

BZA APPLICATION FORM

GENERAL INFORMATION

The undersigned hereby petitions the Board of Zoning Appeal for the following:

Special Permit: _____ Variance: _____ Appeal: _____

and relief pursuant to Section 6409 of the Middle Class Tax Relief Act

PETITIONER: T-Mobile Northeast LLC

PETITIONER'S ADDRESS: Prince Lobel Tye, LLP, Attn. Ricardo M. Sousa, Esq., 100 Cambridge Street, Suite 2200, Boston, MA

LOCATION OF PROPERTY: 1 Brattle Square

TYPE OF OCCUPANCY: Telecommunications ZONING DISTRICT: Business B

REASON FOR PETITION:

Additions New Structure
 Change in Use/Occupancy Parking
 Conversion to Addi'l Dwelling Unit's Sign
 Dormer Subdivision
 Other: Section 6409(a) of the Spectrum Act relief for Special Permit for the collocation of a Wireless Facility

DESCRIPTION OF PETITIONER'S PROPOSAL:

The Applicant proposes to modify the existing wireless communications facility by replacing three (3) existing panel antennas with three (3) new L700 panel antennas to be installed consistent with the existing antennas on the facade of the penthouse on the roof of the Building and painted to match. The Applicant's proposal complies with Section 6409 of the Spectrum Act as the collocation of antennas is not a substantial change to the existing base station.

Moreover, the Applicants proposal complies with Section 4.32 and 10.4 of the Cambridge Zoning Code.

SECTIONS OF ZONING ORDINANCE CITED:

Article 4.00 Section 4.32 (g)(1) Utilities - Telephone Exchange

Article 10.00 Section 10.4 - Special Permit

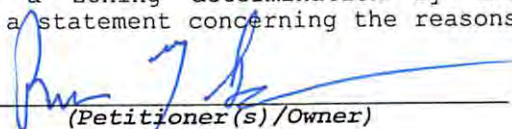
Article 6409 Section Middle Class Tax Relief and Job Creation Act

Applicants for a Variance must complete Pages 1-5

Applicants for a Special Permit must complete Pages 1-4 and 6

Applicants for an Appeal to the BZA of a Zoning determination by the Inspectional Services Department must attach a statement concerning the reasons for the appeal

Original Signature(s):



(Petitioner(s)/Owner)

Ricardo M. Sousa, Esq.

(Print Name)

Address:

100 Cambridge Street, Suite 2200

Boston, MA 02114

Tel. No.:

617-456-8123

E-Mail Address:

rsousa@princelobel.com

Date: March 17, 2016

BZA APPLICATION FORM - OWNERSHIP INFORMATION

To be completed by OWNER, signed before a notary and returned to The Secretary of the Board of Zoning Appeals.

I/We Redmont - One Brattle Square I, LLC
(OWNER)

Address: One Brattle Square, Cambridge MA

State that I/We own the property located at One Brattle Square, which is the subject of this zoning application.

The record title of this property is in the name of Redmont - One Brattle Square I, LLC

*Pursuant to a deed of duly recorded in the date _____, Middlesex South County Registry of Deeds at Book _____, Page _____; or Middlesex Registry District of Land Court, Certificate No. _____ Book _____ Page _____.

Paul Newman General Manager
SIGNATURE BY LAND OWNER OR AUTHORIZED TRUSTEE, OFFICER OR AGENT*

*Written evidence of Agent's standing to represent petitioner may be requested.

Commonwealth of Massachusetts, County of Norfolk

The above-name Paul Newman personally appeared before me, this 16 of March, 2016, and made oath that the above statement is true.

[Signature] Notary

My commission expires 12-14-18 (Notary Seal).



- If ownership is not shown in recorded deed, e.g. if by court order, recent deed, or inheritance, please include documentation.



March 17, 2016

City of Cambridge
Board of Zoning Appeals
831 Massachusetts Avenue
Cambridge, MA 02139

Re: Eligible Facilities Request pursuant to Section 6409 of the Spectrum Act and an Application for Special Permit, in the alternative

Property Address: 1 Brattle Square, Cambridge, MA 02138
Assessor's Map 34, Lot 138 (the "Property")

Applicant: T-Mobile Northeast LLC (the "Applicant")

Dear Honorable Members of the Board of Zoning Appeals:

This firm represents T-Mobile Northeast LLC ("T-Mobile") (hereinafter, the "Applicant") in connection with an application for a special permit from the City of Cambridge Board of Zoning Appeals (the "Board"), to modify an existing wireless communications facility on the Property. The Property is located in the Business B zoning district. To the extent that the Board determines that the requirements of Article 4 Section 4.32G.1 of the City of Cambridge Zoning Ordinance (the "Ordinance") apply, the use of the Property for a wireless telecommunications facility is permitted by special permit from the Board¹. The Applicant's proposal satisfies the requirements for the grant of a special permit pursuant to Section 10-43 of the Ordinance.

The Applicant's Proposed Facility (as defined herein) is subject to Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012, more commonly known as the "Spectrum Act" (47 U.S.C. § 1455). As such, we respectfully submit that in the event that the Board determines that the application does not comply with the Spectrum Act, the Applicant hereby states that the special permit requirements set forth in the Ordinance are hereby met by the Applicant, and that relief must be granted to the Applicant. The compliance with the Spectrum Act is shown on the Eligible Facilities Request permit application form attached hereto and incorporated herein by reference (the "EFR").

¹ Pursuant to Section 6409(a) of the Spectrum Act, 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." As such, the Applicant submits that they need not apply for a special permit from the board. To the extent that this Board determines that the Applicants' proposed wireless facility must comply with special permit requirements set forth in Section 10-43 of the Ordinance, the Applicants submit that they have complied with said requirements, without waiving the argument that such relief is not required.

The Applicant seeks to modify its existing wireless communications facility by replacing three (3) existing panel antennas with three (3) new panel antennas, adjacent to the remaining T-Mobile antennas, and three (3) Remote Radio Head Units (“RRH”), together with supporting equipment (the “Proposed Facility”). All of the proposed replacement antennas will be located in the same location as the antennas they will be replacing and painted to match the existing façade of the penthouse on the roof of building located at the Property (the “Building”), adjacent to three (3) existing T-Mobile antennas. Resulting in no net increase to the total number of antennas as previously approved under the Original Decision, as defined herein. The Applicant’s facilities are shown on the Plans attached hereto and incorporated herein by reference (the “Plans”)

I. Background

The Applicant is licensed by the Federal Communications Commission (the “FCC”) to construct and operate a wireless telecommunications network in various markets throughout the country, including the Commonwealth of Massachusetts and in particular in the City of Cambridge. A copy of the Applicant’s FCC license is attached hereto. The Applicant is in the process of designing and constructing a telecommunications system to serve all of the Commonwealth of Massachusetts. One of the key design objectives of its systems is to provide seamless coverage. Such a system requires a grid of radio transmitting and receiving links located approximately .5 to 2 miles apart, depending on the location of existing and proposed installations in the surrounding area, the existing use of the network and the existing topography. The radio transmitting and receiving facilities operate on a line-of-sight basis, requiring a clear path from the facility to the user on the ground. This dynamic requires the antennas to be located in a location where the signal is not obstructed or degraded by other buildings or by topographical features such as hills.

II. Project Description

As noted above, the Applicant proposes to modify its existing wireless facility currently operating on the rooftop of the Building by replacing three (3) existing panel antennas with three (3) new T-Mobile L700 panel antennas, together with three (3) RRH’s and supporting equipment. All new antennas will be installed to be consistent with the original zoning decision for this facility (the “Original Decision”). Furthermore, as the Applicant is proposing to replace existing antennas with the new antennas there will be no increase in the total number of antennas on the roof of the Building. Consequently, the visual change to the Applicant’s existing facility will be de minimus.

After installation, the Proposed Facility will be unmanned and will only require twice a month maintenance visits per carrier. The only utilities required to operate this Proposed Facility are standard 120-volt electrical power as well as telephone service. These are presently in place at the Property. The traffic generated by the Proposed Facility will be approximately two vehicle trips per month by maintenance personnel who will inspect the Proposed Facility to ensure it remains in good working order. The Proposed Facility will comply with all applicable local, state and federal safety codes.

III. Legal Arguments

A. The Applicant complies with the Wireless Communications provisions set forth in Section 4.32(g), footnote 49 of the Ordinance

Pursuant to Section 4.32(g) of the Ordinance, the Applicant's proposed use for a wireless communications facility in the Business B zoning district is permitted by special permit. The Applicant's Proposed Facility further complies with the provisions set forth in Section 4.32(g), footnote 49 of the Ordinance:

- 1. The Board of Zoning Appeal shall consider the scope of or limitations imposed by any license secured from any state or federal agency having jurisdiction over such matters.**

Enclosed herewith is the Applicant's FCC license. The Applicant meets all requirements imposed by governmental authorities having jurisdiction over the Proposed Facility, including by the FCC, to provide wireless communications in this market area.

The intent of the U.S. Congress, when it enacted the Telecommunications Act of 1996 ("TCA") was to institute a framework to promote competition and innovation within the telecommunications industry. Under its license from the FCC, T-Mobile is obligated to provide a reliable "product" (i.e. wireless communications service) to the population of the City of Cambridge. Likewise, consumer expectations for increasingly robust and reliable service requires competing service providers (including T-Mobile) to identify and remedy existing gaps in reliable network coverage, or gaps that result from increasing subscriber voice and data traffic beyond the limits of existing network infrastructure. A carrier's failure to remedy network gaps in a timely fashion can result in a significant loss of subscribers to competing telecommunications carriers. As demonstrated in the Affidavit of Radio Frequency Expert provided by the Applicant and attached hereto, the Proposed Facility and corresponding relief requested are necessary to remedy a gap in reliable service coverage within T-Mobile's existing network infrastructure.

T-Mobile investigated alternative sites in and around the defined geographic area within which its engineers determined that a facility must be located to fill the gap in service coverage and to function effectively within its network of existing and planned facilities. This is an existing location that is being upgraded with new technology to provide the necessary coverage to the subject area of the City of Cambridge. Therefore, the Proposed Facility in the Business B zoning district is necessary to close the coverage gap that is illustrated on the propagation maps submitted herewith. Consequently, T-Mobile is unable to close a gap in its wireless network without obtaining the requested relief under Section 6409 of the Spectrum act or a Special Permit to modify its existing wireless facility in the Business B zoning district.

Furthermore, 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 “collocations of new Transmission Equipment,” “removal,” or “replacement” of Transmission Equipment.

Because federal law now preempts many of the permit application requirements that this jurisdiction would previously have required from an Applicant, we have provided, on the attached EFR, only the information that federal law allows this jurisdiction to consider when reviewing an EFR. As such, we submit that the Wireless Communications set forth in Section 4.32(g), footnote 49 of the Ordinance, provisions are not applicable to Proposed Facility and relief must be granted pursuant to Section 6409(a) of the Spectrum Act.

- 2. The Board of Zoning Appeal shall consider the extent to which the visual impact of the various elements of the proposed facility is minimized: (1) through the use of existing mechanical elements on the building’s roof or other features of the building as support and background, (2) through the use in materials that in texture and color blend with the materials to which the facilities are attached, or (3) other effective means to reduce the visual impact of the facility on the site.**

The Applicant’s design minimizes the visual impact of the Proposed Facility. The facility will be installed on the existing rooftop of the Building and consistent with the Original Decision. The resulting installation will have an increased capacity to better serve the City of Cambridge without the need for an increased number of antennas on the Building. The proposed replacement antennas will be painted to match the color of the existing Building thereby minimizing any visual impacts.

As stated above, federal law now preempts many of the permit applications requirements that the Ordinance sets forth. To the extent that this Board determines that the Applicants’ proposed wireless facility must comply with the Wireless Communications provisions set forth in Section 4.32(g), footnote 49 of the Ordinance, the Applicants submit that they have complied with said requirements, without waiving the argument that such relief is not required.

- 3. Where it is proposed to erect such a facility in any residential zoning district, the extent to which there is a demonstrated public need for the facility at the proposed locations, the existence of alternative, functionally suitable sites in nonresidential locations, the character of the prevailing uses in the area, and the prevalence of other existing mechanical systems and equipment carried on or above the roof of nearby structures. The Board of Zoning Appeal shall grant a special permit to erect such a facility in a residential zoning district only upon a finding that nonresidential uses predominate in the vicinity of the proposed facility’s location and that the telecommunications facility is not inconsistent with the character that does prevail in the surrounding neighborhood.**

The Applicant proposes to install its facility within the Business-B zoning district. As such, this is not applicable.

