



# CITY OF CAMBRIDGE

BOARD OF ZONING APPEAL

831 Massachusetts Avenue, Cambridge MA 02139

617-349-6100

2023 MAY 22 AM 11:59  
OFFICE OF THE CITY CLERK  
CAMBRIDGE, MASSACHUSETTS

## BZA Application Form

**BZA Number: 223702**

### General Information

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

Special Permit:   X                        Variance:                             Appeal:       

**PETITIONER:** T-Mobile Northeast LLC for Massachusetts Institute of Technology C/O Adam Braillard of Prince Lobel Tye LLP

**PETITIONER'S ADDRESS:** One International Place, Boston, MA 02110

**LOCATION OF PROPERTY:** 120 Vassar St., Cambridge, MA

**TYPE OF OCCUPANCY:** Telecommunications and Institutional                      **ZONING DISTRICT:** Residential C-3 Zone

### **REASON FOR PETITION:**

/Telecommunication Facility (antenna)/

### **DESCRIPTION OF PETITIONER'S PROPOSAL:**

The Applicant proposes to modify its existing telecommunications facility located on the rooftop and on the facade of the existing building by replacing and adding panel antennas and by replacing and reducing the number of remote radio units at the facility. All visible replaced and added antennas will be painted to match the color of the existing building.

### **SECTIONS OF ZONING ORDINANCE CITED:**

- Article: 4.000                      Section: 4.32.G.1 (footnote 49) (Telecommunications Facilities).
- Article: 10.000                      Section: 10.40 (Special Permit).
- Article: 6409                      Section: Federal Middle Class Tax Relief Act (Spectrum Act)

Original  
Signature(s):

*(Petitioner (s) / Owner)*  
Adam F. Braillard of Prince Lobel Tye LLP, for the  
Applicant, T-Mobile Northeast LLC

(Print Name)

One International Place, Suite 3700, Boston MA 02110

Address:

Tel. No.

617-456-8153

E-Mail Address:

abraillard@princelobel.com

**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 Massachusetts Institute of Technology  
(OWNER)

Address: 77 Mass Ave, W92-196, Cambridge, MA 02139

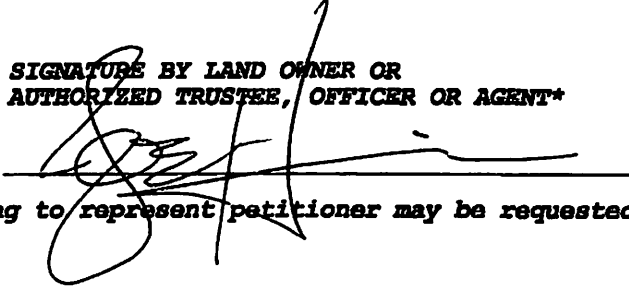
State that I/We own the property located at Building W34 and Building W35 located at 120 Vassar Avenue which is the subject of this zoning application.

The record title of this property is in the name of Massachusetts Institute of Technology

\*Pursuant to a deed of duly recorded in the date 6/24/1960, Middlesex South County Registry of Deeds at Book 9620, Page 252; or

Middlesex Registry District of Land Court, Certificate No. \_\_\_\_\_  
Book \_\_\_\_\_ Page \_\_\_\_\_

SIGNATURE BY LAND OWNER OR  
AUTHORIZED TRUSTEE, OFFICER OR AGENT\*



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

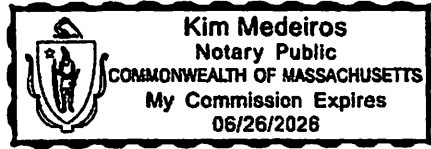
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Commonwealth of Massachusetts, County of Middlesex

The above-name Joe Higgins personally appeared before me, this 15 of May, 2023 and made oath that the above statement is true.

Kim Medeiros<sup>1</sup> Notary

My commission expires 06/26/2026 (Notary Seal).

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



May 17, 2023

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: 120 Vassar Street  
Assessor's Map 57, Lot 173 (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**" or 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 Residential C-3 (**C-3**) 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 Board<sup>1</sup>. 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. Compliance with the Spectrum Act is

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<sup>1</sup> 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.

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shown on the Eligible Facilities Request permit application form attached hereto and incorporated herein by reference (the “**EFR**”).

The Applicant seeks to modify its existing wireless communications facility by replacing two (2) existing panel antennas with nine (9) new panel antennas and remove eight (8) existing Remote Radio Units (“**RRUs**”) and replace those with six (6) new RRUs, all mounted on the roof of the existing building, together with supporting equipment (the “**Proposed Facility**”). All of the proposed antennas will be installed at the same locations as the existing antennas. As noted, the proposed antennas and RRUs will be installed on the rooftop of the existing building located at the Property (the “**Building**”). 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**

The Applicant’s existing facility currently operating on the rooftop of the Building consists of two (2) sectors (Sectors Gamma and Beta) of one (1) panel antenna each and four (4) RRUs each. The Applicant proposes to modify its existing wireless facility by:

- Replacing each of the panel antennas with three (3) new like kind panel antennas per sector;
- Adding a third sector (Alpha) to the facility and including three (3) new panel antennas.
- Replacing eight (8) existing RRUs currently located at the Gamma and Beta sectors, with four (4) new RRUs,

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- Assing two (2) new RRUs to the new Alpha sector,
- Add and replace ancillary equipment within the existing equipment room, out of view.

