

WESTWOOD PLANNING BOARD APPLICATION FOR HEARING

1. Requested Approval(s):
Administrative approval of T-Mobile's equipment upgrade at 20 East Street, Westwood, MA
2. Brief Narrative of Proposal:
On rooftop, install 3 T-Mobile antennas, replace existing 3' stealth canister with 4' stealth canister
Install 3 remote radio units (RRU's), install (2) lines of 1 5/8" coax & 1 hybrid cable to replace existing 7/8" lines
3. Address/Location of Property Subject to Hearing:
20 East Street, Westwood, MA
4. Assessor's Map and Parcel Number(s): Map 18, Parcel # 18-054
5. Size of Parcel: 2.69 Acres
6. Name of Applicant:
Eric Kallio, as agent for T-Mobile Northeast LLC
7. Applicant's Mailing Address:
33 Boston Post Road West, Suite 210, Marlborough, MA 01752
8. Applicant's Telephone: (H) N/A (W) 978-808-8258
9. Applicant's E-Mail Address: eric.kallio@smartlinkllc.com
10. Applicant is: Owner Tenant Licensee Prospective Purchaser Other (Lessee)
11. Name of Property Owner(s):
Westwood East Property Acquisition LLC
12. Property Owner's Mailing Address:
701 Western Avenue, 1st Floor, Glendale, CA 91201, Attention: Lori Kind
13. Deed Recorded in:
 - a. County Registry of Deeds, Book 16813 Page 045
 - b. Registry District of the Land Court, Certificate Number _____
Page _____ Book _____

14. Has any Application ever been filed with the Planning Board regarding this Property?

Yes, When? 2003
 No

15. Has the Lot been surveyed by a Registered Land Surveyor?

Yes, When? 2001
 No

The Applicant hereby requests a public hearing before the Westwood Planning Board and consents to pay for the cost of all legal advertisements required by the Zoning Bylaw and/or Planning Board Rules and Regulations, which will be billed directly to the Applicant by the newspaper at a later date. The Applicant also consents to pay for all costs required pursuant to applicable sections of the Westwood Zoning Bylaw and/or Planning Board Rules and Regulations, unless expressly waived by the Planning Board, including all project review fees, inspection fees, and costs associated transcription, in addition to all other fees, expenses and costs in connection with the Planning Board's review and evaluation of this Application.

Signed: 
Applicant (or Agent) Signature

ERIC KALLIO
Printed Name of Applicant

Signed: _____
Property Owner(s) of Record Signature(s)

Printed Name(s) of Property Owner(s) of Record

Date: _____

Payments Received: Application Fee:	\$ <u>100.00</u> _____
Project Review Fees: (if applicable)	\$ <u>0</u> _____
Inspection Fees: (if applicable)	\$ <u>0</u> _____
Other Fees: (if applicable)	\$ <u>0</u> _____



smartlink

January 5, 2016

Westwood East Property Acquisition LLC
701 Western Ave. 1st Floor
Glendale, CA 91201
ATTN: Lori Kind

RE: **Letter of Authorization**
Property: 20 East Street, Westwood, MA
T-Mobile Site No.: 4BS0568B PS # 29184

Westwood East Property Acquisition LLC ("Property Owner") does hereby appoint **T-Mobile Northeast LLC (T-Mobile)** ("Carrier") and its authorized contractors/agents including but not limited to **Smartlink, LLC** to act as "Applicant/Agent" for the purpose of preparing and filing any application or document necessary to ensure Carrier's ability to use the Property as a telecommunications facility. The Property Owner understands and agrees that this application may be denied, modified, or approved with conditions and that such conditions or modifications must be complied with prior to the issuance of building permits. It is understood by both Property Owner and Carrier that the authorization given herein does not constitute a commitment by the Property Owner to Carrier or otherwise convey right to the Property to Carrier, and that such conveyance shall only be accomplished by the execution of a further agreement by both parties.

By: Lori Kind
Lori Kind – Wireless Department

Date: Jan. 6, 2016

California All-Purpose Acknowledgment

A notary public or other officer completing this certificate verifies only the identity of the individual who signed the document to which this certificate is attached, and not the truthfulness, accuracy, or validity of that document.

State of California
 County of Los Angeles } s.s.

On January 6, 2016 before me, Carmen L. Orellana, Notary Public
Name of Notary Public, Title

personally appeared Lori Kind
Name of Signer (1)

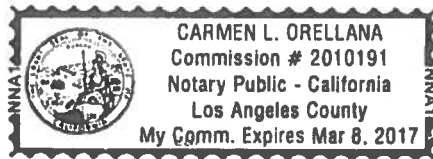
Name of Signer (2)

who proved to me on the basis of satisfactory evidence to be the person whose name is subscribed to the within instrument and acknowledged to me that she executed the same in her authorized capacity, and that by her signature on the instrument the person, or the entity upon behalf of which the person acted, executed the instrument.

I certify under PENALTY OF PERJURY under the laws of the State of California that the foregoing paragraph is true and correct.

WITNESS my hand and official seal.

Carmen Orellana
Signature of Notary Public



OPTIONAL INFORMATION

Although the information in this section is not required by law, it could prevent fraudulent removal and reattachment of this acknowledgment to an unauthorized document and may prove useful to persons relying on the attached document

Description of Attached Document
 The preceding Certificate of Acknowledgment is attached to a document titled/for the purpose of Letter of Authorization
20 East St - Westwood MA - PS #29184 - T-Mobile
 containing 1 pages, and dated January 6, 2016

The signer(s) capacity or authority is/are as:

Individual(s)
 Attorney-in-fact
 Corporate Officer(s) _____
Title(s)

Guardian/Conservator
 Partner - Limited/General
 Trustee(s)
 Other: Wireless Leasing Manager

representing: Westwood East Property Acquisition LLC
Name(s) of Person(s) Entity(ies) Signer is Representing

Additional Information

Method of Signer Identification

Proved to me on the basis of satisfactory evidence:
 form(s) of identification credible witness(es)

Notarial event is detailed in notary journal on:
 Page # _____ Entry # _____

Notary contact: _____

Other

Additional Signer Signer(s) Thumbprints(s)



March 23, 2016

Westwood Planning Board
c/o Abigail McCabe
Town Planner
Town of Westwood
50 Carby Street
Westwood, MA 02090

RE: T-Mobile Northeast LLC (“T-Mobile”)-Request for Full Environmental Impact & Design Review (EIDR) for Personal Wireless Service Facility as the Administrative Review of Eligible Facilities Request for Facility Located at 20 East Street, Westwood, MA (T-Mobile Site Number: 4BS0441A) (the “Site”)

Dear Honorable Members of the Westwood Planning Board:

We represent T-Mobile, an FCC licensed provider of wireless communication services and, while reserving all rights, respectfully request and administrative review by the Westwood Planning Board (the “Board”) of the proposed modifications and to be placed on an upcoming meeting agenda. This request constitutes and Eligible Facilities Request pursuant to Section 6409 of the Federal Middle Class Tax Relief and Job Creation Act of 2012, commonly referred to as the Spectrum Act (the “Spectrum Act”). Pursuant to Section 6409 of the Spectrum Act, T-Mobile seeks an administrative review for the colocation of transmission equipment inside enclosures on the roof of the existing building and electronic equipment inside existing equipment cabinets. As noted on the attached plans (the “Plans”), T-Mobile has transmission equipment on the roof in existing enclosures with its equipment cabinets on the roof of the building. T-Mobile’s proposed modifications clearly constitute an Eligible Facilities Request which does not substantially change the physical dimensions of the Eligible Support Structure or Base Station pursuant to Section 6409 of the Spectrum Act.

As you may know Section 6409(a) of the Spectrum Act mandates that state and local governments “may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.” Under Section 6409 (a)(2)(A)-(C), an Eligible Facilities Request is any request to modify a Tower or Base Station that involves “collocation of new Transmission Equipment,” “removal,” or “replacement” of Transmission Equipment.

This Eligible Facilities Request involves an effort to collocate Transmission Equipment on the roof of the building used by T-Mobile as a base station. T-Mobile



currently has three (3) antennas located inside one 36” fiberglass enclosure on the roof of the building at a top height of 45’. T-Mobile proposes to modify its existing base station by collocating three (3) additional antennas inside two (2) slightly larger 48” fiberglass enclosures with a top height of 49’, 9’ above the roof to the top of the fiberglass enclosures. T-Mobile’s equipment cabinets are located on the third floor of the building and T-Mobile will be adding equipment components inside an existing cabinet. T-Mobile is not proposing to add any equipment cabinets.

The equipment identified on the Plans submitted as part of this Eligible Facilities Request application that will be collocated or replaced at the Base Station is Transmission Equipment pursuant to the FCC definition. The FCC has defined Transmission Equipment as “any equipment that facilitates transmission for any Commission-licensed or authorized wireless communication service, including, but not limited to, radio transceivers, antenna and other relevant equipment associated with and necessary to their operation, including coaxial or fiber-optic cable, and regular and back-up power supply. This definition includes equipment used in any technological configuration associated with any Commission-authorized wireless transmission, licensed or unlicensed, terrestrial or satellite, including commercial mobile, private mobile, broadcast and public safety services, as well as fixed wireless services such as microwave backhaul or fixed broadband.”

The FCC adopted a Report and Order captioned, *In re: Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies*, FCC Document No. 13-238, Report and Order No. 14-153 (October 17, 2014) Final Rule codified at 47 CFR Parts 1 and 17 promulgating regulations (the “Regulations”) interpreting and implementing the provisions of the Spectrum Act which determined that any modification to an existing telecommunications Tower or Base Station that meets the following six criteria does not substantially change the physical dimensions of the existing Tower or Base Station and, therefore, is an Eligible Facilities Request which must be granted:

1. The modifications to the Transmission Equipment do not increase the height of the Eligible Support Structure by more than ten feet (10’) or ten percent (10%),
2. The modifications to the Transmission Equipment do not protrude from the edge of the Eligible Support Structure by more than six feet (6’).
3. The modifications to the Transmission Equipment do not involve the installation of more than the standard number of equipment cabinets for the technology involved, not to exceed four.



4. The modifications to the Transmission Equipment do not entail any excavation or deployment outside of the Site.
5. The modifications to the Transmission Equipment do not defeat any existing concealment elements of the Eligible Support Structure.
6. The modifications to the Transmission Equipment comply with prior conditions of approval of the Base Station, unless the non-compliance is due to an increase in height, increase in width, addition of equipment cabinets, or new excavation that does not exceed the corresponding “substantial change” thresholds in numbers 1-4 above.

As evidenced on the Plans, this Eligible Facilities Request satisfies each of the six review criteria identified by the FCC. In accordance with the Spectrum Act and the Regulations, T-Mobile’s proposed modifications will not increase the height of the Eligible Support Structure, in this case the building, by more than ten feet (10’) nor protrude from the edge of the building by more than six feet (6’). T-Mobile does not propose excavating outside of the Site or adding any equipment cabinets. Lastly, T-Mobile’s modifications do not defeat any concealment elements because the modifications will all be within fiberglass enclosures and the Transmission Equipment will not be visible outside the building. T-Mobile’s modifications to the Transmission Equipment at the Eligible Support Structure and Base Station contained in this Eligible Facilities Request fully conform to Section 6409(a) of the Spectrum Act.

While the Westwood Zoning Bylaw may provide that a special permit or other zoning relief is required for modifications and colocations, such a discretionary process is contrary to the guidance issued by the FCC in its Public Notice (the “Public Notice”) dated January 25, 2013 and the Massachusetts Office of the Attorney General (the “Attorney General”) in response letters to municipalities granting approvals of bylaw amendments.

In its Public Notice, the FCC determined that the relevant government entity may require the filing of an application for “administrative approval” only. Additionally, pursuant to Section 1.40001 (c)(1) of the Regulations, “when an applicant asserts in writing that a request for a modification is covered by this section, a State or local government may require the applicant to provide documentation or information only to the extent reasonably related to determining whether the request meets the requirements



of this section”. The Regulations provide that applicants are not required to justify a need for the facility. Further, the Regulations also require that local governmental approvals must be granted for eligible facilities requests within 60 days of the date that the application is submitted. Clearly, this review may not be subject to a discretionary special permit process with the associated public hearing and appeal period provisions. Likewise, the Attorney General has issued a number of letters to municipalities reflecting that same opinion and warning municipalities that such qualifying requests under Section 6409 cannot be subject to a discretionary special permit process. We are confident that you will agree that T-Mobile’s proposed modifications do not substantially change the physical dimensions of the Eligible Support Structure or Base Station at the Site, as enumerated in the Regulations.

T-Mobile is committed to working cooperatively with the Town of Westwood, and all jurisdictions around the country, to secure expeditious approval of requests to modify existing personal wireless service facilities. We respectfully request that the Board review T-Mobile’s proposed modifications and determine that the modification do not “substantially change the physical dimensions of the Base Station” pursuant to Section 6409 of the Spectrum Act.

Please do not hesitate to contact me should there be any questions.