B. The Applicant complies with the Special Permit Criteria set forth in Section 10-43 of the Ordinance²:

1. The requirements of the Ordinance can be met:

As provided above, the Applicant has met the requirements set forth in Section 4.32(g), footnote 49 of the Ordinance.

2. Traffic generated or patterns of access or egress would not cause congestion hazard, or substantial change in established neighborhood character for the following reasons:

The proposed installation will not obstruct existing rights-of-way or pedestrian access and will not change the daily conditions of access, egress, traffic, congestion hazard, or character of the neighborhood. The installation will not require the addition of any new parking or loading spaces. The use is passive and will not change the current conditions or appearance surrounding the Building. The facility will not produce any odors, fumes, noise or waste. There will be no need for water, sewer, or other municipal services.

As mentioned above, once modified, the facility will be unmanned and will only require infrequent visits by a technician, typically two times per month for routine diagnostics and/or maintenance, except in cases of emergency. These infrequent visits will not result in any material increase in traffic or disruption to patterns of access or egress that will cause congestion hazards or cause a substantial change in the established neighborhood character. The Applicant's maintenance personnel will make use of the existing access roads and parking at the Building.

3. The continued operation of or the development of adjacent uses as permitted in the Zoning Ordinance would not be adversely affected by the nature of the proposed use for the following reasons:

As described above and illustrated on the attached photograph simulations, the modification of the existing facility will produce a minimal change in the appearance of the Building. The modification of the existing facility will blend with the existing characteristics of

² Pursuant to Section 6409(a) of the Spectrum Act, 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." As such, the Applicant submits that they need not apply for a special permit from the board. To the extent that this Board determines that the Applicants' proposed wireless facility must comply with special permit requirements set forth in Section 10-43 of the Ordinance, the Applicants submit that they have complied with said requirements, without waiving the argument that such relief is not required.

the Building and the surrounding neighborhood. Moreover, the proposed installation will not generate any traffic, smoke, dust, heat, glare, discharge of noxious substances, nor will it pollute waterways or groundwater. Conversely, the surrounding properties and general public will benefit from the potential to enjoy improved wireless communication.

4. Nuisance or hazard would not be created to the detriment of the health, safety, and/or welfare of the occupant of the proposed use or the citizens of the City for the following reasons:

The operations of the proposed telecommunications facility will not adversely impact the health, safety, and the welfare of the residents of the City of Cambridge. On the contrary, the proposed use will benefit the City and promote the safety and welfare of its residents, businesses and drivers by providing reliable state-of-the-art digital wireless voice and data services. Further, the site will improve the reliability of emergency communications with the police and fire departments by eliminating dropped or blocked calls due to inadequate signal strength or insufficient network capacity to handle call volume, particularly important during emergency situations.

The Proposed Facility will comply with all federal, state and local safety requirements including the standards established by the FCC, Federal Aviation Administration (FAA), the American Standards Institute (ANSI), and the Massachusetts Department of Public Health (MDPH).

Accordingly, the Proposed Facility will not adversely impact the health, safety and/or welfare of the neighborhood or the residents of the City of Cambridge.

5. For other reasons, the proposed installation will not impair the integrity of the district or adjoining district or otherwise derogate from the intent or purpose of this ordinance for the following reasons:

The Proposed Facility is designed to blend with the existing characteristics of the Property, reducing any visual impacts to the surrounding area. Accordingly, the Proposed Facility's design results in a minimal impact on the underlying and adjacent zoning district and is consistent with the Ordinance's intention to allow for less intrusive wireless telecommunications facilities in all districts (other than Open Space), including the Business B zoning districts.

As mentioned above, the proposed modifications to the existing installation will not generate any traffic, smoke, dust, heat, glare, discharge or noxious substances, nor will it pollute waterways or groundwater.

6. The new use of the building construction is consistent with the Urban Design Objective set for tin Section 19.30 of the Ordinance:

Not Applicable. The Applicant is not proposing to construct a new building or structure.

IV. Summary

The Applicant hereby requests that the Board determine that the City of Cambridge has the right to authorize the construction of the Proposed Facility through the issuance of a Building Permit, pursuant to Section 6409(a) of the Spectrum Act. Or, in the alternative, its proposed modifications to the existing telecommunications facility will not have any adverse effect on the neighborhood within which the Property is located in particular, and the City of Cambridge as a whole. The findings are made in view of the particular characteristics of the Property and of the Applicant's proposed siting and equipment, as detailed above. This Property is the most appropriate location for the installation and operation of the wireless communications facility.

For the foregoing reasons the Applicant respectfully requests that the Board grant the foregoing relief pursuant to Section 6409(a) of the Spectrum Act or, in the alternative, zoning relief in the form of a Special Permit and such other relief as the Board deems necessary to allow the installation and operation of the Applicant's Proposed Facility.

Sincerely,



Ricardo M. Sousa

Direct: 617-456-8123

Email: rsousa@princelobel.com

BZA APPLICATION FORM

DIMENSIONAL INFORMATION

APPLICANT: T-Mobile Northeast PRESENT USE/OCCUPANCY: _____

LOCATION: 1 Brattle Square ZONE: Business B

PHONE: 617-456-8123 REQUESTED USE/OCCUPANCY: Wireless Telecommunications

	<u>EXISTING CONDITIONS</u>	<u>REQUESTED CONDITIONS</u>	<u>ORDINANCE REQUIREMENTS¹</u>
<u>TOTAL GROSS FLOOR AREA:</u>	<u>N/A</u>	<u>No Change</u>	<u>N/A</u> (max.)
<u>LOT AREA:</u>	<u>N/A</u>		<u>N/A</u> (min.)
<u>RATIO OF GROSS FLOOR AREA TO LOT AREA:²</u>	<u>N/A</u>	<u>No Change</u>	<u>N/A</u> (max.)
<u>LOT AREA FOR EACH DWELLING UNIT:</u>	<u>N/A</u>	<u>No Change</u>	<u>N/A</u> (min.)
<u>SIZE OF LOT:</u>	<u>N/A</u>		<u>N/A</u> (min.)
<u>Setbacks in Feet:</u>			
<u>SIZE OF BLDG.:</u>			
<u>RATIO OF USABLE OPEN SPACE TO LOT AREA:³⁾</u>	<u>N/A</u>	<u>No Change</u>	<u>N/A</u> (min.)
<u>NO. OF DWELLING UNITS:</u>	<u>N/A</u>	<u>No Change</u>	<u>N/A</u> (max.)
<u>NO. OF PARKING SPACES:</u>	<u>N/A</u>	<u>No Change</u>	<u>N/A</u> (min./max)
<u>NO. OF LOADING AREAS:</u>	<u>N/A</u>	<u>No Change</u>	<u>N/A</u> (min.)
<u>DISTANCE TO NEAREST BLDG. ON SAME LOT:</u>	<u>N/A</u>	<u>No Change</u>	<u>N/A</u> (min.)

Describe where applicable, other occupancies on same lot, the size of adjacent buildings on same lot, and type of construction proposed, e.g.; wood frame, concrete, brick, steel, etc.

The proposed installation involves a modification of an existing Wireless Telecommunications Facility,
more commonly referred to as a "collocation".

1. SEE CAMBRIDGE ZONING ORDINANCE ARTICLE 5.000, SECTION 5.30 (DISTRICT OF DIMENSIONAL REGULATIONS).
2. TOTAL GROSS FLOOR AREA (INCLUDING BASEMENT 7'-0" IN HEIGHT AND ATTIC AREAS GREATER THAN 5') DIVIDED BY LOT AREA.
3. OPEN SPACE SHALL NOT INCLUDE PARKING AREAS, WALKWAYS OR DRIVEWAYS AND SHALL HAVE A MINIMUM DIMENSION OF 15'.

T-Mobile

T-MOBILE NORTHEAST LLC

T-MOBILE SITE #: 4BSM457A
SITE NAME: BRATTLE SQUARE
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

T-Mobile

T-MOBILE NORTHEAST LLC
 A DELAWARE LIMITED LIABILITY COMPANY

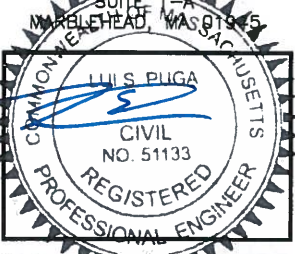
15 COMMERCE WAY, SUITE B
 NORTON, MA 02766
 PHONE: (508) 286-5700
 FAX: (508) 286-2883

Dewberry

Dewberry Engineers Inc.
 280 SUMMER STREET
 10TH FLOOR
 BOSTON, MA 02210
 PHONE: 617.695.3400
 FAX: 617.695.3310

NANEPASHEMET
 PROJECT MANAGEMENT

328 WEST SHORE DRIVE
 MARBLEHEAD, MASSACHUSETTS



SITE CONFIGURATION:
 5F
 APPROVALS
 LANDLORD _____
 LEASING _____
 R.F. _____
 ZONING _____
 CONSTRUCTION _____
 A/E _____

PROJECT NO: 50037672

JOB NO: 50074320

DRAWN BY: JG

CHECKED BY: LSP

SUBMITTALS		
1	03/10/16	FOR CONSTRUCTION
0	10/13/15	FOR CONSTRUCTION
A	08/24/15	FOR REVIEW

4BSM457A
 BRATTLE SQUARE
 1 BRATTLE SQUARE
 CAMBRIDGE, MA 02138

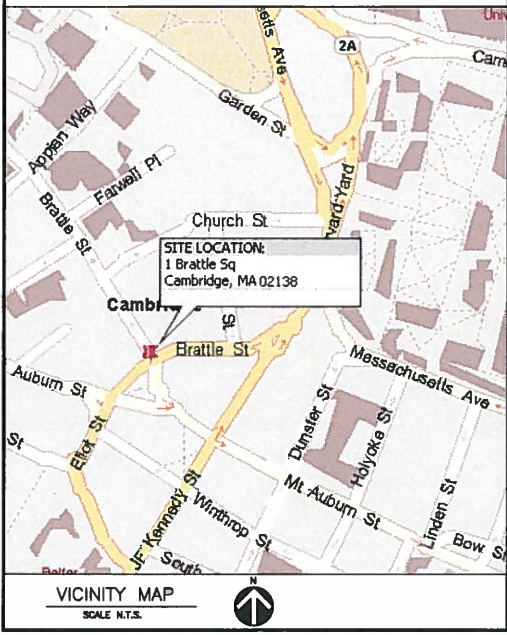
SHEET TITLE
 TITLE SHEET

SHEET NUMBER
 T-1

GENERAL NOTES

- 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.
- 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.
- THE CONTRACTOR OR BIDDER SHALL BEAR THE RESPONSIBILITY OF NOTIFYING (IN WRITING) THE LESSEE REPRESENTATIVE OF ANY CONFLICTS, ERRORS, OR OMISSIONS PRIOR TO THE SUBMISSION OF 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.
- 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.
- 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.
- 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.
- 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.
- 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.
- 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 THE CONTRACT.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL NECESSARY CONSTRUCTION CONTROL SURVEYS, ESTABLISHING AND MAINTAINING ALL LINES AND GRADES REQUIRED TO CONSTRUCT ALL IMPROVEMENTS AS SHOWN HEREIN.
- 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.
- THE CONTRACTOR SHALL MAKE 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.
- 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 THE PROPERTY. PREMISES SHALL BE LEFT IN CLEAN CONDITION AND FREE FROM PAINT SPOTS, DUST, OR SMUDGES OF ANY NATURE.
- THE CONTRACTOR SHALL COMPLY WITH ALL OSHA REQUIREMENTS AS THEY APPLY TO THIS PROJECT.
- THE CONTRACTOR SHALL NOTIFY THE LESSEE REPRESENTATIVE WHERE A CONFLICT OCCURS ON ANY OF THE CONTRACT DOCUMENTS. 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 REPRESENTATIVE.
- THE CONTRACTOR SHALL VERIFY ALL DIMENSIONS, ELEVATIONS, PROPERTY LINES, ETC. ON THE JOB.
- 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. CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION NOTIFICATION 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY: DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 1-888-344-7233 CALL BEFORE YOU DIG
- PER FCC MANDATE, ENHANCED EMERGENCY (E911) SERVICE IS REQUIRED TO MEET NATIONWIDE STANDARDS FOR WIRELESS COMMUNICATIONS SYSTEMS. PROJECT OWNER IMPLEMENTATION REQUIRES DEPLOYMENT OF EQUIPMENT AND ANTENNAS GENERALLY DEPICTED ON THIS PLAN, ATTACHED TO OR MOUNTED IN CLOSE PROXIMITY TO THE BTS RADIO CABINETS. THE PROJECT OWNER RESERVES THE RIGHT TO MAKE REASONABLE MODIFICATIONS TO E911 EQUIPMENT AND LOCATION AS TECHNOLOGY EVOLVES TO MEET REQUIRED SPECIFICATIONS.

