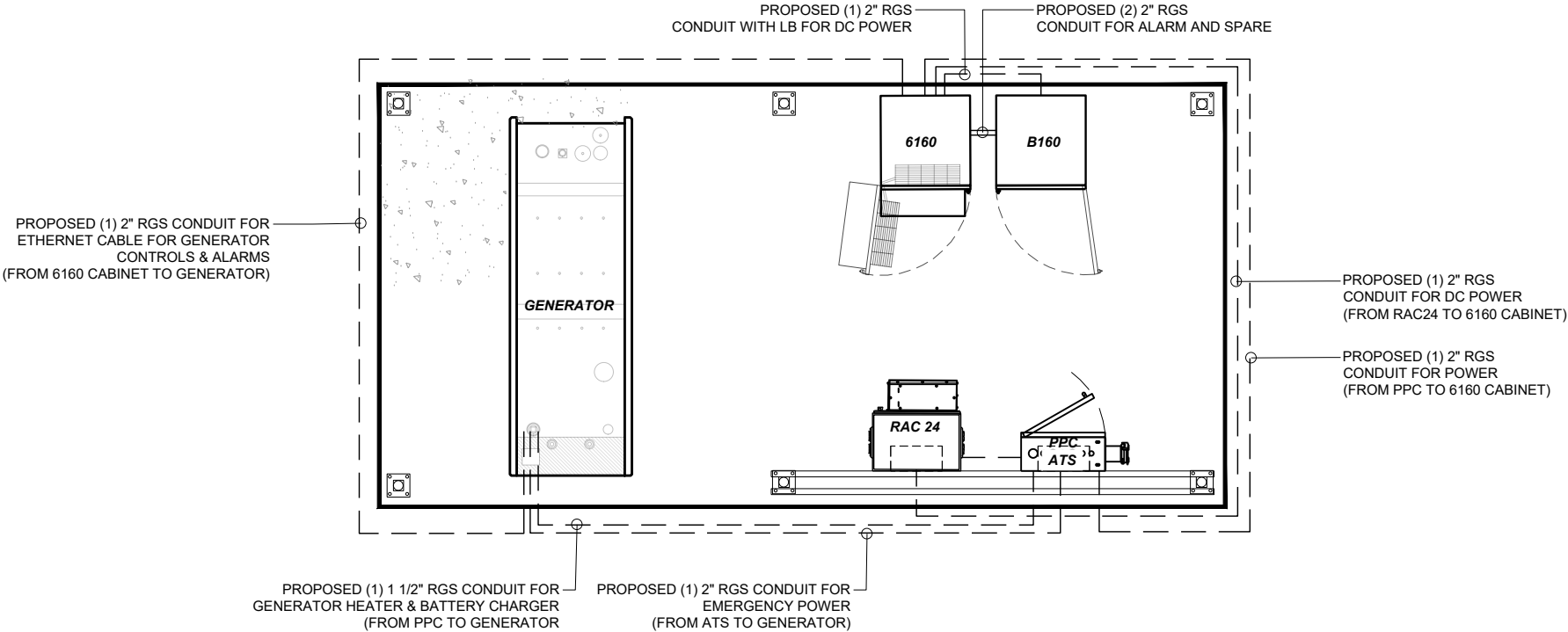
3. THE GROUND LEASE PROVIDES BROAD/BLANKET UTILITY RIGHTS. "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 ARE BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS NOT AN OPTION, PLEASE NOTIFY TOWER OWNER AS FURTHER COORDINATION MAY BE NEEDED.



UTILITIES PLAN

SCALE: 1" = 30'

1  
E-1



EQUIPMENT UTILITIES PLAN

SCALE: 3/16" = 1'-0"

2  
E-1

APPLICANT:  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
15 COMMERCE WAY, SUITE B  
NORTHON, MA 02766

PROJECT MANAGER  
**NORTHEAST SITE SOLUTIONS**  
5 MELROSE DR  
FARMINGTON, CT 06032

ENGINEERING CONSULTANT:  
**FORESITE LLC.**  
462 WALNUT STREET, SUITE 1  
NEWTON, MA 02460

PROFESSIONAL SEAL

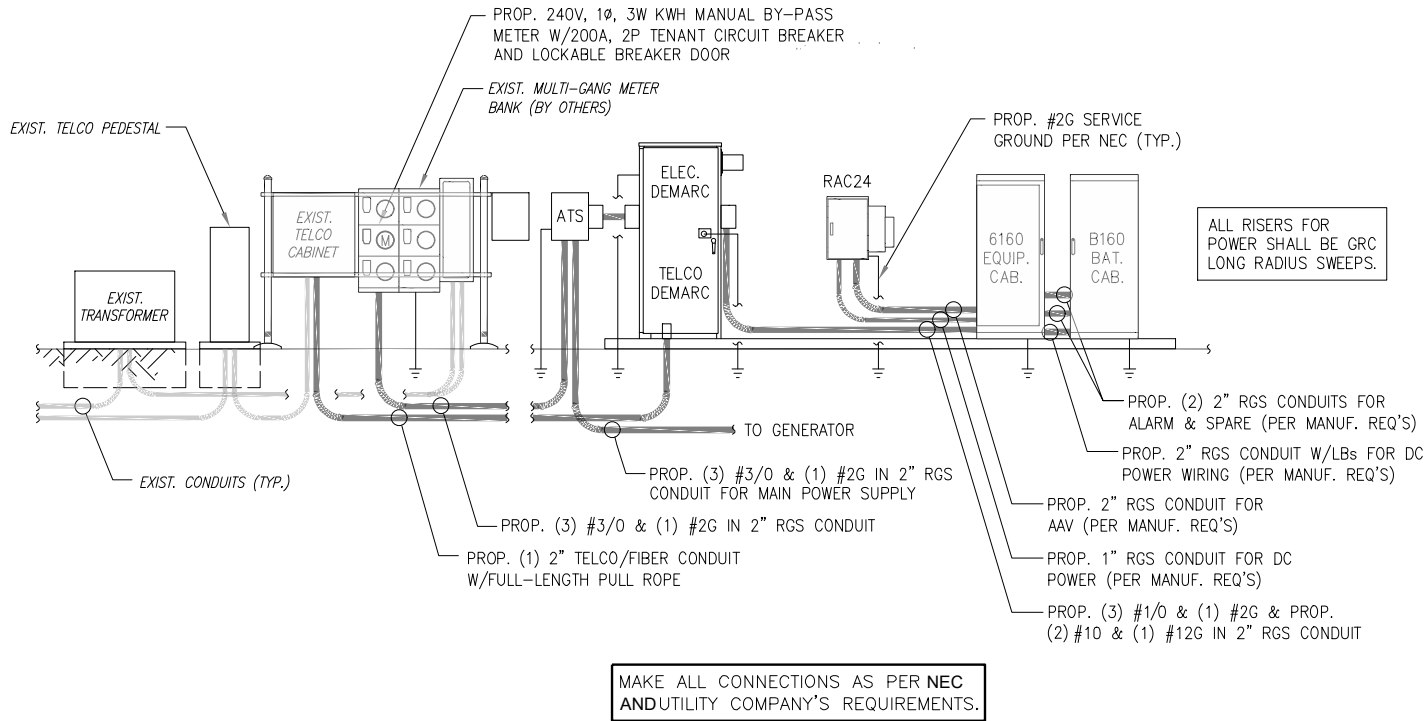
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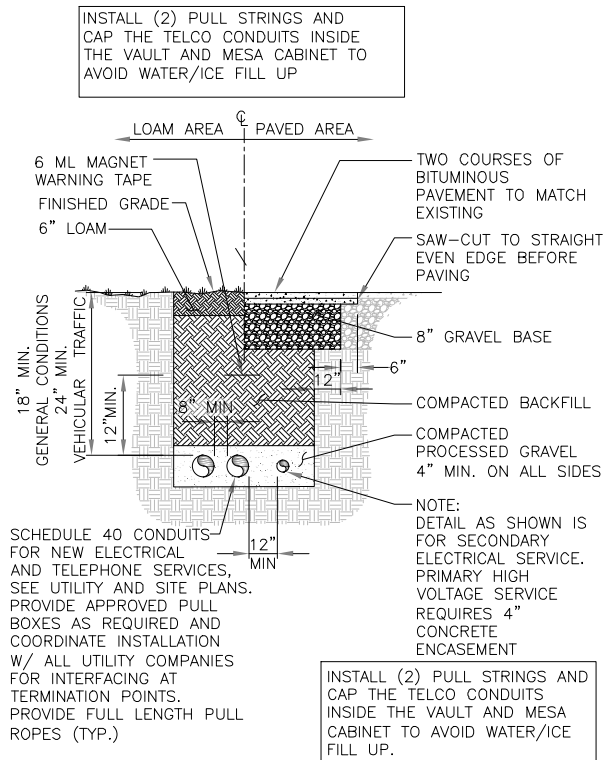
SHEET TITLE:  
E-1: UTILITIES PLAN





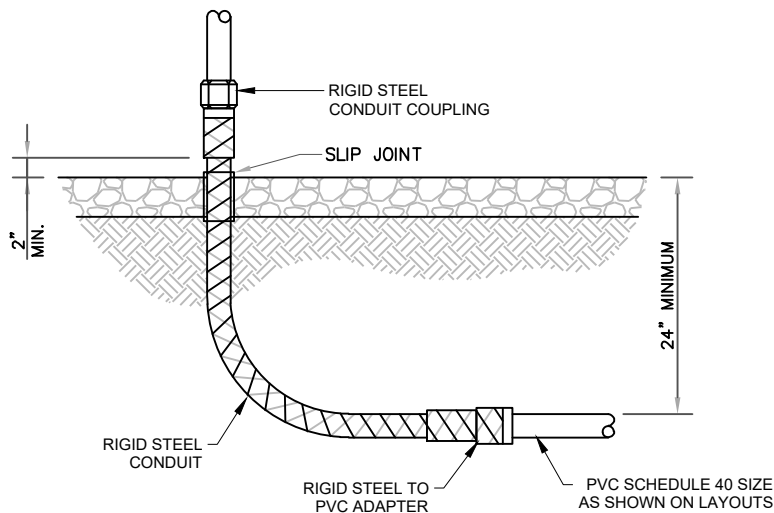
POWER AND TELCO RISER DIAGRAM  
N.T.S.

1  
E-2



BURIED CONDUIT DETAILS  
N.T.S.

2  
E-2



CONDUIT STUB-UP DETAILS  
N.T.S.

3  
E-2

- SPECIAL CONTRACTOR'S NOTES:
1. CONTRACTOR TO VERIFY THE POWER FEED & PHASE OF METER BANK AND THAT THE EXISTING AND PROPOSED CONDUITS AND WIRE SIZES ARE ADEQUATE FOR THE PROPOSED LOADING IN ACCORDANCE WITH THE NEC AND INCLUDE ELECTRICAL UPGRADES IN THE SCOPE OF WORK AS REQUIRED.
  2. CONTRACTOR SHALL FIELD VERIFY ALL PROPOSED UNDERGROUND UTILITY CONDUIT ROUTE.
  3. THE GROUND LEASE PROVIDES BROAD/BANKET UTILITY RIGHTS. "PWR" AND "FBR" PATH DEPICTED ON A-1 AND E-1 ARE BASED ON BEST AVAILABLE INFORMATION INCLUDING BUT NOT LIMITED TO FIELD VERIFICATION, PRIOR PROJECT DOCUMENTATION AND OTHER REAL PROPERTY RIGHTS DOCUMENTS. WHEN INSTALLING THE UTILITIES PLEASE LOCATE AND FOLLOW EXISTING PATH. IF EXISTING PATH IS NOT AN OPTION, PLEASE NOTIFY TOWER OWNER AS FURTHER COORDINATION MAY BE NEEDED.

APPLICANT:  
**T-Mobile**  
**T-MOBILE NORTHEAST LLC**  
15 COMMERCE WAY, SUITE B  
NORTHON, MA 02766

PROJECT MANAGER  
**NORTHEAST**  
SITE SOLUTIONS  
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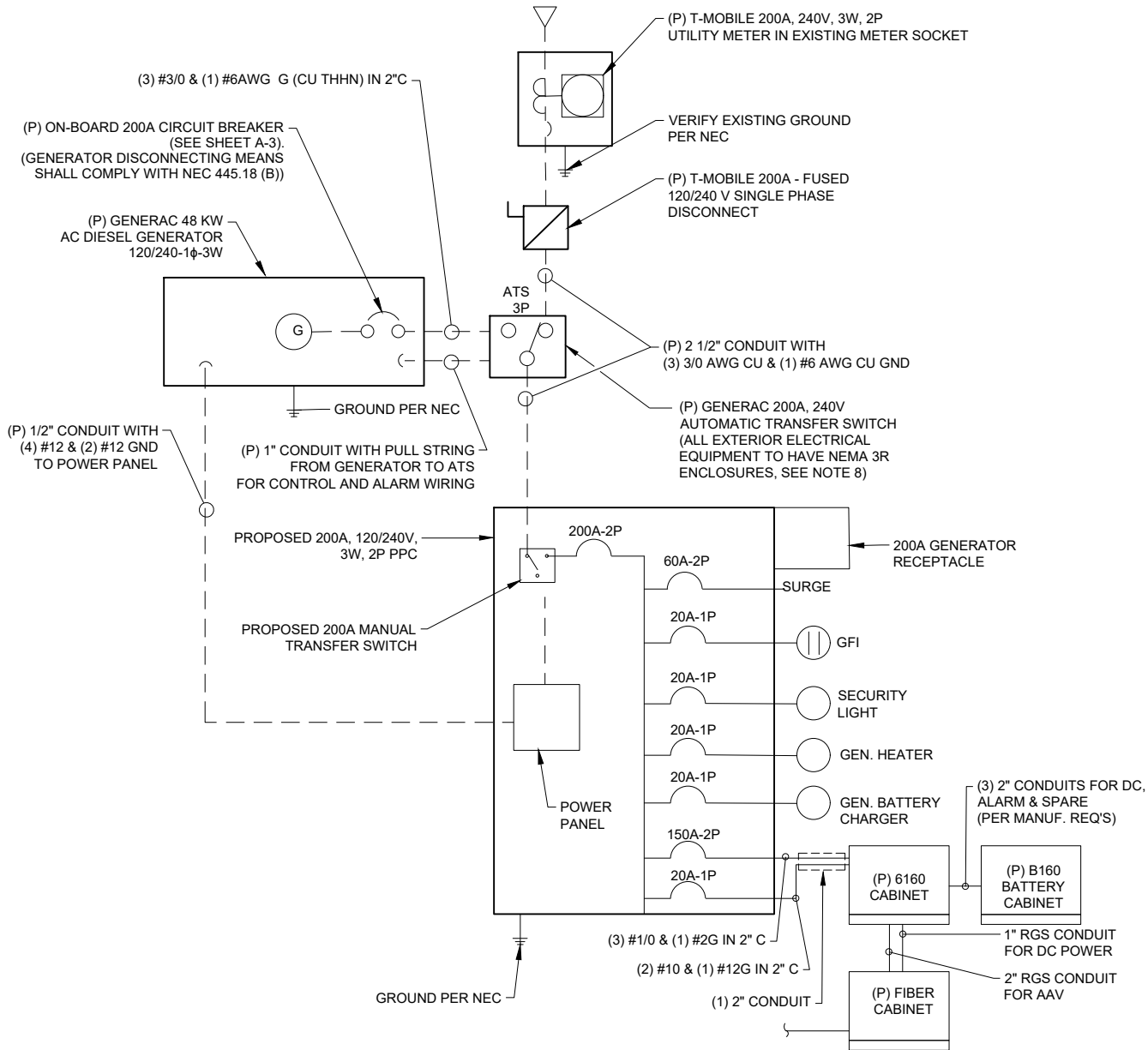
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SITE ADDRESS:  
11 MUNN RD  
COLCHESTER, CT 06415

SHEET TITLE:  
E-2: ELECTRICAL DETAILS



NOTES:  
DIAGRAM AS SHOWN, IS A GENERIC ROUTING SCHEMATIC BASED ON AVAILABLE INFORMATION AND MAY NOT REPRESENT ACTUAL FIELD CONDITIONS. CONTRACTOR SHOULD INSTALL THE GENERATOR, EQUIPMENT AND CONNECTIONS BASED ON VERIFIED ELECTRICAL AUDITS AND PER MANUFACTURER'S INSTALLATION GUIDELINES AS WELL AS ALL APPLICABLE LOCAL AND NATIONAL CODES AND REQUIREMENTS.

- NOTES:
- 1- MAKE ALL CONNECTIONS AS PER UTILITY COMPANY AND NEC REQUIREMENTS.
  - 2- INSTALL NEW BREAKERS PER NEC AND MANUFACTURER'S REQUIREMENTS.
  - 3- CONDUIT SWEEPS TO ABOVE GROUND ELECTRICAL APPLIANCES SHALL BE GRC.
  - 4- UTILITY COMPANY TO CONFIRM CAPACITY IN METER BANK AND TRANSFORMER.



EQUYIPMENT ONE LINE DIAGRAM  
N.T.S.

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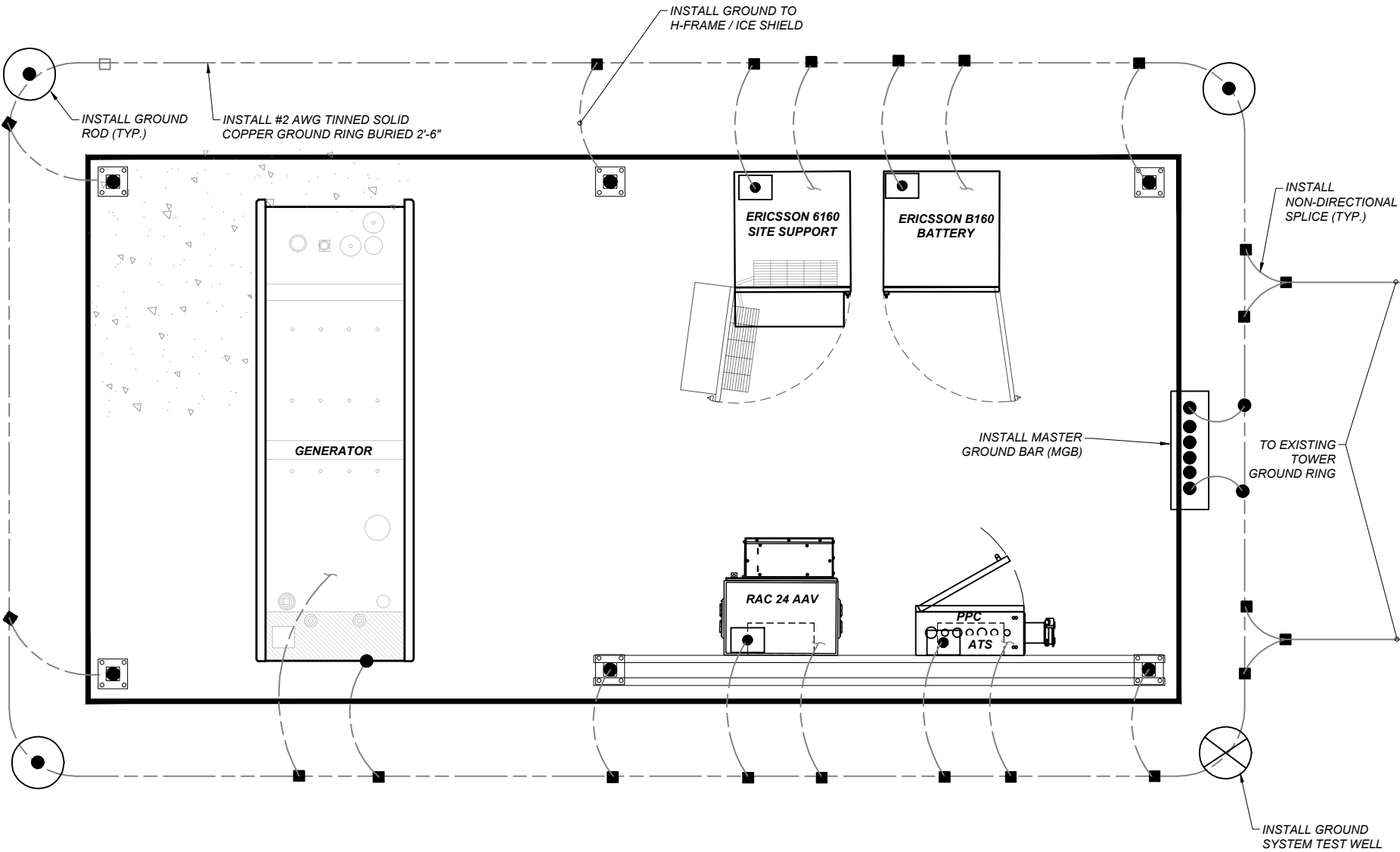
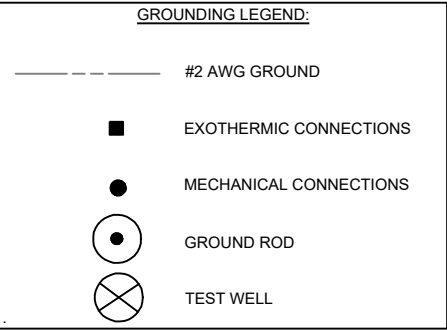
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E-3: ELECTRICAL DETAILS

GROUNDING SPECIFICATIONS:

- GROUNDING SHALL COMPLY WITH ARTICLE 250 OF THE NATIONAL ELECTRICAL CODE. ALL GROUNDING DEVICES SHALL BE U.L. APPROVED OR LISTED FOR THEIR INTENDED USE.
- GROUND WIRES SHALL BE TINNED #2 AWG BARE SOLID COPPER UNLESS NOTED OTHERWISE.
- GROUNDING CONNECTIONS SHALL BE EXOTHERMIC (CADWELD) NOTED OTHERWISE. CLEAN SURFACES TO SHINE METAL. WHERE GROUND WIRES ARE CADWELD TO GALVANIZED SURFACES. SPRAY CADWELD WITH GALVANIZING PAINT.
- ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE. BEND GROUNDING LEADS WITH A MINIMUM 12" RADIUS.
- PRIOR TO INSTALLING LUGS ON GROUND WIRES, APPLY THOMAS & BETSS KOPR-SHIELD (TM OF JET LUBE, INC.). PRIOR TO BOLTING GROUND WIRE LUGS TO GROUND BARS, APPLY KOPR-SHIELD OR EQUAL.
- WHERE BARE COPPER GROUND WIRES ARE ROUTED FROM ANY CONNECTION ABOVE GRADE TO GROUND RING, INSTALL WIRE IN ¼" PVC SLEEVE, FROM 1'-0" MIN. ABOVE GRADE AND SEAL TOP WITH SILICONE MATERIAL.
- PREPARE ALL BONDING SURFACES FOR GROUNDING CONNECTIONS BY REMOVING ALL PAINT AND CORROSION DOWN TO SHINY METAL. FOLLOWING CONNECTION, APPLY APPROPRIATE ANTI-OXIDIZATION PAINT.
- GROUNDING WIRE CONNECTIONS SHALL BE 3-CRIMP C-TAP COMPRESSION TYPE. SPLIT BOLTS ARE NOT ACCEPTABLE.
- GROUND RODS SHALL BE COPPER CLAD STEEL ¾" x 10' SPACED NOT LESS THAN 10' O.C.
- CONNECTORS SHALL BE CRIMPED USING HYDRAULIC CRIMPING TOOLS.
- SURFACE CONNECTIONS SHALL BE MADE TO BARE METAL. PAINTED SURFACES SHALL BE FILED TO ENSURE PROPER CONTACT. APPLY NON-OXIDIZING AGENT TO CONNECTIONS.
- COPPER BUSES SHALL BE CLEANED, POLISHED AND A NON-OXIDIZING AGENT APPLIED. NO FINGERPRINTS OR DISCOLORED COPPER WILL BE PERMITTED.
- GROUNDING CONDUCTORS SHALL BE RUN THROUGH PVC SLEEVE WHERE ROUTED THROUGH WALLS, FLOORS, AND CEILINGS. ENDS OF CONDUIT SHALL BE GROUND. SEAL BOTH ENDS OF CONDUIT WITH SILICONE CAULK.
- HARDWARE (I.E. NUTS, BOLTS, WASHERS, ETC.) TO BE STAINLESS STEEL.
- EXOTHERMIC WELDS SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
- THE ENTIRE SYSTEM SHALL BE SOLIDLY GROUND. USING LOCKNUTS AND BONDING NUTS ON CONDUITS AND PROPERLY BONDED GROUND CONDUCTORS, RECEPTACLES AND EQUIPMENT BRANCH CIRCUITS SHALL BE GROUND. WITH A FULL SIZED EQUIPMENT GROUNDING CONDUCTOR RUN IN THE CIRCUIT'S CONDUIT.
- INSTALL GROUND BUSHINGS ON ALL METALLIC CONDUITS AND BOND TO THE EQUIPMENT GROUND BUS IN THE PANEL BOARD.
- GROUND BARS (SECTOR, COLLECTOR, MASTER) SHALL BE MIN. BARE ¼" x 4" COPPER AND LARGE ENOUGH TO ACCOMMODATE THE REQUIRED NUMBER OF GROUND CONNECTIONS. THE HARDWARE SECURING THE MASTER GROUND BAR (MGB) SHALL ELECTRICALLY INSULATE THE MGB FROM ANY STRUCTURE TO WHICH IT IS FASTENED.
- APPLY THOMAS & BETSS KOPR-SHIELD OR APPROVED EQUIVALENT PRIOR TO MAKING MECHANICAL CONNECTIONS. CONNECTIONS SHALL BE MADE WITH STAINLESS STEEL BOLTS, NUTS AND LOCK WASHERS ¾" DIAMETER, MIN. WHERE GALVANIZING IS REMOVED FROM METAL IT SHALL BE PAINTED OR TOUCHED UP WITH 'GALVONOX' OR EQUAL.
- ALL TERMINATIONS AT EQUIPMENT ENCLOSURES, PANELS, FRAMES OF EQUIPMENT AND WHERE EXPOSED FOR GROUNDING CONDUCTOR TERMINATION SHALL BE PERFORMED UTILIZING TWO HOLE BOLTED TONGUE COMPRESSION TYPE WITH STAINLESS STEEL SELF-TAPPING SCREWS.
- ALL CLAMPS AND SUPPORTS USED TO SUPPORT THE GROUNDING SYSTEM CONDUCTOR AND PVC CONDUITS SHALL BE PVC TYPE (NON-CONDUCTIVE). DO NOT USE METAL BRACKETS OR SUPPORTS WHICH WOULD FORM A COMPLETE RING AROUND ANY GROUNDING CONDUCTOR.
- ALL BOLTS, WASHERS, AND NUTS USED ON GROUNDING CONNECTIONS SHALL BE STAINLESS STEEL.
- THE CONTRACTOR SHALL ENGAGE AN INDEPENDENT ELECTRICAL TESTING FIRM TO TEST AND VERIFY THAT RESISTANCE TO EARTH DOES NOT EXCEED 5.0 OHMS. PROVIDE A COPY OF TESTING REPORT, INCLUDING THE METHOD AND INSTRUMENTS USED TO VERIFY RESISTANCE TO SPRINT REPRESENTATIVE.
- COAX CABLE SHALL BE GROUND.ED AT ANTENNA LEVEL WITHIN 5' OF ANTENNA, COAX WILL ADDITIONALLY BE GROUND.ED AT THE BASE OF THE TOWER 18" BEFORE THE CABLE REACHES A HORIZONTAL PLANE. IF EQUIPMENT CABINET IS MORE THAN 15' FROM THE TOWER AN ADDITIONAL GROUND KIT WILL BE ADDED 24" BEFORE CABLE ENTERS CABINET.
- ALL COAX GROUND KITS WILL BE ANDREW 'COMPACT SURE GROUND' OR APPROVED EQUIVALENT.
- VERIFY THE GROUNDING CONTINUITY BETWEEN THE TOWER BASE AND THE NEW T-MOBILE CABINET GROUND BAR. CONTRACTOR SHALL ENSURE THAT ALL METALLIC OBJECTS WITHIN 6" FROM CABINET HAVE GROUNDING CONTINUITY. THE CONTRACTOR SHALL CORRECT ANY DEFECTS BE ADDING GROUNDING CONDUCTOR TO ENSURE CONTINUITY.
- GROUNDING CONDUCTORS SHALL BE COPPER ONLY. EITHER SOLID OR STRANDED CONDUCTORS ARE PERMITTED. ALL EXTERNAL BURIED CONDUCTORS MUST BE BARE. EQUIPMENT GROUND LEADS IN CABLE TRAYS MUST BE GREEN INSULATED.
- CONTRACTOR TO PROVIDE GROUND WIRES, BARS, AND CONNECTIONS AS SHOWN ON GROUNDING RISER DIAGRAM.



GROUNDING PLAN  
N.T.S.

1  
G-1

APPLICANT:  
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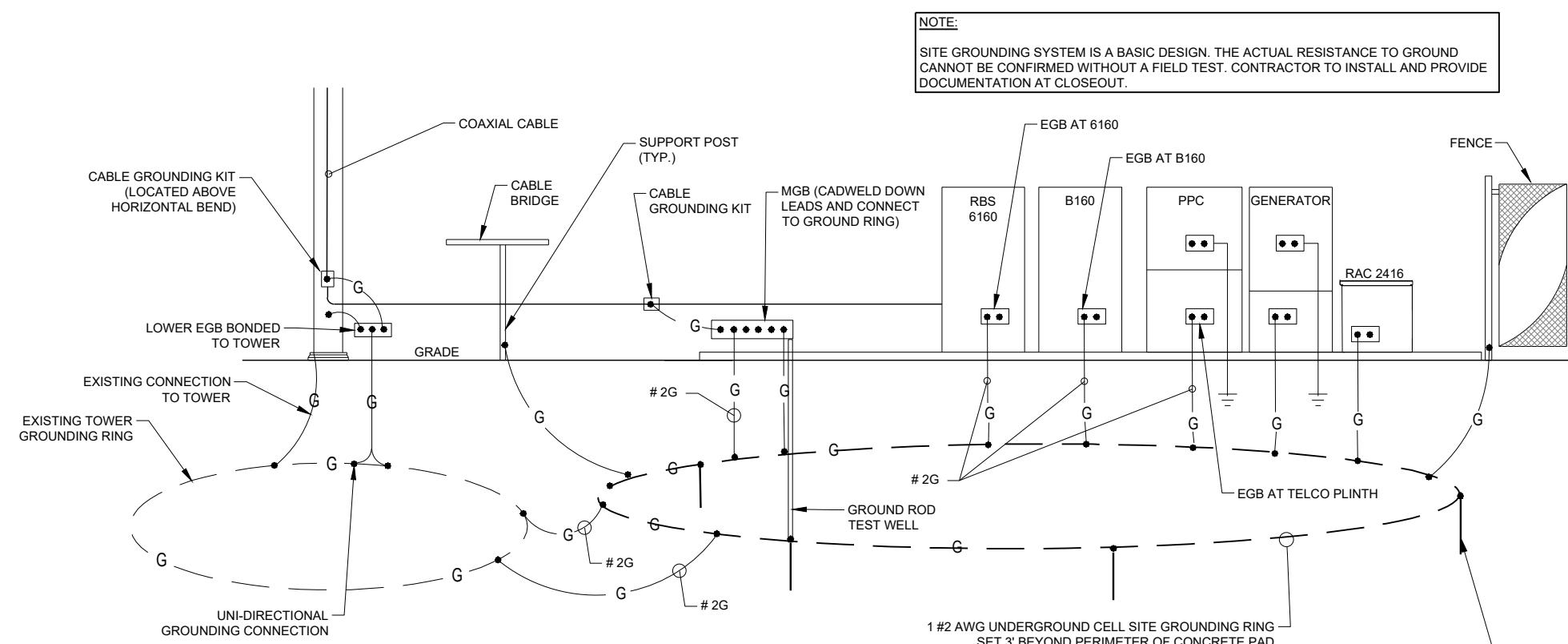


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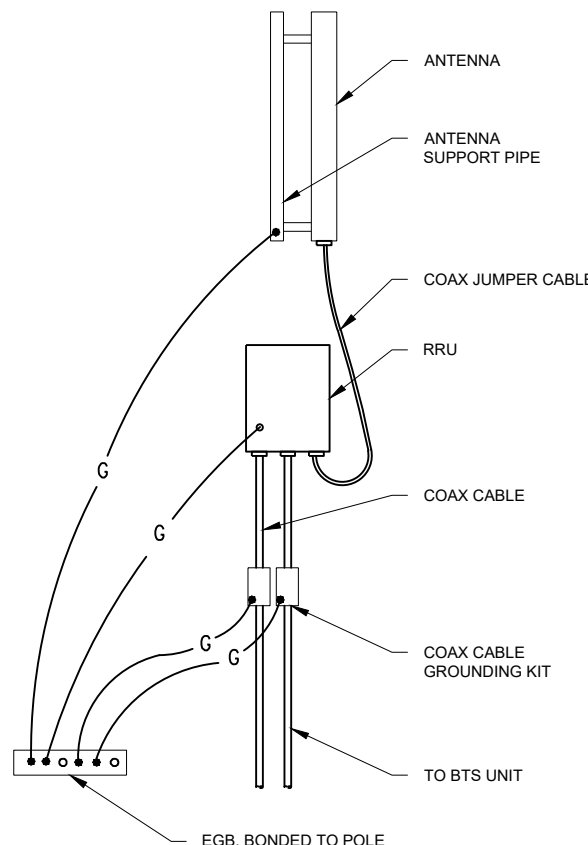
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COLCHESTER, CT 06415

SHEET TITLE:  
G-1: GROUNDING DETAILS



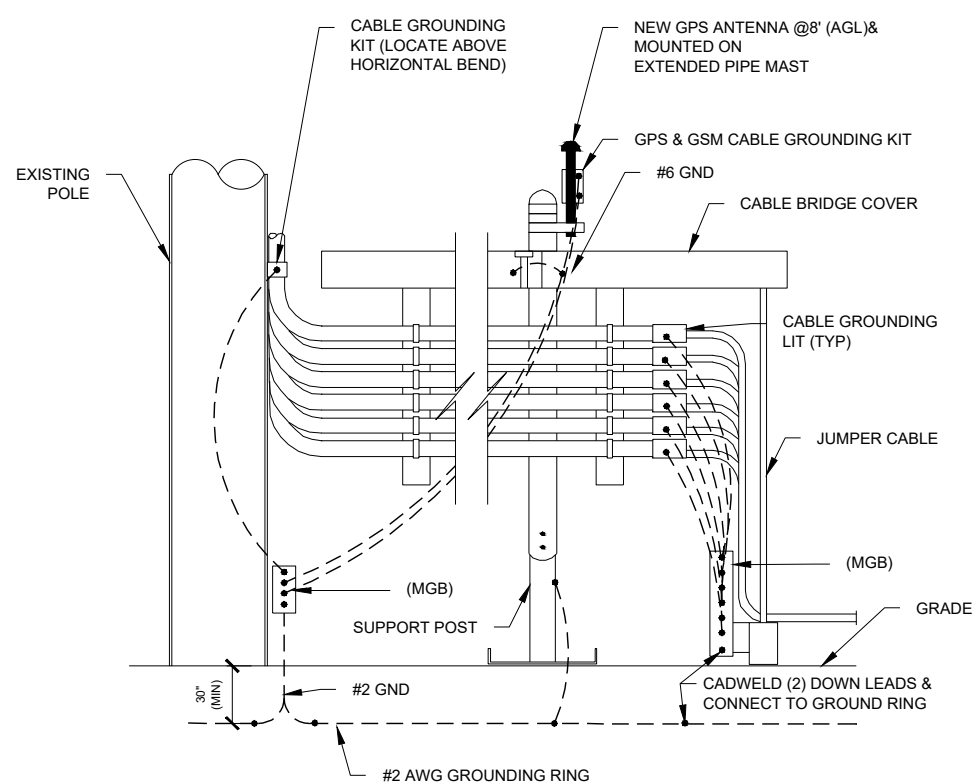
**GROUNDING RISER DIAGRAM**  
N.T.S.

1  
G-2



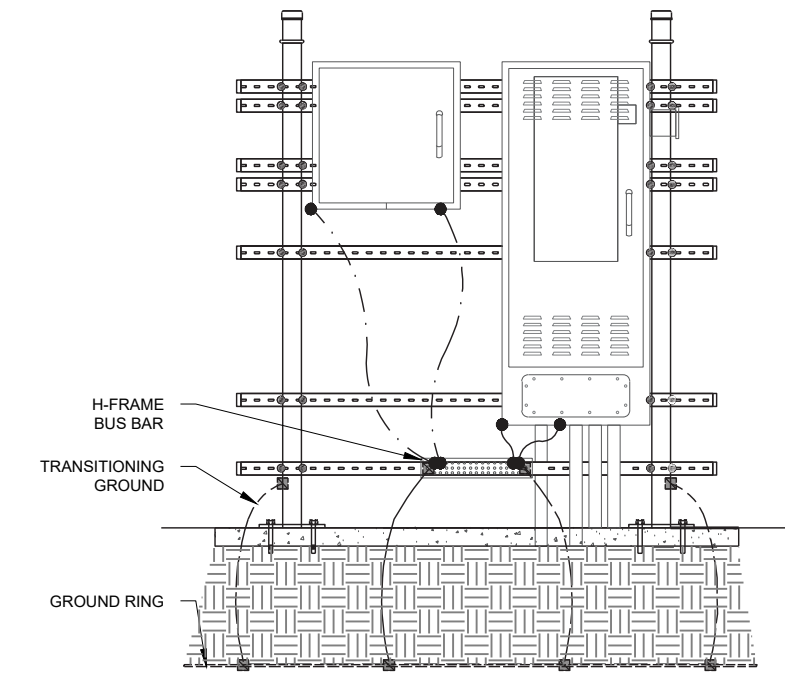
**TOWER TOP GROUNDING**  
N.T.S.

2  
G-2



**ICE BRIDGE GROUNDING**  
N.T.S.

3  
G-2



**H-FRAME GROUNDING**  
N.T.S.

4  
G-2

APPLICANT:  
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**T-MOBILE NORTHEAST LLC**  
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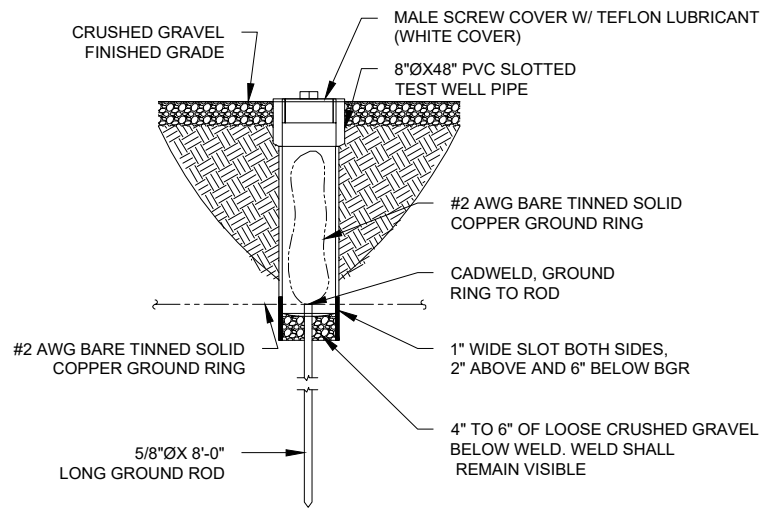
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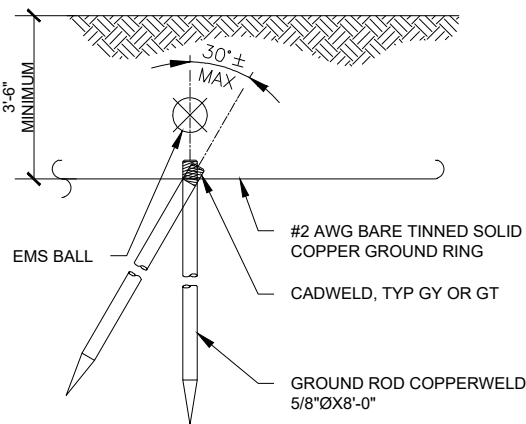




NOTE:  
1. PROPOSED BGR TO BE INSTALLED 3'-6" MIN. BELOW GRADE OR BELOW LOCAL FROST DEPTH, WHICHEVER IS GREATER.  
2. ONE TEST WELL SHALL BE PROVED BETWEEN THE TOWER GROUND LOOP AND TWO ON THE EQUIPMENT GROUND LOOP.

**GROUND ROD TEST WELL DETAIL**  
N.T.S

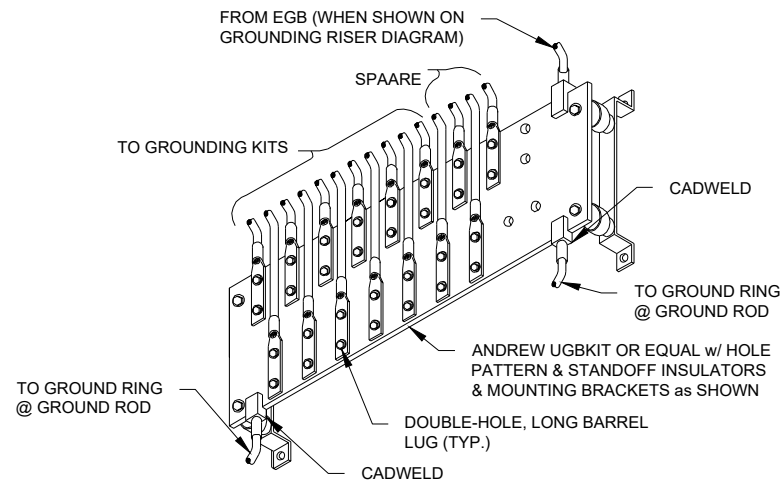
1  
G-3



NOTE:  
1. PROPOSED BGR TO BE INSTALLED 3'-6" MIN. BELOW GRADE OR BELOW LOCAL FROST DEPTH, WHICHEVER IS GREATER.  
2. GROUND ROD SHALL BE DRIVEN VERTICALLY, NOT TO EXCEED 30 DEGREES FROM THE VERTICAL.

**GROUND ROD DETAIL**  
N.T.S

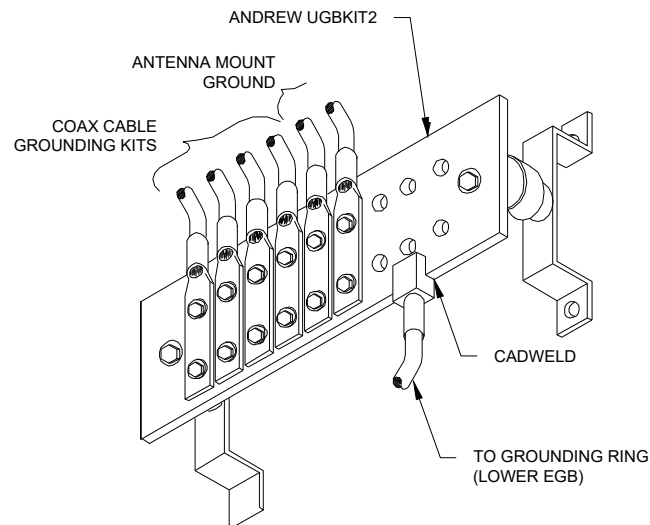
2  
G-3



NOTES:  
(1) VERTICAL POST SHALL BE BONDED TO THE RING @ EACH CORNER & @ EACH GATE POST. AS A MINIMUM ONE VERTICAL POST SHALL BE BONDED TO THE GROUND RING IN EVERY 100'-0" STRAIGHT RUN OF FENCE.  
(2) HORIZONTAL POLES SHALL BE BONDED TO EACH OTHER.  
(3) BOND EACH HORIZONTAL POLE / BRACE TO EACH OTHER & TO EACH VERTICAL POST THAT IS BONDED TO THE EXTERIOR GROUND RING.