Sincerely,

ERIC KALLIO

Eric Kallio
Real Estate Specialist
Smartlink, LLC as agent for T-Mobile Northeast LLC

SITE NAME: BS568/TRM STORAGE WESTWOOD

20 EAST STREET
WESTWOOD, MA 02090
NORFOLK COUNTY

SITE NUMBER: 4BS0568B

RF DESIGN GUIDELINE: 702Cc

BASED ON RFDS DATED: 10/29/15

T-MOBILE TECHNICIAN SITE SAFETY NOTES

LOCATION	SPECIAL RESTRICTIONS
SECTOR A: ANTENNA/TMA/RRH	ACCESS NOT PERMITTED
SECTOR B: ANTENNA/TMA/RRH	ACCESS NOT PERMITTED
SECTOR C: ANTENNA/TMA/RRH	ACCESS NOT PERMITTED
GPS/LMU:	UNRESTRICTED
RADIO CABINETS:	UNRESTRICTED
PPC DISCONNECT:	UNRESTRICTED
MAIN CIRCUIT D/C:	UNRESTRICTED
NIU/T DEMARC:	UNRESTRICTED
OTHER/SPECIAL:	NONE

T-MOBILE NORTHEAST LLC

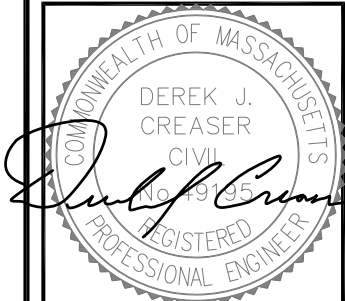
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
OFFICE: (508) 286-2700
FAX: (508) 286-2893



1997 ANNAPOLIS EXCHANGE PKWY
SUITE 200
ANNAPOLIS, MD 21401



1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586



CHECKED BY: AT

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
3	03/21/16	ISSUED FOR CONSTRUCTION	EB
2	03/15/16	ISSUED FOR CONSTRUCTION	RB
1	01/27/16	ISSUED FOR CONSTRUCTION	EB
0	11/11/15	ISSUED FOR REVIEW	OM

SITE NUMBER:
4BS0568B

SITE NAME:
BS568/TRM STORAGE WESTWOOD

SITE ADDRESS:
20 EAST STREET
WESTWOOD, MA 02090
NORFOLK COUNTY

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

GENERAL NOTES

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

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

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



PROJECT SUMMARY

SCOPE OF WORK: UNMANNED TELECOMMUNICATIONS FACILITY T-MOBILE EQUIPMENT MODERNIZATION

ZONING JURISDICTION: (TOWN OF WESTWOOD) BASED ON INFORMATION PROVIDED BY T-MOBILE, THIS TELECOMMUNICATIONS EQUIPMENT DEPLOYMENT IS AN ELIGIBLE FACILITY UNDER THE TAX RELIEF ACT OF 2012, 47 USC 1455(A), AND IS SUBJECT TO AN EXPEDITED ELIGIBLE FACILITIES REQUEST/REVIEW AND ZONING PRE-EMPTION FOR LOCAL DISCRETIONARY PERMITS (VARIANCE, SPECIAL PERMIT, SITE PLAN REVIEW).

SITE ADDRESS: 20 EAST STREET
WESTWOOD, MA 02090

LATITUDE: 42° 13' 24.66" N

LONGITUDE: 71° 10' 04.79" W

JURISDICTION: NATIONAL, STATE & LOCAL CODES OR ORDINANCES

CURRENT USE: TELECOMMUNICATIONS FACILITY

PROPOSED USE: TELECOMMUNICATIONS FACILITY

APPROVALS

PROJECT MANAGER	DATE
CONSTRUCTION	DATE
RF ENGINEERING	DATE
ZONING / SITE ACQ.	DATE
OPERATIONS	DATE
LANDLORD	DATE



CALL
BEFORE YOU DIG
CALL TOLL FREE 1-888-DIG-SAFE
OR CALL 811

UNDERGROUND SERVICE ALERT

DRAWING INDEX

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GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.
4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR.
9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
 CONTRACTOR – SMARTLINK
 SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
 OWNER – T-MOBILE
2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
16. CONSTRUCTION SHALL COMPLY WITH UMTS SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE SITES."
17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.
20. APPLICABLE BUILDING CODES:
 SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
 BUILDING CODE: MA STATE BUILDING CODE 780 CMR 8TH EDITION
 ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
 LIGHTNING CODE: REFER TO ELECTRICAL DRAWINGS

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

- AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;
- AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;
- TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-G, STRUCTURAL STANDARDS FOR STEEL
- ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

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

ABBREVIATIONS					
AGL	ABOVE GRADE LEVEL	EQ	EQUAL	REQ	REQUIRED
AWG	AMERICAN WIRE GAUGE	GC	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
BBU	BATTERY BACKUP UNIT	GRC	GALVANIZED RIGID CONDUIT	TBD	TO BE DETERMINED
BTCW	BARE TINNED SOLID COPPER WIRE	MGB	MASTER GROUND BAR	TBR	TO BE REMOVED
BGR	BURIED GROUND RING	MIN	MINIMUM	TBRR	TO BE REMOVED AND REPLACED
BTS	BASE TRANSCEIVER STATION	P	PROPOSED	TYP	TYPICAL
E	EXISTING	NTS	NOT TO SCALE	UG	UNDER GROUND
EGB	EQUIPMENT GROUND BAR	RAD	RADIATION CENTER LINE (ANTENNA)	VIF	VERIFY IN FIELD
EGR	EQUIPMENT GROUND RING	REF	REFERENCE		

T-MOBILE NORTHEAST LLC

15 COMMERCE WAY, SUITE B
 NORTON, MA 02766
 OFFICE: (508) 286-2700
 FAX: (508) 286-2893



1997 ANNAPOLIS EXCHANGE PKWY
 SUITE 200
 ANNAPOLIS, MD 21401



1600 OSGOOD STREET
 BUILDING 20 NORTH, SUITE 3090
 N. ANDOVER, MA 01845
 TEL: (978) 557-5553
 FAX: (978) 336-5586



COMMONWEALTH OF MASSACHUSETTS
 DEREK J. CREASER
 CIVIL
 No. 9195
 REGISTERED PROFESSIONAL ENGINEER

CHECKED BY: AT

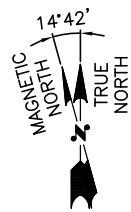
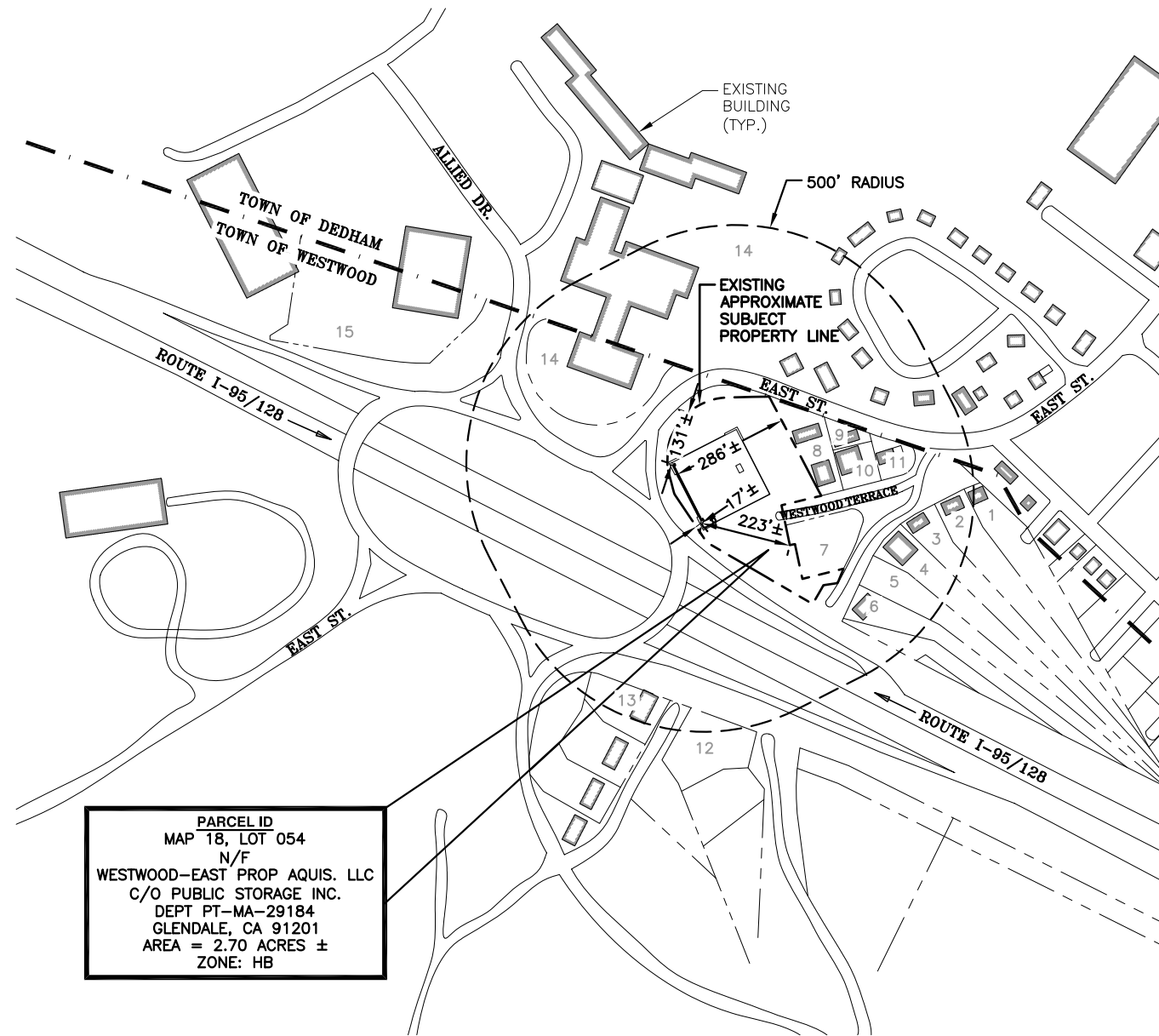
APPROVED BY: DPH

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REV.	DATE	DESCRIPTION	BY
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0	11/11/15	ISSUED FOR REVIEW	OM

SITE NUMBER:
4BS0568B
 SITE NAME:
 BS568/TRM STORAGE WESTWOOD
 SITE ADDRESS:
 20 EAST STREET
 WESTWOOD, MA 02090
 NORFOLK COUNTY

SHEET TITLE
GENERAL NOTES

SHEET NUMBER
GN-1



PLOT PLAN

22x34 SCALE: 1"=200'-0"
 11x17 SCALE: 1"=400'-0"



GENERAL NOTES:

SITE NAME: TRM STORAGE WESTWOOD
 SITE ADDRESS: 20 EAST STREET
 WESTWOOD, MA 02090
 PROPERTY OWNER: WESTWOOD-EAST PROP AQUIS. LLC
 C/O PUBLIC STORAGE INC.
 DEPT PT-MA-29184
 GLENDALE, CA 91201
 APPLICANT: T-MOBILE NORTHEAST LLC.
 15 COMMERCE WAY, SUITE B
 NORTON, MA 02766
 JURISDICTION: TOWN OF WESTWOOD
 PLAN REFERENCES: TOWN OF WESTWOOD ASSESSORS MAPS (ONLINE GIS)

ALL UNDERGROUND UTILITY INFORMATION WAS DETERMINED FROM SURFACE INVESTIGATIONS AND EXISTING PLANS OF RECORD. THE CONTRACTOR SHALL CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION NOTIFICATION 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY:

DIG SAFE SYSTEM (MA, ME, NH, RI, VT): GENERAL RESIDENTIAL, AGRICULTURAL, RURAL 1-888-344-7233
 CALL BEFORE YOU DIG (CT): 1-800-922-4455

PROPERTY LINE INFORMATION IS COMPILED FROM ASSESSORS PLAN AND RECORD DOCUMENTS AND IS NOT TO BE CONSTRUED AS HAVING BEEN OBTAINED AS THE RESULT OF A FIELD BOUNDARY SURVEY, AND IS SUBJECT TO CHANGE AS AN ACCURATE FIELD SURVEY MAY DISCLOSE. A FULL BOUNDARY SURVEY WAS NOT PERFORMED.

BEARING SYSTEM OF THIS PLAN IS BASED ON TRUE NORTH. TRUE NORTH WAS ESTABLISHED FROM EXISTING PLAN REFERENCE. IT IS NOT INTENDED TO BE AN EXACT REPRESENTATION OF TRUE NORTH.