VICINITY MAP



DO NOT SCALE DRAWINGS

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.

THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE NORTHEAST LLC. 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.

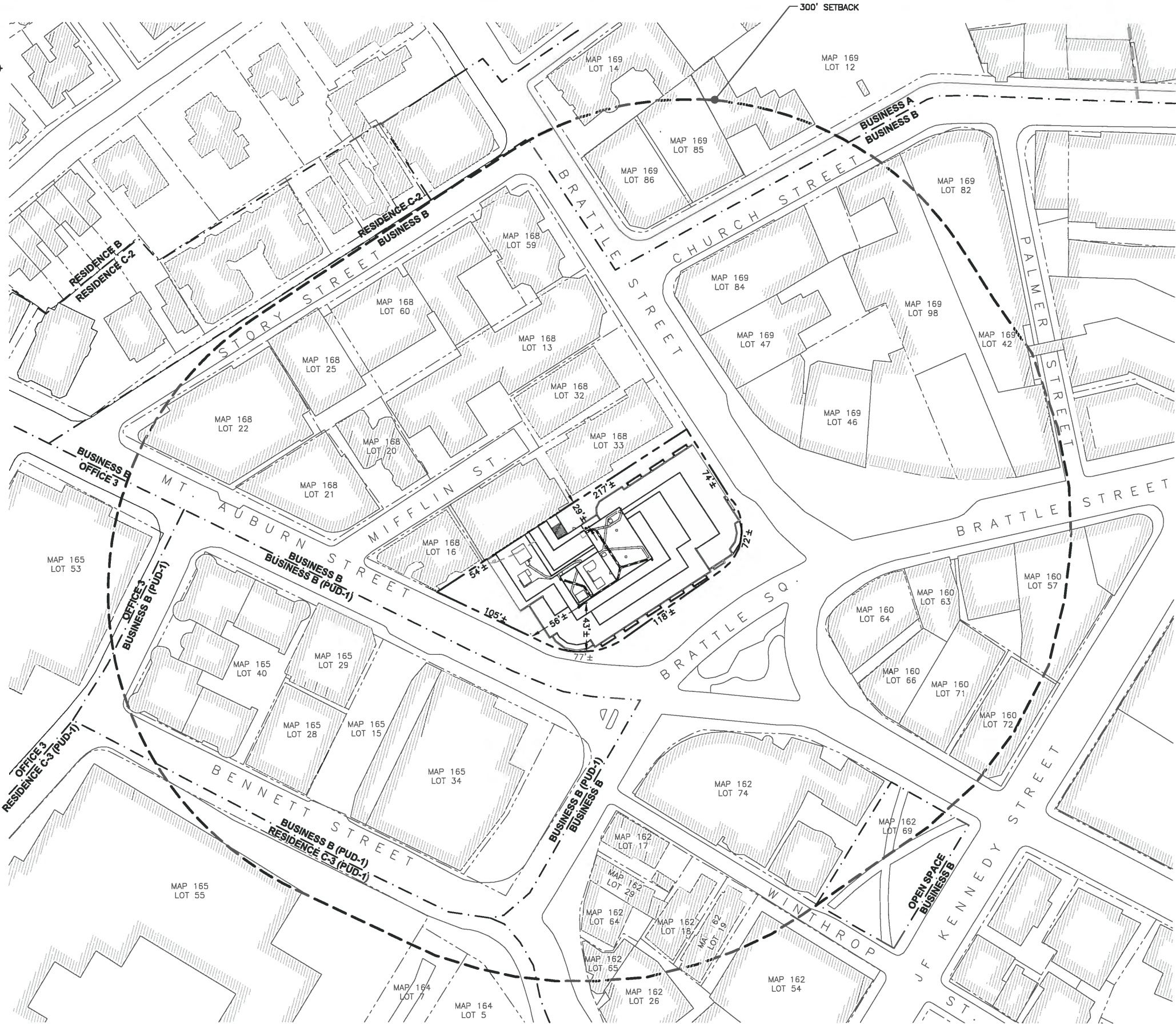
SHEET INDEX

SHT. NO.	DESCRIPTION	REV. NO.
T-1	TITLE SHEET	1
A-1	PLOT PLAN	1
A-2	ROOF PLAN	1
A-3	SOUTH ELEVATION	1
A-4	EAST ELEVATIONS	1
A-5	ANTENNA, ROOM PLAN & RF SCHEDULE	1
A-6	CONSTRUCTION DETAILS I	1
E-1	GROUNDING DETAILS & NOTES	1

PROJECT SUMMARY

SITE NUMBER: 4BSM457A
 SITE NAME: BRATTLE SQUARE
 SITE ADDRESS: 1 BRATTLE SQUARE
 CAMBRIDGE, MA 02138
 ZONING DISTRICT: BUSINESS B
 PARCEL ID.: MAP 16B LOT 36
 CONSTRUCTION TYPE: ROOF TOP
 PROPERTY OWNER: WELLS REIT-ONE BRATTLE SQUARE I,LLC
 C/O CB RICHARD ELLIS-NE PARTNERS, LP
 745 ATLANTIC AVENUE
 BOSTON, MA 02111
 APPLICANT, LESSEE/LICENSEE, PROJECT OWNER: T-MOBILE NORTHEAST LLC,
 15 COMMERCE WAY, SUITE B
 NORTON, MA 02766
 THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.
 A.D.A. COMPLIANCE: FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.

APPROXIMATE TRUE NORTH

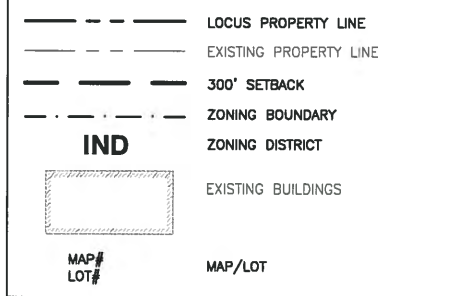


PLOT PLAN
 SCALE: 1"=100' FOR 11"x17"
 1"=50' FOR 22"x34"
 0' 50' 100'

GENERAL NOTES:

1. PLOT PLAN BASED ON DRAWINGS BY HUDSON DESIGN GROUP, LLC, AND ISSUED FOR CONSTRUCTION, REVISION 2, DATED 11/05/09.
2. VERTICAL DATUM: NORTH AMERICAN VERTICAL DATUM OF 1988 (NAV88)
3. HORIZONTAL DATUM: NORTH AMERICAN DATUM OF 1983 (NAD83)
4. SITE CONTROL POINT: CENTER OF BUILDING FOOTPRINT
 LATITUDE: N 42.373242
 LONGITUDE: W -71.121417
5. PROPERTY OWNER: WELLS REIT - ONE BRATTLE SQUARE I, LLC
 C/O CB RICHARD ELLIS - NE PARTNERS, LP
 745 ATLANTIC AVENUE
 BOSTON, MA 02111
6. SITE NUMBER: 4BSM457A
7. SITE ADDRESS: 1 BRATTLE SQUARE
 CAMBRIDGE, MA 02138
8. APPLICANT: T-MOBILE NORTHEAST LLC,
 15 COMMERCE WAY, SUITE B
 NORTON, MA 02766
9. JURISDICTION: CITY OF CAMBRIDGE
10. TAX ID: MAP 168 LOT 36
11. DEED REFERENCE: N/A
12. PLAN REFERENCES: CITY OF CAMBRIDGE ASSESSORS MAP
13. ZONING JURISDICTION: BB-HSQ
14. 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. CALL THE FOLLOWING FOR ALL PRE-CONSTRUCTION NOTIFICATION 72-HOURS PRIOR TO ANY EXCAVATION ACTIVITY: DIG SAFE SYSTEM (MA, ME, NH, RI, VT): 1-888-344-7233 CALL BEFORE YOU DIG (CT): 1-800-922-4455
15. SOME PROPOSED AND EXISTING INFORMATION NOT SHOWN FOR CLARITY.
16. 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



ZONING SUMMARY TABLE

ZONING DISTRICT: BUSINESS B (BB-HSQ)
 ASSESSORS MAP: MAP 168 LOT 36
 JURISDICTION: CITY OF CAMBRIDGE
 USE: WIRELESS COMMUNICATION FACILITY

DIMENSION:	REQUIRED MINIMUM	EQUIPMENT	ANTENNA
LOT AREA	-	-	28,940 S.F.
LOT FRONTAGE	-	-	118 FT
FRONT YARD SETBACK*	NONE	INDOOR	43'±
SIDE YARD SETBACK*	NONE	INDOOR	56'±
REAR YARD SETBACK*	NONE	INDOOR	29'±

* DIMENSIONS MEASURED FROM THE CLOSEST POINT OF ANTENNAS TO NEAREST LOT LINE.

T-Mobile
 T-MOBILE NORTHEAST LLC
 A DELAWARE LIMITED LIABILITY COMPANY
 15 COMMERCE WAY, SUITE B
 NORTON, MA 02766
 PHONE: (508) 288-2700
 FAX: (508) 288-2883

Dewberry
 Dewberry Engineers Inc.
 280 SUMMER STREET
 10TH FLOOR
 BOSTON, MA 02210
 PHONE: 617.695.3400
 FAX: 617.695.3310

NANEPASHEMET
 PROJECT MANAGEMENT
 328 WEST SHORE DRIVE
 SUITE 1-A
 MARLBOROUGH, MA 01545
 LUIS PUGA
 CIVIL
 NO. 51133
 REGISTERED ENGINEER

SITE CONFIGURATION:
 5F

APPROVALS

LANDLORD _____

LEASING _____

R.F. _____

ZONING _____

CONSTRUCTION _____

A/E _____

PROJECT NO: 50037672

JOB NO: 50074320

DRAWN BY: JG

CHECKED BY: LSP

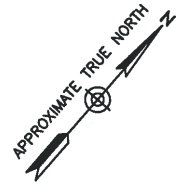
SUBMITTALS

NO.	DATE	DESCRIPTION
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0	10/13/15	FOR CONSTRUCTION
A	08/24/15	FOR REVIEW

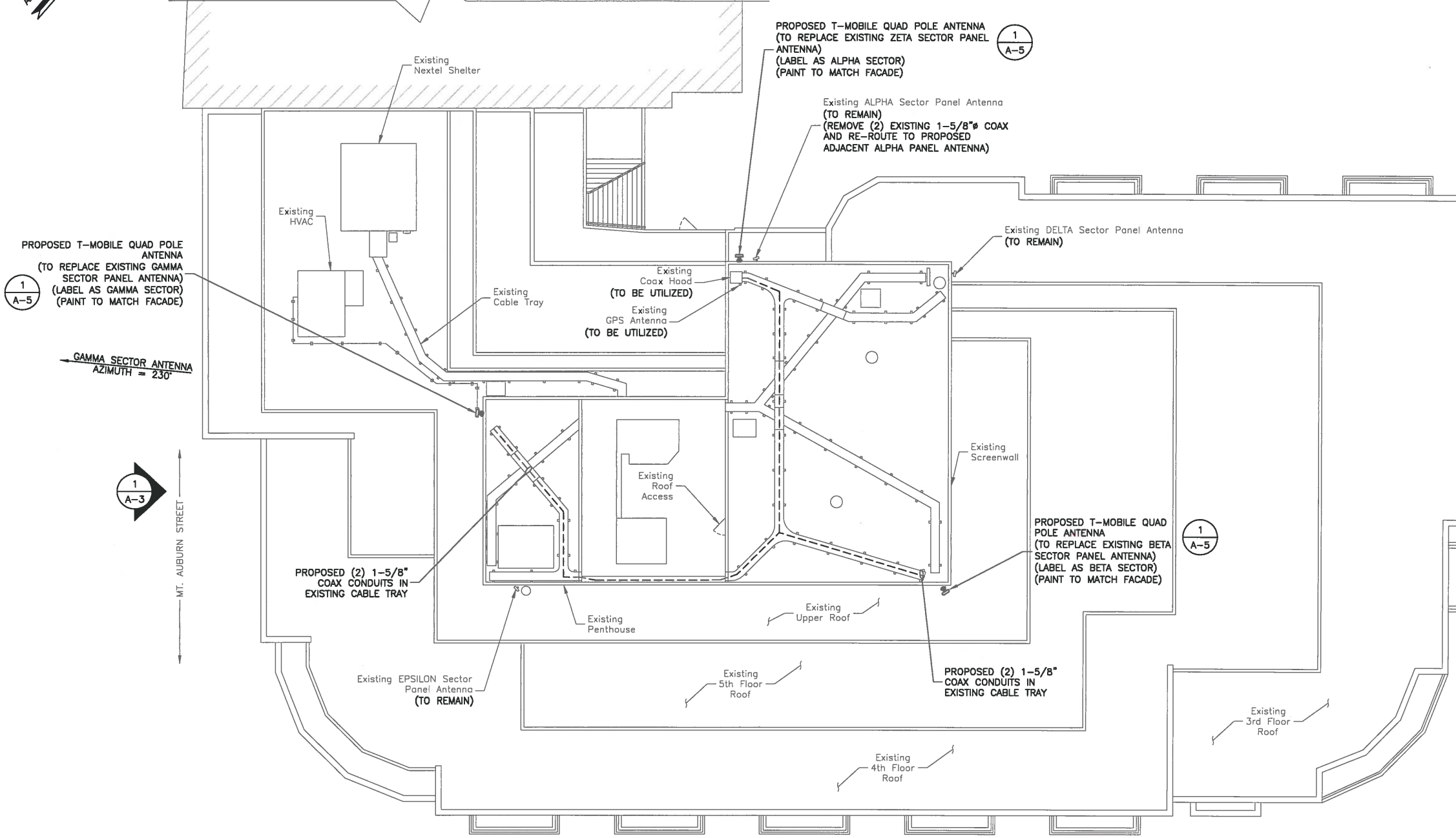
4BSM457A
 BRATTLE SQUARE
 1 BRATTLE SQUARE
 CAMBRIDGE, MA 02138