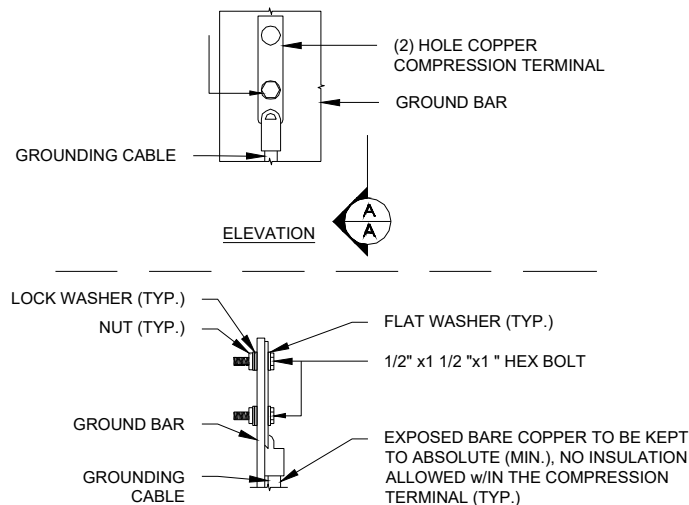
**(MGB) MASTER GROUND BAR**  
N.T.S

3  
G-3



**(EGB)EQUIPMENT GROUND BAR**  
N.T.S

4  
G-3

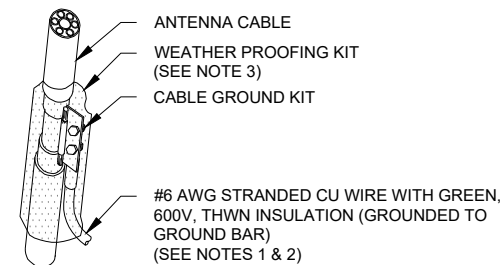


NOTES:  
(1) "DOUBLING UP" OR "STACKING" OF CONNECTIONS IS NOT PERMITTED.  
(2) OXIDE INHIBITING COMPOUND TO BE USED @ ALL LOCATIONS.  
(3) CADWELD DOWN LEADS FROM UPPER EGB, LOWER EGB & MGB.

**GROUND BAR CONNECTION DETAIL**  
N.T.S

5  
G-3

NOTES:  
(1) DO NOT INSTALL CABLE GROUND KIT AT A BEND ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.  
(2) GROUNDING KIT BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.  
(3) WATERPROOFING SHALL BE TYPE AND PART NUMBER AS SUPPLIED OR RECOMMENDED BY CABLE MANUFACTURER.



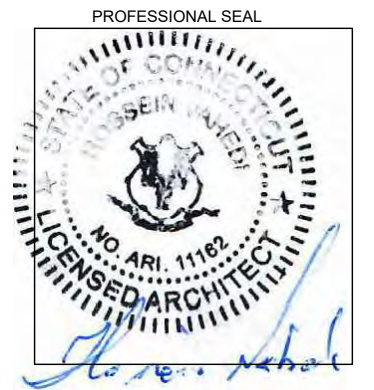
**CONNECTION OF GROUND KIT TO ANTENNA CABLE DETAIL**  
N.T.S

6  
G-3

APPLICANT:  
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SHEET TITLE:  
G-3: GROUNDING DETAILS

# Exhibit D

## **Structural Analysis Report**

## Project

# Structural Analysis Report 320-ft Three-Legged Lattice Tower Proposed T-Mobile Equipment Installation CSB Site Ref: #50 11 Munn Road Colchester, CT 06415

**Centek Project No.:** 24144.01

**Date Issued:** November 20, 2024 - Rev. 0

### Prepared For

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**CEN TEK** engineering  
Centered on Solutions<sup>SM</sup>

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Appendices

- RF Data Sheet

## 1.00 REPORT

### 1.01 INTRODUCTION

The purpose of this report is to summarize the results of the non-linear, P-Δ structural analysis of the equipment installation proposed by T-Mobile on the existing lattice tower located in Colchester, CT.

The host tower is a 320-ft, three-legged, lattice tower originally designed and manufactured by Rohn Industries. File no. 43233AE dated May 10, 2001. The tower geometry, structure member sizes and foundation information were taken from a previous structural analysis report prepared by Centek Engineering job no. 21007.82 dated January 2, 2024. The tower has been previously reinforced. All previous reinforcements are assumed to be installed. See Primary Assumptions Section below for detailed reinforcement reference reports.

Antenna and appurtenance information were obtained from the aforementioned structural analysis and information provided by T-Mobile.

The tower consists of fifteen (15) vertical sections consisting of steel pipe legs conforming to ASTM A572-50 and steel angle/pipe lateral bracing. The vertical tower sections are connected by bolted flange plates with the diagonal and horizontal bracing to pipe legs consisting of bolted connections. The width of the tower is 6.8-ft at the top and 40.7-ft at the bottom.

### 1.02 ANTENNA AND APPURTENANCE SUMMARY

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

<b>Antenna Type</b>	<b>Carrier</b>	<b>Mount</b>	<b>Antenna Centerline Elevation</b>	<b>Cable</b>
(1) Lightning Rod	Tower (existing)	Leg Mount	329'	N/A
(1) Lighted Beacon	Tower (existing)	Tower Mount	325'	(1) 1/2" coax cable
(1) PD-128 Omni/Dipole Antenna	ECI-1 CSP-2 (existing)	6' Side Arm Mount	325'	(1) 7/8" coax cable (LCF78-50JA-A7)
(1) BA-1012 Omni Antenna	ECI-2 CSP-1 (existing)	6' Side Arm Mount	320'	(1) 7/8" coax cable (LCF78-50JA-A7)



<b>Antenna Type</b>	<b>Carrier</b>	<b>Mount</b>	<b>Antenna Centerline Elevation</b>	<b>Cable</b>
(1) ANT450F6 Antenna	ECI-3 (existing)	Pipe Mounted to tower Leg	318'	(1) 7/8" coax cable (LCF78-50JA-A7)
(1) SC479-HF1LDF Omni Antenna	ECI-4 CSP-52 (existing)	6' Side Arm Mount	300'	(1) 1-5/8" coax cable (AVA7-50A)
(1) PD-340 Dipole Antenna	ECI-5 CSP-4 (existing)	6' Side Arm Mount	290'	(1) 7/8" coax cable (LCF78-50JA-A7)
(1) DB-809T3 Omni Antenna	ECI-6 CSP-14 (existing)	<i>Shared with ECI-7 Mount</i>	286'	(1) 1-5/8" coax cable (AVA7-50A)
(1) (inverted) SC479-HF1LDF (D00I-E6085) Omni Antenna	ECI-7 CSP-53 (existing)	6' Side Arm Mount @ 284'	283'	(1) 1-5/8" coax cable (AVA7-50A)
(1) PD-440 Dipole Antenna	ECI-8 DEHMS-6 (existing)	6' Side Arm Mount @ 260'	264'	(1) 7/8" coax cable (LCF78-50JA-A7)
(1) SC479-HF1LDF Omni Antenna	ECI-10 DEP-5 (existing)	<i>Shared with below T-Frame Mount</i>	251'	(1) 1-5/8" coax cable (AVA7-50A)
(1) PD-1142 Omni Antenna	ECI-14 DEHMS-7 (existing)	6' Side Arm Mount	248'	(1) 7/8" coax cable (LCF78-50JA-A7)
(2) (inverted) SC479-HF1LDF Omni Antennas (1) TMA Unit @ 247' (EL.)	ECI-11,12,13 CSP-16,17 (existing)	(1)T-Arm Frame Mount @ 246'	245'	(2) 1-5/8" coax cable (AVA7-50A) (1) 1/2" coax cable

<b>Antenna Type</b>	<b>Carrier</b>	<b>Mount</b>	<b>Antenna Centerline Elevation</b>	<b>Cable</b>
(1) 531-70 Dipole Antenna	ECI-15 CSP-8 (existing)	6' Side Arm Mount	238'	(1) 7/8" coax cable (LCF78-50JA-A7)
(3) Samsung MT6413-77A (3) Samsung RF4461d-13A (3) LNX-6512DS-VTM (6) JAHH-65B-R3B (3) B2/B66A RRHs (3) CBC78T-DS-43-2X Diplexers (1) OVP-RVZDC-6627-PF- 48 OVP Units	VZW (existing)	(3) V-frames (existing)	232'	(12) 1 5/8" coax cables (existing) (2) HB158-1-08U8-S8J18 Fiber Optic Cable
(3) Amphenol APXVAALL24M-U-J20 (3) Amphenol APXVLL19P_43-C-A20 (3) Ericsson 4480 B71+B85 (3) Ericsson 4460 B25+B66	T-Mobile (Proposed)	(3) SitePro VFA12- HD	210'	(2) 1-5/8" Hybrid Cable

<b>Antenna Type</b>	<b>Carrier</b>	<b>Mount</b>	<b>Antenna Centerline Elevation</b>	<b>Cable</b>
(3) Powerwave 7770 Panel Antennas (2) CCI HPA-65R-BUU-H8 (1A, 1B) (1) CCI HPA-65R-BUU-H6 (1C) (3) RRUS-11 RRH Units (3) RRUS-32 B2 RRH Units (1) DC6-48-60-0-8C Surge Arrestor	AT&T (existing)	(3) T-Arm mounts with (1) Stiff-Arm connected to Tower Structure	200'	(6) 1 5/8" coax cables (1) Fiber Optic Cable & (2) DC Cables within 2" Flex Conduit
(3) Commscope FFVV-65B- R2 (3) Samsung RF4450t-71A (3) Samsung RF4451d-70A (1) Raycap RDIDC-9181- PF-48	Dish (reserved)	(3) SitePro VFA8- HD V-Frames	190'	(1) 1-3/4" Hybrid Cable
(1) 1151-3N Omni Antenna	ECI-50 NEU-32 (existing)	4' Side Arm Mount	179'	(1) 7/8" coax cable (LCF78-50JA-A7)
(1) DB586-Y Omni Antenna	ECI-51 NEU-48 (existing)	<i>Shared with Below Mount</i>	177'	(1) 7/8" coax cable (LCF78-50JA-A7)
(1) TTA Unit	ECI-52 NEU-49 (existing)	<i>Shared with Below Mount</i>	176'	(1) 1/2" coax cable (LDF4-50A)

<b>Antenna Type</b>	<b>Carrier</b>	<b>Mount</b>	<b>Antenna Centerline Elevation</b>	<b>Cable</b>
(1) (inverted) DB586-Y Omni Antenna	ECI-53 NEU-50 (existing)	6' Side Arm Mount @ 176'	175'	(1) 7/8" coax cable (LCF78-50JA-A7)
(1) Small Lighted Tower Beacon Light	ECI-54 Tower (existing)	Mounted to Leg	168'	(1) 3/8" coax cable
(1) Small Lighted Tower Beacon Light	ECI-55 Tower (existing)	Mounted to Leg	165'	(1) 3/8" coax cable
(1) Small Lighted Tower Beacon Light	ECI-56 Tower (existing)	Mounted to Leg	164'	(1) 3/8" coax cable
(1) Telewave ANT220F2 Omni Antenna	Eversource (existing)	(1) SitePro1 USF-4U Mount @ Elevation 160'	163'	(1) LCF78-50JA-A7
(1) ANT450F6 Antenna	ECI-57 CSP (existing)	Pipe Mounted to Leg	154'	(1) 7/8" coax cable (LCF78-50JA-A7)

<b>Antenna Type</b>	<b>Carrier</b>	<b>Mount</b>	<b>Antenna Centerline Elevation</b>	<b>Cable</b>
(1) 6' Dish with Radome (PAR6-59W-PXA)	ECI-58 CSP (existing)	Pipe Mounted to Leg	154'	(1) EW63 elliptical cable
(1) Telewave ANT220F2 Omni Antenna	Eversource (existing)	(1) SitePro1 USF-4U Mount @ Elevation 160'	163'	(1) LCF78-50JA-A7
(1) PD-156S Yagi Antenna	ECI-60 "DEAD" Carrier (existing)	<i>Shared with ECI-59 Mount</i>	139'	(1) 7/8" coax cable (LCF78-50JA-A7)
(1) DB-212 Dipole Antenna	ECI-59 NEU-33 (existing)	4' Side Arm Mount	139'	(1) 7/8" coax cable (LCF78-50JA-A7)
(1) 3' Ice Shield (for ECI-61 Dish)	ECI-61 CSP (existing)	Pipe Mounted to Leg	117'	N/A
(1) Ice Shield (for ECI-63 Dish)	ECI-63 CSP (existing)	Pipe Mounted to Leg	115'	N/A

<b>Antenna Type</b>	<b>Carrier</b>	<b>Mount</b>	<b>Antenna Centerline Elevation</b>	<b>Cable</b>
(1) 3' Dish with Radome	ECI-61 CSP-13 (existing)	Pipe Mount to Leg	112'	(1) EW90 coax cable
(1) 8' "Drum" Dish Antenna w/ Shroud	ECI-63 CSP (existing)	Pipe mounted to Leg	107'	(1) EW63 Elliptical Cable
(1) PD-458 Omni Antenna	ECI-62 CTT-18 (existing)	4' Side Arm Mount	106'	(1) 7/8" coax cable (LCF78-50JA-A7)
(1) PD-688 Yagi Antenna	ECI-66 FBI-31 (existing)	Pipe Mount to Leg	94'	(1) 7/8" coax cable (LCF78-50JA-A7)

### 1.03 PRIMARY ASSUMPTIONS USED IN THE ANALYSIS

- The tower structure's theoretical capacity does not include any assessment of the condition of the tower.
- The tower carries horizontal and vertical loads due to the weight of antennas, ice load and wind.
- Tower is properly installed and maintained.
- Tower is in plumb condition.
- Tower loading for antennas and mounts as listed in this report.
- All bolts are appropriately tightened providing the necessary connection continuity.
- All welds are fabricated with ER-70S-6 electrodes.
- All members are assumed to be as specified in the original tower design documents or reinforcement drawings.
- All members are "hot dipped" galvanized in accordance with ASTM A123 and ASTM A153 Standards.
- All members' protective coatings are in good condition.
- All tower members were properly designed, detailed, fabricated, installed and have been properly maintained since erection.
- Any deviation from the analyzed antenna loading will require a new analysis for verification of structural adequacy.
- All existing coax cables to be installed as indicated in Section 3 of this report.
- **All previous reinforcements per the below listed structural analysis and modification reports are assumed to be installed.**
  - **Structural report prepared by AECOM Corp for Verizon project no. VZ5-183/36917452 dated 08/06/2015.**
  - **Structural report prepared by AECOM Corp for AT&T project no. SAI-095/60529362 dated 02/06/2017.**
- **The tower geometry, structure member sizes and foundation information were taken from a previous structural analysis report prepared by Centek job no. 21007.82 dated January 2, 2024.**

### 1.04 ANALYSIS

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

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

The controlling wind speed is determined by evaluating the local available wind speed data as provided in Appendix P of the 2022 Connecticut State Building Code (CSBC) and the wind speed data available in the TIA-222-H Standard.

### 1.05 TOWER LOADING

Tower Loading was determined by the basic wind speed as applied to project surface areas with modification factors per TIA-222-H, gravity loads of the tower structure and its components, and the application of 1.0" radial ice on the tower structure and its components.

Load Cases	<u>Load Case 1</u> : 135 mph (Risk Cat IV) wind speed w/ no ice plus gravity load – used in calculation of tower stresses and rotation.	<i>[Appendix P of the 2022 CSBC]</i>
	<u>Load Case 2</u> : 50 mph wind speed w/ 1.00" radial ice plus gravity load – used in calculation of tower stresses.	<i>[Annex B of TIA-222-H]</i>
	<u>Load Case 3</u> : 90 mph wind speed w/ 0.5" radial ice plus gravity load – used in calculation of tower twist and sway.	<i>[TIA-222-F used for calculation of tower twist and sway per the requirements of the CSP]</i>

### 1.06 REFERENCE STANDARDS

2021 International Building Code as Amended by the 2022 Connecticut State Building Code (CSBC)

### 1.07 TOWER CAPACITY

- Calculated stresses **were found** to be within allowable limits. This tower was found to be at **99.0%** of its total capacity.

Tower Section	Elevation	Stress Ratio (percentage of capacity)	Result
Leg (T16)	30'-60'	65.5%	<b>PASS</b>
Diagonal (T10)	160'-170'	99.0%	<b>PASS</b>
Horizontal (T16)	80'-100'	94.0%	<b>PASS</b>



- The tower combined deflection **was found to be within allowable limits.**

Deflection Criteria	Proposed (degrees)	Allowable (degrees)	Result
Sway (Tilt)	0.3213	n/a	n/a
Twist	0.1527	n/a	n/a
Combined	0.474	0.75	<b>PASS</b>

\*TIA-222-F standard used for calculation of tower twist and sway per the requirements of the CSP.

*NOTE: Per the Department of Energy Services and Public Protection (DESPP) / Connecticut State Police (CSP) directive, required twist and sway for this location is permitted to be measured from the highest service dishes @ 154-ft AGL. The DESPP / CSP reserves the right to update the requirements of tower Twist and Sway for this site and shall coordinate with the Department prior to any antenna equipment installation.*

#### 1.08 FOUNDATION AND ANCHORAGE

The existing foundation consists of three (3) 7.5-ft diameter x 35.5-ft long reinforced concrete caissons. The base of the tower is connected to the foundation by means of (24) 1.00" Ø anchor bolts per leg embedded into the concrete foundation structure.

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

Load Effect	Proposed Tower Reaction
Leg Shear	130 kips
Leg Compression	950 kips
Leg Tension	750 kips
Base Moment	31,388 kip-ft
Base Shear	221 kips

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

Tower Section	Component	Stress Ratio (percentage of capacity)	Result
Anchor Bolts	Combined Shear/Axial	53.8%	<b>PASS</b>

- The foundation was found to be within allowable limits.

Foundation	Design Limit	(percentage of capacity)	Result
(3) Reinforced Concrete Caisson	Uplift	83.09%	<b>PASS</b>
	Bearing	86.32%	<b>PASS</b>

### 1.09 CONCLUSION

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

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

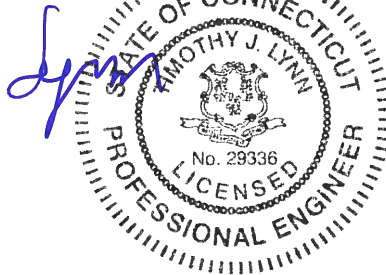
Please feel free to call with any questions or comments.

Respectfully Submitted by:

Prepared by:



Timothy J. Lynn, PE  
Structural Engineer




Christian Tomaso  
Structural Engineer

## **2.00 CONDITIONS AND SOFTWARE**

### **2.01 STANDARD ENGINEERING 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 necessarily limited to:

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

## **2.02 GENERAL DESCRIPTION OF STRUCTURAL ANALYSIS PROGRAM**

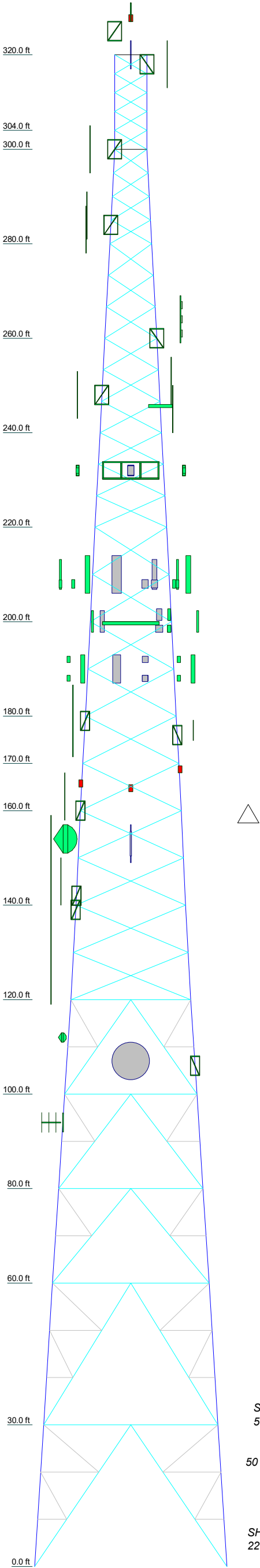
tnxTower is an integrated structural analysis and design software package designed specifically for the telecommunications industry. tnxTower, formerly RISA Tower, automates much of the tower analysis and design required by the TIA/EIA 222 Standard.

### tnxTower Features:

- tnxTower can analyze and design 3- and 4-sided guyed towers, 3- and 4-sided self-supporting towers and either round or tapered ground mounted poles with or without guys.
- The program analyzes towers using the TIA-222-H (2018) standard or any previous TIA/EIA standards back to RS-222 (1959). Steel design is checked using the AISC ASD or the AISC LRFD specifications.
- Linear and non-linear (P-delta) analyses can be used in determining displacements and forces in the structure. Wind pressures and forces are automatically calculated.
- Extensive graphics plots include material takeoff, shear-moment, leg compression, displacement, twist, feed line, guy anchor and stress plots.
- tnxTower contains unique features such as True Cable behavior, hog rod take-up, foundation stiffness and much more.