LEGEND

---	PROPERTY LINE
---	ABUTTING PROPERTY LINES
	EXISTING TRAIN TRACKS
-x-x-x-x-x-x-x-x-x-x-	EXISTING CHAIN LINK FENCE
-x-x-x-x-x-x-x-x-x-x-	PROPOSED CHAIN LINK FENCE
---	EXISTING EASEMENT
OH OH OH OH OH	EXISTING OVERHEAD UTILITIES
OH OH OH OH OH	PROPOSED OVERHEAD UTILITIES
⊙	EXISTING UTILITY POLE
---	TOWN BOUNDARY LINE

ZONING INFORMATION

ZONING DISTRICT:	HB - HIGHWAY BUSINESS	
ASSESSORS MAP:	MAP 18 LOT 054	
PROPOSED USE:	WIRELESS COMMUNICATION FACILITY	
DIMENSIONS REQUIREMENTS:	REQUIRED MINIMUM	PROPOSED ANTENNAS
FRONT YARD SETBACK:	50 FT.	131'±
SIDE YARD SETBACK:	15 FT.	17'± & 286'±
REAR YARD SETBACK:	15 FT.	223'±

(ALL MEASUREMENTS ARE IN FEET ± UNLESS OTHERWISE NOTED)
 (SETBACKS TO CLOSEST POINT OF PROPOSED EQUIPMENT TO NEAREST LOT LINE)

ABUTTERS

#	MAP-LOT	ADDRESS	LAND USE
1	18-045	8 WESTWOOD TER	SFR
2	18-046	12 WESTWOOD TER	SFR
3	18-047	20 WESTWOOD TER	SFR
4	18-048	26 WESTWOOD TER	SFR
5	18-049	32 WESTWOOD TER	SFR
6	18-050	38 WESTWOOD TER	SFR
7	18-053	23 WESTWOOD TER	SFR
8	18-055	1200 EAST ST	0
9	18-056	1198 EAST ST	0
10	18-057	21 WESTWOOD TER	SFR
11	18-058	9 WESTWOOD TER	SFR
12	18-006	61 CANTON TER	SFR
13	18-069	8 METCALF RD	SFR
14	17-171	ALLIED DR	0
15	17-172	CIRCUMFERENTIAL HW	RD

T-MOBILE NORTHEAST LLC

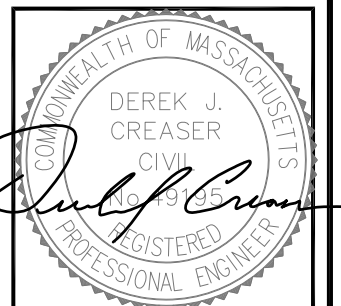
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CHECKED BY: AT

APPROVED BY: DPH

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SITE ADDRESS:
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 NORFOLK COUNTY

SHEET TITLE

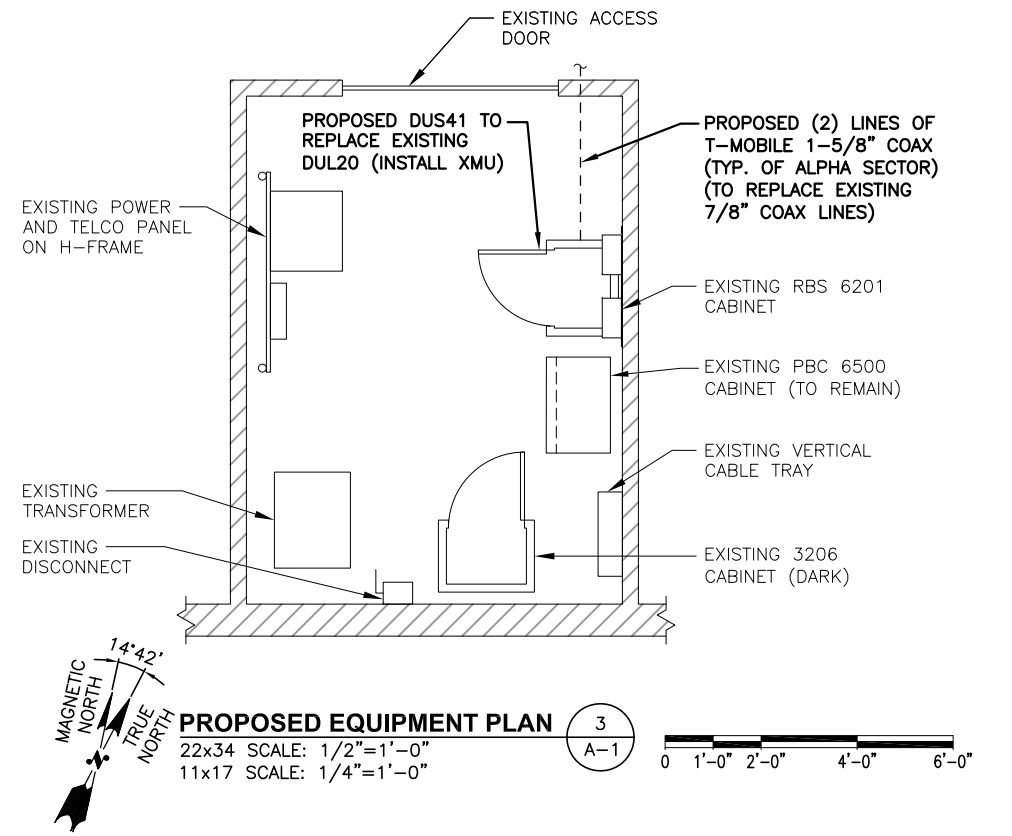
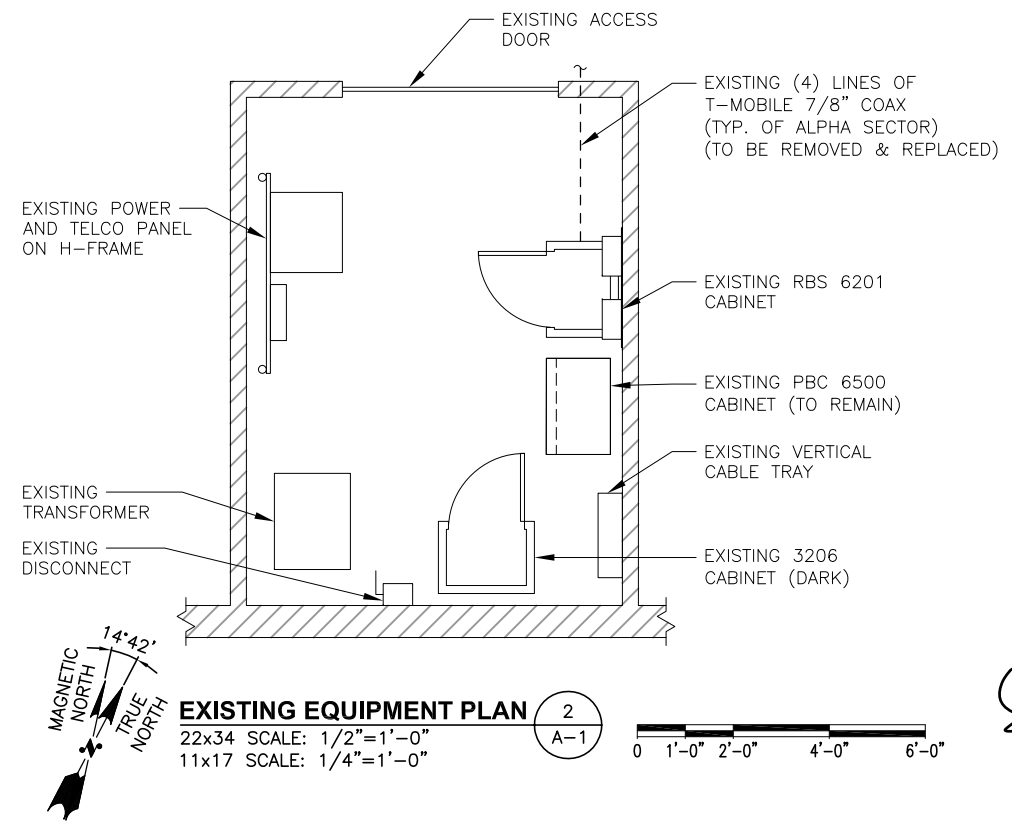
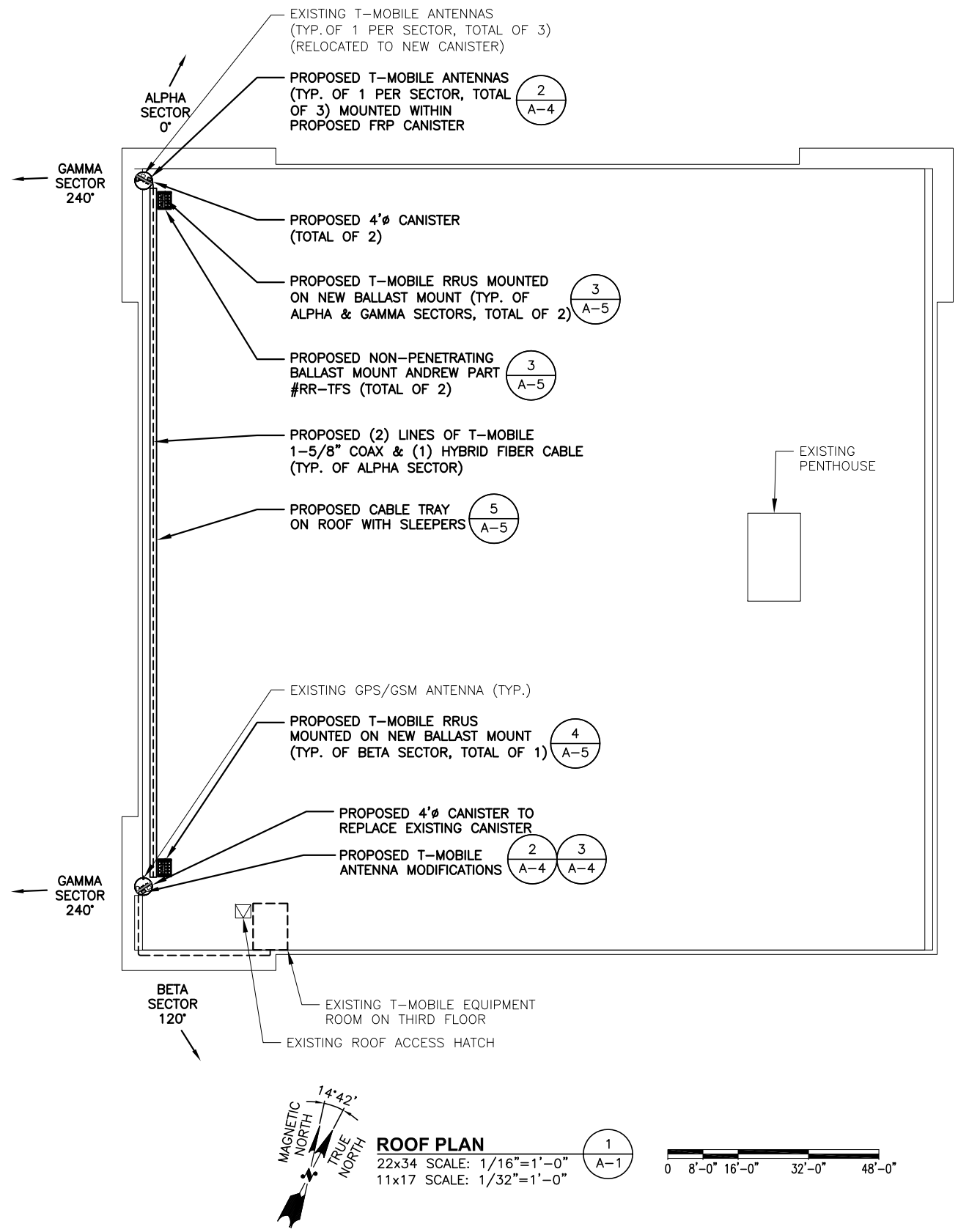
PLOT PLAN

SHEET NUMBER

C-1

NOTE:
REFER TO STRUCTURAL ANALYSIS
BY: HUDSON DESIGN GROUP, LLC,
DATED: DECEMBER 18, 2015,
FOR THE CAPACITY OF THE
EXISTING STRUCTURES TO SUPPORT
THE PROPOSED EQUIPMENT.

NOTE:
REFER TO THE FINAL RF DATA
SHEET FOR FINAL ANTENNA
SETTINGS.