In total, the panel antenna count will go from two (2) panel antennas to nine (9) panel antennas and the RRU count will be reduced from eight (8) to six (6) RRUs. All panel antennas will be mounted on the façade of the Building and painted to match the finish of the Building. The RRUs will be installed behind the Building's parapet and out of view. All new equipment will be installed to be consistent with the previous decisions of the Board for this facility, the most recent of which is dated December 20, 2018 (Case No. BZA-016980-2018) (the "Decisions"). 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 B-3 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.

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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 BA 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 BA 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.

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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 Proposed Facility has a minimal additional visual impact on the existing facility and Building. The Proposed Facility will continue to comply with the Decisions, and such will have a de-minimus impact on the existing visual conditions of the Building.

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 Property and Proposed Facility are located in the C-3 zoning district, but nonresidential uses predominate in the area. Pursuant to the requirement that the Board shall grant a special permit to erect a Telecommunications Facility only upon a finding that non-residential uses predominate in the vicinity of the proposed facility's location the Applicant hereby states that this is a modification of an existing wireless facility and as such respectfully submits to the Board that it has previously found that nonresidential uses predominate in the vicinity of this Proposed Facility. The Board has reached a decision to grant a special permit for the Applicant's Existing Facility the previous Decisions. As such, the Applicant respectfully requests that, in keeping with its prior decisions, the Board find that

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nonresidential uses predominate in the vicinity of the Proposed Facility and that the Proposed Facility is not inconsistent with the character that does prevail in the surrounding neighborhood.

Further, notwithstanding anything contained herein to the contrary, and in agreement with the aforementioned predominately nonresidential use finding, upon an inspection of the vicinity of the Proposed Facility the Applicant respectfully submits that said finding is reasonable as the character of the surrounding neighborhood consists of nonresidential uses such as, the numerous sporting fields and stadiums in the vicinity along Vassar Street, the MIT Recreational Center on Vassar Street, and numerous non-residential building and uses along Vassar Street in the vicinity of the Proposed Facility.

Moreover, the proposed changes to the Existing Facility are de minimis and therefore, the Proposed Facility is not inconsistent with the character that does prevail in the surrounding neighborhood. Finally, as noted above, the proposed installation is a modification to the Applicant's Facility and as such is the preferred location for additional equipment, pursuant to the TCA, as referenced above.

**B. The Applicant complies with the Special Permit Criteria set forth in Section 10-43 of the Ordinance<sup>2</sup>:**

**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:**

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<sup>2</sup> 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 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 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.

**3. 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

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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 BA 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.

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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,



Adam F. Braillard  
Direct: 617-456-8153  
Email: [abraillard@princelobel.com](mailto:abraillard@princelobel.com)

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Suite 3700  
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Date: May 18, 2023

**BZA Application Form**

**DIMENSIONAL INFORMATION**

**Applicant:** T-Mobile Northeast LLC for Massachusetts Institute of Technology  
**Location:** 120 Vassar St., Cambridge, MA  
**Phone:** 617-456-8153

**Present Use/Occupancy:** Telecommunications and Institutional  
**Zone:** Residential C-3 Zone  
**Requested Use/Occupancy:** Telecommunications

		<b><u>Existing Conditions</u></b>	<b><u>Requested Conditions</u></b>	<b><u>Ordinance Requirements</u></b>	
<b><u>TOTAL GROSS FLOOR AREA:</u></b>		N/A	No Change	N/A	(max.)
<b><u>LOT AREA:</u></b>		N/A	No Change	N/A	(min.)
<b><u>RATIO OF GROSS FLOOR AREA TO LOT AREA: <sup>2</sup></u></b>		N/A	No Change	N/A	
<b><u>LOT AREA OF EACH DWELLING UNIT</u></b>		N/A	No Change	N/A	
<b><u>SIZE OF LOT:</u></b>	WIDTH	N/A	No Change	N/A	
	DEPTH	N/A	No Change	N/A	
<b><u>SETBACKS IN FEET:</u></b>	FRONT	N/A	No Change	N/A	
	REAR	N/A	No Change	N/A	
	LEFT SIDE	N/A	No Change	N/A	
	RIGHT SIDE	N/A	No Change	N/A	
<b><u>SIZE OF BUILDING:</u></b>	HEIGHT	N/A	No Change	N/A	
	WIDTH	N/A	No Change	N/A	
	LENGTH	N/A	No Change	N/A	
<b><u>RATIO OF USABLE OPEN SPACE TO LOT AREA:</u></b>		N/A	No Change	N/A	
<b><u>NO. OF DWELLING UNITS:</u></b>		N/A	No Change	N/A	
<b><u>NO. OF PARKING SPACES:</u></b>		N/A	N/A	N/A	
<b><u>NO. OF LOADING AREAS:</u></b>		N/A	No Change	N/A	
<b><u>DISTANCE TO NEAREST BLDG. ON SAME LOT</u></b>		N/A	N/A	N/A	

Describe where applicable, other occupancies on the 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.

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'.