## **3.00 CALCULATIONS**

Section	T17	T16	T15	T14	T13	T12	T11	T10	T9	T8	T7	T6	T5	T4	T3	T2	T1			
Legs	ROHN 12 EHS w Angle 8x8x0.625		ROHN 12 EH w/ angle 8x8x0.5		ROHN 10 EH w/ angle 8x8x0.5		ROHN 8 EH w/ angle 8x8x0.5										ROHN 6 EH		ROHN 5 EH	
Leg Grade	ROHN 4 EH		ROHN 3 XXS		ROHN 3 STD		ROHN 2 STD										ROHN 2 STD		ROHN 2 STD	
Diagonals	ROHN 4 EH		ROHN 3.5 EH		ROHN 3 STD		ROHN 2 STD										ROHN 2 STD		ROHN 2 STD	
Diagonal Grade	ROHN 4 EH		ROHN 3.5 EH		ROHN 3 STD		ROHN 2 STD										ROHN 2 STD		ROHN 2 STD	
Top Girts	ROHN 4 EH		ROHN 3.5 EH		ROHN 3 STD		ROHN 2 STD										ROHN 2 STD		ROHN 2 STD	
Horizontals	ROHN 4 EH		ROHN 3.5 EH		ROHN 3 STD		ROHN 2 STD										ROHN 2 STD		ROHN 2 STD	
Red Horizontals	P1.5x.145		ROHN 1.5 STD		ROHN 1.5 STD		ROHN 1.5 STD										ROHN 1.5 STD		ROHN 1.5 STD	
Red Diagonals	ROHN 2.5 STD		ROHN 2 EH		ROHN 2 STD		ROHN 2 STD										ROHN 2 STD		ROHN 2 STD	
Red Hips	ROHN 1.5 STD		ROHN 1.5 STD		ROHN 1.5 STD		ROHN 1.5 STD										ROHN 1.5 STD		ROHN 1.5 STD	
Inner Bracing	ROHN 3 STD		ROHN 3 STD		ROHN 3 STD		ROHN 3 STD										ROHN 3 STD		ROHN 3 STD	
Face Width (ft)	40.69	36.8	33.14	30.47	27.97	25.39	23.21	21.3	20.26	19.22	17.09	15.09	13.08	11.04	8.85	6.81				
# Panels @ (ft)	2 @ 30	2 @ 30	3 @ 20	3 @ 20	3 @ 20	3 @ 20	3 @ 20	3 @ 20	3 @ 20	3 @ 20	3 @ 20	3 @ 20	3 @ 20	3 @ 20	3 @ 20	3 @ 20	3 @ 20			
Weight (K)	125.4	17.9	15.1	11.5	9.7	9.1	10.0	3.8	3.7	7.3	6.4	5.4	6.5	5.1	2.5	0.3	1.4			

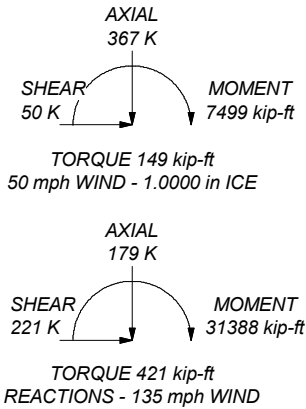


TYPE	ELEVATION	TYPE	ELEVATION
Lightning Rod 5/8x4' (Lightning Rod)	329	SitePro VFA12-HD (T-Mobile)	210
Dual Lights (Beacon)	327	PIROD 12' Lightweight T-Frame (ATI)	200
PD128-1 (ECI-1)	325	PIROD 12' Lightweight T-Frame (ATI)	200
6' Side Mount Standoff (ECI-1)	325	PIROD 12' Lightweight T-Frame (ATI)	200
BA1012-0 (ECI-2)	320	7770.00 (ATI)	200
6' Side Mount Standoff (ECI-2)	320	HPA-65R-BUU-H8 Panel (ATI)	200
ANT450F6 (ECI-3)	318	RRUS-32 (ATI)	200
4"x4" Pipe Mount (ECI-3)	318	RRUS-11 (ATI)	200
SC479-HF1LDF (ECI-4)	300	7770.00 (ATI)	200
6' Side Mount Standoff (ECI-4)	300	HPA-65R-BUU-H8 Panel (ATI)	200
PD340-1 (ECI-5)	290	RRUS-32 (ATI)	200
6' Side Mount Standoff (ECI-5)	290	RRUS-11 (ATI)	200
DB809T3E-XC (ECI-6)	286	7770.00 (ATI)	200
6' Side Mount Standoff (ECI-7)	284	HPA-65R-BUU-H6 Panel (ATI)	200
SC479-HF1LDF(D00I-E6085) (Inverted) (ECI-7)	283	RRUS-32 (ATI)	200
PD440-2 (ECI-8)	264	RRUS-11 (ATI)	200
6' Side Mount Standoff (ECI-8)	260	DC6-48-60-0-8C Squid / Surge Arrestor (ATI)	200
SC479-HF1LDF (ECI-10)	251	STK-U Stiffener Side Arm Attachment (ATI)	200
PD1142-1 (ECI-14)	248	STK-U Stiffener Side Arm Attachment (ATI)	200
6' Side Mount Standoff (ECI-14)	248	STK-U Stiffener Side Arm Attachment (ATI)	200
430-94C-09168-M-11048 TTA (ECI-11)	247	STK-U Stiffener Side Arm Attachment (ATI)	200
Sabre T-Boom (1) (ECI-10,11,12,13)	246	STK-U Stiffener Side Arm Attachment (ATI)	200
SC479-HF1LDF(D00I-E6085) (Inverted) (ECI-13)	245	STK-U Stiffener Side Arm Attachment (ATI)	200
SC479-HF1LDF(D00I-E6085) (Inverted) (ECI-12)	245	FFVV-65B-R2 (Dish)	190
6' Side Mount Standoff (ECI-15)	238	FFVV-65B-R2 (Dish)	190
531-70HD Exposed Dipole Antenna (ECI-15)	238	FFVV-65B-R2 (Dish)	190
Valmont VFA-10-U V-Frame (Verizon)	232	RF4450t-71A (Dish)	190
Valmont VFA-10-U V-Frame (Verizon)	232	RF4450t-71A (Dish)	190
Valmont VFA-10-U V-Frame (Verizon)	232	RF4450t-71A (Dish)	190
JAHH-65B-R3B Panel Antenna (Verizon-AWS)	232	RF4451d-70A (Dish)	190
JAHH-65B-R3B Panel Antenna (Verizon-PCS)	232	RF4451d-70A (Dish)	190
LNx-6512DS-VTM (Verizon-850)	232	RF4451d-70A (Dish)	190
MT6413-77A (Verizon - Proposed)	232	RD1DC-9181-PF-48 (Dish)	190
BSAMNT-SBS-2-2 (JAHH Antenna Bracket (for 2)) (Verizon-PCS/AWS)	232	SitePro VFA8-HD (Dish)	190
B2/B66A RRH (Verizon RRH)	232	SitePro VFA8-HD (Dish)	190
RF4461d-13A (Verizon RRH)	232	SitePro VFA8-HD (Dish)	190
RVZDC-6627-PF-48 (Verizon)	232	Pirot 4' Side Mount Standoff (1) (ECI-50)	179
JAHH-65B-R3B Panel Antenna (Verizon-AWS)	232	1151-3 (ECI-50)	179
JAHH-65B-R3B Panel Antenna (Verizon-PCS)	232	DB586-Y (ECI-51)	177
LNx-6512DS-VTM (Verizon-850)	232	430-94C-09168-M-11048 TTA (ECI-52)	176
MT6413-77A (Verizon - Proposed)	232	Pirot 4' Side Mount Standoff (1) (ECI-53,52,51)	176
BSAMNT-SBS-2-2 (JAHH Antenna Bracket (for 2)) (Verizon-PCS/AWS)	232	DB586-Y (inverted) (ECI-53)	175
B2/B66A RRH (Verizon RRH)	232	L-810 Obstruction Lighting (1) (ECI-54)	168
RF4461d-13A (Verizon RRH)	232	L-810 Obstruction Lighting (1) (ECI-55)	165
JAHH-65B-R3B Panel Antenna (Verizon-AWS)	232	L-810 Obstruction Lighting (1) (ECI-56)	164
JAHH-65B-R3B Panel Antenna (Verizon-PCS)	232	Telewave ANT220F2 - Omni Antenna (Eversource)	163
LNx-6512DS-VTM (Verizon-850)	232	Sitepro1 USF-4U Mount Assembly (Ca = 1.4 assumed) (Eversource)	160
MT6413-77A (Verizon - Proposed)	232	5'3"x4" Pipe Mount (ECI-58a (Dish Support))	154
BSAMNT-SBS-2-2 (JAHH Antenna Bracket (for 2)) (Verizon-PCS/AWS)	232	Commscope PAR6-59W-PXA/A (ECI-58)	154
B2/B66A RRH (Verizon RRH)	232	5'3"x4" Pipe Mount (ECI-57)	153
RF4461d-13A (Verizon RRH)	232	ANT450F6 (ECI-57)	153
CBC78T-DS-43-2X Diplexer (Verizon)	232	Telewave ANT220F2 - Omni Antenna (Eversource)	145
CBC78T-DS-43-2X Diplexer (Verizon)	232	Sitepro1 USF-4U Mount Assembly (Ca = 1.4 assumed) (Eversource)	142
APXVAALL24M-U-J20 (T-Mobile)	210	PD156S (ECI-60)	139
APXVAALL24M-U-J20 (T-Mobile)	210	DB212-1 (ECI-59)	139
APXVALL19P_43-C-A20 (T-Mobile)	210	4' Side Mount Standoff (ECI-60_59)	139
APXVALL19P_43-C-A20 (T-Mobile)	210	3' Wide Ice Shield (for Dish Antennas) (Assume Ca=2.0) (ECI-61a)	117
APXVALL19P_43-C-A20 (T-Mobile)	210	8' Wide Ice Shield (for Dish Antennas) (Assume Ca=2.0) (ECI-63a (Dish Ice Shield))	115
4480 B71+B85 (T-Mobile)	210	5'3"x4" Pipe Mount (ECI-61a (Dish Support))	112
4480 B71+B85 (T-Mobile)	210	Andrew 2' w/Radome (ECI-61)	112
4460 B25+B66 (T-Mobile)	210	5'3"x4" Pipe Mount (ECI-63 (Dish Support))	107
4460 B25+B66 (T-Mobile)	210	PA8-65 (ECI-63)	107
4460 B25+B66 (T-Mobile)	210	Pirot 4' Side Mount Standoff (1) (ECI-62)	106
SitePro VFA12-HD (T-Mobile)	210	PD458 (ECI-62)	106
SitePro VFA12-HD (T-Mobile)	210	PD688S-4 (ECI-66)	94
		4"x4" Pipe Mount (ECI-66)	94

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

- TOWER DESIGN NOTES**
1. Tower designed for Exposure C to the TIA-222-H Standard.
  2. Tower designed for a 135 mph basic wind in accordance with the TIA-222-H Standard.
  3. Tower is also designed for a 50 mph basic wind with 1.00 in ice. Ice is considered to increase in thickness with height.
  4. Deflections are based upon a 60 mph wind.
  5. Tower Risk Category IV.
  6. Topographic Category 3 with Crest Height of 66.50 ft
  7. P-Delta Displacement Effects are not applicable to this tower for this case (TIA-222-H Section 3.5)
  8. TOWER RATING: 99%
- ALL REBAR ARE FACTORED

MAX. CORNER REACTIONS AT BASE:  
DOWN: 950 K  
SHEAR: 130 K  
  
UPLIFT: -750 K  
SHEAR: 108 K



<b>Centek Engineering</b> 63-2 North Branford Road Branford, CT 06405 Phone: (203)-488-0580 FAX: (203) 488-8587		Job: <b>24144.01 - CTNL251A</b> Project: <b>320-ft Lattice Tower (CSP #50)</b> Client: Verizon Code: TIA-222-H Path: <small>\\CENTEK\Engineering\Projects\24144.01 - CTNL251A\Drawings\24144.01 - CTNL251A.dwg</small>			Drawn by: CMT Date: 11/20/24 Scale: NTS Dwg No. E-1
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<b><i>tnxTower</i></b>  <b>Centek Engineering</b> 63-2 North Branford Road Branford, CT 06405 Phone: (203)-488-0580 FAX: (203) 488-8587	<b>Job</b>  21007.82 - Colchester	<b>Page</b>  1 of 107
	<b>Project</b>  320-ft Lattice Tower (CSP #50)	<b>Date</b>  09:30:58 11/20/24
	<b>Client</b>  Verizon	<b>Designed by</b>  CMT

## Tower Input Data

The main tower is a 3x free standing tower with an overall height of 320.00 ft above the ground line.

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

The face width of the tower is 6.81 ft at the top and 40.69 ft at the base.

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

The following design criteria apply:

1. Tower base elevation above sea level: 0.00 ft.
2. Basic wind speed of 135 mph.
3. Risk Category IV.
4. Exposure Category C.
5. Simplified Topographic Factor Procedure for wind speed-up calculations is used.
6. Topographic Category: 3.
7. Crest Height: 66.50 ft.
8. Nominal ice thickness of 1.0000 in.
9. Ice thickness is considered to increase with height.
10. Ice density of 56 pcf.
11. A wind speed of 50 mph is used in combination with ice.
12. Temperature drop of 50 °F.
13. Deflections calculated using a wind speed of 60 mph.
14. P-Delta Displacement Effects are not applicable to this tower for this case (TIA-222-H Section 3.5).
15. Pressures are calculated at each section.
16. Stress ratio used in tower member design is 1.
17. Local bending stresses due to climbing loads, feed line supports, and appurtenance mounts are not considered.

## Options

Consider Moments - Legs Consider Moments - Horizontals Consider Moments - Diagonals Use Moment Magnification ✓ Use Code Stress Ratios ✓ Use Code Safety Factors - Guys Escalate Ice Always Use Max Kz Use Special Wind Profile ✓ Include Bolts In Member Capacity Leg Bolts Are At Top Of Section ✓ Secondary Horizontal Braces Leg Use Diamond Inner Bracing (4 Sided) ✓ SR Members Have Cut Ends SR Members Are Concentric Distribute Leg Loads As Uniform	Assume Legs Pinned ✓ Assume Rigid Index Plate ✓ Use Clear Spans For Wind Area ✓ Use Clear Spans For KL/r Retension Guys To Initial Tension ✓ Bypass Mast Stability Checks Use Azimuth Dish Coefficients Project Wind Area of Appurtenances Alternative Appurt. EPA Calculation Autocalc Torque Arm Areas Add IBC .6D+W Combination ✓ Sort Capacity Reports By Component Triangulate Diamond Inner Bracing Treat Feed Line Bundles As Cylinder Ignore KL/ry For 60 Deg. Angle Legs Use ASCE 10 X-Brace Ly Rules	✓ Calculate Redundant Bracing Forces Ignore Redundant Members in FEA ✓ SR Leg Bolts Resist Compression ✓ All Leg Panels Have Same Allowable Offset Girt At Foundation ✓ Consider Feed Line Torque ✓ Include Angle Block Shear Check Use TIA-222-H Bracing Resist. Exemption Use TIA-222-H Tension Splice Exemption <div style="background-color: #e0e0e0; text-align: center; padding: 2px;">Poles</div> Include Shear-Torsion Interaction Always Use Sub-Critical Flow Use Top Mounted Sockets Pole Without Linear Attachments Pole With Shroud Or No Appurtenances Outside and Inside Corner Radii Are Known
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Section 1 - Site Information

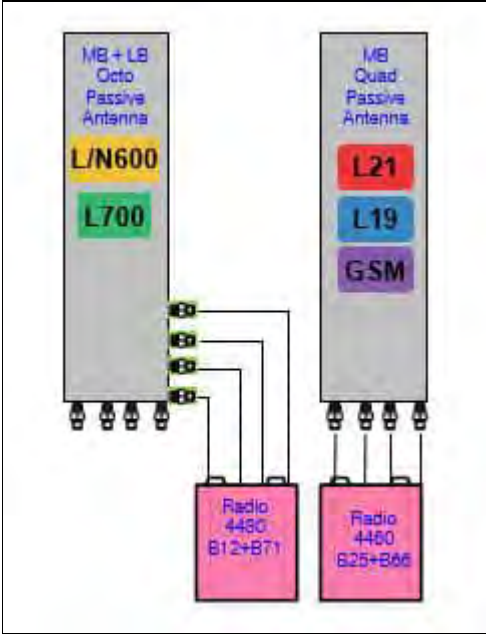
<b>Site ID:</b> CTNL251A	<b>Site Name:</b> CTNL251A_CTSP_Self Support Tower_	<b>Latitude:</b> 41.5925
<b>Status:</b> Draft	Colchester	<b>Longitude:</b> -72.32111
<b>Version:</b> 1	<b>Site Class:</b> Self Support Tower	<b>Address:</b> 285 Windham Ave
<b>Project Type:</b> Coverage Strategy	<b>Site Type:</b> Structure Non Building	<b>City, State:</b> Colchester, CT
<b>Approved:</b> Not approved	<b>Plan Year:</b> 2024	<b>Region:</b> NORTHEAST
<b>Approved By:</b> Not approved	<b>Market:</b> CONNECTICUT CT	
<b>Last Modified:</b> 09/20/2024 6:11:37 PM	<b>Vendor:</b> Ericsson	
<b>Last Modified By:</b> Ryan.MonteDeRamos@T-Mobile.com	<b>Landlord:</b> CTSP	
<b>RAN Template:</b> 67E998E 6160		<b>AL Template:</b> 67E998E_1OP+1QP
<b>Sector Count:</b> 3	<b>Antenna Count:</b> 6	<b>Coax Line Count:</b> 0
		<b>TMA Count:</b> 0
		<b>RRU Count:</b> 6

Section 2 - Existing Template Images

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

Section 3 - Proposed Template Images

67E998E.JPG



Notes:

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#### Section 4 - Siteplan Images

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

Section 5 - RAN Equipment

Existing RAN Equipment

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

Proposed RAN Equipment

Template: 67E998E 6160

Enclosure	1	2
Enclosure Type	Enclosure 6160_v2 AC	B160
Baseband	RP 6651 <div>N600</div> <div>N1900</div> <div>N2100 (RESTRICTED)</div> <div>L700</div> <div>L1900</div> <div>L2100</div>	
Transport System	CSR IXRe V2 (Gen2)	
Functionality Groups	Ericsson Hybrid Trunk *Select Length* (x2)	

RAN Scope of Work:

9/20/2024 - As per RF Region and TMO Market, The proposed AIR6419 will need to be removed from this site, the new proposed configuration will not have Anchor.

Section 6 - A&L Equipment

Existing Template: Custom  
Proposed Template: 67E998E\_10P+1QP

Sector 1 (Proposed) view from behind

Coverage Type	A - Outdoor Macro							
Antenna	1				2		3	
Antenna Model	APXVAALL24M-U-J20 (Octo)				Empty Antenna Mount (Empty mount)		APXVLL19P_43-C-A20 (Quad)	
Azimuth	80				80		80	
M. Tilt	0				0		0	
Height (ft)	181				181		181	
Ports	P1	P2	P3	P4			P5	P6
Active Tech	N600 L700	N600 L700					L1900 L2100 N1900	L1900 L2100 N1900
Dark Tech								
Restricted Tech							N2100	N2100
Decomm. Tech								
E. Tilt								
Cables	Coax Jumper (x2)	Coax Jumper (x2)					Coax Jumper (x2)	Coax Jumper (x2)
TMA's								
Diplexer / Combiners								
Radio	Radio 4480 B71+B 85 (At Antenna)	Radio 4480 B71+B 85 (At Antenna)					Radio 4460 B25+B66 (At Antenna)	Radio 4460 B25+B66 (At Antenna)
Sector Equipment								
Unconnected Equipment:								
Scope of Work:								
*A dashed border indicates shared connected equipment. Any shared equipment, besides the first, is denoted with the SHARED keyword.								

<b>RAN Template:</b> 67E998E 6160	<b>A&amp;L Template:</b> 67E998E_10P+1QP
--------------------------------------	---

**Print Name:**  
Standard  
**Project IDs with associated PORs:**  
CTNL251A-0002427689  
Coverage Strategy\_Regional Coverage

Sector 2 (Proposed) view from behind									
Coverage Type	A - Outdoor Macro								
Antenna	1				2			3	
Antenna Model	APXVAALL24M-U-J20 (Octo)				Empty Antenna Mount (Empty mount)			APXVLL19P_43-C-A20 (Quad)	
Azimuth	200				200			200	
M. Tilt	0				0			0	
Height (ft)	181				181			181	
Ports	P1	P2	P3	P4				P5	P6
Active Tech	L700 N600	L700 N600						L2100 L1900 N1900	L2100 L1900 N1900
Dark Tech									
Restricted Tech								N2100	N2100
Decomm. Tech									
E. Tilt									
Cables	Coax Jumper (x2)	Coax Jumper (x2)						Coax Jumper (x2)	Coax Jumper (x2)
TMA's									
Diplexer / Combiners									
Radio	Radio 4480 B71+B85 (At Antenna)	Radio 4480 B71+B85 (At Antenna)						Radio 4460 B25+B66 (At Antenna)	Radio 4460 B25+B66 (At Antenna)
Sector Equipment									
Unconnected Equipment:									
Scope of Work:									
*A dashed border indicates shared connected equipment. Any shared equipment, besides the first, is denoted with the SHARED keyword.									



Sector 3 (Proposed) view from behind									
Coverage Type	A - Outdoor Macro								
Antenna	1				2			3	
Antenna Model	APXVAALL24M-U-J20 (Octo)				Empty Antenna Mount (Empty mount)			APXVLL19P_43-C-A20 (Quad)	
Azimuth	320				320			320	
M. Tilt	0				0			0	
Height (ft)	181				181			181	
Ports	P1	P2	P3	P4				P5	P6
Active Tech	L700 N600	L700 N600						N1900 L1900 L2100	N1900 L1900 L2100
Dark Tech									
Restricted Tech								N2100	N2100
Decomm. Tech									
E. Tilt									
Cables	Coax Jumper (x2)	Coax Jumper (x2)						Coax Jumper (x2)	Coax Jumper (x2)
TMA									
Diplexer / Combiners									
Radio	Radio 4480 B71+B85 (At Antenna)	Radio 4480 B71+B85 (At Antenna)						Radio 4460 B25+B66 (At Antenna)	Radio 4460 B25+B66 (At Antenna)
Sector Equipment									
Unconnected Equipment:									
Scope of Work:									
*A dashed border indicates shared connected equipment. Any shared equipment, besides the first, is denoted with the SHARED keyword.									