**T-MOBILE
NORTHEAST LLC**

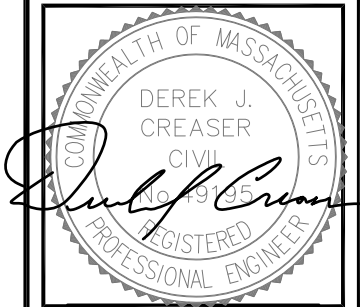
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BS568/TRM STORAGE WESTWOOD

SITE ADDRESS:
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WESTWOOD, MA 02090
NORFOLK COUNTY

SHEET TITLE
ROOF &
EQUIPMENT PLAN

SHEET NUMBER
A-1

**T-MOBILE
NORTHEAST LLC**

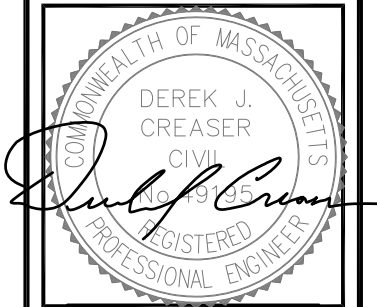
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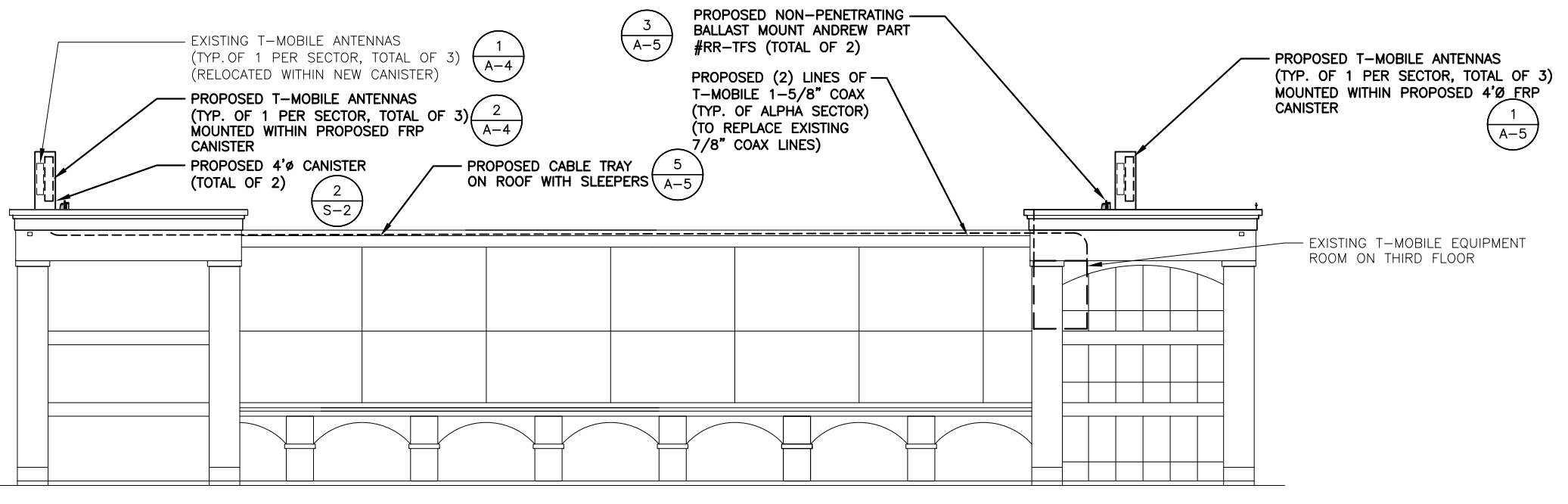
SITE NAME:
BS568/TRM STORAGE WESTWOOD

SITE ADDRESS:
20 EAST STREET
WESTWOOD, MA 02090
NORFOLK COUNTY

SHEET TITLE
ELEVATIONS

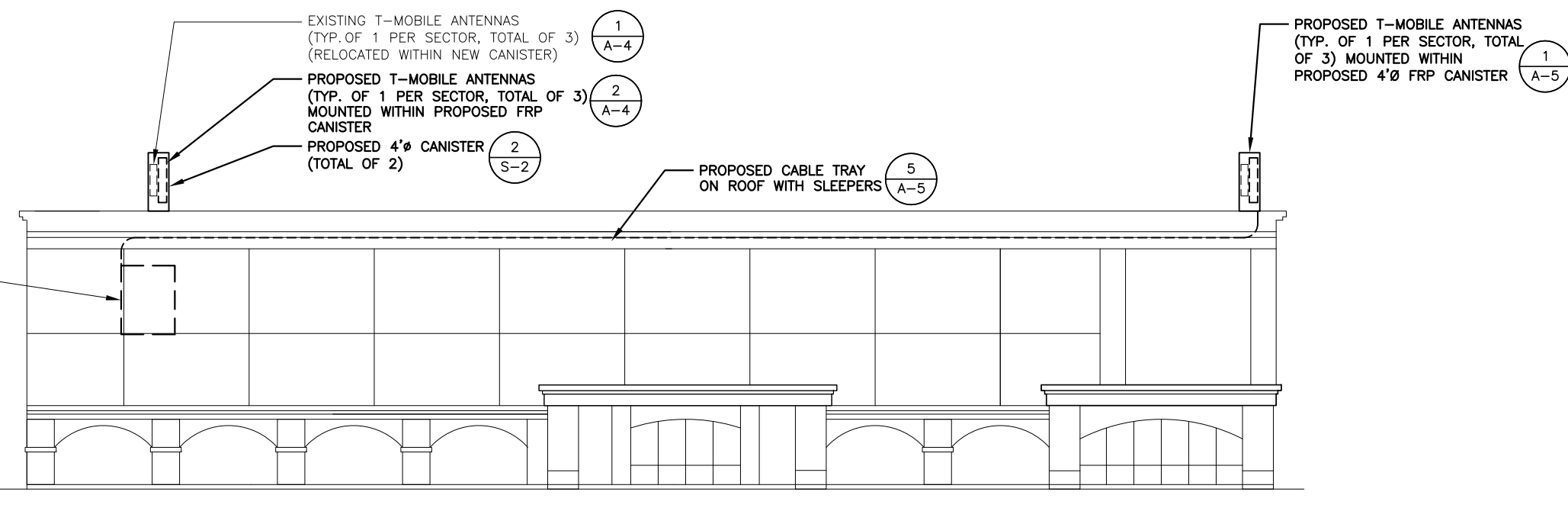
SHEET NUMBER
A-2

- TOP OF PROPOSED T-MOBILE FRP CANISTER
ELEV. = 49'-0"± (AGL)
- ☉ OF EXISTING & PROPOSED T-MOBILE ANTENNAS
ELEV. = 45'-0"± (AGL)
- TOP OF PARAPET
ELEV. 40'-6"± (AGL)
- TOP OF ROOF
ELEV. 37'-6"± (AGL)



WEST ELEVATION
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"
0 5'-4" 10'-8" 21'-4" 32'-0"

- TOP OF PROPOSED T-MOBILE FRP CANISTER
ELEV. = 49'-0"± (AGL)
- ☉ OF EXISTING & PROPOSED T-MOBILE ANTENNAS
ELEV. = 45'-0"± (AGL)
- TOP OF PARAPET
ELEV. 40'-6"± (AGL)
- TOP OF ROOF
ELEV. 37'-6"± (AGL)



EAST ELEVATION
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"
0 5'-4" 10'-8" 21'-4" 32'-0"

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: DECEMBER 18, 2015, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

GRADE LEVEL
ELEV. 0'-0"± (AGL)

**T-MOBILE
NORTHEAST LLC**

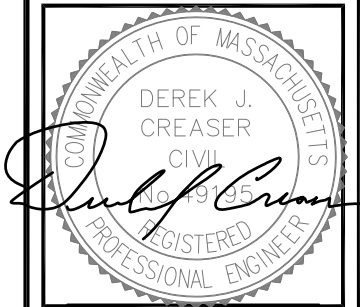
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N. ANDOVER, MA 01845 FAX: (978) 336-5586



CHECKED BY: AT

APPROVED BY: DPH

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SITE NAME:
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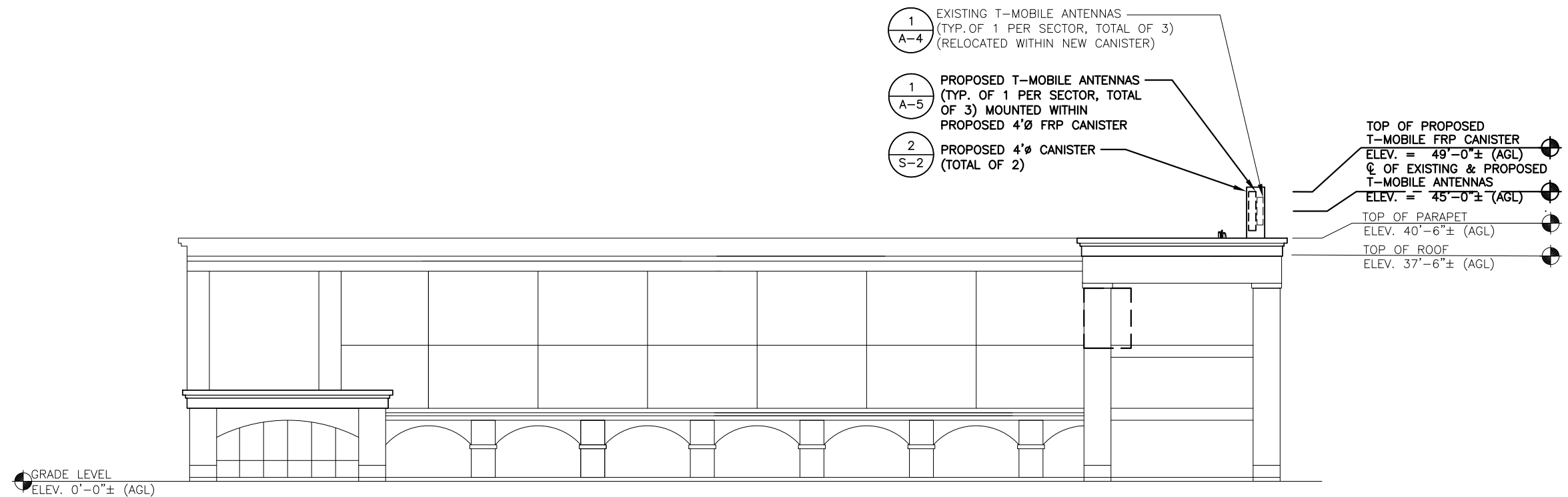
SITE ADDRESS:
20 EAST STREET
WESTWOOD, MA 02090
NORFOLK COUNTY

SHEET TITLE

ELEVATIONS

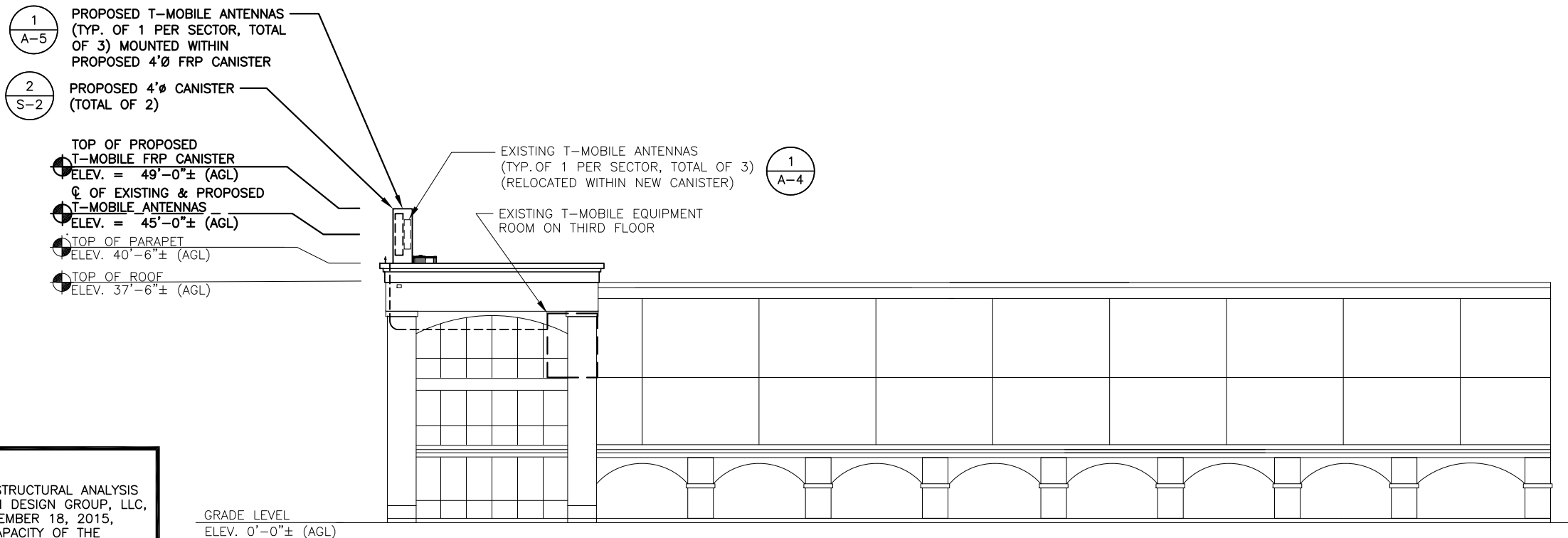
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A-3



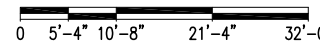
NORTH ELEVATION

22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"



SOUTH ELEVATION

22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"



NOTE:
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DATED: DECEMBER 18, 2015,
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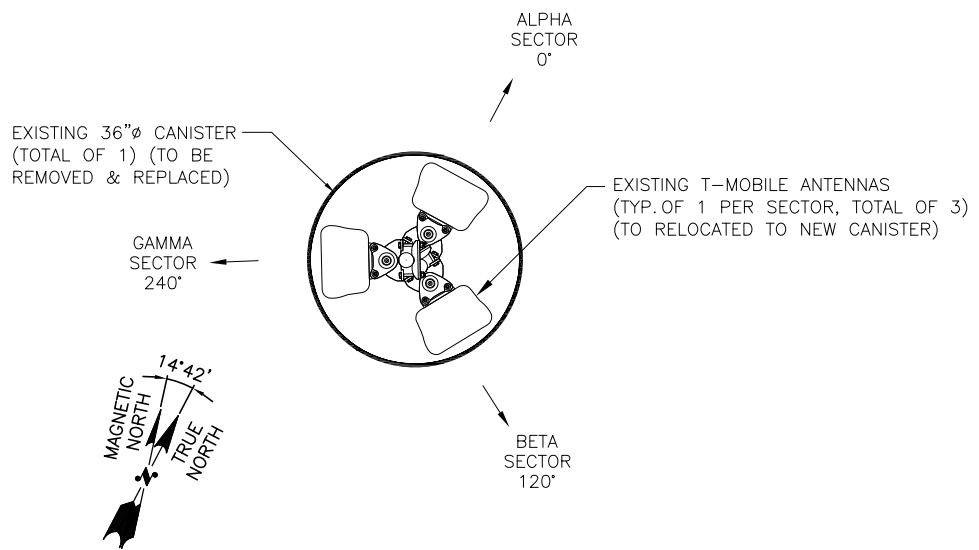
NOTE:
REFER TO THE FINAL RF DATA
SHEET FOR FINAL ANTENNA
SETTINGS.