**PROJECT INFORMATION**

SCOPE OF WORK:

- REMOVE EXISTING (2) COMMScope-NNV-65B-R4 ANTENNAS
- REMOVE EXISTING (2) ALCATEL-2x50 800MHz RRUS
- REMOVE EXISTING (2) ALCATEL-2.5GHz RRUS
- REMOVE EXISTING (2) ALCATEL-1900MHz RRUS
- REMOVE EXISTING (1) SPRINT-BBU CABINET
- REMOVE EXISTING (1) SPRINT-4.0 MOD CELL CABINET
- REMOVE EXISTING (1) HYBRID CABLES
- ADD PROPOSED (3) RFS-APXVLL 19P\_43-C-A20 ANTENNAS
- ADD PROPOSED (3) ERICSSON-AIR6449 B41 MIMO ANTENNAS
- ADD PROPOSED (3) RFS-APXVAALL 18\_43-U-NA20 ANTENNAS
- ADD PROPOSED CONDUIT SUPPORTS PER. ALPHA SECTOR
- ADD PROPOSED (1) CUSTOM RRU WALL MOUNT PER. ALPHA SECTOR
- ADD PROPOSED (3) ERICSSON-4480 B71+B85 RRUS
- ADD PROPOSED (3) ERICSSON-4460 B25+B66 RRUS
- ADD PROPOSED (1) ERICSSON-6230 UNIT & POWER RACK
- ADD PROPOSED (1) FIBER SCLACKBOX
- ADD PROPOSED (1) 19" FLOOR RACK (FULL SIZE)
- ADD PROPOSED (3) 6x24 HYBRID CABLES
- ADD PROPOSED (1) GPS ANTENNA

SITE ADDRESS: 120 VASSAR STREET  
CAMBRIDGE, MA 02139

LATITUDE: 42° 21' 30.07" (NAD 83)\*  
LONGITUDE: 71° 05' 45.78" (NAD 83)\*  
\* PER EXISTING PLANS

JURISDICTION: CITY OF CAMBRIDGE

NAME OF APPLICANT: T-MOBILE  
15 COMMERCE WAY  
NORTON, MA 02766



**T-MOBILE NORTHEAST LLC**

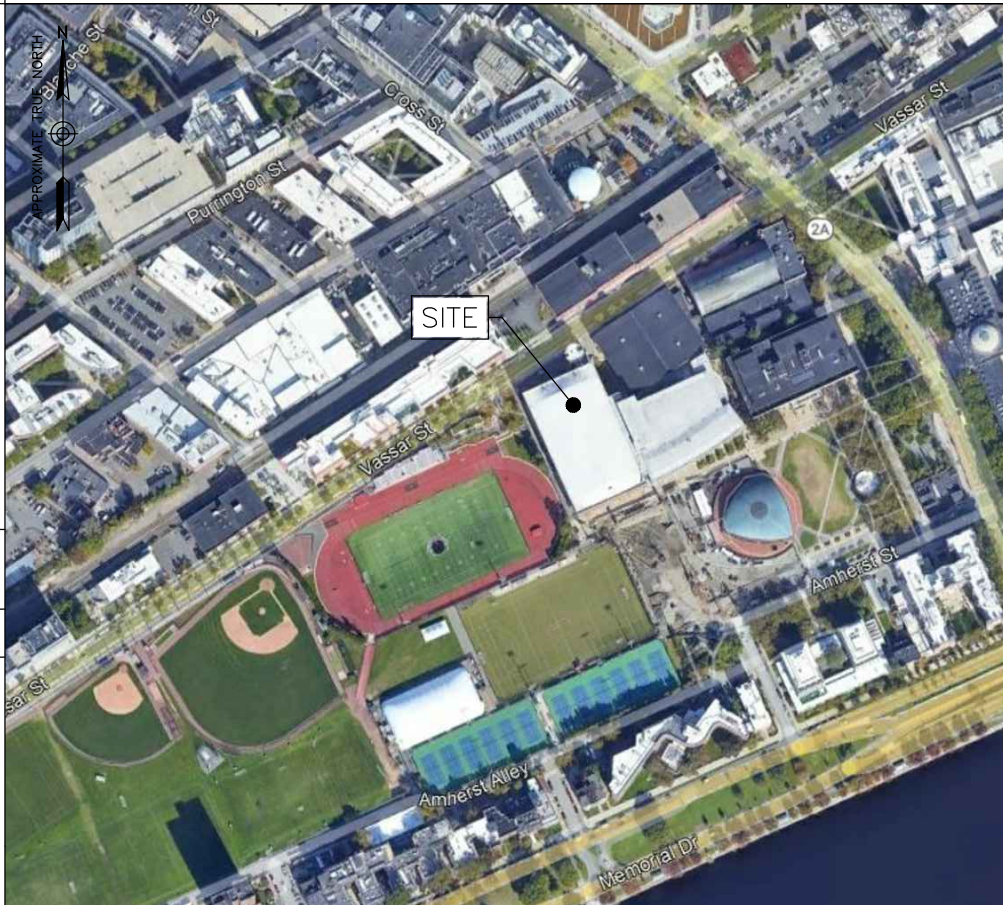
**T-MOBILE SITE #: 4BSS160A**  
**SITE NAME: MIT WEST**  
**120 VASSAR STREET**  
**CAMBRIDGE, MA 02139**

**DRAWING INDEX**

**REV**

T01	TITLE SHEET	0
G01	GENERAL NOTES	0
C01	ROOF & EQUIPMENT PLANS	0
C02	ELEVATIONS	0
C03	ANTENNA PLANS	0
C04	ANTENNA DETAILS & CONFIGURATION	0
C05	EQUIPMENT DETAILS	0
S01	STRUCTURAL DETAILS	0
E01	ELECTRICAL DETAILS	0