SHEET TITLE
 PLOT PLAN

SHEET NUMBER
 A-1



ALPHA SECTOR ANTENNAS
AZIMUTH = 310



PROPOSED T-MOBILE QUAD POLE ANTENNA
(TO REPLACE EXISTING GAMMA SECTOR PANEL ANTENNA)
(LABEL AS GAMMA SECTOR)
(PAINT TO MATCH FACADE)
1
A-5

GAMMA SECTOR ANTENNA
AZIMUTH = 230

1
A-3

MT. AUBURN STREET

PROPOSED T-MOBILE QUAD POLE ANTENNA
(TO REPLACE EXISTING ZETA SECTOR PANEL ANTENNA)
(LABEL AS ALPHA SECTOR)
(PAINT TO MATCH FACADE)
1
A-5

Existing ALPHA Sector Panel Antenna
(TO REMAIN)
(REMOVE (2) EXISTING 1-5/8" COAX
AND RE-ROUTE TO PROPOSED
ADJACENT ALPHA PANEL ANTENNA)

Existing DELTA Sector Panel Antenna
(TO REMAIN)

PROPOSED T-MOBILE QUAD POLE ANTENNA
(TO REPLACE EXISTING BETA SECTOR PANEL ANTENNA)
(LABEL AS BETA SECTOR)
(PAINT TO MATCH FACADE)
1
A-5

PROPOSED (2) 1-5/8" COAX CONDUITS IN EXISTING CABLE TRAY

PROPOSED (2) 1-5/8" COAX CONDUITS IN EXISTING CABLE TRAY

BRATTLE SQUARE

1
A-4

BETA SECTOR ANTENNA
AZIMUTH = 100

ROOF PLAN
SCALE: 3/84"=1' FOR 11"x17"
3/32"=1' FOR 22"x34"



- NOTES:**
- SOME EXISTING AND PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
 - NORTH SHOWN AS APPROXIMATE.
 - EXISTING BUILDING AND ANTENNA ELEVATIONS ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED WITH A MAPPING.
 - PLANS BASED ON EXISTING INFORMATION AND SITE VISIT BY DEWBERRY ENGINEERS INC. ON 6/4/2015.
 - CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO INSTALLATION OF EQUIPMENT.

SCOPE OF WORK

- ADD (1) DUW30 TO RBS6201.
- ADD (3) RUS01 B2 RADIOS AND (6) 80 WATT RUS01 B4 RADIOS.
- ADD RET FUNCTIONALITY TO EACH SECTOR BY INSTALLING (8) SMART BIAS TEES.
- ADD (1) CELLMAX CMA-BDHH/6520/EO-8 TO EACH SECTOR.
- RE-USE EXISTING GPS ANTENNA AND ADD SPLITTER AND GPS02.

NOTE: ANTENNA MAST TOTAL COUNT = 6. EXISTING ANTENNA COUNT = 6. KEEP THREE EXISTING DUAL POLE ANTENNAS AND ADD ONE QUAD POLE CELLMAX CMA-BDHH/6520/EO-8 ON THREE SECTORS (310-100-230). ADD (4) 1-5/8" HARD LINES. ROUTE HARD LINES AS REQUIRED. SEE ADDITIONAL COMMENTS SECTION.

ROOFTOP SITE WITH (6) SECTORS WITH ALL ANTENNA LOCATED ON THE PENTHOUSE ROOF. REPLACE (3) ANTENNAS WITH (3) NEW CELLMAX MED ANTENNAS. REPLACE 3 EXISTING ANTENNA AT EXISTING AZIMUTH 120 DEG, 180 DEG AND 300 DEG, ADDING TWO (2) TWIN TMAS PER ANTENNA. ADD TWO (2) NEW COAX FOR ANTENNAS AT 100 DEG AND 230 DEG. MIGRATE 2 COAX FROM EXISTING 0 DEG SECTOR TO ANTENNA AT 310 DEG. REMOVE JUMPER FROM HARDLINE TO CDMA CABINET AND REPLACE WITH NEW JUMPERS TO THE LTE CABINET (ENSURE NEW JUMPERS HAVE 90 DEG CONNECTOR ON RADIO SIDE).

EXISTING COAX LINES SHOWN CAN BE RE-USED FOR NEW ANTENNAS INSTEAD OF NEW PROPOSED COAX RUNS AS INDICATED. CONTRACTOR TO ENSURE 12 EXISTING/PROPOSED COAX RUNS ARE INSTALLED PER FINAL RFDS REQUIREMENTS. CONTRACTOR TO IDENTIFY AND REPLACE DAMAGED COAX AS REQUIRED.

T-Mobile
T-MOBILE NORTHEAST LLC
A DELAWARE LIMITED LIABILITY COMPANY
15 COMMERCE WAY, SUITE B
NORTON, MA 02786
PHONE: (508) 286-5700
FAX: (508) 286-2883

Dewberry
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

NANEPASHEMET
PROJECT MANAGEMENT
328 WEST SHORE DRIVE
CAMBRIDGE, MA 02145
LUIS PUGA
CIVIL
NO. 51133
REGISTERED PROFESSIONAL ENGINEER

SITE CONFIGURATION:
5F

APPROVALS

LANDLORD _____

LEASING _____

R.F. _____

ZONING _____

CONSTRUCTION _____

A/E _____

PROJECT NO: 50037672

JOB NO: 50074320

DRAWN BY: JG

CHECKED BY: LSP

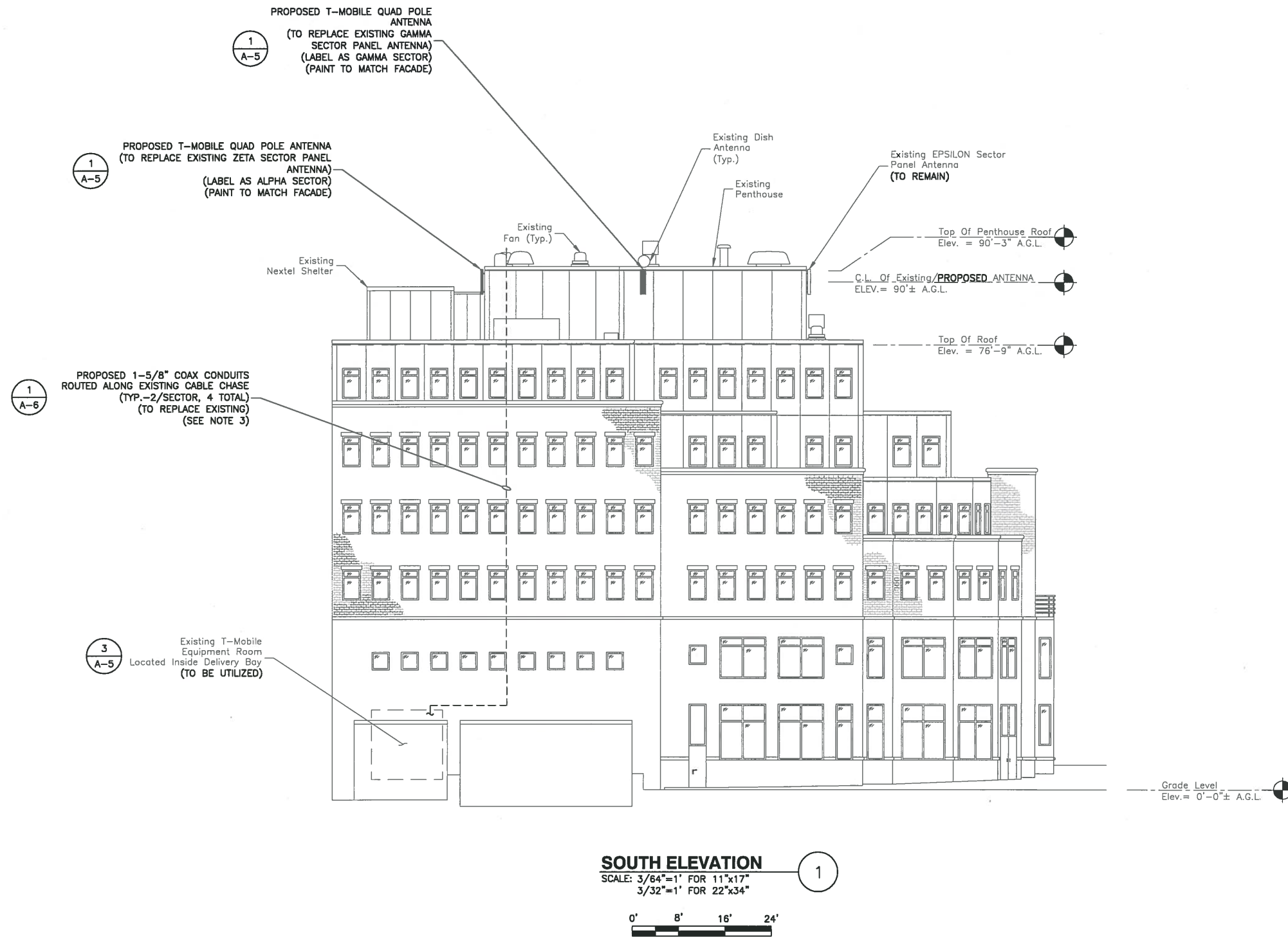
SUBMITTALS

1	03/10/16	FOR CONSTRUCTION
0	10/13/15	FOR CONSTRUCTION
A	08/24/15	FOR REVIEW

4BSM457A
BRATTLE SQUARE
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
ROOF PLAN

SHEET NUMBER
A-2



SOUTH ELEVATION
 SCALE: 3/64"=1' FOR 11"x17"
 3/32"=1' FOR 22"x34"



- NOTES:**
- ELEVATIONS SHOWN AS APPROXIMATE.
 - SOME EXISTING & PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
 - EXISTING COAX LINES SHOWN CAN BE RE-USED FOR NEW ANTENNAS INSTEAD OF NEW PROPOSED COAX RUNS AS INDICATED. CONTRACTOR TO ENSURE 12 EXISTING/PROPOSED COAX RUNS ARE INSTALLED PER FINAL RFDS REQUIREMENTS. CONTRACTOR TO IDENTIFY AND REPLACE DAMAGED COAX AS REQUIRED.