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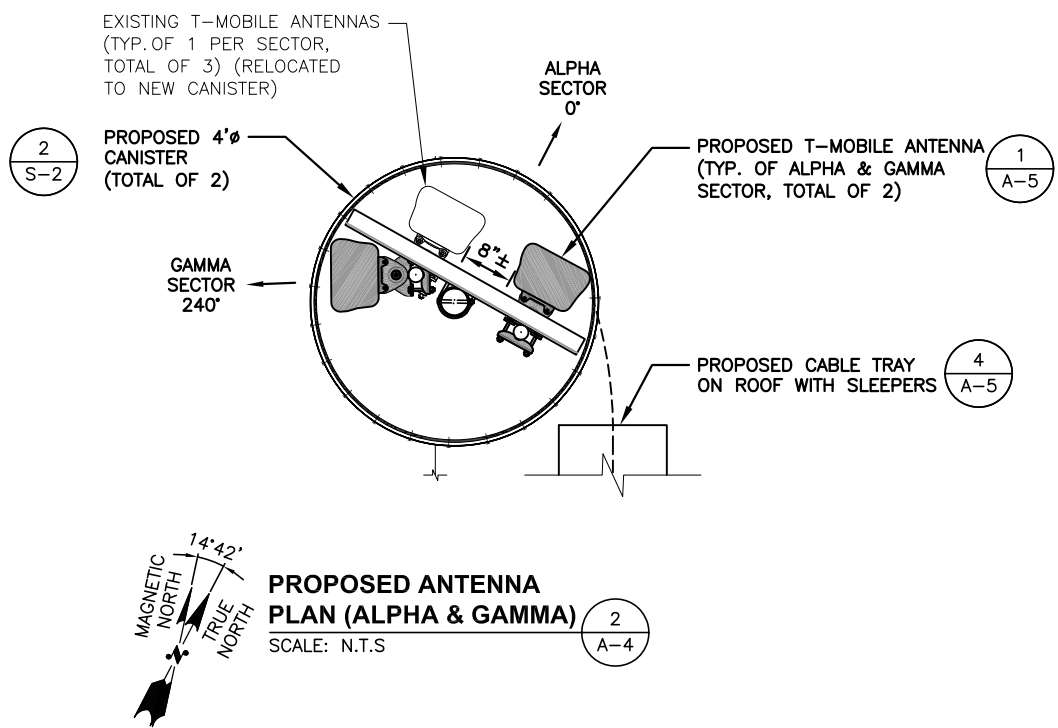
NOTE:
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EXISTING ANTENNA SCHEDULE					
SECTOR	MAKE	MODEL#	SIZE (INCHES)	AZIMUTHS	
ALPHA:	ERICSSON	AIR21 B2A/B4P	56x12x7.9	0°	
BETA:	ERICSSON	AIR21 B2A/B4P	56x12x7.9	120°	
GAMMA:	ERICSSON	AIR21 B2A/B4P	56x12x7.9	240°	

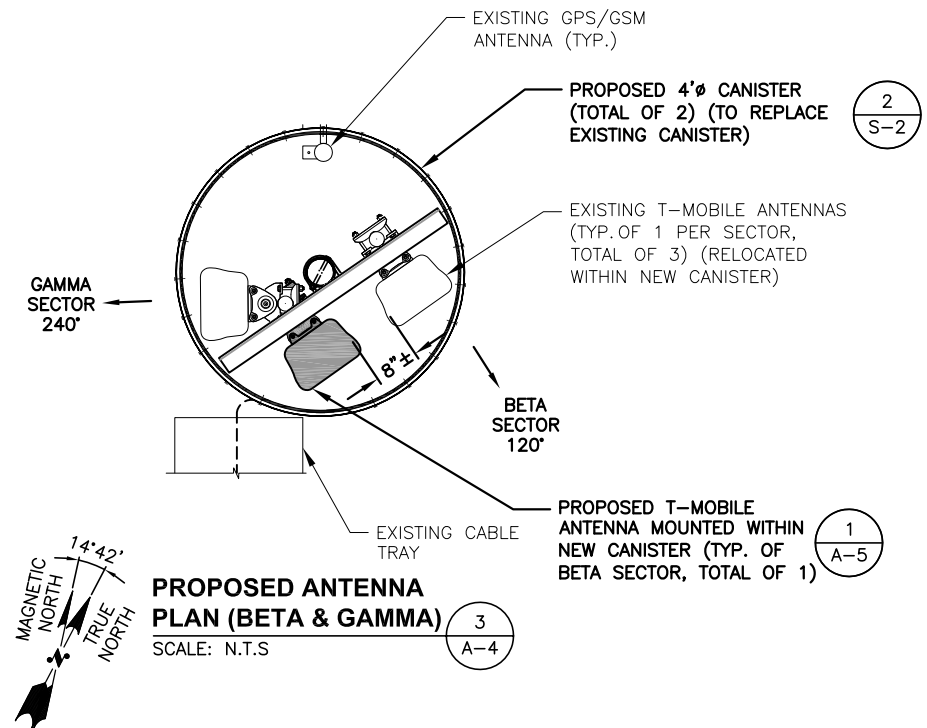
PROPOSED ANTENNA SCHEDULE					
SECTOR	MAKE	MODEL#	SIZE (INCHES)	AZIMUTHS	
ALPHA:	ERICSSON	AIR21 B2A/B4P	56x12x7.9	0°	
	ERICSSON	AIR21 B2A/B12P	78x14.8x9.5	0°	
BETA:	ERICSSON	AIR21 B2A/B4P	56x12x7.9	120°	
	ERICSSON	AIR21 B2A/B12P	78x14.8x9.5	120°	
GAMMA:	ERICSSON	AIR21 B2A/B4P	56x12x7.9	240°	
	ERICSSON	AIR21 B2A/B12P	78x14.8x9.5	240°	



EXISTING ANTENNA PLAN (1)
SCALE: N.T.S.



PROPOSED ANTENNA PLAN (ALPHA & GAMMA) (2)
SCALE: N.T.S.

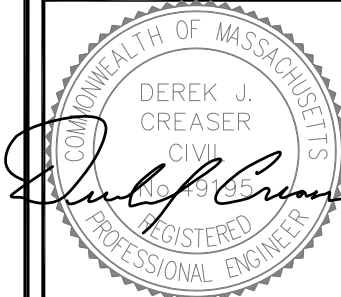


PROPOSED ANTENNA PLAN (BETA & GAMMA) (3)
SCALE: N.T.S.

T-MOBILE NORTHEAST LLC
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smartlink
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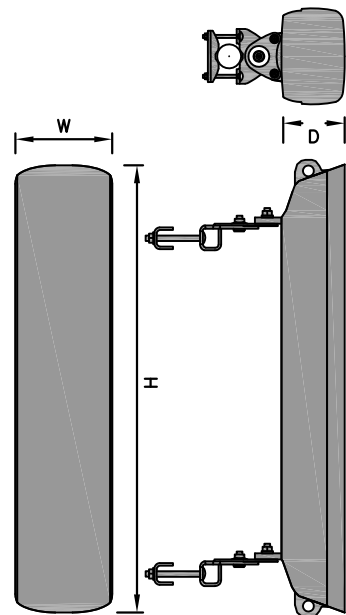
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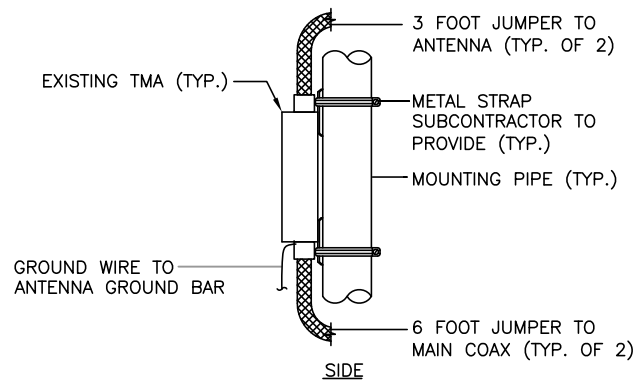
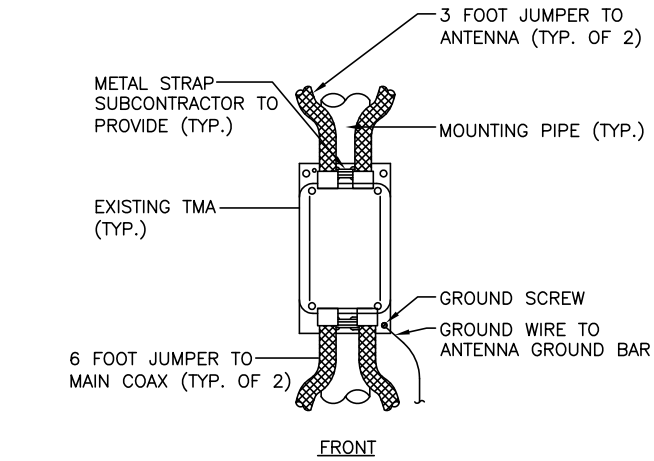
SHEET TITLE
**EXISTING/
PROPOSED ANTENNA
PLANS**

SHEET NUMBER
A-4



L700 ANTENNA DIMENSIONS	
MODEL #	AIR21 B4A/B12P-B8P
MANUF.	ERICSSON
HEIGHT	78.0"
WIDTH	14.8"
DEPTH	9.5"
WEIGHT	135.0 LBS

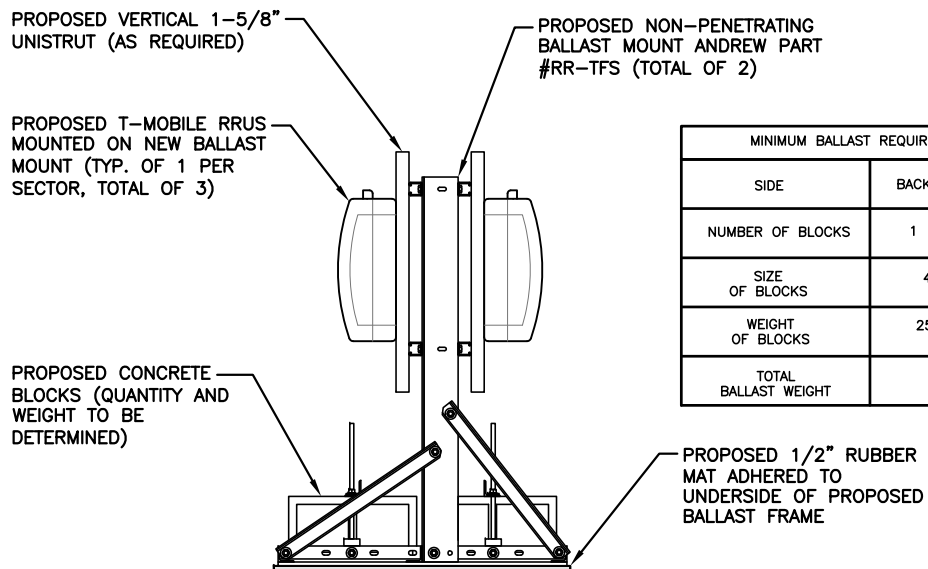
L700 ANTENNA DETAIL 1
SCALE: N.T.S. A-5



TMA MOUNTING DETAIL 2
SCALE: N.T.S. A-5

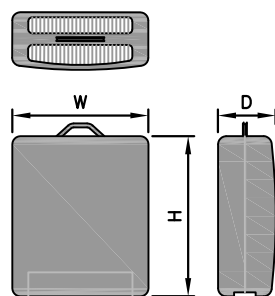
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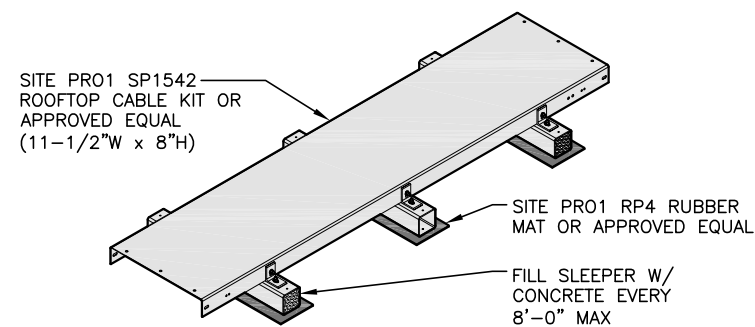
MINIMUM BALLAST REQUIREMENTS		
SIDE	BACK	FRONT
NUMBER OF BLOCKS	1	1
SIZE OF BLOCKS	4"x8"x16" (SOLID)	
WEIGHT OF BLOCKS	25/38 lbs. EACH	
TOTAL BALLAST WEIGHT	307 lbs.	