**VICINITY MAP**



**APPLICABLE BUILDING CODES AND STANDARDS**

CONTRACTOR'S WORK SHALL COMPLY WITH PROJECT STANDARD NOTES, SYMBOLS AND DETAILS (SEE DRAWING INDEX FOR STANDARD NOTES AND DETAILS INCLUDED WITH TYPICAL DRAWING PACKAGE). CONTRACTOR 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:  
MASSACHUSETTS STATE BUILDING CODE (780 CMR)

ELECTRICAL CODE:  
NATIONAL ELECTRICAL CODE (NEC)  
MASSACHUSETTS ELECTRICAL CODE (527 CMR 12.00)

CONTRACTOR'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, NINTH EDITION  
TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES:  
TIA 607, COMMERCIAL BUILDING GROUNDING AND BONDING REQUIREMENTS FOR TELECOMMUNICATIONS

INSTITUTE FOR ELECTRICAL AND ELECTRONICS ENGINEERS (IEEE) 81, GUIDE FOR MEASURING EARTH RESISTIVITY, GROUND IMPEDANCE, AND EARTH SURFACE POTENTIALS OF A GROUND SYSTEM  
IEEE 1100 (1999) RECOMMENDED PRACTICE FOR POWERING AND GROUNDING OF ELECTRONIC EQUIPMENT  
IEEE C62.41, RECOMMENDED PRACTICES ON SURGE VOLTAGES IN LOW VOLTAGE AC POWER CIRCUITS (FOR LOCATION CATEGORY "C3" AND "HIGH SYSTEM EXPOSURE")

TELCORDIA GR-1503, COAXIAL CABLE CONNECTIONS

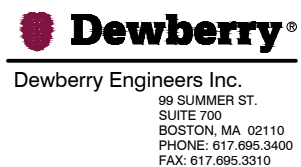
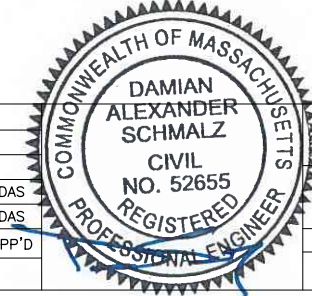
ANSI T1.311, FOR TELECOM - DC POWER SYSTEMS - TELECOM, ENVIRONMENTAL PROTECTION

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.

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.

**CONTACT INFORMATION**

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CAMBRIDGE, MA 02139



0	04/06/23	ISSUED FOR REVIEW	MR	CDH	DAS
A	03/28/23	ISSUED FOR REVIEW	MR	CDH	DAS
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: CDH	DRAWN BY: MR		

T-MOBILE NORTHEAST LLC  
NORTON, MA 92766

TITLE SHEET

DEWBERRY NO.	DRAWING NUMBER	REV
50122947/50122981	T01	A

**GENERAL NOTES:**

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
PROJECT MANAGEMENT – SAI COMMUNICATIONS  
CONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)  
OWNER – T-MOBILE  
OEM – ORIGINAL EQUIPMENT MANUFACTURER
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING CONTRACTOR 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 PROJECT MANAGEMENT.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. CONTRACTOR 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.
- DRAWINGS PROVIDED HERE ARE NOT TO SCALE UNLESS OTHERWISE NOTED AND ARE INTENDED TO SHOW OUTLINE ONLY.
- UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
- THE CONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
- IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE CONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION FOR APPROVAL BY PROJECT MANAGEMENT.
- CONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. CONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. CONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH PROJECT MANAGEMENT.
- THE CONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
- CONTRACTOR 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.
- CONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- 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.
- CONTRACTOR SHALL NOTIFY DEWBERRY 48 HOURS IN ADVANCE OF POURING CONCRETE, OR BACKFILLING TRENCHES, SEALING ROOF AND WALL PENETRATIONS & POST DOWNS, FINISHING NEW WALLS OR FINAL ELECTRICAL CONNECTIONS FOR ENGINEER REVIEW.
- CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. CONTRACTOR SHALL NOTIFY PROJECT MANAGEMENT OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY CONTRACTOR 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.
- 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.

**SITE WORK GENERAL NOTES:**

- THE CONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
- ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY CONTRACTOR. EXTREME CAUTION SHOULD BE USED BY THE CONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. CONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO:  
A) FALL PROTECTION  
B) CONFINED SPACE  
C) ELECTRICAL SAFETY  
D) TRENCHING & EXCAVATION.
- ALL SITE WORK SHALL BE AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
- IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES, TOP SOIL AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
- ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, SUBJECT TO THE APPROVAL OF CONTRACTOR, OWNER AND/OR LOCAL UTILITIES.
- CONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION.
- THE CONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE T-MOBILE SPECIFICATION FOR SITE SIGNAGE.
- THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE TRANSMISSION EQUIPMENT AND TOWER AREAS.
- NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
- THE SUB GRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION, SEE SOIL COMPACTION NOTES.
- THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY, SHALL BE GRADED TO A UNIFORM SLOPE, AND STABILIZED TO PREVENT EROSION.
- EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL JURISDICTION'S GUIDELINES FOR EROSION AND SEDIMENT CONTROL.