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

Dewberry
 Dewberry Engineers Inc.
 280 SUMMER STREET
 10TH FLOOR
 BOSTON, MA 02210
 PHONE: 617.695.3400
 FAX: 617.695.3310

NANEPASHEMET
 PROJECT MANAGEMENT
 328 WEST SHORE DRIVE
 SUITE 100
 MARBLEHEAD, MA 01945
 LUIS PUGA
 CIVIL
 NO. 51133
 REGISTERED
 PROFESSIONAL ENGINEER

SITE CONFIGURATION:
 5F
 APPROVALS

LANDLORD _____
 LEASING _____
 R.F. _____
 ZONING _____
 CONSTRUCTION _____
 A/E _____

PROJECT NO: 50037672

JOB NO: 50074320

DRAWN BY: JG

CHECKED BY: LSP

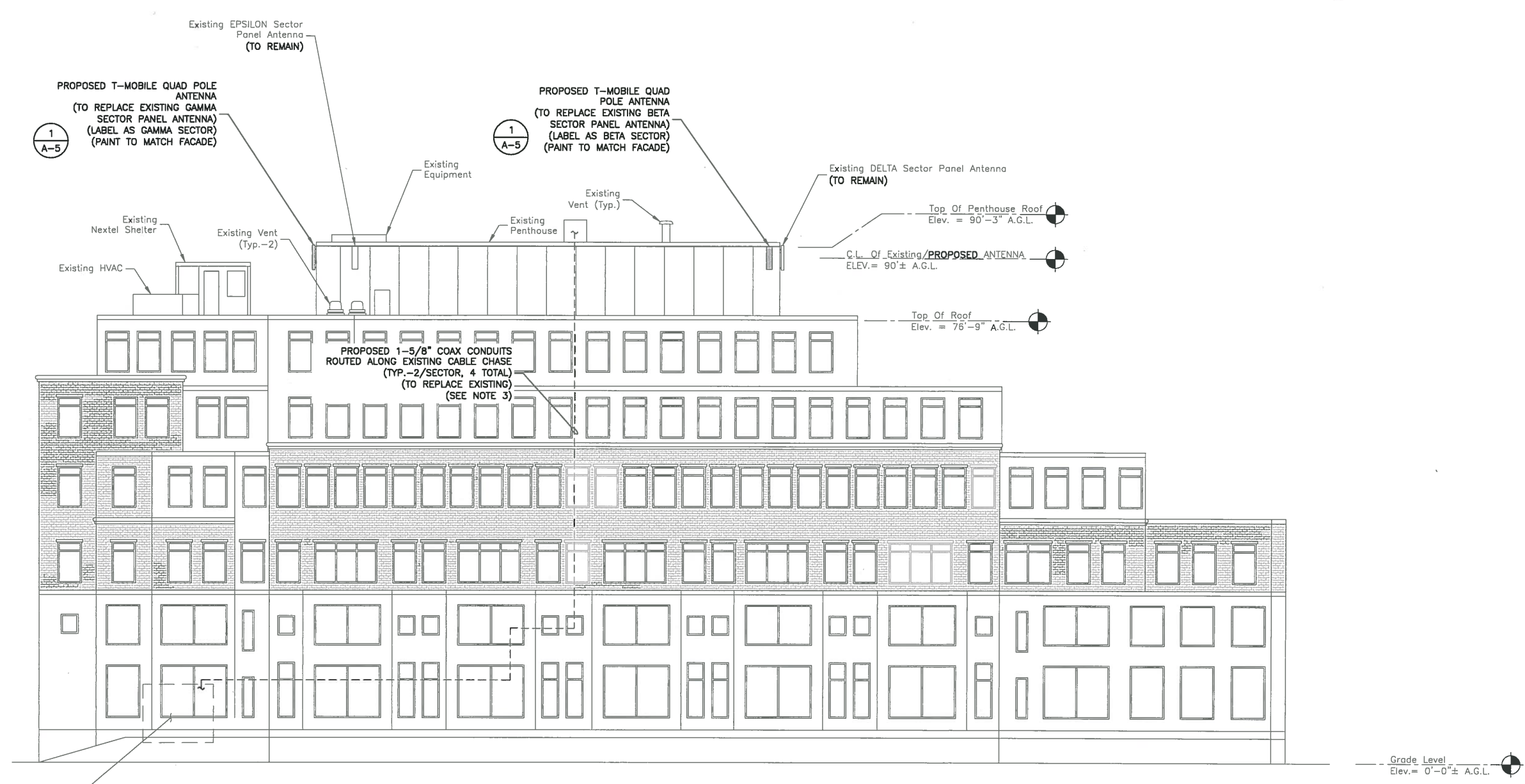
SUBMITTALS

1	03/10/16	FOR CONSTRUCTION
0	10/13/15	FOR CONSTRUCTION
A	08/24/15	FOR REVIEW

4BSM457A
 BRATTLE SQUARE
 1 BRATTLE SQUARE
 CAMBRIDGE, MA 02138

SHEET TITLE
 SOUTH ELEVATION

SHEET NUMBER
 A-3

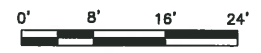


1
A-5
PROPOSED T-MOBILE QUAD POLE ANTENNA
(TO REPLACE EXISTING GAMMA SECTOR PANEL ANTENNA)
(LABEL AS GAMMA SECTOR)
(PAINT TO MATCH FACADE)

1
A-5
PROPOSED T-MOBILE QUAD POLE ANTENNA
(TO REPLACE EXISTING BETA SECTOR PANEL ANTENNA)
(LABEL AS BETA SECTOR)
(PAINT TO MATCH FACADE)

PROPOSED 1-5/8" COAX CONDUITS
ROUTED ALONG EXISTING CABLE CHASE
(TYP.-2/SECTOR, 4 TOTAL)
(TO REPLACE EXISTING)
(SEE NOTE 3)

EAST ELEVATION
SCALE: 3/84"=1' FOR 11"x17"
3/32"=1' FOR 22"x34"



3
A-5
Existing T-Mobile
Equipment Room
Located Inside Delivery Bay
(TO BE UTILIZED)

- NOTES:**
- ELEVATIONS SHOWN AS APPROXIMATE.
 - SOME EXISTING & PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
 - EXISTING COAX LINES SHOWN CAN BE RE-USED FOR NEW ANTENNAS INSTEAD OF NEW PROPOSED COAX RUNS AS INDICATED. CONTRACTOR TO ENSURE 12 EXISTING/PROPOSED COAX RUNS ARE INSTALLED PER FINAL RFDs REQUIREMENTS. CONTRACTOR TO IDENTIFY AND REPLACE DAMAGED COAX AS REQUIRED.

T-Mobile
T-MOBILE NORTHEAST LLC
A DELAWARE LIMITED LIABILITY COMPANY
15 COMMERCE WAY, SUITE B
NORTON, MA 02756
PHONE: (508) 286-2700
FAX: (508) 286-2893

Dewberry
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

NANEPASHEMET
PROJECT MANAGEMENT
328 WEST SHORE DRIVE
SUITE 100
MARBLEHEAD, MASSACHUSETTS 01945
LUI S. PUGA
CIVIL
NO. 51133
REGISTERED
PROFESSIONAL ENGINEER

SITE CONFIGURATION:
5F

APPROVALS

LANDLORD _____

LEASING _____

R.F. _____

ZONING _____

CONSTRUCTION _____

A/E _____

PROJECT NO: 50037672

JOB NO: 50074320

DRAWN BY: JG

CHECKED BY: LSP

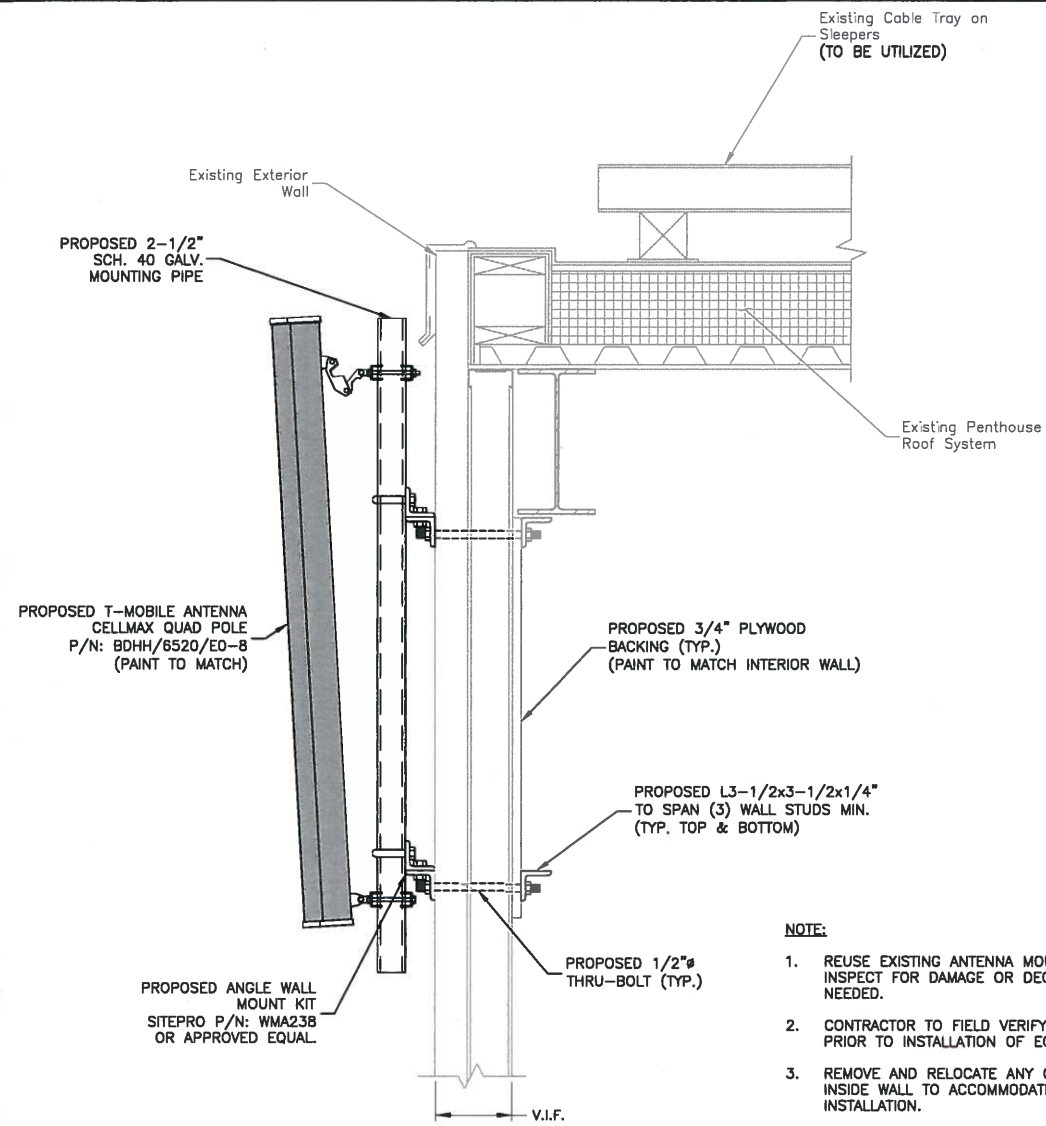
SUBMITTALS

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0	10/13/15	FOR CONSTRUCTION
A	08/24/15	FOR REVIEW

4BSM457A
BRATTLE SQUARE
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

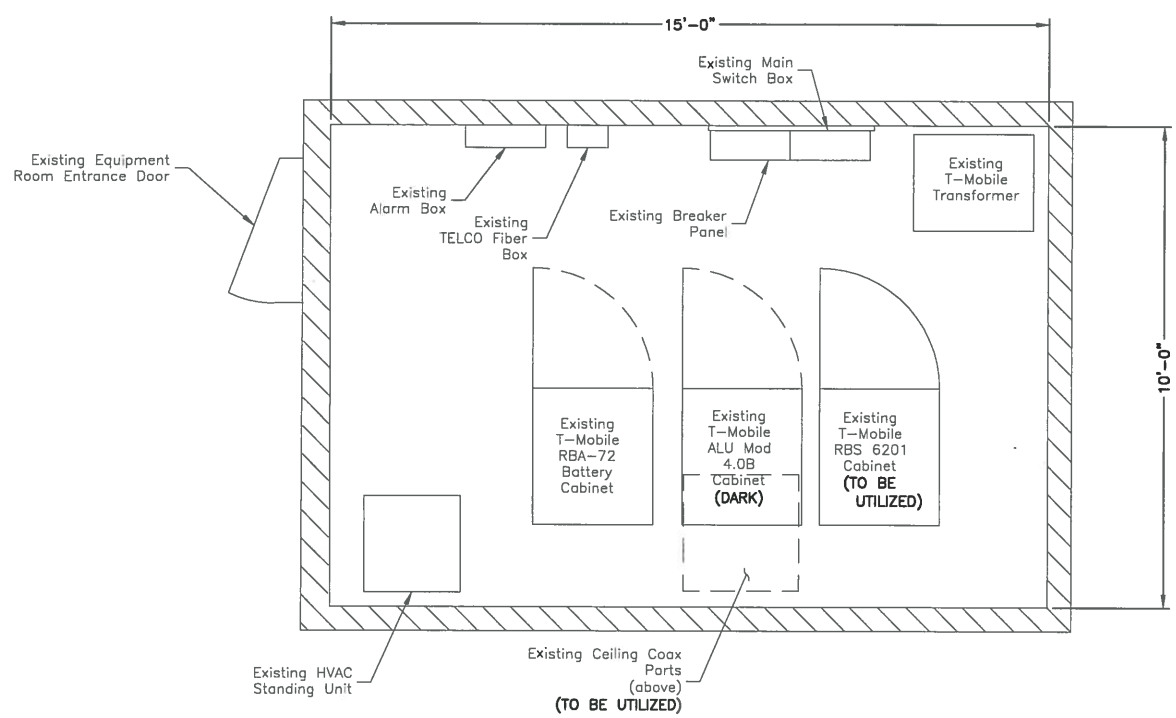
SHEET TITLE
EAST ELEVATION

SHEET NUMBER
A-4



FACADE MOUNT DETAIL 1
 SCALE: 1/2"=1' FOR 11"x17"
 1"=1' FOR 22"x34"
 0' 1' 2'

- NOTE:**
1. REUSE EXISTING ANTENNA MOUNTS AND COAX. INSPECT FOR DAMAGE OR DECAY AND REPLACE AS NEEDED.
 2. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO INSTALLATION OF EQUIPMENT.
 3. REMOVE AND RELOCATE ANY OBSTRUCTION ON THE INSIDE WALL TO ACCOMMODATE ANTENNA MOUNT INSTALLATION.
 4. PRIME AND PAINT ALL MOUNTING BRACKETS AND ANTENNAS TO MATCH EXISTING PENTHOUSE WALL.