PROPOSED RRUS MOUNTING DETAIL 3
SCALE: N.T.S. A-5



RRU DIMENSIONS	
MODEL #	RRU11 B12
MANUF.	ERICSSON
HEIGHT	20"
WIDTH	17"
DEPTH	7"
WEIGHT	50.6 LBS

PROPOSED RRU DETAIL 4
SCALE: N.T.S. A-5



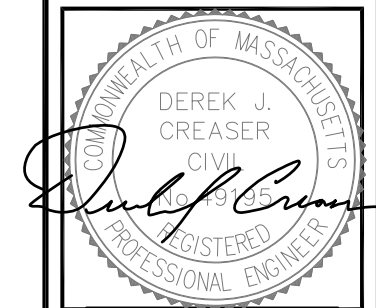
CABLE TRAY DETAIL 5
22x34 SCALE: N.T.S. A-5

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NORFOLK COUNTY

SHEET TITLE
EQUIPMENT DETAILS

SHEET NUMBER
A-5

STRUCTURAL NOTES:

- DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE (IBC 2009), ASCE 7-05, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
- DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
- STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
- FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D.I.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". 9TH EDITION.
- INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
- UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
- EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS. AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-20 AND OR HY-150 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
- EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
- WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
- ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

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

NOTES:

- REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
 - PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
 - PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
 - HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
 - AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.
- NOTES:**
- ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4" A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
 - SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
 - SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
 - VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
 - CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
 - EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINT. ENGINEER OF RECORD TO APPROVE.

SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):

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

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

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

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

REQUIRED INSPECTIONS AND SITE REVIEW DOCUMENT AS A CONDITION OF THE BUILDING PERMIT THE FOLLOWING INSPECTIONS AND SITE REVIEWS IDENTIFIED BY THE BUILDING OFFICIAL ARE REQUIRED FOR WORK PER THE 8TH EDITION OF THE MASSACHUSETTS STATE BUILDING CODE, 780 CMR, SECTION 110 AND CHAPTER 17

REQUIRED SITE REVIEW AND DOCUMENTATION FOR PORTIONS OR PHASES CONSTRUCTION ^{1,6,7} (TO BE PERFORMED BY THE APPROPRIATE REGISTERED DESIGN PROFESSIONAL OR HIS/HER DESIGNEE OR M.G.L.C 112 §81R CONTRACTOR)			
SITE REVIEW AND DOCUMENTATION	X	SITE REVIEW AND DOCUMENTATION	X
SOIL CONDITION/ANALYSIS/REPORT		ENERGY EFFICIENCY REQUIREMENTS	
FOOTING AND FOUNDATION (INCLUDING REINFORCEMENT AND FOUNDATION ATTACHMENT)		FIRE ALARM INSTALLATION ²	
CONCRETE FLOOR AND UNDER FLOOR		FIRE SUPPRESSION INSTALLATION ³	
LOWEST FLOOR FLOOD ELEVATION		FIELD REPORTS ⁵	
STRUCTURAL FRAME - WALL/FLOOR/ROOF	X	CARBON MONOXIDE DETECTION SYSTEM ⁴	
LATH AND PLASTER/GYPSUM		SEISMIC REINFORCEMENT	
FIRE RESISTANT WALL/PARTITIONS FRAMING		SMOKE CONTROL SYSTEMS	
FIRE RESISTANT WALL/PARTITIONS FINISH ATTACHMENTS		SMOKE AND HEAT VENTS	
ABOVE CEILING INSPECTION		ACCESSIBILITY (521 CMR)	
FIRE BLOCKING/STOPPING SYSTEM		OTHER:	
EMERGENCY LIGHTING/EXIT SIGNAGE			
MEANS OF EGRESS COMPONENTS		SPECIAL INSPECTIONS (SECTION 1704): -CHANNEL REINFORCEMENT -STEEL STUB-UP INSTALLATION SUPPORTING PLATFORM. (ROOF)	X
ROOFING, COPING/SYSTEM			
VENTING SYSTEMS (KITCHEN, CHEMICAL, FUME)			
MECHANICAL SYSTEMS			

- IT IS THE RESPONSIBILITY OF THE PERMIT APPLICANT TO NOTIFY THE BUILDING OFFICIAL OF REQUIRED INSPECTIONS (X). INSPECTION OF 780 CMR FIRE PROTECTION SYSTEMS MAY BE WITNESSED BY THE FIRE OFFICIAL AND INSTALLATION PERMITS ARE REQUIRED FROM THE FIRE DEPARTMENT PER 527 CMR.
- INCLUDE NFPA 72 TEST AND ACCEPTANCE DOCUMENTATION
- INCLUDE APPLICABLE NFPA 13, 13R, 13D, 14, 15, 17, 20, 241, ETC. - TEST AND ACCEPTANCE DOCUMENTATION
- INCLUDE NFPA 720 RECORD OF COMPLETION AND INSPECTION AND TEST FORM
- INCLUDE FIELD REPORTS AND RELATED DOCUMENTATION
- WORK SHALL NOT PROCEED, OR BE CONCEALED, UNTIL THE REQUIRED INSPECTION HAS BEEN APPROVED BY THE BUILDING OFFICIAL, AND NOTHING WITHIN CONSTRUCTION CONTROL SHALL HAVE THE EFFECT OF WAIVING OR LIMITING THE BUILDING OFFICIAL'S AUTHORITY TO ENFORCE THIS CODE WITH RESPECT TO EXAMINATION OF THE CONTRACT DOCUMENTS, INCLUDING PLANS, COMPUTATIONS AND SPECIFICATIONS, AND FIELD INSPECTIONS.
- ROUGH AND/OR FINISH INSPECTIONS OF ELECTRICAL, PLUMBING, OR SHEET METAL SHALL BE INSPECTED PRIOR TO ROUGH AND FINISH INSPECTIONS BY THE BUILDING OFFICIAL.

MASSACHUSETTS AMENDMENTS TO THE IBC (REFERENCE 780 CMR):

107.6 CONSTRUCTION CONTROL:

107.6.1 GENERAL. THIS SECTION SHALL APPLY TO THE CONSTRUCTION CONTROLS, PROFESSIONAL SERVICES AND CONTRACTOR SERVICES REQUIRED FOR BUILDINGS AND STRUCTURES NEEDING REGISTERED DESIGN PROFESSIONAL SERVICES. THE FOLLOWING STRUCTURES ARE EXEMPT FROM THE REQUIREMENTS OF THIS SECTION: ANY BUILDING CONTAINING LESS THAN 35,000 CUBIC FEET OF ENCLOSED SPACE, MEASURED TO THE EXTERIOR SURFACES OF WALLS AND ROOFS AND TO THE TOP OF A GROUND SUPPORTED FLOOR, OR IN THE CASE OF A CRAWL SPACE, TO THE BOTTOM SURFACE OF THE CRAWL SPACE. IN THE CASE OF BASEMENT FLOORS OR LEVELS, THE CALCULATION OF ENCLOSED SPACE SHALL INCLUDE SUCH SPACES. FOR ADDITIONS TO EXISTING BUILDINGS, THE VOLUME OF ENCLOSED SPACE SHALL INCLUDE THE ENTIRE EXISTING BUILDING AND ALL PROPOSED ADDITIONS.

- ANY ONE OR TWO FAMILY DWELLING OR ANY ACCESSORY BUILDING THERETO.
- ANY BUILDING USED EXCLUSIVELY FOR AGRICULTURAL PURPOSES. SEE APPENDIX C FOR OCCUPANCY AND OTHER LIMITATIONS.
- RETAINING WALLS LESS THAN TEN FEET IN HEIGHT AT ALL POINTS ALONG THE WALL AS MEASURED FROM THE BASE OF THE FOOTING TO THE TOP OF THE WALL.

NOTWITHSTANDING THESE EXEMPTIONS, PROFESSIONAL ENGINEERING SERVICES SHALL BE REQUIRED FOR ACTIVITIES WHICH ARE DEEMED TO CONSTITUTE THE PRACTICE OF ENGINEERING AS DEFINED IN M.G.L. C. 112, § 81D, EXCEPT AS PROVIDED IN M.G.L. C. 54A AND ANY LEGALLY REQUIRED PROFESSION OR AS PROVIDED IN M.G.L. C. 112, § 81R. WHERE WORK IS PERFORMED BY LICENSED TRADES PEOPLE PURSUANT TO M.G.L. C. 112, § 81R, PLANS AND SPECIFICATIONS PREPARED TO DOCUMENT THAT WORK SHALL NOT BE REQUIRED TO BEAR THE SEAL OR SIGNATURE OF A REGISTERED DESIGN PROFESSIONAL.

107.6.1.1 SPECIALIZED STRUCTURES. TELECOMMUNICATION TOWERS, WIND TURBINE TOWERS, AND SIMILAR STRUCTURES ARE ENGINEERED STRUCTURES AND SHALL BE SUBJECT TO THE REQUIREMENTS OF SECTION 107.6.

107.6.2.2 CONSTRUCTION. THE REGISTERED DESIGN PROFESSIONALS WHO ARE RESPONSIBLE FOR THE DESIGN, PLANS, CALCULATIONS, AND SPECIFICATIONS, THEIR DESIGNEE OR THE REGISTERED DESIGN PROFESSIONALS WHO HAVE BEEN RETAINED FOR CONSTRUCTION PHASE SERVICES, SHALL PERFORM THE FOLLOWING TASKS:

- REVIEW, FOR CONFORMANCE TO THIS CODE AND THE DESIGN CONCEPT, SHOP DRAWINGS, SAMPLES AND OTHER SUBMITTALS BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS.
- PERFORM THE DUTIES FOR REGISTERED DESIGN PROFESSIONALS IN CHAPTER 17.
- BE PRESENT AT INTERVALS APPROPRIATE TO THE STAGE OF CONSTRUCTION TO BECOME GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF THE WORK AND TO DETERMINE IF THE WORK IS BEING PERFORMED IN A MANNER CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND THIS CODE.

THE PERMIT APPLICATION SHALL NOT BE DEEMED COMPLETED UNTIL ALL OF THE CONSTRUCTION DOCUMENTS REQUIRED BY THIS CODE HAVE BEEN SUBMITTED. DOCUMENTATION INDICATING THAT WORK COMPLIES WITH THE PLANS AND SPECIFICATIONS SHALL BE PROVIDED AT THE COMPLETION OF EACH PHASE WHEN REQUIRED BY THE BUILDING OFFICIAL.

107.6.3 CONSTRUCTION CONTRACTOR SERVICES. THE ACTUAL CONSTRUCTION OF THE WORK SHALL BE THE RESPONSIBILITY OF THE GENERAL CONTRACTOR AS IDENTIFIED ON THE APPROVED BUILDING PERMIT AND SHALL INVOLVE THE FOLLOWING:

- EXECUTION OF ALL WORK IN ACCORDANCE WITH THE APPROVED CONSTRUCTION DOCUMENTS.
- EXECUTION AND CONTROL OF ALL METHODS OF CONSTRUCTION IN A SAFE AND SATISFACTORY MANNER IN ACCORDANCE WITH ALL APPLICABLE LOCAL, STATE, AND FEDERAL STATUTES AND REGULATIONS.
- UPON COMPLETION OF THE CONSTRUCTION, CERTIFICATION IN WRITING TO THE REGISTERED DESIGN PROFESSIONAL IN RESPONSIBLE CHARGE THAT, TO THE BEST OF THE CONTRACTOR'S KNOWLEDGE AND BELIEF, CONSTRUCTION HAS BEEN DONE IN SUBSTANTIAL ACCORD WITH SECTION 107.6 AND WITH ALL PERTINENT DEVIATIONS SPECIFICALLY NOTED. THE BUILDING OFFICIAL MAY REQUIRE A COPY OF THIS CERTIFICATION.

107.6.4 ON SITE PROJECT REPRESENTATION. WHEN APPLICATIONS FOR UNUSUAL DESIGNS OR MAGNITUDE OF CONSTRUCTION ARE FILED, OR WHERE REFERENCE STANDARDS REQUIRE SPECIAL ARCHITECTURAL OR ENGINEERING INSPECTIONS, THE BUILDING OFFICIAL MAY REQUIRE FULLTIME PROJECT REPRESENTATION BY A REGISTERED ARCHITECT OR PROFESSIONAL ENGINEER IN ADDITION TO THAT PROVIDED IN SECTION 107.6. THE PROJECT REPRESENTATIVE SHALL KEEP DAILY RECORDS AND SUBMIT REPORTS AS MAY BE REQUIRED BY THE BUILDING OFFICIAL. UPON COMPLETION OF THE WORK, THE REGISTERED DESIGN PROFESSIONAL SHALL FILE A FINAL REPORT INDICATING THAT THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE APPROVED PLANS AND THIS CODE. THIS ON SITE PROJECT REPRESENTATION REQUIREMENT SHALL BE DETERMINED PRIOR TO THE ISSUANCE OF THE BUILDING PERMIT AND SHALL BE A REQUIREMENT FOR THE PERMIT ISSUANCE. REFUSAL BY THE APPLICANT TO PROVIDE SUCH SERVICE SHALL RESULT IN THE DENIAL OF THE PERMIT. ALL FEES AND COSTS RELATED TO THE PERFORMANCE OF ONSITE PROJECT REPRESENTATION SHALL BE BORNE BY THE OWNER.