**CONCRETE AND REINFORCING STEEL NOTES:**

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE ACI 301, ACI 318, ACI 336, ASTM A184, ASTM A185 AND THE DESIGN AND CONSTRUCTION SPECIFICATION FOR CAST-IN-PLACE CONCRETE.
- ALL CONCRETE SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 4000 PSI AT 28 DAYS, UNLESS NOTED OTHERWISE. A HIGHER STRENGTH (4000 PSI) MAY BE USED. ALL CONCRETING WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.
- REINFORCING STEEL SHALL CONFORM TO ASTM A 615, GRADE 60, DEFORMED UNLESS NOTED OTHERWISE. WELDED WIRE FABRIC SHALL CONFORM TO ASTM A 185 WELDED STEEL WIRE FABRIC UNLESS NOTED OTHERWISE (UNO). SPLICES SHALL BE CLASS "B" AND ALL HOOKS SHALL BE STANDARD, UNO.
- THE FOLLOWING MINIMUM CONCRETE COVER SHALL BE PROVIDED FOR REINFORCING STEEL UNLESS SHOWN OTHERWISE ON DRAWINGS:  
CONCRETE CAST AGAINST EARTH.....3 IN.  
CONCRETE EXPOSED TO EARTH OR WEATHER:  
#6 AND LARGER .....2 IN.  
#5 AND SMALLER & WWF.....1 1/2 IN.  
CONCRETE NOT EXPOSED TO EARTH OR WEATHER OR NOT CAST AGAINST THE GROUND:  
SLAB AND WALL .....3/4 IN.  
BEAMS AND COLUMNS.....1 1/2 IN.
- A CHAMFER 3/4" SHALL BE PROVIDED AT ALL EXPOSED EDGES OF CONCRETE, UNO, IN ACCORDANCE WITH ACI 301 SECTION 4.2.4.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
- CONCRETE CYLINDER TEST IS NOT REQUIRED FOR SLAB ON GRADE WHEN CONCRETE IS LESS THAN 50 CUBIC YARDS (IBC 1905.6.2.3) IN THAT EVENT THE FOLLOWING RECORDS SHALL BE PROVIDED BY THE CONCRETE SUPPLIER;  
(A) RESULTS OF CONCRETE CYLINDER TESTS PERFORMED AT THE SUPPLIER'S PLANT.  
(B) CERTIFICATION OF MINIMUM COMPRESSIVE STRENGTH FOR THE CONCRETE GRADE SUPPLIED.  
FOR GREATER THAN 50 CUBIC YARDS THE GC SHALL PERFORM THE CONCRETE CYLINDER TEST.
- AS AN ALTERNATIVE TO ITEM 7, TEST CYLINDERS SHALL BE TAKEN INITIALLY AND THEREAFTER FOR EVERY 50 YARDS OF CONCRETE FROM EACH DIFFERENT BATCH PLANT.
- EQUIPMENT SHALL NOT BE PLACED ON NEW PADS FOR SEVEN DAYS AFTER PAD IS POURED, UNLESS IT IS VERIFIED BY CYLINDER TESTS THAT COMPRESSIVE STRENGTH HAS BEEN ATTAINED.

**STRUCTURAL STEEL NOTES:**

- ALL STEEL WORK SHALL BE PAINTED OR GALVANIZED IN ACCORDANCE WITH THE DRAWINGS UNLESS NOTED OTHERWISE. STRUCTURAL STEEL SHALL BE ASTM-A-36 UNLESS OTHERWISE NOTED ON THE SITE SPECIFIC DRAWINGS. STEEL DESIGN, INSTALLATION AND BOLTING SHALL BE PERFORMED IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) "MANUAL OF STEEL CONSTRUCTION".
- ALL WELDING SHALL BE PERFORMED USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION". PAINTED SURFACES SHALL BE TOUCHED UP.
- BOLTED CONNECTIONS SHALL BE ASTM A325 BEARING TYPE (3/4"Ø) CONNECTIONS AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
- NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
- INSTALLATION OF CONCRETE EXPANSION/WEDGE ANCHOR, SHALL BE PER MANUFACTURER'S WRITTEN RECOMMENDED PROCEDURE. THE ANCHOR BOLT, DOWEL OR ROD SHALL CONFORM TO MANUFACTURER'S RECOMMENDATION FOR EMBEDMENT DEPTH OR AS SHOWN ON THE DRAWINGS. NO REBAR SHALL BE CUT WITHOUT PRIOR CONTRACTOR APPROVAL WHEN DRILLING HOLES IN CONCRETE. SPECIAL INSPECTIONS, REQUIRED BY GOVERNING CODES, SHALL BE PERFORMED IN ORDER TO MAINTAIN MANUFACTURER'S MAXIMUM ALLOWABLE LOADS. ALL EXPANSION/WEDGE ANCHORS SHALL BE STAINLESS STEEL OR HOT DIPPED GALVANIZED. EXPANSION BOLTS SHALL BE PROVIDED BY RAMSET/REDHEAD OR APPROVED EQUAL.
- CONTRACTOR SHALL SUBMIT SHOP DRAWINGS FOR ENGINEER REVIEW & APPROVAL ON PROJECTS REQUIRING STRUCTURAL STEEL.
- ALL STRUCTURAL STEEL WORK SHALL BE DONE IN ACCORDANCE WITH AISC SPECIFICATIONS.