# Exhibit E

## **Mount Analysis**

**Antenna Mount  
Structural analysis report – Rev.1**

**FORESITE** LLC

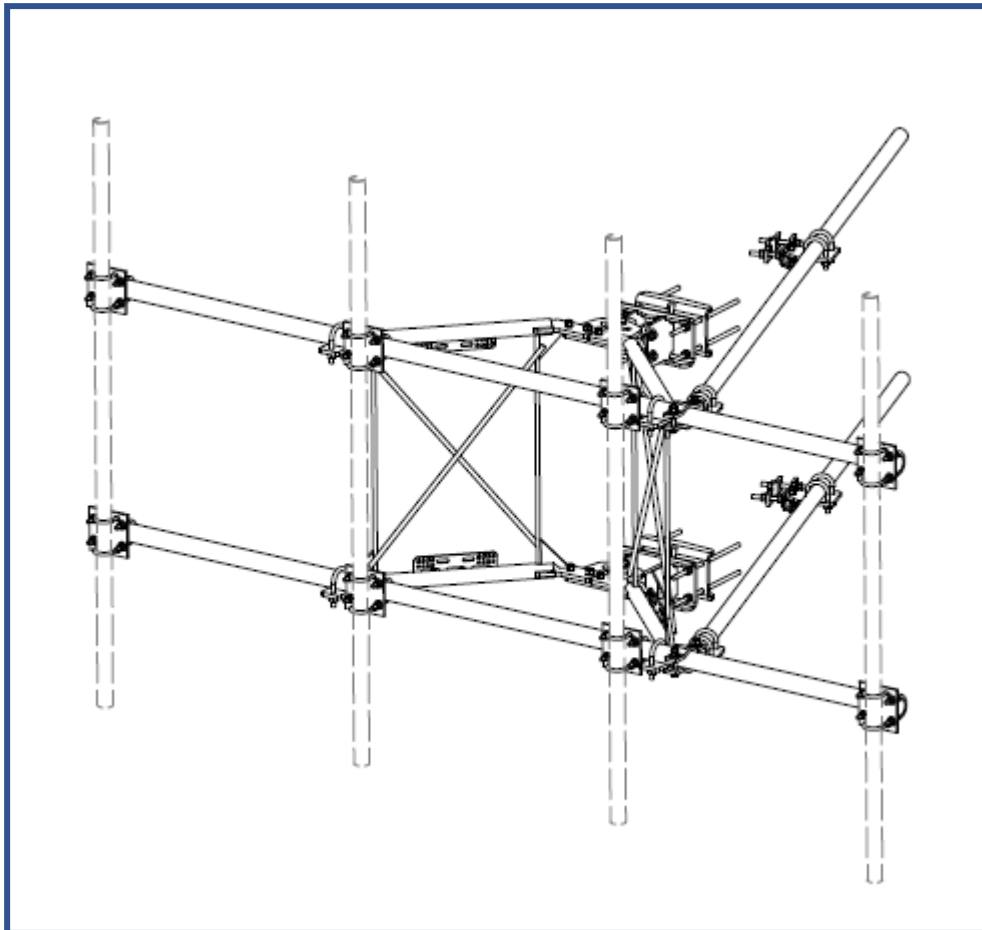
•Architects • Engineers • Land Surveyors

**Date: 02/14/2025**

**Prepared for:**

**T Mobile™**

**T-MOBILE NORTHEAST LLC  
15 Commerce way, suite B  
Northon, MA 02766**



**Site ID: CTNL251A**

**Address:  
11 MUNN RD  
Colchester, CT 06415**

**Date: 02/14/2025**

**Submitted by:**

**Foresite LLC.**

**462 Walnut Street, Suite 1  
Newton, MA 02460  
Phone: 617-527-3031**

Date: 2/14/2025

To: T-Mobile Northeast LLC  
35 Griffin Road South  
Bloomfield, CT 06002

**Subject:** **Mount Structural Analysis Report – Rev.1**

**T-Mobile Designation:** **Site ID:** CTNL251A

**EFI Designation:** **Project Number:** 049.04838 - 2475011

**Site Data:** **285 Windham Ave, Colchester, CT**  
**Latitude 41.5925, Longitude -72.32111**

EFI Global, Inc. is pleased to submit this “**Mount Structural Analysis Report**” to determine the structural capacity of the antenna mounts utilized by T-Mobile at the above referenced site.

The purpose of the analysis is to determine acceptability of the mount stress level for the changes proposed by T-Mobile under the following load case we have determined the mounts to have:

Proposed Equipment  
Note: See Analysis Criteria for loading configuration

**Adequate Capacity (46.0%)**

The analysis has been performed in accordance with TIA-222-H Standard and the 2022 Connecticut State Building Code (2021 IBC).

We at *EFI Global, Inc.* appreciate the opportunity of providing our continuing professional services to you. If you have any questions or need further assistance on this or any other projects, please give us a call.

Sincerely,  
EFI Global, Inc.

2/14/2025

Ahmet Colakoglu, PE  
Connecticut Professional Engineer  
License No: 27057



## 1) ANALYSIS CRITERIA

The analysis was performed for the proposed appurtenances as specified in the loading information referenced below, and per the following loading criteria of Table 1.

**Table 1 – Loading and Analysis Criteria**

<b>RAD Center</b>	210'
<b>Structure Type</b>	Self-Support Tower
<b>Exposure Category</b>	B
<b>Basic Wind Speed</b>	121 mph
<b>Basic Ice Loading</b>	1.0" with 50 mph Wind
<b>Risk Category</b>	II
<b>Topographic Factor</b>	Kzt = 1.0

**Table 1.1 – Proposed and Final Appurtenance Configuration**

<b>Qty</b>	<b>Model</b>
3	APXVAALL24M-U-J20 (Octo) – Antennas
3	APXVLL19P_43-C-A20 (Quad) – Antennas
3	Radio 4480 B71+B85 – RRU
3	Radio 4460 B25+B66 – RRU

**Table 1.2 – Assumed Material Properties**

<b>Member Type</b>	<b>ASTM Material Designation</b>	<b>Fy (ksi)</b>	<b>Fu (ksi)</b>
Pipes	A53 Gr. B	35	60
Angles/Channels	A36	36	58
Rectangular HSS	A500 Gr. B - 46	46	58
Round HSS	A500 Gr. B - 42	42	58
Others (UNO)	A572 Gr. 50	50	65

## 2) ANALYSIS PROCEDURE

The analysis is based on the following information:

**Table 2 – Documents**

Document	Provided By	Date
RFDS	T-Mobile	1/26/2025

### 2.1) Analysis Method

Risa-3D, a commercially available analysis software package, was used to create a three-dimensional model of the mount and calculate member stresses for various loading cases. Selected output from the analysis is included in the Appendix.

### 2.2) Analysis Conditions and Assumptions

- 1) The mount was built and installed in accordance with the manufacturer's specifications.
- 2) The mount has been maintained and will be maintained in accordance with the manufacturer's specifications. All structural members and connections of the mount are in good condition and can achieve theoretical strength.
- 3) The configuration of antennas is as specified in "1) Analysis Criteria".
- 4) The analysis was performed for the subject mount only. It does not include an evaluation of the other mounts or the tower, which should be analyzed by others.
- 5) The evaluation does not include any antenna rigging loads. The equipment should not be rigged using the subject antenna mount as the support.
- 6) The analysis includes a minimum 250 lbf maintenance point load at the worst-case location on the mount, as well as a minimum 500 lbf maintenance point load at each antenna location in conjunction with a 30 mph wind load.
- 7) Any steel grating represented in this model is for loading purposes only and it is not considered to provide any structural restraint or support.
- 8) Member sizes per available mount specifications and assumed based on our experience with similar structures. Please refer to calculation output in the appendix of this report for sizes and lengths assumed.
- 9) 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.

EFI Global, Inc. (EFI), must be notified immediately if any of these assumptions are discovered to be incorrect. The results of this analysis may be affected if any of the assumptions are not valid or have been made in error.



### 3) ANALYSIS RESULTS AND CONCLUSION

The analysis results are shown on the table below.

**Table 3.1 – Mount Component Stresses vs. Capacity**

Component	% Capacity	Pass / Fail
Horizontal Face Pipes	40.8	Pass
V-Arm Horizontal Pipes	28.2	Pass
V-Arm Brace Rods	26.7	Pass
Connection Plates	34.5	Pass
Antenna Mount Pipes	46.0	Pass
Tie-Backs	27.6	Pass

**Sector Mount:** The proposed sector mounts have **adequate** capacity for the proposed changes by T-Mobile. For the code specified load combinations and as a maximum, the mount member usage is stressed to **46.0%** of its structural capacity.

EFI Global, Inc. assumes the proposed mounts (P/N: VFA12-HD) will be installed prior to equipment installation proposed in this analysis. The analysis also assumes the following:

- Mount Centerline is equal to the Antenna RAD Centerline.
- Four (4) 120" long 2.0 SCH. 40 mount pipes (Sitepro1 P/N: P2120,) are equally spaced along the face.
- Antenna pipes will be connected to the horizontal face pipes using Sitepro1 Crossover Plate Kit (P/N: SCX2-K).
- Two (2) tieback arms are attached directly to the adjacent tower legs.
- Two (2) 120" long 2.0 SCH. 40 RRU mount pipes, one (1) each on side arm at each sector; are attached to the integrated ground bars using standard 1/2" dia. U-bolts.

**APPENDIX**

**INPUT LOADS**  
**ANALYSIS OUTPUT**

CLIENT: Foresite

PROJECT: CTNL251A\_CTSP

SUBJECT: Antenna Loads - TIA 222 H Standard

Tower Height

326.00

ft

Basic Wind Speed, V

121

mph

Basic Wind Speed w/ Ice, V<sub>i</sub>

50

mph

Maintenance Load Factor, L<sub>FM</sub>

0.0615

Load Factor for Maint. Load Cases (Basic Wind Speed=30 mph)

Ultimate Ice Thickness, t<sub>i</sub>

1

inches

Table 2-3 Importance Factors

Structure Classification	Wind Load Without Ice	Wind Load With Ice	Ice Thickness	Earthquake
II	1	1	1	1

Table 2-4 Exposure Category Coefficients

Exposure Category	Zg	α	Kzmin	Ke	m
B	1200	7	0.7	0.9	0.55

Ground elevation factor, Ke

Zs593.02 ft

Ke0.98

Table 2-5 Topographic Categories

Kzt1.000

Table 2-2 Wind Directionality Factor, Kd

Structure Type	Kd
Lattice Tower	0.95

DOES NOT CHANGE

Gust Effect Factor Gh

Structure Type	Gh
Lattice Tower	1.00

DOES NOT CHANGE

Shielding Factor, Ka

Structure Type	Ka
Lattice Tower	0.90

DOES NOT CHANGE

Seismic Factors

Ss	0.204
S1	0.055
Fa	1.6
Fv	2.4
R	2

Truss or Pole

Wind & Ice Load Calculations			
Velocity Pressure Coefficient	K <sub>z</sub>	1.22	
Topographic Factor	K <sub>zt</sub>	1.00	
Rooftop Wind Speed-up Factor	K <sub>s</sub>	1.00	
Shielding Factor	K <sub>a</sub>	0.90	
Ground Elevation Factor	K <sub>e</sub>	0.98	
Wind Direction Probability Factor	K <sub>d</sub>	0.95	
Basic Wind Speed	V	121	mph
Velocity Pressure	q <sub>z</sub>	42.6	psf
Height Escalation Factor	K <sub>iz</sub>	1.20	
Thickness of Radial Glaze Ice	T <sub>iz</sub>	1.20	in

Seismic Load Calculations			
Short Period DSRAP	S <sub>DS</sub>	0.22	
1 Second DSRAP	S <sub>D1</sub>	0.09	
Importance Factor	I	1	
Response Modification Coefficient	R	2.00	
Seismic Response Coefficient	C <sub>s</sub>	0.03	
Amplification Factor	A	1.00	
Seismic Design Category	SDC	B	

CLIENT: Foresite

PROJECT: CTNL251A\_CTSP

SUBJECT: Antenna Loads - TIA 222 H Standard

Rad Center210.00ft

Antenna AND Mount Without Ice

Antenna AND Mount Without Ice																	Pounds							
Mounting Pole	Height (ft)	Model Number	#	Weight (lbs)	H (in)	*W (in)	D (in)	Ka	**A <sub>N</sub> (ft2)	***A <sub>T</sub> (ft2)	Aspect (FRONT)	Aspect (SIDE)	Ca (FRONT)	Ca (SIDE)	K <sub>z</sub>	q <sub>z</sub> (psf)	Wind Load (Front)	Wind Load (Side)	Dead Load	Total Wind Load (Front)	Total Wind Load (Side)	Total Dead Load	Lateral Load (Seismic)	Vertical Load (Seismic)
Pos. 1	210.00	APXVAALL24M-U-J20 (Octo)	1	48.0	95.7	19.7	8.5	0.90	13.09	5.65	4.86	11.26	1.30	1.54	1.222	42.6	654.5	333.7	48	654	387	141	4	6
	210.00	Radio 4480 B71+B85	1	93.0	21.8	N/A	7.5	0.90	-	1.14	-	2.91	-	1.22	1.222	42.6	0.0	53.0	93					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
Pos. 3	210.00	APXVLL19P_43-C-A20 (Quad)	1	66.0	75.8	11.3	4.6	0.90	5.95	2.42	6.71	16.48	1.39	1.72	1.222	42.6	316.1	159.2	66	316	224	175	5	8
	210.00	Radio 4460 B25+B66	1	109.0	17.0	N/A	11.9	0.90	-	1.40	-	1.43	-	1.20	1.222	42.6	0.0	64.6	109					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
		Empty		0.0	-	-	-	0.90	-	-	-	-	-	-	-	-	0.0	0.0	0					
																	328	194	71	2	3			
																	159	112	88	3	4			

\* Enter N/A in the W column for front shielded apurtanances.

\*\* A<sub>N</sub> is the product of H and W

\*\*\* A<sub>T</sub> is the product of H and D

DL316

Mount	Height (ft)	Member	*L (in)	**W (in)	D (in)	Weight (lb/ft)	*** Ca	K <sub>z</sub>	q <sub>z</sub> (psf)	Wind Load (PLF)	Lateral Load (Seismic)	Vertical Load (Seismic)
	210.00	4 STD Pipe	0.00	4.50	0.00		-	-	-	-	-	-
	210.00	2.5 STD Pipe	12.00	2.88	0.00	5.80	1.20	1.222	38.3	11	0.17	0.25
	210.00	2.0 STD Pipe	12.00	2.38	0.00	3.66	1.20	1.222	38.3	9	0.11	0.16
	210.00	3/4" SR	12.00	0.75	0.00	1.50	1.20	1.222	38.3	3	0.05	0.07
	210.00	5/8" SR	12.00	0.63	0.00	1.04	1.20	1.222	38.3	2	0.03	0.05
	210.00	(L3.5x3.5x4)	0.00	3.50	3.50		-	-	-	-	-	-
	210.00	(L2x2x3)	0.00	2.00	2.00		-	-	-	-	-	-
	210.00	(LL2.5x2.5x3x3)	0.00	5.38	2.50		-	-	-	-	-	-
	210.00	Plate (PL3.5x5/8)	12.00	3.50	0.63	7.45	2.00	1.222	38.3	22	0.22	0.32
	210.00	Plate (PL3x3/8)	0.00	3.00	0.38		-	-	-	-	-	-
	210.00	Plate (PL5x5/8)	0.00	5.00	0.63		-	-	-	-	-	-
	210.00	HSS3.5x20.25	0.00	3.50	3.50		-	-	-	-	-	-
	210.00	Double Angle	0.00	0.00	0.00		-	-	-	-	-	-
	210.00	Channel (C3.38x2.06X0.188)	0.00	3.38	2.06		-	-	-	-	-	-
	210.00	PL 1000- CFA	0.00	1.63	1.63		-	-	-	-	-	-

\* The dimension L is the longest dimension of the member

\*\* The dimension W is the height or width of the member that resists wind load

\*\*\* Ca will equal 1.2 for round members and 2.0 for flat members

CLIENT: Foresite

PROJECT: CTNL251A\_CTSP

SUBJECT: Antenna Loads - TIA 222 H Standard

ti (in)1.203291

Kiz1.2032906

reduction0.17075

Antenna AND Mount With Ice

Mounting Pole	Height (ft)	Model Number	#	H (in)	W (in)	D (in)	Ka	*A <sub>N</sub> (ft2)	*A <sub>T</sub> (ft2)	*Volume Ice (ft3)	*Weight Ice (lbs)	**Ca (FRONT)	**Ca (SIDE)	Kz	q <sub>z</sub> (psf)	Pounds							
																Ice Wind Load (Front)	Ice Wind Load (Side)	Combined Wind Load (Front)	Combined Wind Load (Side)	Ice Dead Load	**Total Wind Load (Front)	**Total Wind Load (Side)	Total Ice Load
Pos. 1	210.00	APXVAALL24M-U-J20 (Octo)	1	95.7	19.7	8.5	0.90	1.97	1.78	4.42	247.24	0.74	0.84	1.222	7.3	9.6	9.8	121.3	66.8	247	121	78	304
	210.00	Radio 4480 B71+B85	1	21.8	15.4	7.5	0.90	-	0.53	1.01	56.78	0.70	0.70	1.222	7.3	0.0	2.4	0.0	11.5	57			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
Pos. 3	210.00	APXVLL19P_43-C-A20 (Quad)	1	75.8	11.3	4.6	0.90	1.50	1.38	2.07	115.71	0.77	0.89	1.222	7.3	7.5	8.1	61.5	35.3	116	62	49	174
	210.00	Radio 4460 B25+B66	1	17.0	15.1	11.9	0.90	-	0.52	1.05	58.52	0.70	0.70	1.222	7.3	0.0	2.4	0.0	13.4	59			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
		Empty		-	-	-	0.90	-	-	-	0.00	-	-	-	-	0.0	0.0	0.0	0.0	0			
																					61	40	153
																					31	25	88

\* A<sub>N</sub>, A<sub>T</sub>, Volume Ice and Weight Ice are calculated per unit

\*\* Ca will equal 1.2 for all ice load calculations

Mount	Height (ft)	Member	*L (in)	**W (in)	D (in)	***A <sub>N</sub> (ft2)	Volume Ice (ft3)	Weight Ice (lbs)	****Ca (FRONT)	Kz	q <sub>z</sub> (psf)	PLF		
												Ice Wind Load (Front)	Combined Wind Load (Front)	Ice Dead Load
	210.00	4 STD Pipe	0.00	4.50	0.00	-	-	-	-	-	-	-	-	-
	210.00	2.5 STD Pipe	12.00	2.88	0.00	0.29	0.11	6.00	1.20	1.222	6.5	2.3	4.1	6
	210.00	2.0 STD Pipe	12.00	2.38	0.00	0.28	0.09	5.26	1.20	1.222	6.5	2.2	3.8	5
	210.00	3/4" SR	12.00	0.75	0.00	0.25	0.05	2.87	1.20	1.222	6.5	2.0	2.5	3
	210.00	5/8" SR	12.00	0.63	0.00	0.25	0.05	2.69	1.20	1.222	6.5	2.0	2.4	3
	210.00	(L3.5x3.5x4)	0.00	3.50	3.50	-	-	-	-	-	-	-	-	-
	210.00	(L2x2x3)	0.00	2.00	2.00	-	-	-	-	-	-	-	-	-
	210.00	(LL2.5x2.5x3x3)	0.00	5.38	2.50	-	-	-	-	-	-	-	-	-
	210.00	Plate (PL3.5x5/8)	12.00	3.50	0.63	0.30	0.13	7.51	1.20	1.222	6.5	2.3	6.2	8
	210.00	Plate (PL3x3/8)	0.00	3.00	0.38	-	-	-	-	-	-	-	-	-
	210.00	Plate (PL5x5/8)	0.00	5.00	0.63	-	-	-	-	-	-	-	-	-
	210.00	HSS3.5x20.25	0.00	3.50	3.50	-	-	-	-	-	-	-	-	-
	210.00	Double Angle	0.00	0.00	0.00	-	-	-	-	-	-	-	-	-
	210.00	Channel (C3.38x2.06X0.188)	0.00	3.38	2.06	-	-	-	-	-	-	-	-	-
	210.00	PL 1000- CFA	0.00	1.63	1.63	-	-	-	-	-	-	-	-	-

\* The dimension L is the longest dimension of the member

\*\* The dimension W is the height or width of the member that resists wind load

\*\*\* A<sub>N</sub> is the area of ice built up on the LW plane

\*\*\*\* Ca will equal 1.2 for all ice load calculations

**RD048 | 3.4L | 48 kW**

**INDUSTRIAL DIESEL GENERATOR SET**

EPA Certified Stationary Emergency

**GENERAC** | **INDUSTRIAL  
POWER**

### Standby Power Rating

48 kW, 60 kVA, 60 Hz



Image used for illustration purposes only

## Codes and Standards

Not all codes and standards apply to all configurations.  
Contact factory for details.



UL2200, UL508, UL489, UL142



CSA 22.2



BS5514 and DIN 6271



SAE J1349



NFPA 37, 70, 99



ISO 3046, 8528, 9001



NEMA ICS1, ICS10, MG1, 250, ICS6, AB1



American National Standards Institute

ANSI/IEEE C62.41

## Powering Ahead

For over 50 years, Generac has led the industry with innovative design and superior manufacturing.