T-MOBILE NORTHEAST LLC

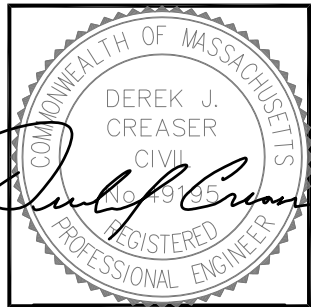
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CHECKED BY: AT

APPROVED BY: DPH

SUBMITTALS

REV.	DATE	DESCRIPTION	BY
3	03/21/16	ISSUED FOR CONSTRUCTION	EB
2	03/15/16	ISSUED FOR CONSTRUCTION	RB
1	01/27/16	ISSUED FOR CONSTRUCTION	EB
0	11/11/15	ISSUED FOR REVIEW	OM

SITE NUMBER:
4BS0568B

SITE NAME:
BS568/TRM STORAGE WESTWOOD

SITE ADDRESS:
20 EAST STREET
WESTWOOD, MA 02090
NORFOLK COUNTY

SHEET TITLE
STRUCTURAL NOTES

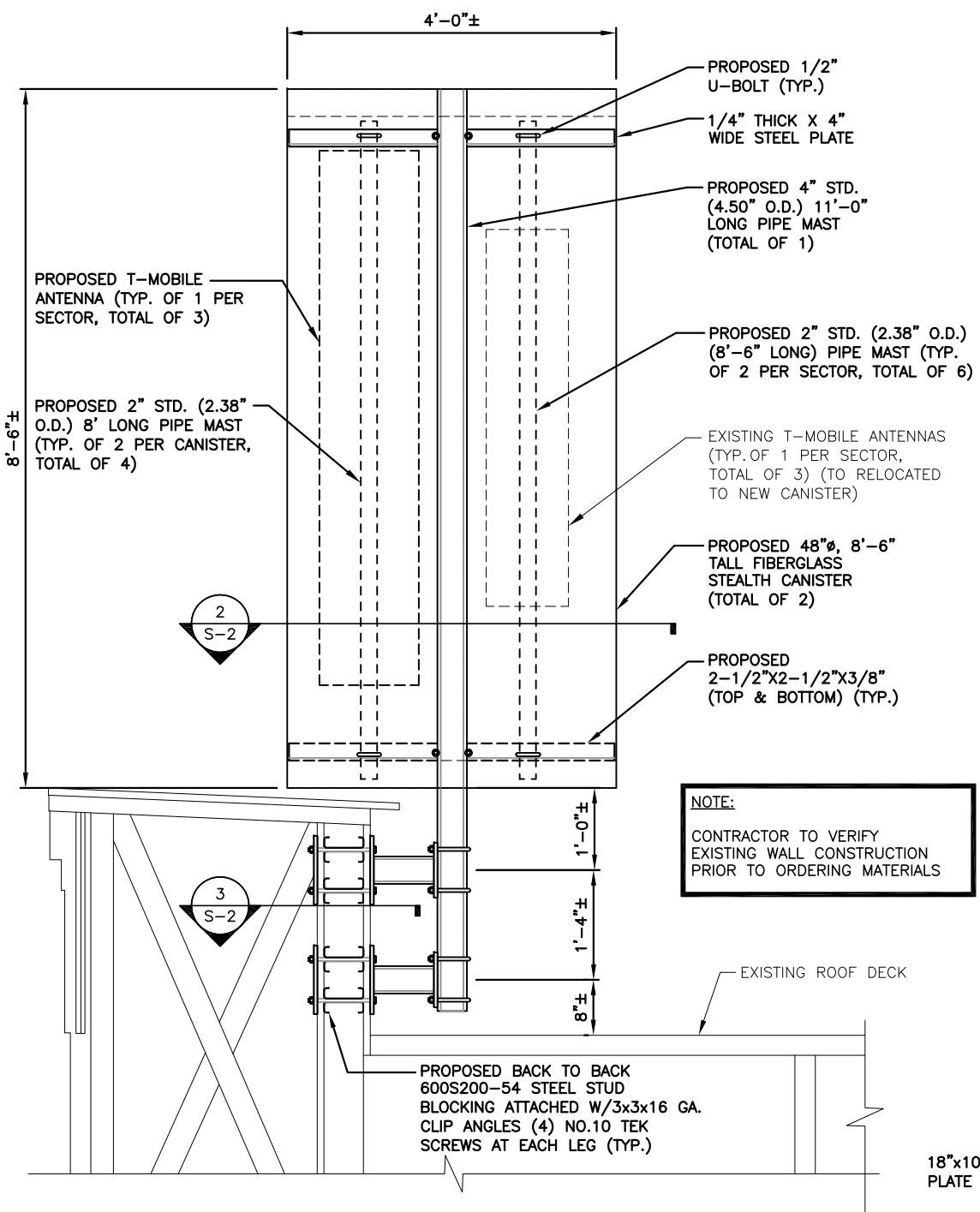
SHEET NUMBER
S-1

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: DECEMBER 18, 2015, FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

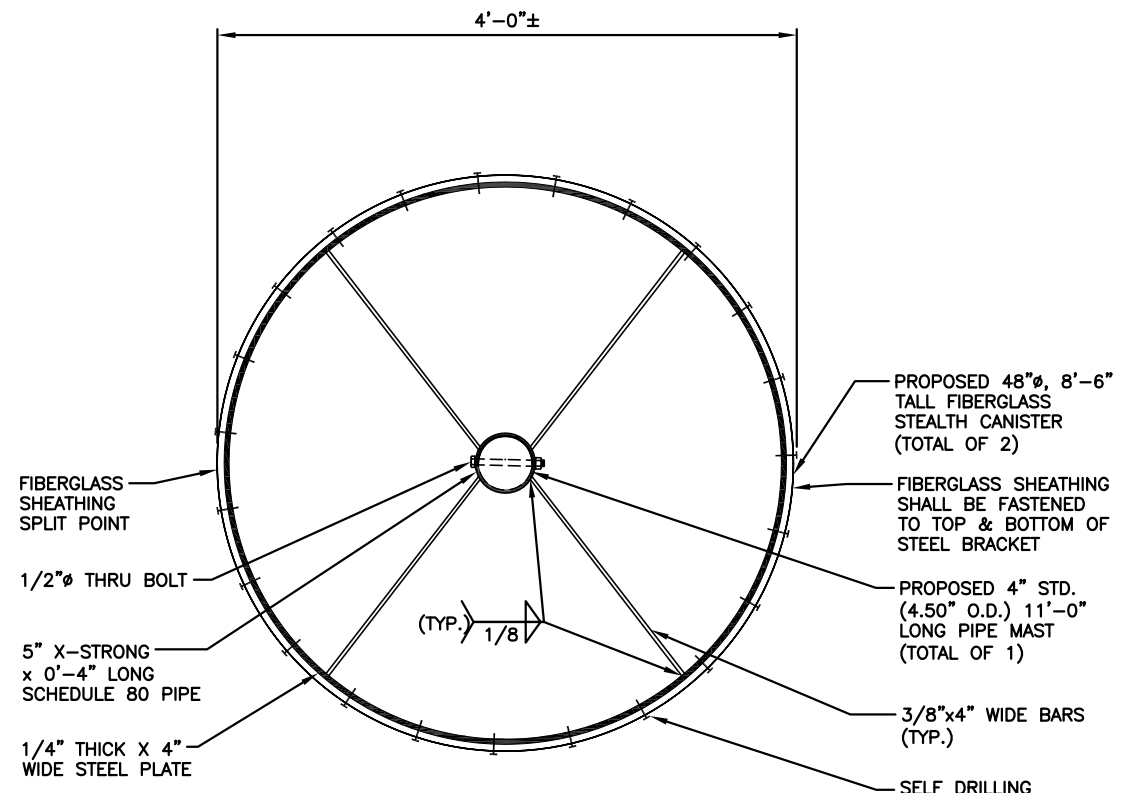
NOTE:
ENGINEER REVIEWED STEEL SHOP DRAWINGS REQUIRED PRIOR TO FABRICATION.

NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

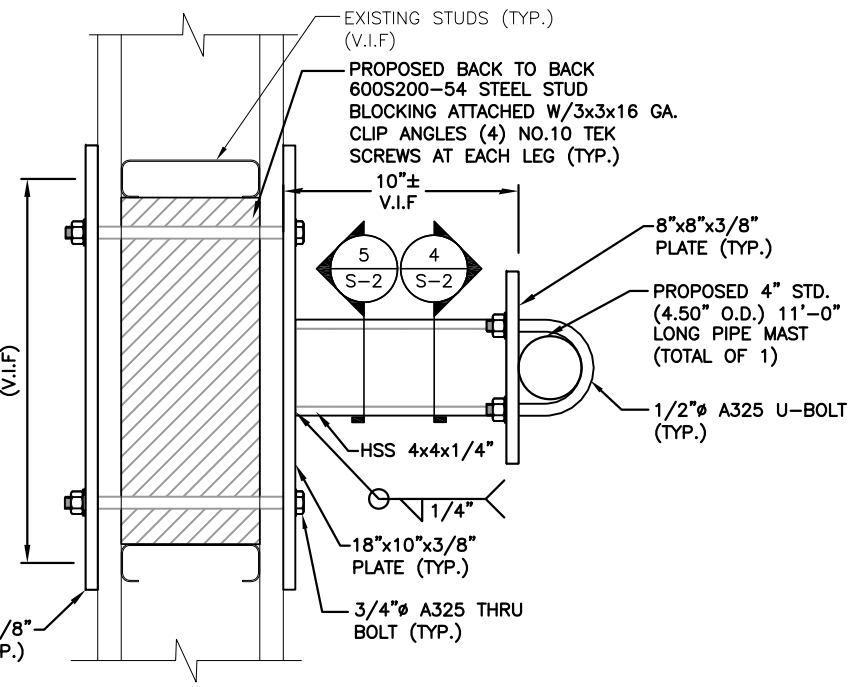
NOTE:
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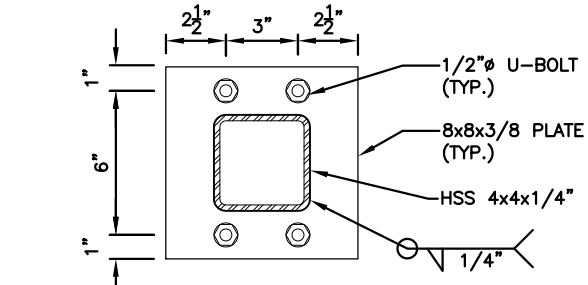
48" FIBERGLASS CANNISTER ELEVATION (1)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"



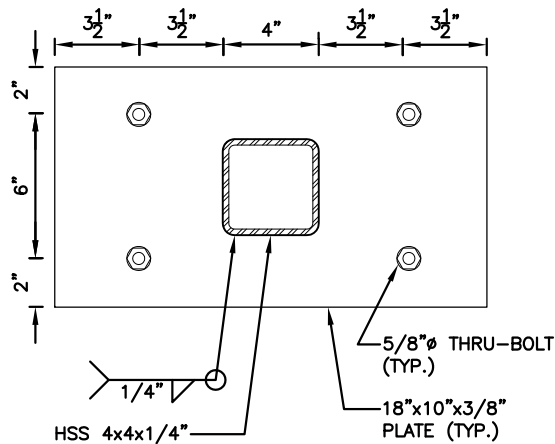
48" FIBERGLASS CANNISTER ELEVATION (2)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"



ANTENNA MOUNTING PLAN (3)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"



CONNECTION DETAIL (4)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

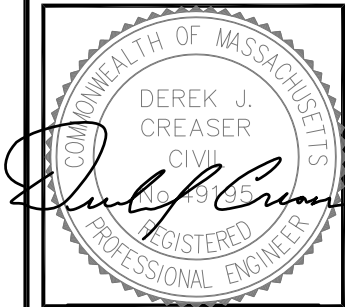


CONNECTION DETAIL (5)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

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CHECKED BY: AT

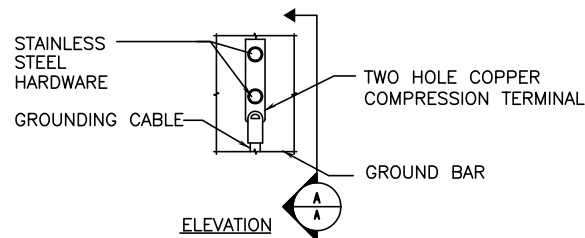
APPROVED BY: DPH

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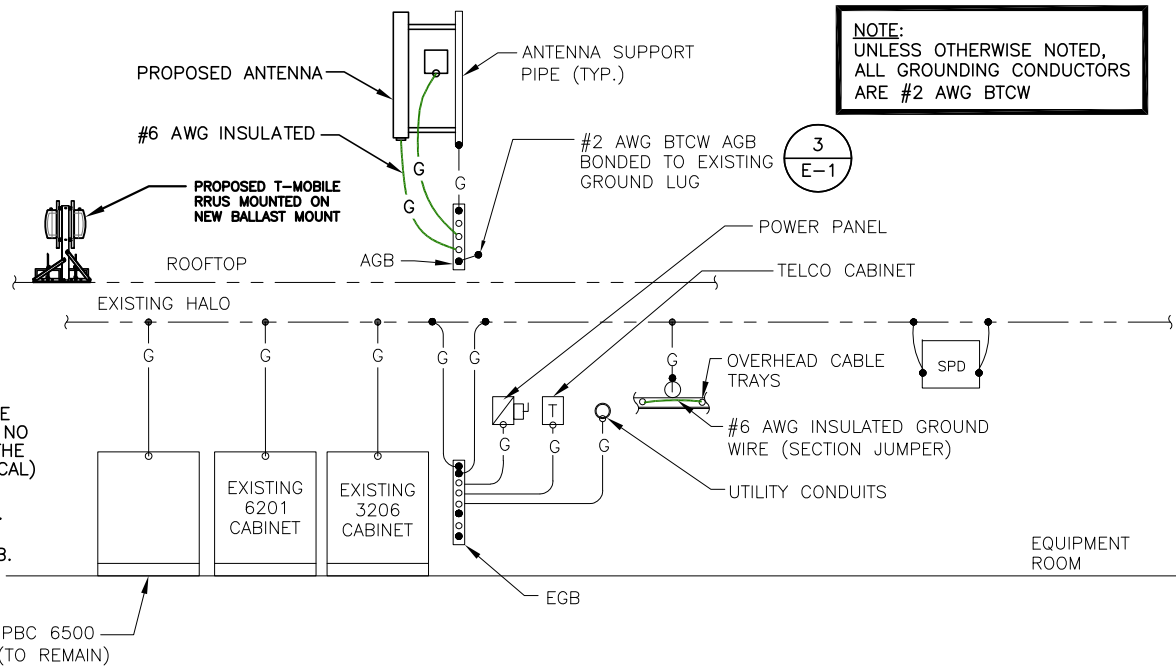
SHEET NUMBER
S-2



- NOTE:
1. "DOUBLING UP" OR "STACKING" OF CONNECTION IS NOT PERMITTED.
 2. OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.
 3. CADWELD DOWNLEADS FROM UPPER AGB/EGB, LOWER EGB, AND MGB.