**SOIL COMPACTION NOTES FOR SLAB ON GRADE:**

- EXCAVATE AS REQUIRED TO REMOVE VEGETATION & TOPSOIL EXPOSE UNDISTURBED NATURAL SUBGRADE AND PLACE CRUSHED STONE AS REQUIRED.
- COMPACTION CERTIFICATION: AN INSPECTION AND WRITTEN CERTIFICATION BY A QUALIFIED GEOTECHNICAL TECHNICIAN OR ENGINEER IS ACCEPTABLE.
- AS AN ALTERNATIVE TO INSPECTION AND WRITTEN CERTIFICATION, THE "UNDISTURBED SOIL" BASE SHALL BE COMPACTED WITH "COMPACTION EQUIPMENT", LISTED BELOW, TO AT LEAST 90% MODIFIED PROCTOR MAXIMUM DENSITY PER ASTM D 1557 METHOD C.
- COMPACTION SUBBASE SHALL BE UNIFORM & LEVELED. PROVIDE 6" MINIMUM CRUSHED STONE OR GRAVEL COMPACTED IN 3" LIFTS ABOVE COMPACTED SOIL. GRAVEL SHALL BE NATURAL OR CRUSHED WITH 100% PASSING 1" SIEVE.
- AS AN ALTERNATIVE TO ITEMS 2 AND 3 PROOFROLL THE SUBGRADE SOILS WITH 5 PASSES OF A MEDIUM SIZED VIBRATORY PLATE COMPACTOR (SUCH AS BOMAG BPR 30/38) OR HAND-OPERATED SINGLE DRUM VIBRATORY ROLLER (SUCH AS BOMAG BW 55E). ANY SOFT AREAS THAT ARE ENCOUNTERED SHOULD BE REMOVED AND REPLACED WITH A WELL-GRADED GRANULAR FILL, AND COMPACTED AS STATED ABOVE.

**COMPACTION EQUIPMENT:**

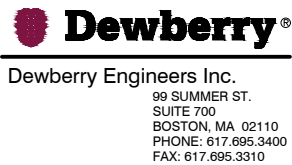
- HAND OPERATED DOUBLE DRUM, VIBRATORY ROLLER, VIBRATORY PLATE COMPACTOR OR JUMPING JACK COMPACTOR.

**CONSTRUCTION NOTES:**

- FIELD VERIFICATION:  
CONTRACTOR SHALL FIELD VERIFY SCOPE OF WORK, T-MOBILE ANTENNA PLATFORM LOCATION AND ANTENNAS TO BE REPLACED.
- COORDINATION OF WORK:  
CONTRACTOR SHALL COORDINATE RF WORK AND PROCEDURES WITH PROJECT MANAGEMENT.
- CABLE LADDER RACK:  
CONTRACTOR SHALL FURNISH AND INSTALL CABLE LADDER RACK, CABLE TRAY, AND CONDUIT AS REQUIRED TO SUPPORT CABLES TO THE NEW BTS LOCATION.