- NOTE:**
1. REUSE EXISTING COAX. INSPECT FOR DAMAGE OR DECAY AND REPLACE AS NEEDED.
 2. CONTRACTOR TO FIELD VERIFY EXISTING CONDITIONS PRIOR TO INSTALLATION OF EQUIPMENT.

EQUIPMENT ROOM PLAN 3
 SCALE: 1/4"=1' FOR 11"x17"
 1/2"=1' FOR 22"x34"
 0' 1' 2' 4'

T-MOBILE RF SYSTEM SCHEDULE*						
EXISTING ANTENNA (METROPCS CONFIGURATION)			PROPOSED/EXISTING ANTENNA (T-MOBILE CONFIGURATION)			
SECTOR	ANTENNA QTY.	ANTENNA MAKE & MODEL	SECTOR	ANT. QTY.	RF CABL. QTY.	ANTENNA MAKE & MODEL
ALPHA	1	KATHREIN 742 351 (60.1"x11.8"x3.3")	ALPHA	1	0	KATHREIN 742 351 (60.1"x11.8"x3.3")
DELTA	1	KATHREIN 742 351 (60.1"x11.8"x3.3")	BETA	1	0	KATHREIN 742 351 (60.1"x11.8"x3.3")
BETA	1	KATHREIN 742 351 (60.1"x11.8"x3.3")	BETA	1	4	CELLMAX BDHH/6520/E0-8 (64.6"x15.9"x5")
EPSILON	1	KATHREIN 742 351 (60.1"x11.8"x3.3")	GAMMA	1	0	KATHREIN 742 351 (60.1"x11.8"x3.3")
GAMMA	1	KATHREIN 742 351 (60.1"x11.8"x3.3")	GAMMA	1	4	CELLMAX BDHH/6520/E0-8 (64.6"x15.9"x5")
ZETA	1	KATHREIN 742 351 (60.1"x11.8"x3.3")	ALPHA	1	4	CELLMAX BDHH/6520/E0-8 (64.6"x15.9"x5")

*ANTENNA CONFIGURATION BASED ON T-MOBILE RFDS REVISION 3 (DATED 9/24/15)
 VERIFY ALL INFORMATION WITH LATEST RF DATA SHEET AND T-MOBILE RF PRIOR TO CONSTRUCTION

RF SCHEDULE 2
 SCALE: N.T.S.

T-Mobile
 T-MOBILE NORTHEAST LLC
 A DELAWARE LIMITED LIABILITY COMPANY
 15 COMMERCE WAY, SUITE B
 NORTON, MA 02756
 PHONE: (508) 286-2700
 FAX: (508) 286-2883

Dewberry
 Dewberry Engineers Inc.
 280 SUMMER STREET
 10TH FLOOR
 BOSTON, MA 02210
 PHONE: 617.695.3400
 FAX: 617.695.3310

NANEPASHEMET
 PROJECT MANAGEMENT

328 WEST SHORE DRIVE
 SUITE 100
 MARBLEHEAD, MASSACHUSETTS 01945

LUIS PUGA
 CIVIL
 NO 51133
 REGISTERED PROFESSIONAL ENGINEER

SITE CONFIGURATION:
 5F

APPROVALS

LANDLORD _____

LEASING _____

R.F. _____

ZONING _____

CONSTRUCTION _____

A/E _____

PROJECT NO: 50037672

JOB NO: 50074320

DRAWN BY: JG

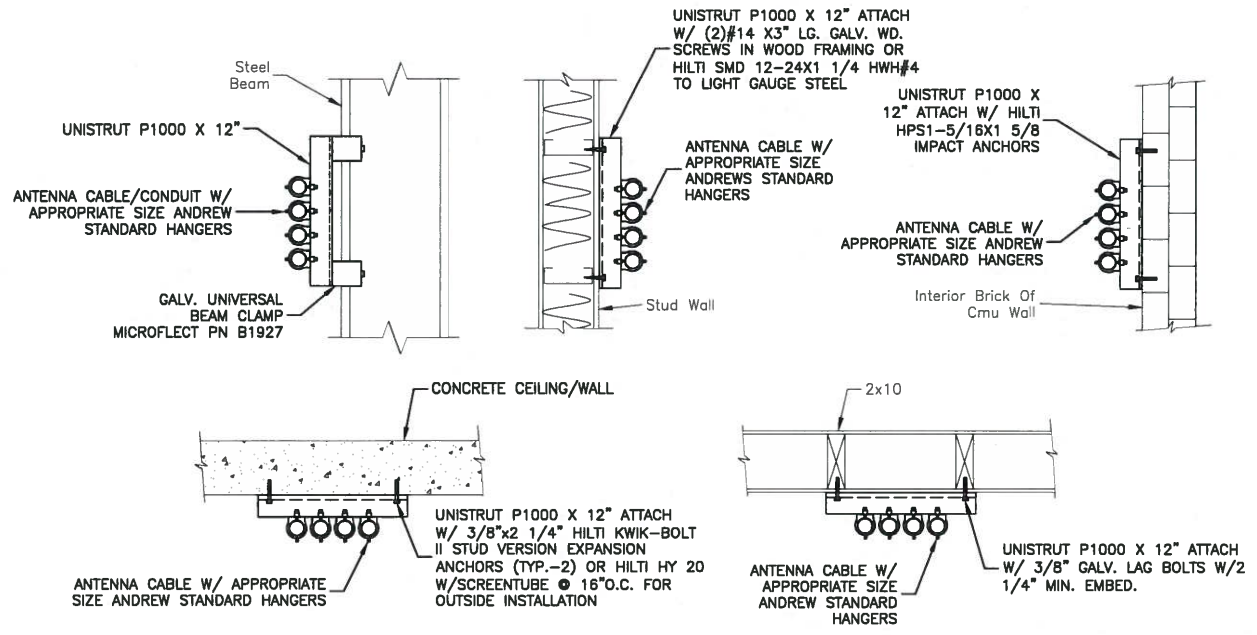
CHECKED BY: LSP

SUBMITTALS		
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0	10/13/15	FOR CONSTRUCTION
A	08/24/15	FOR REVIEW

4BSM457A
 BRATTLE SQUARE
 1 BRATTLE SQUARE
 CAMBRIDGE, MA 02138

SHEET TITLE
 ANTENNA,
 ROOM PLAN
 & RF SCHEDULE

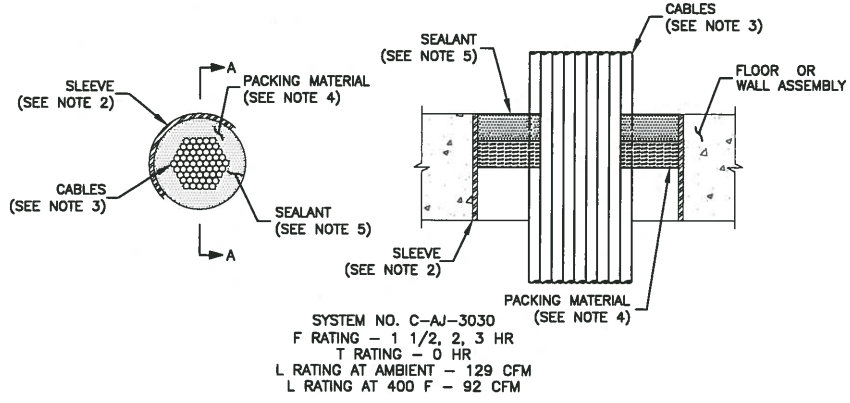
SHEET NUMBER
 A-5



NOTES:

1. ALL COAX CABLE SUPPORT SPACING: 4'-0" MAX.
2. ALL CONDUIT SUPPORT SPACING: 10' MAX.
3. ALL COAX TO BE VERTICALLY AND HORIZONTALLY SECURED THROUGHOUT CABLE RUN.

CABLE CONDUIT SUPPORT 1
SCALE: N.T.S.



NOTES:

1. FLOOR OR WALL ASSEMBLY - MIN. 2-1/2 IN THICK LIGHTWEIGHT OR NORMAL WEIGHT (100-150 PCF) CONCRETE. WALL MAY ALSO BE CONSTRUCTED OF ANY UL CONCRETE BLOCKS*. MAX DIAM OF OPENING IS 8 IN.
* BEARING THE UL CLASSIFICATION MARKING.
2. SLEEVE - NOM. 8 IN. DIAM (OR SMALLER) SCHEDULE 40 (OR HEAVIER) STEEL PIPE CAST INTO FLOOR OR WALL ASSEMBLY. SLEEVE TO BE FLUSH WITH OR PROJECT MAX 2 IN. FROM TOP SURFACE OF FLOOR OR BOTH SURFACES OF WALL.
3. CABLES - AGGREGATE CROSS-SECTIONAL AREA OF CABLES TO BE MIN 10 PERCENT TO MAX 40 PERCENT OF THE CROSS-SECTIONAL AREA OF THE OPENING. CABLES TO BE RIGIDLY SUPPORTED ON BOTH SIDES OF THE FLOOR OR WALL ASSEMBLY. ANY COMBINATION OF THE FOLLOWING TYPES AND SIZES MAY BE USED:
 - A. MAX NO. 12 AWG MULTICONDUCTOR COPPER CONTROL CABLES; CROSS-LINKED POLYETHYLENE, POLYVINYL CHLORIDE, NEOPRENE RUBBER, HYPALON OR SILICONE RUBBER INSULATION JACKET MATERIALS.
 - B. RG/U (RADIO GRADE/UNIVERSAL) COAXIAL CABLE WITH FLUORINATED ETHYLENE (FE) OR PVC INSULATION AND JACKET.
 - C. THROUGH PENETRATING PRODUCT* - ANY CABLES, ARMORED CABLE+OR METAL CLAD CABLE+CURRENTLY CLASSIFIED UNDER THE THROUGH PENETRATING PRODUCT CATEGORY. SEE THROUGH PENETRATING PRODUCT (XHLTY) CATEGORY IN THE FIRE RESISTANCE DIRECTORY FOR NAMES OF MANUFACTURERS.
4. PACKING MATERIAL - MIN 1 IN. THICKNESS OF MINERAL WOOL BATT INSULATION FIRMLY PACKED INTO OPENING AS A PERMANENT FORM. PACKING MATERIAL TO BE RECESSED FROM TOP SURFACE OF FLOOR OR SLEEVE OR FROM BOTH SURFACES OF WALL OR ENDS OF SLEEVE AS REQUIRED TO ACCOMMODATE THE REQUIRED THICKNESS OF FILL MATERIAL.
5. FILL, VOID OR CAVITY MATERIAL* - CAULK OR SEALANT - APPLIED TO FILL THE THROUGH OPENING TO A MIN THICKNESS OF 1 IN. FLUSH WITH THE TOP SURFACE OF THE FLOOR OR SLEEVE OR BOTH SURFACES OF WALL OR ENDS OF SLEEVE. CAULK TO BE FORCED INTO INTERSTICES OF CABLE GROUP TO MAX EXTENT POSSIBLE. F RATING OF FIRESTOP SYSTEMS IS DEPENDENT UPON THE THROUGH OPENING SIZE, THE THICKNESS OF THE CONCRETE, THE SLEEVE TYPE AND PERCENT OF CABLE FILL.