Generac ensures superior quality by designing and manufacturing most of its generator components, including alternators, enclosures and base tanks, control systems and communications software.

Generac's gensets utilize a wide variety of options, configurations and arrangements, allowing us to meet the standby power needs of practically every application.

Generac searched globally to ensure the most reliable engines power our generators. We choose only engines that have already been proven in heavy-duty industrial application under adverse conditions.

Generac is committed to ensuring our customers' service support continues after their generator purchase.



## Standard Features

### ENGINE SYSTEM

- Cold Weather Kit
- Oil Drain Extension
- Fan Guard
- Stainless Steel Flexible Exhaust Connection
- Factory Filled Oil & Coolant

### Fuel System

- Primary Fuel Filter

### Cooling System

- Closed Coolant Recovery System
- Factory-Installed Radiator
- 50/50 Ethylene Glycol Antifreeze
- Radiator Drain Extension
- Can Operate at up to 122°F (50°C) Ambient Temperature

### Electrical System

- Battery Charging Alternator
- Battery Cables
- Battery Tray
- Rubber-Booted Engine Electrical Connections
- Solenoid Activated Starter Motor
- Smart Battery Charger

### ALTERNATOR SYSTEM

- Class H Insulation Material
- 2/3 Pitch
- Skewed Stator
- Sealed Bearings
- Low Temperature Rise (<120°C)
- Low THD (<5%)

### GENERATOR SET

- Sound Attenuated Aluminum Enclosure
- Internal Genset Vibration Isolation
- Separation of Circuits - High/Low Voltage
- Wrapped Exhaust Piping
- Standard Factory Testing
- 5 Year Limited Warranty
- Ready to Accept Full Load in <10 Seconds
- E-Stop

### TANKS

- 48 Hour Run Time Tank
- UL 142 Listed Tank

## CONTROL SYSTEM



### Evolution™ Controller

- Two-Line Plain Text LCD Display
- Programmable Start Delay Between 10-30 seconds
- 10 second Engine Start Sequence
- 5 second Engine Warm Up
- 1 minute Engine Cool-Down
- Starter Lock-Out
- Smart Battery Charger
- Automatic Voltage Regulation with Over and Under Protection
- Automatic Low Oil Pressure Shutdown
- Overspeed Shutdown
- High Temperature Shutdown
- Overcrank Protection
- Safety Fused
- Failure to Transfer Protection
- Low Battery Protection
- 50 Even Run Log
- Future Set Capable Exerciser
- Incorrect Wiring Protection
- Internal Fault Protection
- Common External Fault Capability
- Governor Failure Protection

## Optional Shipped Loose and Field Install Kits

### GENERATOR SET

- Paint Kit
- Scheduled Maintenance Kit

### CONTROL SYSTEM

- Mobile Link™ and Adapter Kit

### TANKS

- Spill Box
- 90% Fuel Alarm
- Tank Risers
- Spill Box Drainback Kit
- Vent Extension Support Kit
- 5 Day Run Time Tank
- Overfill Prevention Valve
- Fuel Fill Drop Tube
- Lockable Fuel Cap

APPLICATION AND ENGINEERING DATA

ENGINE SPECIFICATIONS

General

Make	Generac
Cylinder #	4
Type	In-Line
Displacement - in <sup>3</sup> (L)	3.4 (207.48)
Bore - in (mm)	3.86 (98)
Stroke - in (mm)	4.45 (113)
Compression Ratio	18.5:1
Intake Air Method	Turbocharged/Aftercooled
Cylinder Head	Cast Iron OHV
Piston Type	Aluminum

Engine Governing

Governor	Electronic
Frequency Regulation (Steady State)	±0.25%

Lubrication System

Oil Pump Type	Gear
Oil Filter Type	Full Flow Spin-On Canister
Crankcase Capacity with Filters- qt (L)	7.4 (7.0)

Cooling System

Cooling System Type	Closed Recovery
Fan Type	Pusher
Fan Speed- rpm	2,029
Fan Diameter - in (mm)	22 (559)

Fuel System

Fuel Type	Ultra Low Sulfur Diesel Fuel
Fuel Specification	ASTM
Fuel Pump Type	Mechanical Engine Driven Gear
Injector Type	Mechanical
Fuel Supply Lin (mm/in)	7.94/0.31 (ID)
Fuel Return Line (mm/in)	7.94/0.31 (ID)
Fuel Filtering (microns)	25

Engine Electrical System

System Voltage	12 VDC
Battery Charger Alternator	Standard
Battery Size	Group 27F
Battery Voltage	12 VDC
Ground Polarity	Negative

ALTERNATOR SPECIFICATIONS

Standard Model	Generac
Poles	4
Field Type	Rotating
Insulation Class - Rotor	H
Insulation Class - Stator	H
Total Harmonic Distortion	<5%
Telephone Interference Factor (TIF)	<50

Standard Excitation	Direct
Bearings	Single Sealed
Coupling	Flexible Disc
Prototype Short Circuit Test	Yes
Voltage Regulator Type	Full Digital
Number of Sensed Phases	2
Regulation Accuracy (Steady State)	±1.0%

RD048 | 3.4L | 48 kW

INDUSTRIAL DIESEL GENERATOR SET

EPA Certified Stationary Emergency



OPERATING DATA

POWER RATINGS

		Standby
Single-Phase 120/480 VAC @0.1pf	48 kW	Amps: 200

MOTOR STARTING CAPABILITIES (sKVA)

sKVA vs. Voltage Dip at 30%

120/240 V, Single-Phase at 0.4pf	189
----------------------------------	-----

FUEL CONSUMPTION RATES\*

Percent Load	Diesel gal/hr (L/hr)
25%	1.35 (5.11)
50%	2.15 (8.14)
75%	3.06 (11.58)
100%	3.98 (15.07)

\* Fuel supply installation must accommodate fuel consumption rates at 100% load.

COOLING

		Standby
Air Flow (Radiator and Alternator)	ft³/min (m³/min)	2824 (80)
Coolant System Capacity	gal (L)	2.8 (10.6)
Heat Rejection to Coolant	BTU/hr (MJ/hr)	135,900 (143.4)
Temperature Deration	3% for every 5°C above 25°C or 1.7% for every 5°F over 77°F	
Altitude Deration	1% for every 100 m above 915 or 3% for every 1000 ft over 3000 ft	
Maximum Radiator Backpressure	in H <sub>2</sub> O (kPa)	0.50 (0.12)

COMBUSTION AIR REQUIREMENTS

		Standby
Flow at Rated Power	ft³/min (m³/min)	190 (5.38)

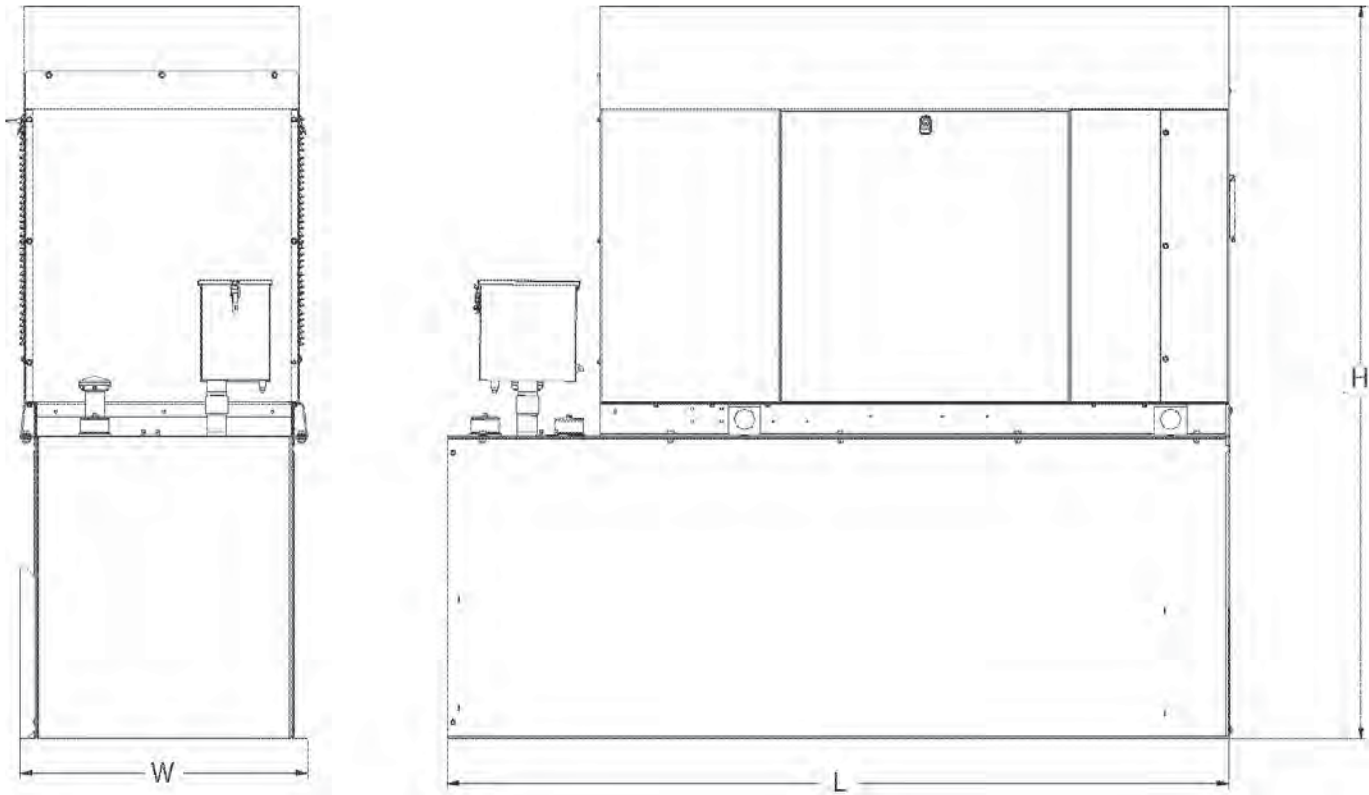
ENGINE

EXHAUST

		Standby			Standby
Rated Engine Speed	rpm	1,800	Exhaust Flow (Rated Output)	ft³/min (m³/min)	448 (12.7)
Horsepower at rated kW	HP	85	Exhaust Temp (Rated Output - Post Silencer)	°F (°C)	1120 (604.4)

Deration – Operational characteristics consider maximum ambient conditions. Derate factors may apply under atypical site conditions.  
Please consult a Generac Power Systems Industrial Dealer for additional details. All performance ratings in accordance with ISO3046, BS5514, ISO8528 and DIN6271 standards.  
Standby - See Bulletin 0187500SSB

DIMENSIONS AND WEIGHTS\*



ENCLOSED UNIT with 48hour Tank

L x W x H in (mm)	95.4 (2,422) x 35.0 (880) x 89.3 (2,269)
Sound output in dB(A) at 23ft with generator operating at normal Load	65

\* All measurements are approximate and for estimation purposes only.

YOUR FACTORY RECOGNIZED GENERAC INDUSTRIAL DEALER

Specification characteristics may change without notice. Dimensions and weights are for preliminary purposes only. Please consult a Generac Power Systems Industrial Dealer for detailed installation drawings.



## Protector™ Series

# GENERAC®

## Diesel Generator Set

Protector™ Series

1 of 12

### INCLUDES:

- Two Line LCD Multilingual Digital Evolution™ Controller (English/Spanish/French/Portuguese) with external viewing window for easy indication of generator status and breaker position.
- Isochronous Electronic Governor
- Sound Attenuated Aluminum Enclosure
- Smart Battery Charger
- UV/Ozone Resistant Hoses
- $\pm 1\%$  Voltage Regulation
- Integrated Base Tank Provides Up to 40 Hours of Run Time
- 5 Year Limited Warranty\*
- UL 2200 / UL142 / ULC S601 Listed
- Meets code requirements for External Vent and Fill

### Standby Power Rating

- Model RD015 - 15 kW 60 Hz
- Model RD020 - 20 kW 60 Hz
- Model RD030 - 30 kW 60 Hz
- Model RD048 - 48 kW 60 Hz (single phase only)
- Model RD050 - 50 kW 60 Hz (three phase only)



**QUIET-TEST**

Meets EPA Emission Regulations  
CA/MA Emissions Compliant



\*Built in the USA using domestic and foreign parts

\* 5 year warranty applicable to U.S. and Territories/Canada. International warranty is 3 year limited.

## FEATURES

- **INNOVATIVE DESIGN & PROTOTYPE TESTING** are key components of GENERAC'S success in "IMPROVING POWER BY DESIGN." But it doesn't stop there. Total commitment to component testing, reliability testing, environmental testing, destruction and life testing, plus testing to applicable CSA, NEMA, EGSA, and other standards, allows you to choose GENERAC POWER SYSTEMS with the confidence that these systems will provide superior performance.
- **TEST CRITERIA:**
  - ✓ **PROTOTYPE TESTED**
  - ✓ **SYSTEM TORSIONAL TESTED**
  - ✓ **NEMA MG1-22 EVALUATION**
  - ✓ **MOTOR STARTING ABILITY**
- **SOLID-STATE, FREQUENCY COMPENSATED VOLTAGE REGULATION.** This state-of-the-art power maximizing regulation system is standard on all Generac models. It provides optimized FAST RESPONSE to changing load conditions and MAXIMUM MOTOR STARTING CAPABILITY by electronically torque-matching the surge loads to the engine. Digital voltage regulation at  $\pm 1\%$ .
- **SINGLE SOURCE SERVICE RESPONSE** from Generac's extensive dealer network provides parts and service know-how for the entire unit, from the engine to the smallest electronic component.
- **GENERAC TRANSFER SWITCHES.** Long life and reliability are synonymous with GENERAC POWER SYSTEMS. One reason for this confidence is that the GENERAC product line includes its own transfer systems and controls for total system compatibility.

# GENERAC®



**GENERATOR SPECIFICATIONS**

Type	Synchronous
Rotor Insulation Class	H (15 & 20 kW) or F (30, 48 & 50 kW)
Stator Insulation Class	H
Telephone Interference Factor (TIF)	<50
Alternator Output Leads 1-Phase	3 wire
Alternator Output Leads 3-Phase	6 wire
Bearings	Single Sealed Cartridge
Coupling	Direct, Flexible Disc
Excitation System	Direct

**VOLTAGE REGULATION**

Type	Electronic
Sensing	Single Phase
Regulation	± 1%
Features	Adjustable Voltage & Gain

**GOVERNOR SPECIFICATIONS**

Type	Electronic Isochronous
Steady State Regulation	± 0.25%

**ELECTRICAL SYSTEM**

Battery Charge Alternator	50 Amp (15 & 20 kW) or 70 Amp (30, 48 & 50 kW)
Smart Battery Charger	2 Amp
Recommended Battery (battery not included)	Group 27F, 700 CCA
System Voltage	12 Volts

**GENERATOR FEATURES**

Revolving field heavy duty generator  
 Directly connected to the engine  
 Operating temperature rise 120°C above a 40°C ambient  
 Class H insulation is NEMA rated  
 Class F insulation is NEMA rated  
 All models fully prototype tested

**ENCLOSURE FEATURES**

Aluminum weather protective enclosure	Ensures protection against mother nature. Electrostatically applied textured epoxy paint for added durability.
Enclosed critical grade muffler	Quiet, critical grade muffler is mounted inside the unit to prevent injuries and maximize sound dampening.
Small, compact, attractive	Makes for an easy, eye appealing installation.
SAE	Sound attenuated enclosure ensures quiet operation.

(All ratings in accordance with BS5514, ISO3046, ISO8528, SAE J1349 and DIN6271)



15 • 20 • 30 • 48 • 50 kW

application & engineering data

### ENGINE SPECIFICATIONS: 15 & 20 kW

Make	Generac
Model	In-line
Cylinders	4
Displacement (Liters)	2.28
Bore (in./mm)	3.46/88
Stroke (in./mm)	3.70/94
Compression Ratio	21.3:1
Intake Air System	Naturally Aspirated
Cylinder Head Type	Cast Iron OHV
Piston Type	Aluminum
EPA Emissions Compliance	Emergency Stationary

### ENGINE SPECIFICATIONS: 30 kW

Make	Generac
Model	In-line
Cylinders	4
Displacement (Liters)	2.4
Bore (in./mm)	3.54/90
Stroke (in./mm)	3.70/94
Compression Ratio	21.3:1
Intake Air System	Turbocharged
Cylinder Head Type	Cast Iron OHV
Piston Type	Aluminum
EPA Emissions Compliance	Emergency Stationary

### ENGINE SPECIFICATIONS: 48/50 kW

Make	Generac
Model	In-Line
Cylinders	4
Displacement (Liters)	3.4
Bore in/mm	3.86/98
Stroke in/mm	4.45/113
Compression Ratio	18.5:1
Intake Air System	Turbocharged/Aftercooled
Cylinder Head Type	Cast Iron OHV
Piston Type	Aluminum
EPA Emissions Compliance	Emergency Stationary

### WEIGHTS AND DIMENSIONS

	15 kW	20 kW	30 kW	48 kW	50 kW
Weight (lb/kg)	1380/626		1927/874	2197/997	
Dimensions (LxWxH) (in/cm)	81 x 31 x 50/205 x 78 x 128		95 x 35 x 57/242 x 89 x 145		

### ENGINE LUBRICATION SYSTEM

Oil Pump Type	Gear
Oil Filter Type	Full flow spin-on canister
Crankcase Capacity (quarts/liters)	6.87/6.5 - 15 & 20 kW 6.8/6.4 - 30 kW 7.4/7 - 48 & 50 kW

### ENGINE COOLING SYSTEM

Type	Pressurized radiator - 15 & 20 kW Closed recovery - 30, 48 & 50 kW
Water Pump	Pre-lubed, self-seating
Fan Speed (rpm)	1800 - 15 & 20 kW 2061 - 30 kW 2029 - 48 & 50 kW
Fan Diameter (in./mm)	18.11/460 (15 & 20 kW) 22/559 (30, 48 & 50 kW)
Fan Mode	Pusher

### FUEL SYSTEM

Fuel Type	Ultra Low Sulfur Diesel Fuel
Fuel Pump Type	Mechanical Engine Driven Gear
Injector Type	Mechanical
Fuel Supply Line (mm/in)	7.94/0.31 (ID)
Fuel Return Line (mm/in)	7.94/0.31 (ID)
Fuel Specification	ASTM
Fuel Filtering (microns)	5 - 15, 20 & 30 kW 10 - 48 & 50 kW

### TANK SPECIFICATIONS

Total Size (gallons/liters)	34/128.7 - 15 & 20 kW 62/234.7 - 30, 48 & 50 kW
Usable Size (gallons/liters)	32/121.1 - 15 & 20 kW 57/215.8 - 30, 48 & 50 kW
Run Time @ 1/2 Load (hrs)	41 - 15 kW 31 - 20 kW 38 - 30 kW 25 - 48 & 50 kW
Listings	UL142 ULC-S601

**15 • 20 • 30 • 48 • 50 kW****GENERATOR OUTPUT VOLTAGE/kW - 60 Hz**

		<b>kW (Standby)</b>	<b>Amp (Standby)</b>	<b>CB Size</b>
RD015	120/240 V, 1Ø, 1.0 pf	15	62	70
	120/208 V, 3Ø, 0.8 pf	15	52	60
	120/240 V, 3Ø, 0.8 pf	15	45	50
RD020	120/240 V, 1Ø, 1.0 pf	20	83	100
	120/208 V, 3Ø, 0.8 pf	20	69	80
	120/240 V, 3Ø, 0.8 pf	20	60	70
RD030	120/240 V, 1Ø, 1.0 pf	30	125	150
	120/208 V, 3Ø, 0.8 pf	30	104	125
	120/240 V, 3Ø, 0.8 pf	30	90	100
	277/480 V, 3Ø, 0.8 pf	30	45	50
RD048/ RD050	120/240 V, 1Ø, 1.0 pf	48	200	200
	120/208 V, 3Ø, 0.8 pf	50	173	200
	120/240 V, 3Ø, 0.8 pf	50	150	175
	277/480 V, 3Ø, 0.8 pf	50	75	90

**SURGE CAPACITY IN AMPS****Voltage Dip @ < .4 pf**

		15%	30%
RD015	120/240 V, 1Ø	53	129
	120/208 V, 3Ø	37	90
	120/240 V, 3Ø	32	78
RD020	120/240 V, 1Ø	87	211
	120/208 V, 3Ø	59	143
	120/240 V, 3Ø	51	124
RD030	120/240 V, 1Ø	66	168
	120/208 V, 3Ø	59	144
	120/240 V, 3Ø	51	125
	277/480 V, 3Ø	26	64
RD048/ RD050	120/240 V, 1Ø	69	189
	120/208 V, 3Ø	90	218
	120/240 V, 3Ø	78	189
	277/480 V, 3Ø	36	87

**ENGINE FUEL CONSUMPTION**

		gal/hr	L/hr
RD015	25% of rated load	0.51	1.93
	50% of rated load	0.79	2.99
	75% of rated load	1.14	4.31
	100% of rated load	1.48	5.58
RD020	25% of rated load	0.67	2.6
	50% of rated load	1.05	3.97
	75% of rated load	1.52	5.32
	100% of rated load	1.98	7.48
RD030	25% of rated load	0.92	3.5
	50% of rated load	1.45	5.5
	75% of rated load	1.96	7.4
	100% of rated load	2.74	10.4
RD048/ RD050	25% of rated load	1.35	5.11
	50% of rated load	2.15	8.14
	75% of rated load	3.06	11.58
	100% of rated load	3.98	15.07

STANDBY RATING: Standby ratings apply to installations served by a reliable utility source. The standby rating is applicable to varying loads for the duration of a power outage. There is no overload capability for this rating. Ratings are in accordance with ISO-3046-1. Design and specifications are subject to change without notice.