**ELECTRICAL INSTALLATION NOTES:**

- ALL ELECTRICAL WORK SHALL BE PERFORMED IN ACCORDANCE WITH THE PROJECT SPECIFICATIONS, NEC AND ALL APPLICABLE LOCAL CODES.
- CONTRACTOR SHALL MODIFY EXISTING CABLE TRAY SYSTEM AS REQUIRED TO SUPPORT RF AND TRANSPORT CABLING TO THE NEW BTS EQUIPMENT. CONTRACTOR SHALL SUBMIT MODIFICATIONS TO PROJECT MANAGEMENT FOR APPROVAL.
- CONDUIT ROUTINGS ARE SCHEMATIC. CONTRACTOR SHALL INSTALL CONDUITS SO THAT ACCESS TO EQUIPMENT IS NOT BLOCKED.
- WIRING, RACEWAY AND SUPPORT METHODS AND MATERIALS SHALL COMPLY WITH THE REQUIREMENTS OF THE NEC.
- ALL CIRCUITS SHALL BE SEGREGATED AND MAINTAIN MINIMUM CABLE SEPARATION AS REQUIRED BY THE NEC.
- CABLES SHALL NOT BE ROUTED THROUGH LADDER-STYLE CABLE TRAY RUNGS.
- EACH END OF EVERY POWER, POWER PHASE CONDUCTOR (I.E., HOTS), GROUNDING, AND T1 CONDUCTOR AND CABLE SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). THE IDENTIFICATION METHOD SHALL CONFORM WITH NEC & OSHA, AND MATCH EXISTING INSTALLATION REQUIREMENTS.
- ALL ELECTRICAL COMPONENTS SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS. ALL EQUIPMENT SHALL BE LABELED WITH THEIR VOLTAGE RATING, PHASE CONFIGURATION, WIRE CONFIGURATION, POWER OR AMPACITY RATING, AND BRANCH CIRCUIT ID NUMBERS (I.E., PANELBOARD AND CIRCUIT ID'S).
- PANELBOARDS (ID NUMBERS) AND INTERNAL CIRCUIT BREAKERS (CIRCUIT ID NUMBERS) SHALL BE CLEARLY LABELED WITH ENGRAVED LAMACOID PLASTIC LABELS.
- ALL TIE WRAPS SHALL BE CUT FLUSH WITH APPROVED CUTTING TOOL TO REMOVE SHARP EDGES.
- POWER, CONTROL, AND EQUIPMENT GROUND WIRING IN TUBING OR CONDUIT SHALL BE SINGLE CONDUCTOR (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90 °C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- POWER PHASE CONDUCTORS (I.E., HOTS) SHALL BE LABELED WITH COLOR-CODED INSULATION OR ELECTRICAL TAPE (3M BRAND, 1/2 INCH PLASTIC ELECTRICAL TAPE WITH UV PROTECTION, OR EQUAL). PHASE CONDUCTOR COLOR CODES SHALL CONFORM WITH THE NEC & OSHA AND MATCH EXISTING INSTALLATION REQUIREMENTS.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED INDOORS SHALL BE SINGLE CONDUCTOR (SIZE 6 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2 GREEN INSULATION, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; LISTED OR LABELED FOR THE LOCATION AND RACEWAY SYSTEM USED, UNLESS OTHERWISE SPECIFIED.
- SUPPLEMENTAL EQUIPMENT GROUND WIRING LOCATED OUTDOORS, OR BELOW GRADE, SHALL BE SINGLE CONDUCTOR #2 AWG SOLID TINNED COPPER CABLE, UNLESS OTHERWISE SPECIFIED.
- POWER AND CONTROL WIRING, NOT IN TUBING OR CONDUIT, SHALL BE MULTI-CONDUCTOR, TYPE TC CABLE (SIZE 14 AWG OR LARGER), 600V, OIL RESISTANT THHN OR THWN-2, CLASS B STRANDED COPPER CABLE RATED FOR 90°C (WET AND DRY) OPERATION; WITH OUTER JACKET; LISTED OR LABELED FOR THE LOCATION USED, UNLESS OTHERWISE SPECIFIED.
- ALL POWER AND POWER GROUNDING CONNECTIONS SHALL BE CRIMP-STYLE, COMPRESSION WIRE LUGS AND WIRENUTS BY THOMAS AND BETTS (OR EQUAL). LUGS AND WIRENUTS SHALL BE RATED FOR OPERATION AT NO LESS THAN 75°C (90°C IF AVAILABLE).
- RACEWAY AND CABLE TRAY SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC, AND NEC.
- NEW RACEWAY OR CABLE TRAY WILL MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- ELECTRICAL METALLIC TUBING (EMT) OR RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40, OR RIGID PVC SCHEDULE 80 FOR LOCATIONS SUBJECT TO PHYSICAL DAMAGE) SHALL BE USED FOR EXPOSED INDOOR LOCATIONS.
- ELECTRICAL METALLIC TUBING (EMT), ELECTRICAL NONMETALLIC TUBING (ENT), OR RIGID NONMETALLIC CONDUIT (RIGID PVC, SCHEDULE 40) SHALL BE USED FOR CONCEALED INDOOR LOCATIONS.
- GALVANIZED STEEL INTERMEDIATE METALLIC CONDUIT (IMC) SHALL BE USED FOR OUTDOOR LOCATIONS ABOVE GRADE.
- RIGID NONMETALLIC CONDUIT (I.E., RIGID PVC SCHEDULE 40 OR RIGID PVC SCHEDULE 80) SHALL BE USED UNDERGROUND; DIRECT BURIED, IN AREAS OF OCCASIONAL LIGHT VEHICLE TRAFFIC OR ENCASED IN REINFORCED CONCRETE IN AREAS OF HEAVY VEHICLE TRAFFIC.
- LIQUID-TIGHT FLEXIBLE METALLIC CONDUIT (LIQUID-TITE FLEX) SHALL BE USED INDOORS AND OUTDOORS, WHERE VIBRATION OCCURS OR FLEXIBILITY IS NEEDED.
- CONDUIT AND TUBING FITTINGS SHALL BE THREADED OR COMPRESSION-TYPE AND APPROVED FOR THE LOCATION USED. SETSCREW FITTINGS ARE NOT ACCEPTABLE.
- CABINETS, BOXES, AND WIREWAYS SHALL BE LISTED OR LABELED FOR ELECTRICAL USE IN ACCORDANCE WITH NEMA, UL, ANSI/IEEC, AND NEC.
- CABINETS, BOXES, AND WIREWAYS TO MATCH THE EXISTING INSTALLATION WHERE POSSIBLE.
- WIREWAYS SHALL BE EPOXY-COATED (GRAY) AND INCLUDE A HINGED COVER, DESIGNED TO SWING OPEN DOWNWARD; SHALL BE PANDUIT TYPE E (OR EQUAL); AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- EQUIPMENT CABINETS, TERMINAL BOXES, JUNCTION BOXES, AND PULL BOXES SHALL BE GALVANIZED OR EPOXY-COATED SHEET STEEL, SHALL MEET OR EXCEED UL 50, AND RATED NEMA 1 (OR BETTER) INDOORS, OR NEMA 3R (OR BETTER) OUTDOORS.
- METAL RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL BE GALVANIZED, EPOXY-COATED, OR NON-CORRODING; SHALL MEET OR EXCEED UL 514A AND NEMA OS 1; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- NONMETALLIC RECEPTACLE, SWITCH, AND DEVICE BOXES SHALL MEET OR EXCEED NEMA OS 2; AND RATED NEMA 1 (OR BETTER) INDOORS, OR WEATHER PROTECTED (WP OR BETTER) OUTDOORS.
- THE CONTRACTOR SHALL NOTIFY AND OBTAIN NECESSARY AUTHORIZATION FROM PROJECT MANAGEMENT BEFORE COMMENCING WORK ON THE AC POWER DISTRIBUTION PANELS.
- THE CONTRACTOR SHALL PROVIDE NECESSARY TAGGING ON THE BREAKERS, CABLES AND DISTRIBUTION PANELS IN ACCORDANCE WITH THE APPLICABLE CODES AND STANDARDS TO SAFEGUARD AGAINST LIFE AND PROPERTY.