MAX THROUGH OPENING DIAM. IN.	MIN. CONCRETE THKNS IN.	SLEEVE TYPE	% CABLE FILL	F RATING HR
8	2 1/2	STEEL	15-40	1 1/2
8	2 1/2	STEEL	10-15	3
8	4 1/2	STEEL	10-22	3

THROUGH PENETRATION FIRESTOP SYSTEM DETAIL 2
SCALE: N.T.S.

T-Mobile
T-MOBILE NORTHEAST LLC
A DELAWARE LIMITED LIABILITY COMPANY
15 COMMERCE WAY, SUITE B
NORTON, MA 02766
PHONE: (508) 286-2700
FAX: (508) 286-2883

Dewberry
Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

NANEPASHEMET
PROJECT MANAGEMENT

328 WEST SHORE DRIVE
SUITE 111A
CAMBRIDGE, MA 02145



SHEET CONFIGURATION:
5F

APPROVALS

LANDLORD _____

LEASING _____

R.F. _____

ZONING _____

CONSTRUCTION _____

A/E _____

PROJECT NO: 50037672

JOB NO: 50074320

DRAWN BY: JG

CHECKED BY: LSP

SUBMITTALS

NO.	DATE	DESCRIPTION
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0	10/13/15	FOR CONSTRUCTION
A	08/24/15	FOR REVIEW

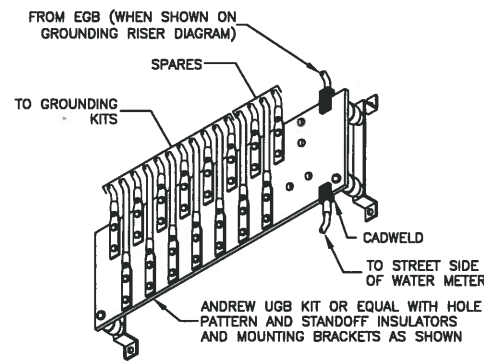
4BSM457A
BRATTLE SQUARE
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
CONSTRUCTION DETAILS
1

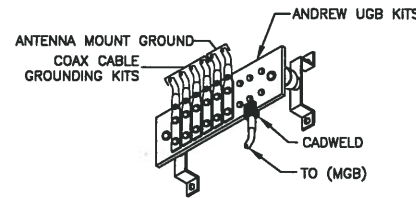
SHEET NUMBER
A-6

ELECTRICAL & GROUNDING NOTES

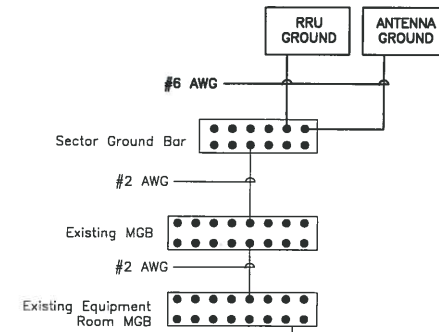
- ALL ELECTRICAL WORK SHALL CONFORM TO THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC) AS WELL AS APPLICABLE STATE AND LOCAL CODES.
- ALL ELECTRICAL ITEMS SHALL BE U.L. APPROVED OR LISTED AND PROCURED PER SPECIFICATION REQUIREMENTS.
- THE ELECTRICAL WORK INCLUDES ALL LABOR AND MATERIAL DESCRIBED BY DRAWINGS AND SPECIFICATION INCLUDING INCIDENTAL WORK TO PROVIDE COMPLETE OPERATING AND APPROVED ELECTRICAL SYSTEM.
- GENERAL CONTRACTOR SHALL PAY FEES FOR PERMITS, AND IS RESPONSIBLE FOR OBTAINING SAID PERMITS AND COORDINATION OF INSPECTIONS.
- 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.
- RIGID STEEL CONDUITS SHALL BE GROUNDED AT BOTH ENDS.
- ELECTRICAL WIRING SHALL BE COPPER WITH TYPE XHHW, THWN, OR THIN INSULATION.
- RUN ELECTRICAL CONDUIT OR CABLE BETWEEN ELECTRICAL UTILITY DEMARCATION POINT AND LESSEE/LICENSEE CELL SITE PPC AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE. COORDINATE INSTALLATION WITH UTILITY COMPANY.
- RUN TELCO CONDUIT OR CABLE BETWEEN TELEPHONE UTILITY DEMARCATION POINT AND LESSEE/LICENSEE CELL SITE TELCO CABINET AND BTS CABINET AS INDICATED ON THIS DRAWING. PROVIDE FULL LENGTH PULL ROPE IN INSTALLED TELCO CONDUIT. PROVIDE GREENLEE CONDUIT MEASURING TAPE AT EACH END.
- ALL EQUIPMENT LOCATED OUTSIDE SHALL HAVE NEMA 3R ENCLOSURE.
- GROUNDED SHALL COMPLY WITH NEC ART. 250.
- GROUND COAXIAL CABLE SHIELDS MINIMUM AT BOTH ENDS USING MANUFACTURER'S COAX CABLE GROUNDING KITS SUPPLIED BY LESSEE/LICENSEE.
- USE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR GROUNDED (UNLESS OTHERWISE SPECIFIED) AND #2 SOLID TINNED BARE COPPER WIRE FOR BELOW GRADE GROUNDED AS INDICATED ON THE DRAWING.
- 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.
- ROUTE GROUNDED CONDUCTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDED 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 6 FEET OF LESSEE/LICENSEE EQUIPMENT OR CABINET TO MASTER GROUND BAR OR GROUNDED RING.
- CONNECTIONS TO GROUND BARS SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
- APPLY OXIDE INHIBITING COMPOUND TO ALL COMPRESSION TYPE GROUND CONNECTIONS.
- BOND ANTENNA MOUNTING BRACKETS, COAXIAL CABLE GROUND KITS, AND ALNA TO EGB PLACED NEAR THE ANTENNA LOCATION.
- BOND ANTENNA EGBS AND MGB TO GROUND RING.
- TEST COMPLETED GROUND SYSTEM AND RECORD RESULTS FOR PROJECT CLOSE-OUT DOCUMENTATION. 5 OHMS MINIMUM RESISTANCE REQUIRED.
- BOND ANY METAL OBJECT WITHIN 7 FEET OF THE PROPOSED EQUIPMENT OR CABINET TO MASTER GROUND BAR.
- VERIFY PROPOSED SERVICE UPGRADE WITH LOCAL UTILITY COMPANY PRIOR TO CONSTRUCTION.



MASTER GROUND BAR (MGB)
SCALE: N.T.S.

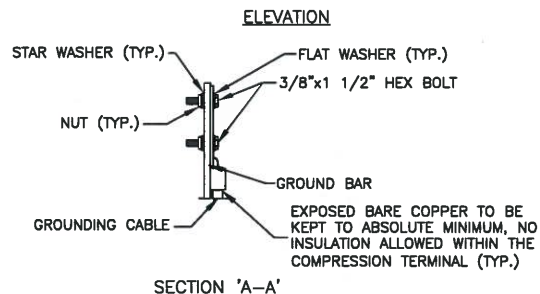
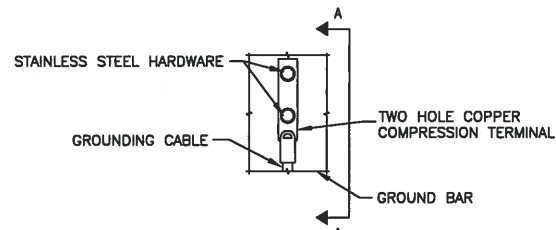


EQUIPMENT GROUND BAR (EGB)
SCALE: N.T.S.



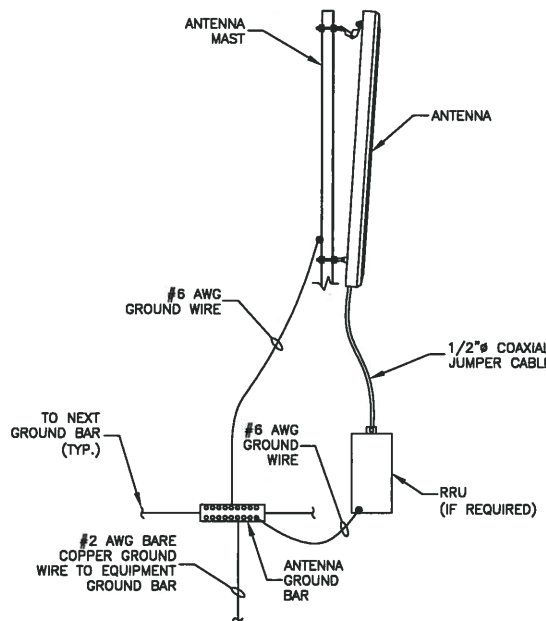
- NOTES:**
- ALL PROPOSED EQUIPMENT TO BE GROUNDED TO SECTOR GROUND BAR.
 - TYPICAL FOR ALL SECTORS.
 - GROUNDED SHALL COMPLY WITH NEC ART. 250 & T-MOBILE SPECIFICATIONS.

SCHEMATIC GROUNDING DIAGRAM
SCALE: N.T.S.

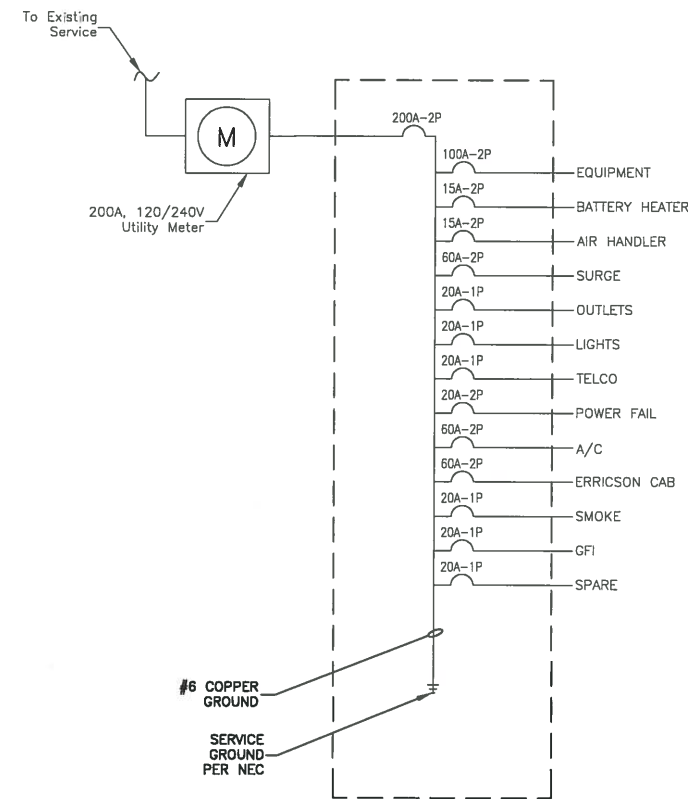


- NOTES:**
- DOUBLING UP OR STACKING OF CONNECTIONS IS NOT PERMITTED.
 - OXIDE INHIBITING COMPOUND TO BE USED AT ALL LOCATIONS.

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



TYPICAL ANTENNA GROUNDING DETAIL
SCALE: N.T.S.



- NOTE:**
- VERIFY REQUIRED BREAKER SIZE WITH T-MOBILE CM CONTRACTOR TO VERIFY EXISTING PANEL CONDITIONS AND ALL EXISTING WIRING PRIOR TO INSTALLATION. CONTRACTOR TO CONFIRM EXISTING PANEL HAS CAPACITY FOR BREAKER REQUIREMENTS AND EXISTING CONDUITS/WIRING ARE SUITABLE FOR ANY UPGRADE.