15 • 20 • 30 • 48 • 50 kW

### ENGINE COOLING

	15 kW	20 kW	30 kW	48/50 kW
Air flow (inlet air including alternator and combustion air in cfm/cmm)	2824/80	2824/80	3038/86	2824/80
System coolant capacity (gal/liters)	2.8/10.6	2.8/10.6	2.8/10.6	2.8/10.6
Heat rejection to coolant (BTU per hr/MJ per hr)	63,535/67	63,535/67	111,000/117.1	135,900/143.4
Maximum operation air temperature on radiator (°C/°F)	50/122			
Maximum ambient temperature (°C/°F)	50/122			

### COMBUSTION REQUIREMENTS

Flow at rated power (cfm/cmm)	84.76/2.4	84.76/2.4	90/2.55	190/5.38
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### SOUND EMISSIONS

Sound output in dB(A) at 23 ft (7 m) with generator in exercise mode*	65
Sound output in dB(A) at 23 ft (7 m) with generator operating at normal load*	70

\*Sound levels are taken from the front of the generator. Sound levels taken from other sides of the generator may be higher depending on installation parameters.

### EXHAUST

Exhaust flow at rated output (cfm/cmm)	98.88/2.8	98.88/2.8	230/6.51	448/12.7
Exhaust temperature at rated output (°C/°F)	604.4/1120	604.4/1120	454.4/850	604.4/1120

### ENGINE PARAMETERS

Rated Synchronous RPM	1800			
HP at rated kW	26.4	33.5	49	85

### POWER ADJUSTMENT FOR AMBIENT CONDITIONS

Temperature Deration .....	3% for every 5 °C above 25 °C or 1.7% for every 5 °F above 77 °F
Altitude Deration (15, 30, 48 & 50 kW) .....	1% for every 100 m above 915 m or 3% for every 1000 ft above 3000 ft
Altitude Deration (20 kW) .....	1% for every 100 m above 305 m or 3% for every 1000 ft above 1000 ft

### CONTROLLER FEATURES

2-Line Plain Text Multilingual LCD Display .....	Simple user interface for ease of operation.
Mode Buttons: Auto .....	Automatic Start on Utility failure. Programmable 7 day exerciser.
Manual .....	Start with starter control, unit stays on. If utility fails, transfer to load takes place.
Off .....	Stops unit. Power is removed. Control and charger still operate.
Ready to Run/Maintenance Messages .....	Standard
Engine Run Hours Indication .....	Standard
Programmable start delay between 2-1500 seconds .....	Standard (programmable by dealer only)
Utility Voltage Loss/Return to Utility Adjustable .....	From 140-171 V/190-216 V
Future Set Capable Exerciser/Exercise Set Error Warning .....	Standard
Run/Alarm/Maintenance Logs .....	50 Events Each
Engine Start Sequence .....	Cyclic cranking: 16 sec on, 7 rest (90 sec maximum duration).
Starter Lock-out .....	Starter cannot re-engage until 5 sec after engine has stopped.
Smart Battery Charger .....	Standard
Charger Fault/Missing AC Warning .....	Standard
Low Battery/Battery Problem Protection and Battery Condition Indication .....	Standard
Automatic Voltage Regulation with Over and Under Voltage Protection .....	Standard
Under-Frequency/Overload/Stepper Overcurrent Protection .....	Standard
Safety Fused/Fuse Problem Protection .....	Standard
Automatic Low Oil Pressure/High Oil Temperature Shutdown .....	Standard
Overcrank/Overspeed (@ 72 Hz)/RPM Sense Loss Shutdown .....	Standard
High Engine Temperature Shutdown .....	Standard
Internal Fault/Incorrect Wiring Protection .....	Standard
Common External Fault Capability .....	Standard
Field Upgradable Firmware .....	Standard

# GENERAC®

## installation layout

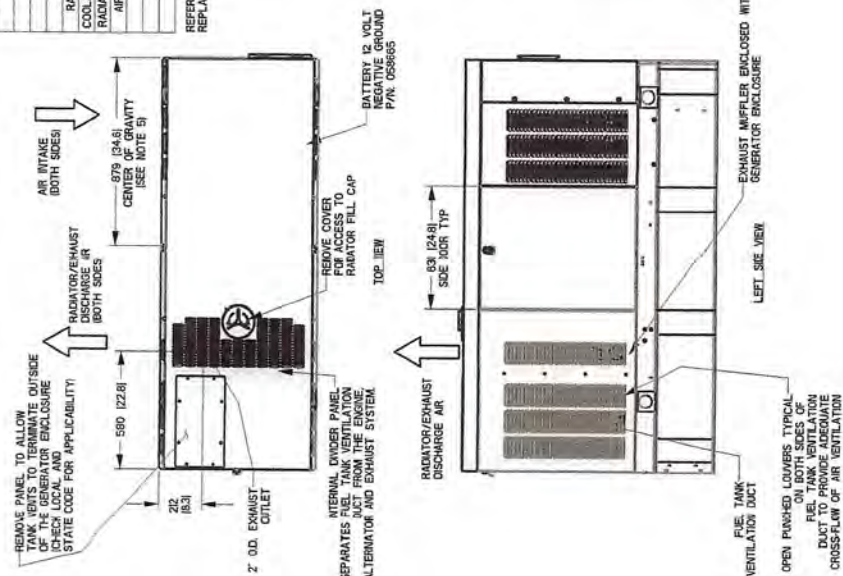
Drawing #0K7025-C (1 of 2)

WEIGHT DATA, WITH EMPTY BASEWALK SEE NOTE 5	WEIGHT: KG (LBS) DIMENSIONS: MM (INCH)
23L	
RIGHT SIDE	GENERATORS AS SHOWN 628 (13)
RIGHT SIDE	WITH WOODEN SHIPPING SOD 685 (14)
OIL OF STICK	
OIL FILTER	
OIL DRAIN NOSE	
RADIATOR DRAIN NOSE	
COOLANT RECOVERY BOTTLE	
COOLANT RECOVERY BOTTLE	
RADIATOR FILL CAP ACCESS	
AIR CLEANER ELEMENT	
MUFFLER	
FAN BELT	
BATTERY	

NOTES

1. MINIMUM RECOMMENDED CONCRETE PUD 325/1022 (431) MIXE X, 2625 (671) LONG REFERENCE INSTALLATION GUIDE SUPPLIED WITH UNIT FOR CONCRETE PAD GUIDELINES.
2. ALLOW SUFFICIENT ROOM ON ALL SIDES OF THE GENERATOR FOR MAINTENANCE AND SERVICE. THIS UNIT MUST BE INSTALLED IN ACCORDANCE WITH CURRENT NFPA 70E AND IEC 60364-4-41 REQUIREMENTS AS WELL AS ANY OTHER FEDERAL, STATE, AND LOCAL CODES.
3. CONTROL PANEL / CIRCUIT BREAKER INFORMATION:
  - ACCESSIBLE THROUGH CLUSTER AND NEAR ENCLOSURE COVER PANEL TO ACCESS.
  - REMOVE THE REAR STUBB AND REAR ENCLOSURE COVER PANEL TO ACCESS.
  - PHYSICAL CONNECTIONS INCLUDING AC LOAD LEAD CONDUIT CONNECTION (SEE MAX) CONNECTION.
  - THE NEUTRAL CONNECTION INCLUDING AC LOAD LEAD CONDUIT CONNECTION (SEE MAX) CONNECTION.
  - LOW VOLTAGE CONNECTION INCLUDING TRANSFORMER SWITCH CONTROL WIRES.
  - AND ACCESSORY RELAY CONNECTION (ITY 4).
4. THE GENERATOR MUST BE PROTECTED BY AN OVERCURRENT DEVICE (CIRCUIT BREAKER OR FUSE) LOCATED AT THE BOTTOM OF GENERATOR OR NEAR THE EXHAUST DISCHARGE AND RECYCLATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
5. EXHAUST SYSTEM MAXIMUM BACK PRESSURE: 24 INCHES H<sub>2</sub>O.
6. THE EXHAUST SYSTEM MUST BE PROTECTED BY AN OVERCURRENT DEVICE (CIRCUIT BREAKER OR FUSE) LOCATED AT THE BOTTOM OF GENERATOR OR NEAR THE EXHAUST DISCHARGE AND RECYCLATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
7. MOUNTING BOLTS (OR STUDS) TO MOUNTING SURFACE SHALL BE 5/8"X1 GRADE 5 (USE STANDARD SAE TORQUE SPECS).
8. MUST ALLOW FREE FLOW OF INTAKE AIR DISCHARGE AIR AND EXHAUST SEE SPEC D.
9. MUST ALLOW FREE FLOW OF EXHAUST AIR DISCHARGE AIR AND EXHAUST SEE SPEC D.
10. EXHAUST SYSTEM MUST BE PROTECTED BY AN OVERCURRENT DEVICE (CIRCUIT BREAKER OR FUSE) LOCATED AT THE BOTTOM OF GENERATOR OR NEAR THE EXHAUST DISCHARGE AND RECYCLATION OF DISCHARGE AIR AND/OR IMPROPER COOLING AIR FLOW.
11. GENERATOR MUST BE INSTALLED SUCH THAT EXHAUST AIR IS AVAILABLE AND THAT DISCHARGE AIR FROM RADIATOR IS NOT RECYCLED.

REFERENCE OWNERS MANUAL FOR PERIODIC  
REPLACEMENT PART LISTINGS



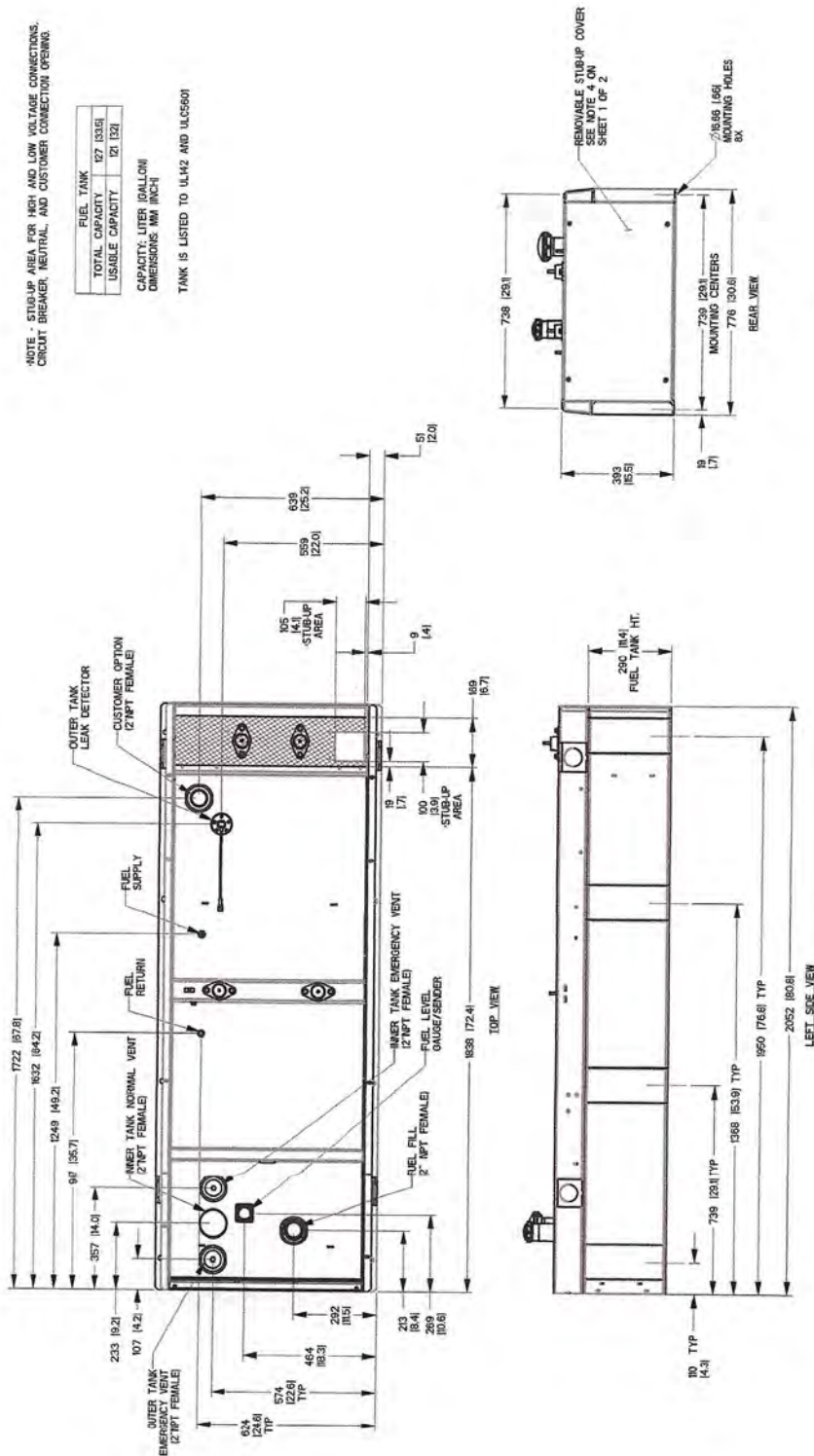


### 15 & 20 kW

\*NOTE - STUB-UP AREA FOR HIGH AND LOW VOLTAGE CONNECTIONS, CIRCUIT BREAKER, NEUTRAL, AND CUSTOMER CONNECTION (SEE DRAWING SHEET 1 OF 2)

FUEL TANK	
TOTAL CAPACITY	127 (336)
USABLE CAPACITY	121 (321)
CAPACITY: LITERS (GALLONS)	
DIMENSIONS: MM (INCH)	

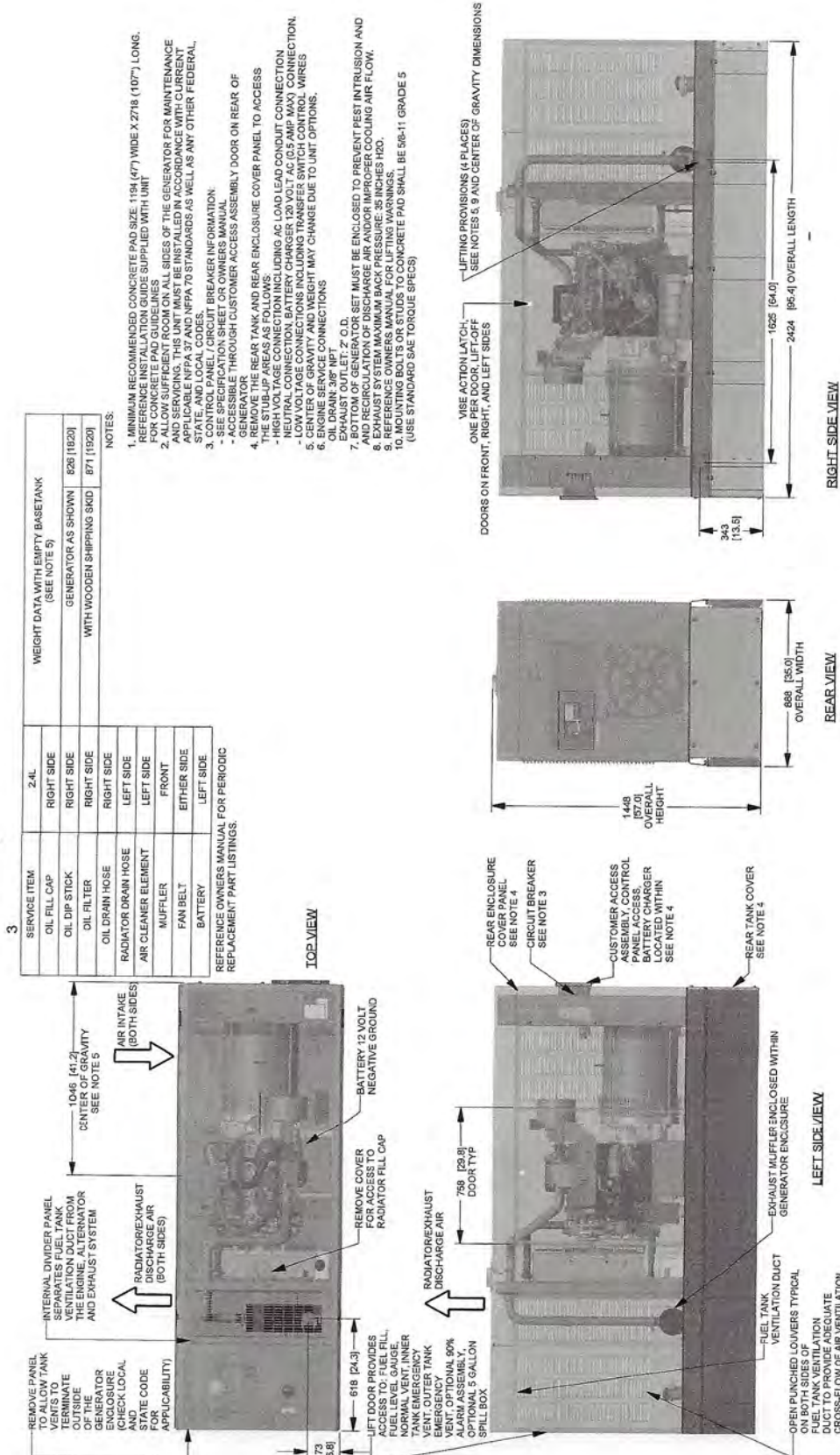
TANK IS LISTED TO UL42 AND ULCS601



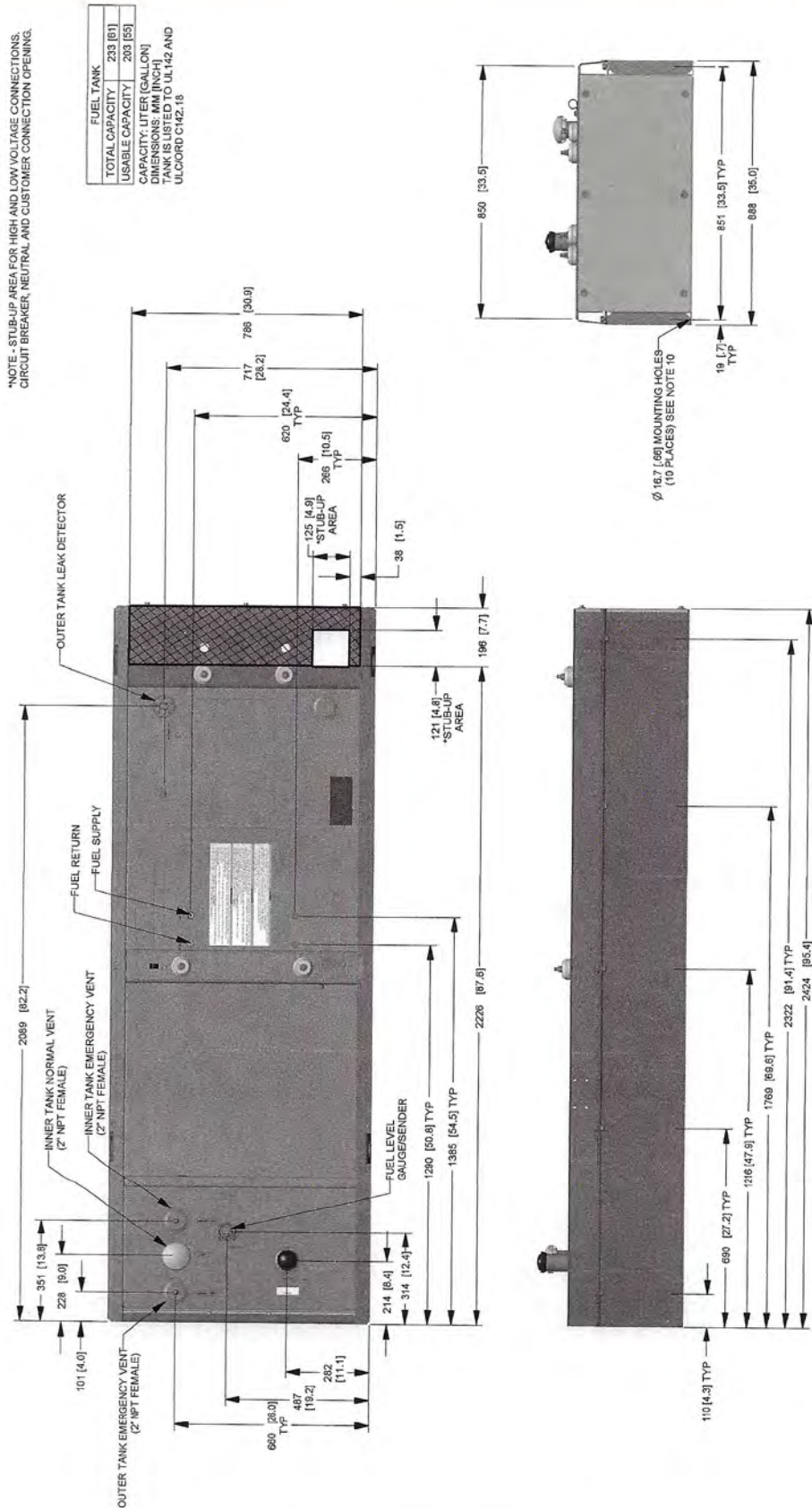


30 kW

Drawing #0K7002-C (1 of 2)



30 kW



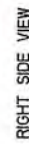
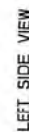


## installation layout

RIGHT SIDE VIEW

NOTES:

- VICE ACTION LATCH.—

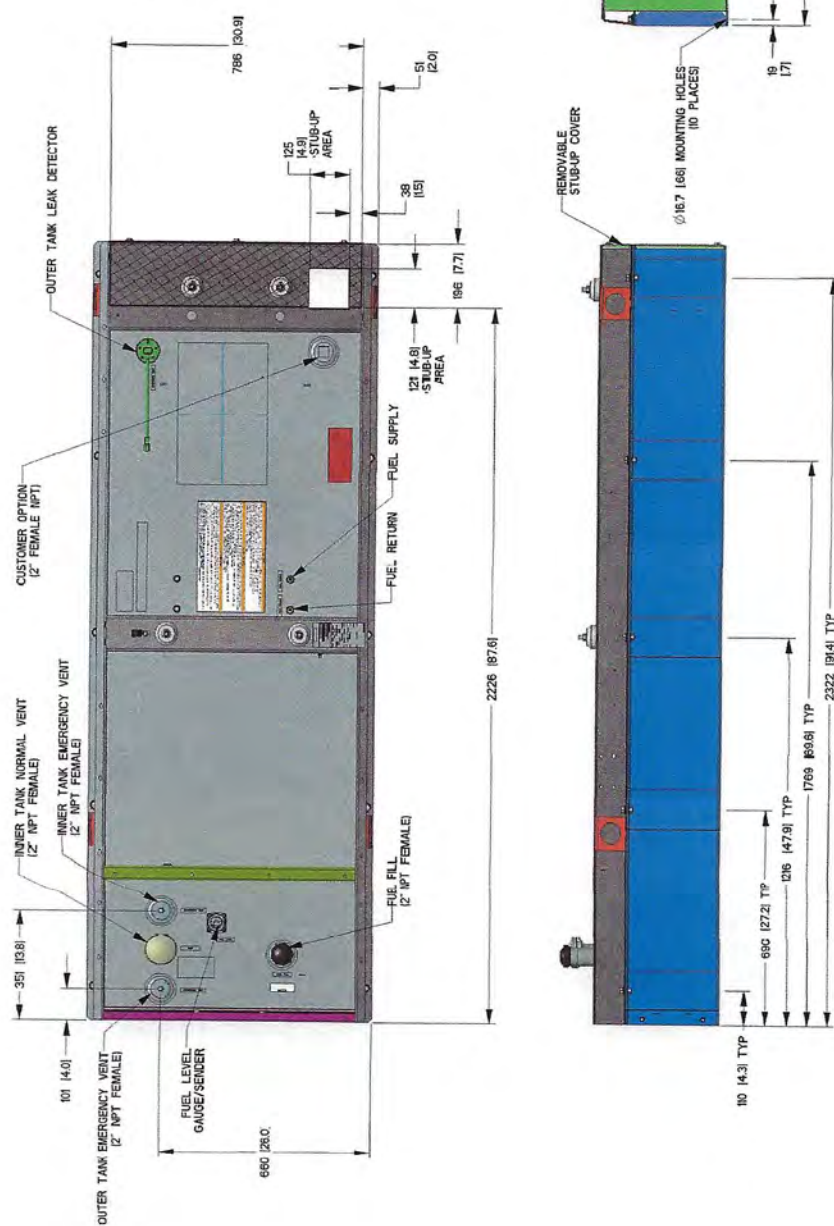


FUEL TANK	
TOTAL CAPACITY	233 [61]
USABLE CAPACITY	209 [55]

CAPACITY: LITER [GALLONS]  
DIMENSIONS: MM [INCH]

THIS TANK IS LISTED TO UL142 AND UL5801

NOTE - STUB-UP AREA FOR HIGH AND LOW VOLTAGE CONNECTIONS, CIRCUIT BREAKER, NEUTRAL AND CUSTOMER CONNECTION OPENING.