TYPICAL GROUND BAR CONNECTION DETAIL
SCALE: N.T.S.

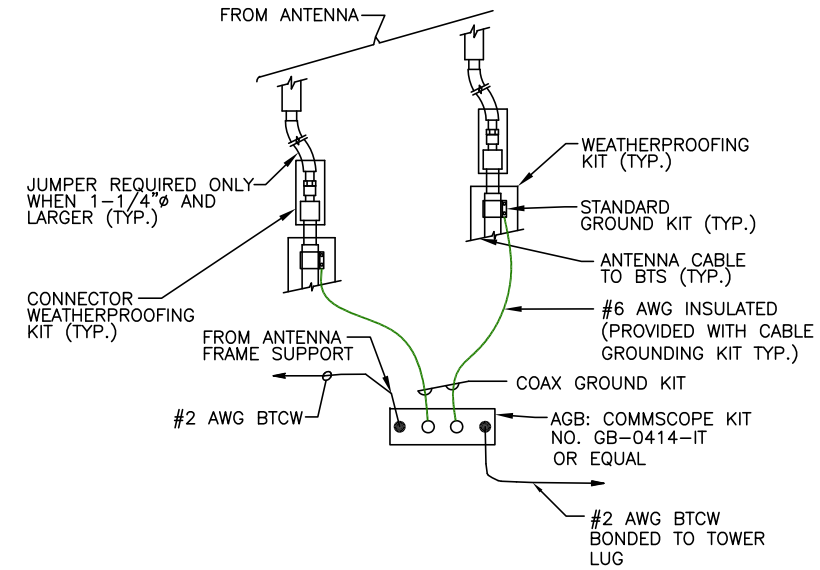
1
E-1



NOTE:
UNLESS OTHERWISE NOTED,
ALL GROUNDING CONDUCTORS
ARE #2 AWG BTCW

TYPICAL GROUNDING RISER DIAGRAM
SCALE: N.T.S.

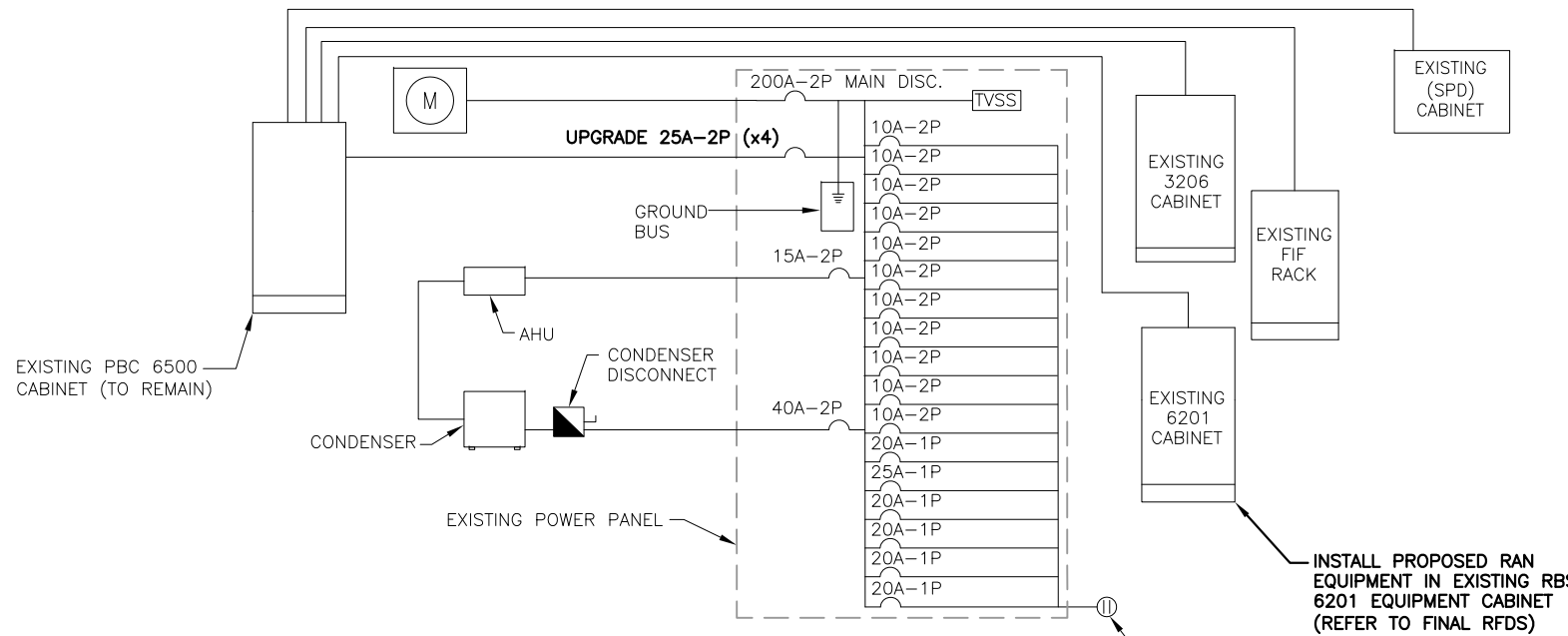
2
E-1



NOTE:
INSTALL CABLE GROUND KIT ABOVE HORIZONTAL BEND
AND ALWAYS DIRECT GROUND WIRE DOWN TO AGB/EGB.

TOWER TOP CABLE GROUNDING DETAIL
SCALE: N.T.S.

3
E-1



ONE LINE POWER DIAGRAM
SCALE: N.T.S.

4
E-1

ELECTRICAL LEGEND	
A	AMPERE
V	VOLT
KWH	KILOWATT - HOUR
C	CONDUIT
GRC	GALVANIZED RIGID CONDUIT
BTCW	BARE TINNED (SOLID) COPPER WIRE (#2 AWG, UNLESS NOTED OTHERWISE)
G	GROUND
⊥	GROUND
MGB	MASTER GROUND BAR
○	MECHANICAL CONNECTION
⊙	CADWELD CONNECTION
○	EQUIPMENT GROUND BAR/ANTENNA GROUND BAR
—	GROUND COPPER WIRE, SIZE AS NOTED
—	EXPOSED WIRING
—	INSULATED GROUNDING CONDUCTOR (#6 AWG STRANDED, UNLESS NOTED OTHERWISE)
⊙	5/8" x 8' COPPER CLAD STAINLESS STEEL GROUND ROD
⊙	EXOTHERMIC (CAD WELD) OR MECHANICAL (COMPRESSION TYPE) CONNECTION
PPC	POWER PROTECTION CABINET
⊗	OMNI-DIRECTIONAL ELECTRONIC MARKER SYSTEM (EMS) BALL

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.
2. ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED 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 IS 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) AND 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 CABLE BETWEEN ELECTRICAL ROOM AND PROPOSED CELL SITE POWER PEDESTAL AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
9. RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND PROPOSED CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON DRAWING A-1. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
10. ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R CANISTER.
11. GROUNDING SHALL COMPLY WITH NEC ART. 250.
12. GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURERS COAX CABLE GROUNDING KITS SUPPLIED BY PROJECT OWNER.
13. USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR ABOVE GRADE GROUNDING (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDING AS INDICATED ON THE DRAWING.
14. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD. DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
15. ROUTE GROUNDING CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NEVER BE BENT AT RIGHT ANGLE. ALWAYS MAKE AT LEAST 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
16. CONNECTIONS TO MGB SHALL BE ARRANGED IN THREE MAIN GROUPS: SURGE PRODUCERS (COAXIAL CABLE GROUND KITS, TELCO AND POWER PANEL GROUND); (GROUNDING ELECTRODE RING OR BUILDING STEEL); NON-SURGING OBJECTS (EGB GROUND IN BTS UNIT).
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 CONNECTIONS.
19. BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
20. BOND ANTENNA EGB'S AND MGB TO WATER MAIN.
21. TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION.
22. BOND ANY METAL OBJECTS WITHIN 7 FEET OF PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
23. VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.

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COMMONWEALTH OF MASSACHUSETTS
DEREK J. CREASER
CIVIL
No. 97195
REGISTERED
PROFESSIONAL ENGINEER

CHECKED BY: AT

APPROVED BY: DPH

SUBMITTALS			
REV.	DATE	DESCRIPTION	BY
3	03/21/16	ISSUED FOR CONSTRUCTION	EB
2	03/15/16	ISSUED FOR CONSTRUCTION	RB
1	01/27/16	ISSUED FOR CONSTRUCTION	EB
0	11/11/15	ISSUED FOR REVIEW	OM

SITE NUMBER:
4BS0568B
SITE NAME:
BS568/TRM STORAGE WESTWOOD
SITE ADDRESS:
20 EAST STREET
WESTWOOD, MA 02090
NORFOLK COUNTY

SHEET TITLE
ONE-LINE DIAGRAM AND GROUNDING DETAILS

SHEET NUMBER
E-1

Photographic Simulation Package

Proposed Upgrade to Existing Wireless Telecommunications Facility:

4BS0568B TRM Storage Westwood
20 East Street
Westwood MA 02090

- proposed changes to existing Rooftop Mount Antenna Structure
- documentation photographs taken 3/17/16

Simulation package prepared by:

Virtual Site Simulations, LLC
9 walts way
Narragansett, Rhode Island 02882

Photo Simulations are for demonstration purposes only. It should not be used in any other fashion or with any other intent. The accuracy of the resulting data is not guaranteed and is not for redistribution





Proposed Upgrade to Existing Wireless Telecommunications Facility:
4BS0568B TRM Storage Westwood
20 East Street
Westwood MA 02090

- Legend:
- ☆ Facility Location
 - ⊗ Photo Documentation location
 - 1000 Ft Radius

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Existing



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
1	Exit 14	42.22356 -71.17293	+/- 0.20 Miles	East	92.8	Year Round

Site: 4BS0568B TRM Storage Westwood

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Simulation



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
1	Exit 14	42.22356 -71.17293	+/- 0.20 Miles	East	92.8	Year Round

Site: 4BS0568B TRM Storage Westwood

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Existing



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
2	Rt 95/128 on-ramp	42.2225 -71.16970	+/- 0.09 Miles	South East	22.64	Year Round

Site: 4BS0568B TRM Storage Westwood

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Simulation



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
2	Rt 95/128 on-ramp	42.22225 -71.16970	+/- 0.09 Miles	South East	22.64	Year Round

Site: 4BS0568B TRM Storage Westwood

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Existing



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
3	Parking Lot	42.22294 -71.16801	+/- 0.06 Miles	South West	300.07	Year Round

Site: 4BS0568B TRM Storage Westwood

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Simulation



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
3	Parking Lot	42.22294 -71.16801	+/- 0.06 Miles	South West	300.07	Year Round

Site: 4BS0568B TRM Storage Westwood

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Existing

Note: Proposed changes not visible from this location



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
4	East Street 1	42.22395 -71.16750	+/- 0.09 Miles	North West	243.42	Year Round

Site: 4BS0568B TRM Storage Westwood

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Existing



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
5	East Street 2	42.22410 -71.16935	+/- 0.05 Miles	North	160.59	Year Round

Site: 4BS0568B TRM Storage Westwood

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Simulation



Photo #	Location	Gps Coordinates	Distance to site	Orientation	Bearing to site	Visibility
5	East Street 2	42.22410 -71.16935	+/- 0.05 Miles	North	160.59	Year Round

Site: 4BS0568B TRM Storage Westwood

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