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

T-Mobile

T-MOBILE NORTHEAST LLC
A DELAWARE LIMITED LIABILITY COMPANY
15 COMMERCE WAY, SUITE B
NORTON, MA 02756
PHONE: (508) 286-2700
FAX: (508) 286-2883

Dewberry

Dewberry Engineers Inc.
280 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3310

NANEPASHEMET
PROJECT MANAGEMENT

328 WEST SHORE DRIVE
SUITE 4-A
MARBLEHEAD, MA 01945



SITE CONFIGURATION:
5F

APPROVALS

LANDLORD _____

LEASING _____

R.F. _____

ZONING _____

CONSTRUCTION _____

A/E _____

PROJECT NO: 50037672

JOB NO: 50074320

DRAWN BY: JG

CHECKED BY: LSP

SUBMITTALS

NO.	DATE	DESCRIPTION
1	03/10/16	FOR CONSTRUCTION
0	10/13/15	FOR CONSTRUCTION
A	08/24/15	FOR REVIEW

4BSM457A
BRATTLE SQUARE
1 BRATTLE SQUARE
CAMBRIDGE, MA 02138

SHEET TITLE
GROUNDING DETAILS
& NOTES

SHEET NUMBER
E-1



15 Commerce Way
Norton, MA 02766

PHOTO SIMULATION

**4BSM457A
BRATTLE SQUARE**

Address:
**1 Brattle Square
CAMBRIDGE, MA 02138**

Date:
16 MARCH 2016

Prepared by
**Nanepashemet Project
Management, Inc.
328 West Shore Drive
Marblehead, MA 01945**

PHOTO LOCATION MAP



PHOTO LOCATION 1 - EXISTING

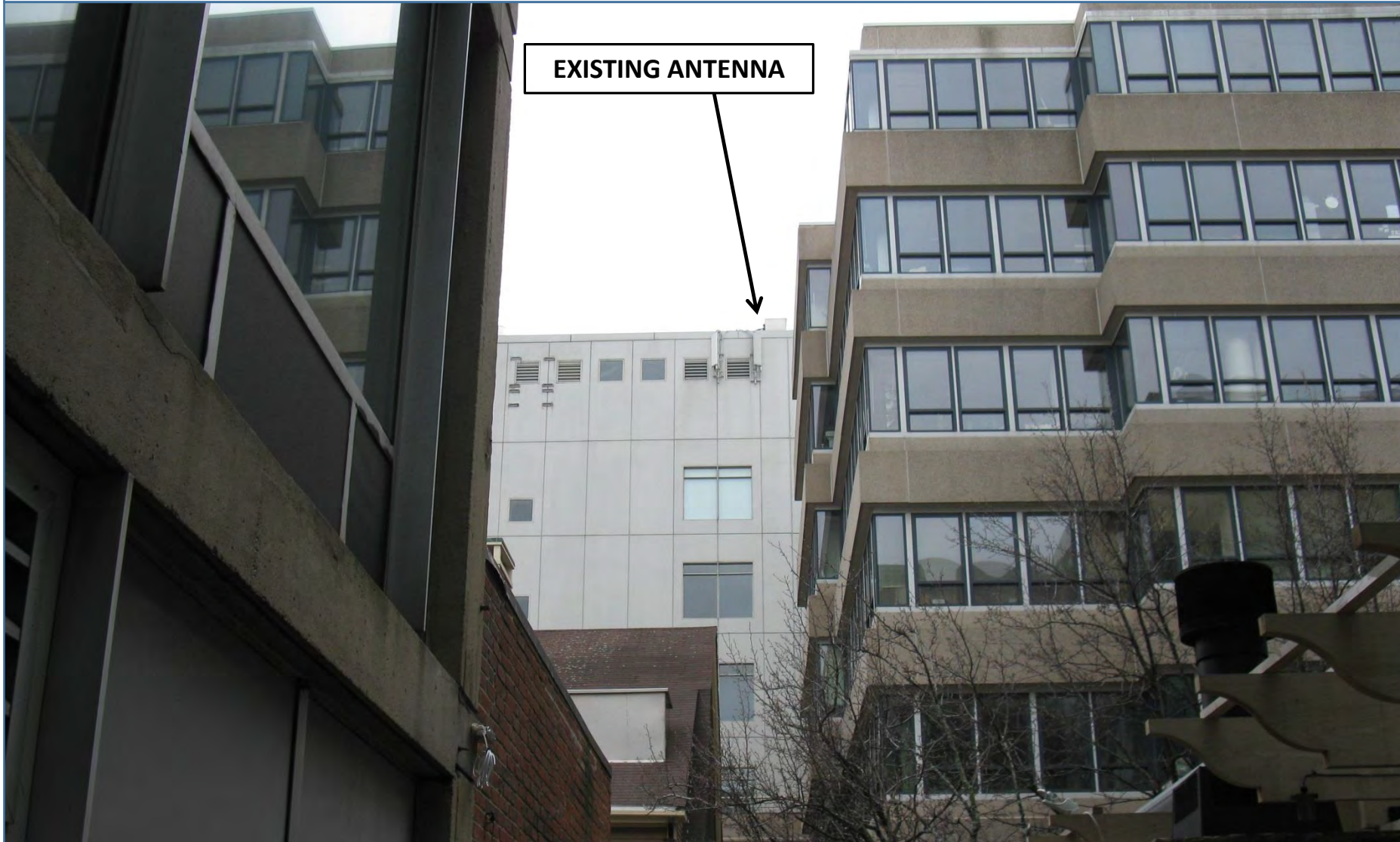


PHOTO LOCATION 1 - PROPOSED

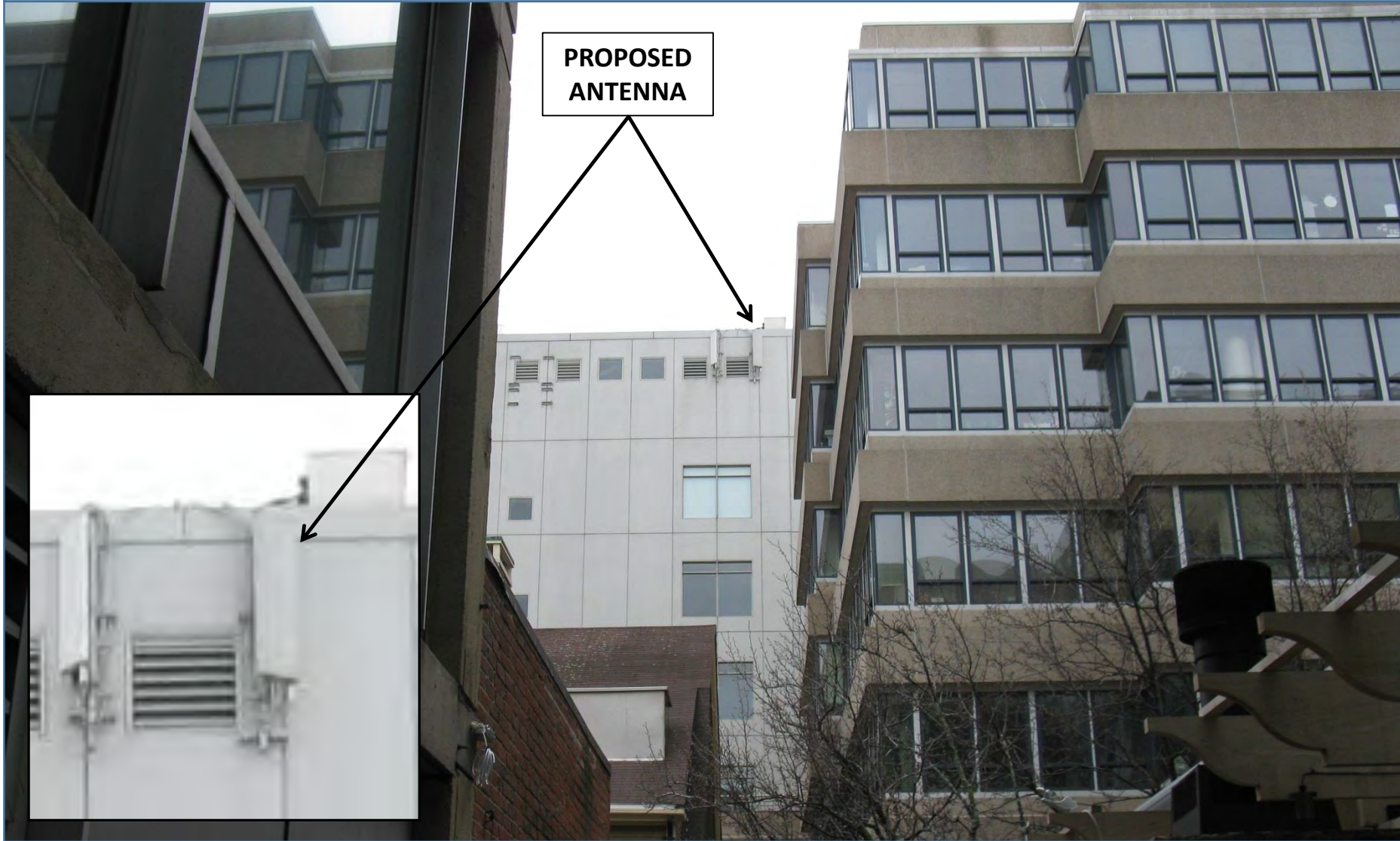


PHOTO LOCATION 2 - EXISTING



PHOTO LOCATION 2 - PROPOSED

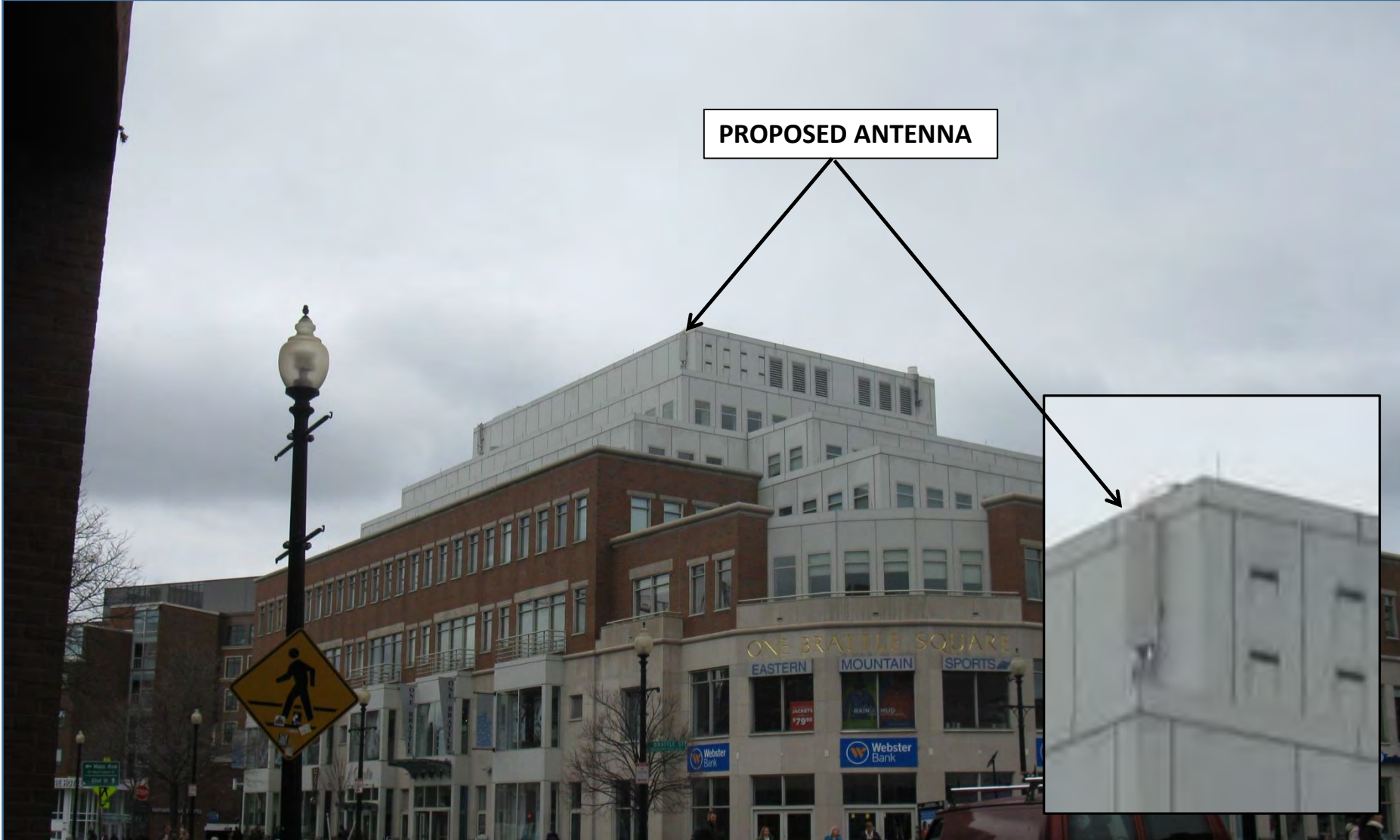


PHOTO LOCATION 3 - EXISTING



PHOTO LOCATION 3 - PROPOSED