**15 • 20 • 30 • 48 • 50 kW****available accessories**

Model #	Product	Description
G006463-4	Mobile Link™	Generac's Mobile Link allows you to check the status of your generator from anywhere that you have access to an Internet connection from a PC or with any smart device. You will even be notified when a change in the generator's status occurs via e-mail or text message. Note: Harness Adapter Kit required. Available in the U.S. only.
G006478-0	Harness Adapter Kit	The Harness Adapter Kit is required to make liquid-cooled units compatible with Mobile Link™.
G006502-0	Spill Box	The 5-gallon spill box screws into the existing fuel fill port of the base tank. It captures and contains fuel if over fueling or spilling occurs during the fill process.
G006504-0	90% Fuel Level Alarm	The 90% fuel level alarm alerts the fuel fill operator when the tank reaches a 90% fill level by sounding an audible alarm and triggering an LED warning light.
G006505-0 - 15 & 20 kW G006506-0 - 30, 48 & 50 kW	Tank Risers	Tank risers are required in some municipalities to help avoid potential base tank corrosion caused by mounting on rough surfaces.
G006507-0	Fuel Fill Drop Tube	A powder coat painted, steel fuel fill drop tube is required in some municipalities to prevent sparking due to static electricity buildup, which can be caused by the fuel dropping into the tank from the fill area. Using a drop tube also results in submerged filling, which increases the fuel delivery flow rate and reduces vapors, foam and potential tank evaporation.
G006513-0 - 15 & 20 kW G006517-0 - 30 kW G006516-0 - 48 & 50 kW	Stainless Steel Fuel Lines	Some municipalities require the use of stainless steel fuel lines instead of the standard hoses provided with the diesel generator products. These stainless steel lines are fire resistant for additional safety.
G006510-0	E-Stop	E-stop allows for immediate fuel shutoff and generator shutdown in the event of an emergency.
G006511-0	Spill Box Drainback Kit	The spill box drainback kit allows fuel that was captured in the 5-gallon spill box to be drained directly back into the fuel tank to avoid vapors.
G006588-1	Vent Extension Support Kit	The vent extension support kit consists of two aluminum plates with the appropriate pipe cutouts to secure the vent extension pipes coming through the top of the generator enclosure. It helps to minimize stress on the NPT fittings integrated on the tank and also helps protect against pests.
G006512-0	Lockable Fuel Cap	The cast iron, lockable fuel cap provides the ability to lock the fuel system to prevent unwanted fuel tampering or fuel siphoning.
G006572-0 - 15 & 20 kW G006571-0 - 30 kW G006570-0 - 48 & 50 kW	Maintenance Kits	The Protector Maintenance Kits offer all the hardware necessary to perform complete maintenance on Generac Protector generators.
G006560-0 - 15 & 20 kW G006559-0 - 30 kW G006558-0 - 48 & 50 kW	Cold Weather Kits	Recommended for generators installed in regions where the temperature regularly falls below 32 °F (0 °C). The Cold Weather Kits consist of a block heater with all necessary mounting hardware and a battery warmer with a thermostat built into the battery wrap.
G005704-0	Paint Kit	If the generator enclosure is scratched or damaged, it is important to touch-up the paint to protect from future corrosion. The paint kit includes the necessary paint to properly maintain or touch-up a generator enclosure.
G006664-0	Local Wireless Remote	Completely wireless and battery powered, Generac's wireless remote monitor provides you with instant status information without ever leaving the house.
G006665-0	Wireless Remote Extension Harness	Recommended for use with the Wireless Remote on units up to 60 kW, required for use on units 70 kW or greater.
G006873-0	Smart Management Module (50 Amps)	Manage large loads by utilizing up to 8 individual Smart Management modules. These devices are installed directly in line with existing appliance wiring for easy installation.



# Exhibit F

## **Power Density/RF Emissions Report**



FOX HILL TELECOM

## Radio Frequency Emissions Analysis Report



Site ID: CTNL251A

Department of Public Safety  
11 Munn Road  
Colchester, CT 06415

January 3, 2025

Fox Hill Telecom Project Number: 250007

Site Compliance Summary	
Compliance Status:	COMPLIANT
Site total MPE% of FCC general population allowable limit:	2.91 %



January 3, 2025

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

## Emissions Analysis for Site: **CTNL251A – Department of Public Safety**

Fox Hill Telecom, Inc (“Fox Hill”) was directed to analyze the proposed installation at the T-MOBILE facility located at **11 Munn Road, Colchester, 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 97-01 and ANSI/IEEE Std C95.1. The FCC regulates Maximum Permissible Exposure in units of microwatts per square centimeter ( $\mu\text{W}/\text{cm}^2$ ). The number of  $\mu\text{W}/\text{cm}^2$  calculated at each sample point is called the power density. The exposure limit for power density varies depending upon the frequencies being utilized. Wireless Carriers and Paging Services use different frequency bands each with different exposure limits, therefore it is necessary to report results and limits in terms of percent MPE rather than power density.

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

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

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

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

S = Power Density (in  $\mu\text{w}/\text{cm}^2$ )

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.



# FOX HILL TELECOM

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
LTE	1900 MHz (PCS)	4	35
5G	1900 MHz (PCS)	4	40
LTE	2100 MHz (AWS)	4	60

*Table 1: Channel Data Table*





# FOX HILL TELECOM

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 APXVAALL24M-U-J20	210
A	2	RFS APXVLL19P 43-C-A20	210
B	1	RFS APXVAALL24M-U-J20	210
B	2	RFS APXVLL19P 43-C-A20	210
C	1	RFS APXVAALL24M-U-J20	210
C	2	RFS APXVLL19P 43-C-A20	210

*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 APXVAALL24M-U-J20	600 MHz / 700 MHz	13.65 / 14.25	6	200	4,772.12	0.42
Antenna A2	RFS APXVLL19P 43-C-A20	1900 MHz (PCS) / 2100 MHz (AWS)	16.05 / 16.75	12	540	23,437.14	0.47
Sector A Composite MPE%							<b>0.89</b>
Antenna B1	RFS APXVAALL24M-U-J20	600 MHz / 700 MHz	13.65 / 14.25	6	200	4,772.12	0.42
Antenna B2	RFS APXVLL19P 43-C-A20	1900 MHz (PCS) / 2100 MHz (AWS)	16.05 / 16.75	12	540	23,437.14	0.47
Sector B Composite MPE%							<b>0.89</b>
Antenna C1	RFS APXVAALL24M-U-J20	600 MHz / 700 MHz	13.65 / 14.25	6	200	4,772.12	0.42
Antenna C2	RFS APXVLL19P 43-C-A20	1900 MHz (PCS) / 2100 MHz (AWS)	16.05 / 16.75	12	540	23,437.14	0.47
Sector C Composite MPE%							<b>0.89</b>

*Table 3: T-MOBILE Emissions Levels*



# FOX HILL TELECOM

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	<b>0.89 %</b>
Verizon Wireless	1.34 %
Antenna no. 2 (CSP/FBI)	0.01 %
Antenna no. 3 (CSP)	0.01 %
Antenna no. 4 (SHP)	0.01 %
Antenna no. 5 (DEP)	0.01 %
Antenna no. 6	0.00 %
Antenna no. 7 (OEM)	0.01 %
Antenna no. 8 (CSP)	0.02 %
Antenna no. 9 (DEP)	0.02 %
Antenna no. 10 (CSP)	0.01 %
Antenna no. 11 (CSP)	0.01 %
Antenna no. 12 (CSP)	0.01 %
Antenna no. 13 (CSP)	0.01 %
Antenna no. 14	0.01 %
Antenna no. 15	0.01 %
Antenna no. 18 (FBI)	0.08 %
Antenna no. 31 (CTT)	0.01 %
Eversource	0.46 %
<b>Site Total MPE %:</b>	<b>2.91 %</b>

*Table 4: All Carrier MPE Contributions*

T-MOBILE Sector A Total:	0.89 %
T-MOBILE Sector B Total:	0.89 %
T-MOBILE Sector C Total:	0.89 %
Site Total:	2.91 %

*Table 5: Site MPE Summary*



# FOX HILL TELECOM

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 for all three sectors.

T-MOBILE _ Frequency Band / Technology Max Power Values (Per Sector)	# Channels	Watts ERP (Per Channel)	Height (feet)	Total Power Density ( $\mu\text{W}/\text{cm}^2$ )	Frequency (MHz)	Allowable MPE ( $\mu\text{W}/\text{cm}^2$ )	Calculated % MPE
T-Mobile 600 MHz LTE / 5G NR	4	926.96	210	1.40	600 MHz	400	0.35%
T-Mobile 700 MHz LTE	2	532.15	210	0.33	700 MHz	467	0.07%
T-Mobile 1900 MHz (PCS) LTE	4	1,409.51	210	1.20	1900 MHz (PCS)	1000	0.12%
T-Mobile 1900 MHz (PCS) 5G	4	1,610.87	210	1.40	1900 MHz (PCS)	1000	0.14%
T-Mobile 2100 MHz (AWS) LTE	4	2,838.91	210	2.10	2100 MHz (AWS)	1000	0.21%
						<b>Total:</b>	<b>0.89 %</b>

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:	0.89 %
Sector B:	0.89 %
Sector C:	0.89 %
T-MOBILE Maximum Total (per sector):	0.89 %
Site Total:	2.91 %
Site Compliance Status:	<b>COMPLIANT</b>

The estimated composite MPE value for this site assuming all carriers present is **2.91 %** 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

## **Letter of Authorization**



---

## DEPARTMENT OF EMERGENCY SERVICES & PUBLIC PROTECTION

### Division of Statewide Emergency Telecommunications

1111 COUNTRY CLUB ROAD, MIDDLETOWN, CT 06457 • (860) 685-8080

---

## Letter of Authorization Co-location on State of Connecticut Telecommunications Tower

Date: January 2, 2025  
T-Mobile Site ID: CTNL251A  
Property address: 11 Munn Rd, Colchester, CT 06415  
Latitude: 41-35-33.0 N; Longitude: 072-19-16.0 W

To Whom It May Concern,

T-Mobile, LLC (T-Mobile) is authorized by the State of Connecticut Department of Emergency Services and Public Protection (DESPP) to co-locate its communications equipment on the DESPP telecommunications tower located at 11 Munn Rd, Colchester, CT 06415.

T-Mobile shall be required by the terms of a license agreement to seek and obtain all necessary permits and approvals. As a duly authorized representative of the DESPP, permission is hereby granted to T-Mobile and its authorized agents from Northeast Site Solutions, LLC, for the purpose of consummating any applications necessary to gain the required approvals from the Connecticut Siting Council.

Any fees or charges associated with all applications or permits and any conditions placed on the applicant shall be the sole responsibility of T-Mobile.

Sincerely,

Mark Gorka

**Planning Specialist**

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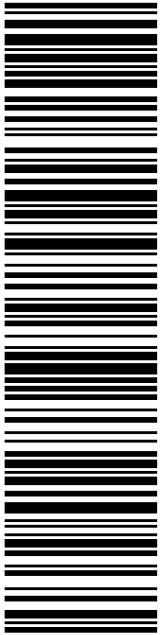

*Division of Statewide Emergency Telecommunications*

 (860) 508-9684; 24/7 Emergencies - NCC (860) 685-8008

 Mark.Gorka@ct.gov

# Exhibit H

## **Recipient Mailings**

 <b>UNITED STATES POSTAL SERVICE®</b>		<b>Click-N-Ship®</b>	
		<small>usps.com</small> 9405 5036 9930 0744 1587 45 0101 0000 0020 0415 <b>US POSTAGE</b> <small>Flat Rate Env</small>	
02/11/2025		Mailed from 01606 986727889025619	
<b>PRIORITY MAIL®</b>			
DEBORAH A CHASE NORTHEAST SITE SOLUTIONS 46 HUNTINGTON AVE WORCESTER MA 01606-3543		Expected Delivery Date: 02/13/25 Ref#: CTNL251A <b>0003</b>	
		BERNIE DENNLER FIRST SELECTMAN-TOWN OF COLCHESTER 127 NORWICH AVE COLCHESTER CT 06415-1230	
		<b>USPS TRACKING #</b>	
<b>9405 5036 9930 0744 1587 45</b>			
Electronic Rate Approved #038555749			

✂ ————— Cut on dotted line.

## Instructions







- Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
- Place your label so it does not wrap around the edge of the package.
- Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
- To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
- Mail your package on the "Ship Date" you selected when creating this label.

## Click-N-Ship® Label Record

<b>USPS TRACKING # :</b> <b>9405 5036 9930 0744 1587 45</b>	
Trans. #: 608025747 Print Date: 02/11/2025 Ship Date: 02/11/2025 Expected Delivery Date: 02/13/2025	Priority Mail® Postage: <b>\$10.10</b> Total: <b>\$10.10</b>
<b>From:</b> DEBORAH A CHASE NORTHEAST SITE SOLUTIONS 46 HUNTINGTON AVE WORCESTER MA 01606-3543	
<b>To:</b> BERNIE DENNLER FIRST SELECTMAN-TOWN OF COLCHESTER 127 NORWICH AVE COLCHESTER CT 06415-1230	
<small>Ref#: CTNL251A</small>	
<small>* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.</small>	



Thank you for shipping with the United States Postal Service!  
Check the status of your shipment on the USPS Tracking® page at [usps.com](https://usps.com)

 <b>UNITED STATES POSTAL SERVICE®</b>		<b>Click-N-Ship®</b>	
		<small>usps.com</small> 9405 5036 9930 0744 1587 52 0101 0000 0020 6415 <b>US POSTAGE</b> <small>Flat Rate Env</small>	
02/11/2025		Mailed from 01606 986727889023906	
<b>PRIORITY MAIL®</b>			
DEBORAH A CHASE NORTHEAST SITE SOLUTIONS 46 HUNTINGTON AVE WORCESTER MA 01606-3543		Expected Delivery Date: 02/13/25 Re#: CTNL251A <b>0003</b>	
		NICOLE HAGGERTY PLANNING DIRECTOR- COLCHESTER 127 NORWICH AVE COLCHESTER CT 06415-1230	
<b>USPS TRACKING #</b>		<b>C001</b>	
			
<b>9405 5036 9930 0744 1587 52</b>			
Electronic Rate Approved #038555749			



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## Instructions

- Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
- Place your label so it does not wrap around the edge of the package.
- Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
- To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
- Mail your package on the "Ship Date" you selected when creating this label.





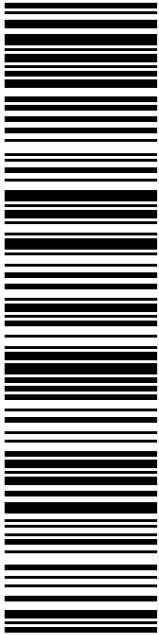

## Click-N-Ship® Label Record

<b>USPS TRACKING # :</b> <b>9405 5036 9930 0744 1587 52</b>	
Trans. #: 608025747 Print Date: 02/11/2025 Ship Date: 02/11/2025 Expected Delivery Date: 02/13/2025	Priority Mail® Postage: <b>\$10.10</b> Total: <b>\$10.10</b>
<b>From:</b> DEBORAH A CHASE NORTHEAST SITE SOLUTIONS 46 HUNTINGTON AVE WORCESTER MA 01606-3543	
<b>To:</b> NICOLE HAGGERTY PLANNING DIRECTOR- COLCHESTER 127 NORWICH AVE COLCHESTER CT 06415-1230	
Re#: CTNL251A	
<small>* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.</small>	



Thank you for shipping with the United States Postal Service!  
Check the status of your shipment on the USPS Tracking® page at usps.com



 <b>UNITED STATES POSTAL SERVICE®</b>		<b>Click-N-Ship®</b>	
		<small>usps.com</small> 9405 5036 9930 0744 1587 69 0101 0000 0020 6106 <b>\$10.10</b> <b>US POSTAGE</b> <small>Flat Rate Env</small>	
02/11/2025		Mailed from 01606 986727889023190	
<b>PRIORITY MAIL®</b>			
DEBORAH A CHASE NORTHEAST SITE SOLUTIONS 46 HUNTINGTON AVE WORCESTER MA 01606-3543		Expected Delivery Date: 02/13/25 Re#: CTNL251A <b>0003</b>	
		STATE OF CONNECTICUT-PROPERTY & 165 CAPITOL AVE HARTFORD CT 06106-1659	
<b>USPS TRACKING #</b>		<b>C029</b>	
			
9405 5036 9930 0744 1587 69			
Electronic Rate Approved #038555749			

✂ ————— Cut on dotted line.

## Instructions

- Each Click-N-Ship® label is unique. Labels are to be used as printed and used only once. DO NOT PHOTO COPY OR ALTER LABEL.
- Place your label so it does not wrap around the edge of the package.
- Adhere your label to the package. A self-adhesive label is recommended. If tape or glue is used, DO NOT TAPE OVER BARCODE. Be sure all edges are secure.
- To mail your package with PC Postage®, you may schedule a Package Pickup online, hand to your letter carrier, take to a Post Office™, or drop in a USPS collection box.
- Mail your package on the "Ship Date" you selected when creating this label.

## Click-N-Ship® Label Record

**USPS TRACKING # :**  
**9405 5036 9930 0744 1587 69**

Trans. #: 608025747  
Print Date: 02/11/2025  
Ship Date: 02/11/2025  
Expected  
Delivery Date: 02/13/2025

Priority Mail® Postage: **\$10.10**  
Total: **\$10.10**

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

Re#: CTNL251A

**To:** STATE OF CONNECTICUT-PROPERTY & TOWER  
OWNER  
165 CAPITOL AVE  
HARTFORD CT 06106-1659

\* Retail Pricing Priority Mail rates apply. There is no fee for USPS Tracking® service on Priority Mail service with use of this electronic rate shipping label. Refunds for unused postage paid labels can be requested online 30 days from the print date.



Thank you for shipping with the United States Postal Service!  
Check the status of your shipment on the USPS Tracking® page at usps.com

CT NL251 - Colchester



GREENDALE  
290 W BOYLSTON ST  
WORCESTER, MA 01606-2378  
(800)275-8777

02/14/2025

03:14 PM

Product	Qty	Unit Price	Price
Prepaid Mail Colchester, CT 06415 Weight: 1 lb 0.70 oz Acceptance Date: Fri 02/14/2025 Tracking #: 9405 5036 9930 0744 1587 45	1		\$0.00
Prepaid Mail Colchester, CT 06415 Weight: 1 lb 0.70 oz Acceptance Date: Fri 02/14/2025 Tracking #: 9405 5036 9930 0744 1587 52	1		\$0.00
Prepaid Mail Hartford, CT 06106 Weight: 1 lb 0.60 oz Acceptance Date: Fri 02/14/2025 Tracking #: 9405 5036 9930 0744 1587 69	1		\$0.00
Grand Total:			\$0.00

For more information call 1-800-275-8777 (TUSPS)