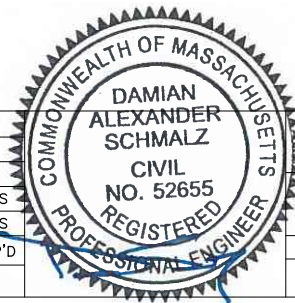


**MIT WEST**

120 VASSAR STREET  
CAMBRIDGE, MA 02139



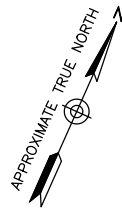
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SCALE: AS SHOWN		DESIGNED BY: CDH	DRAWN BY: MR			



T-MOBILE NORTHEAST LLC  
NORTON, MA 92766

**GENERAL NOTES**

DEWBERRY NO.	DRAWING NUMBER	REV
50122947/50122981	G01	A



VASSAR STREET

Existing Dome

Existing Entrance  
1  
C03

ALPHA SECTOR  
60° AZIMUTH

1  
C02

Existing Athletics  
Center Building

Existing Upper  
Roof

DRIVEWAY

3  
C02

2/3  
C01

Existing Cable Tray

PROPOSED T-MOBILE  
GPS ANTENNA

GAMMA SECTOR  
265° AZIMUTH

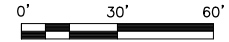
2/3  
C03

BETA SECTOR  
160° AZIMUTH

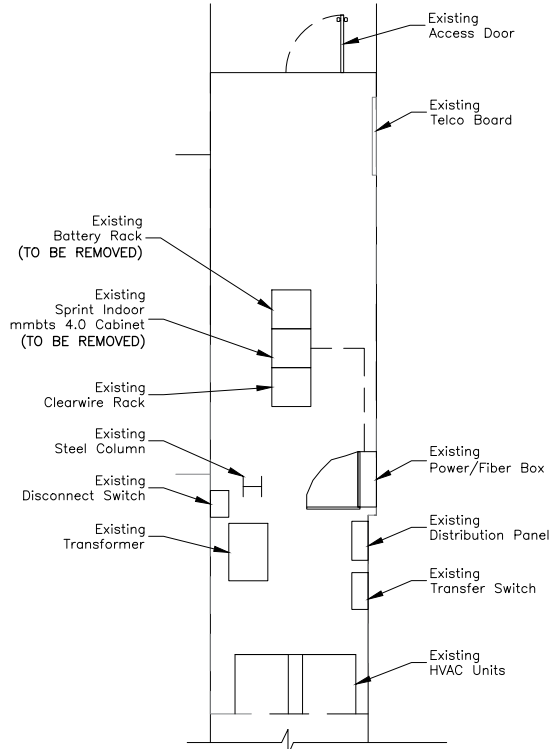
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C02

**ROOF PLAN**

SCALE: 1"=60' FOR 11"x17"  
1"=30' FOR 22"x34"



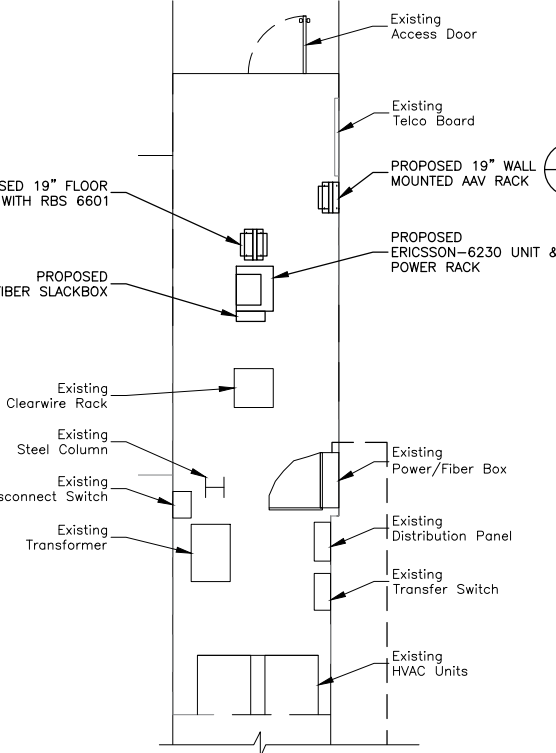
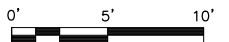
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**EXISTING EQUIPMENT PLAN**

SCALE: 1"=10' FOR 11"x17"  
1"=5' FOR 22"x34"

2



**PROPOSED EQUIPMENT PLAN**

SCALE: 1"=10' FOR 11"x17"  
1"=5' FOR 22"x34"

3



- NOTES:**
- SOME EXISTING & PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
  - NORTH SHOWN AS APPROXIMATE.
  - ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, STRUCTURAL ASSESSMENT & MOUNTING DESIGN JC ENGINEERING, INC. DATED 10/05/21.
  - SITE PLAN BASED ON SITE VISIT BY DEWBERRY ENGINEERS INC. ON 03/14/23.

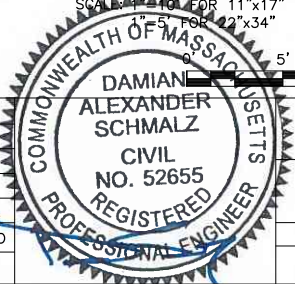
**Dewberry**  
Dewberry Engineers Inc.  
99 SUMMER ST.  
SUITE 700  
BOSTON, MA 02110  
PHONE: 617.695.3400  
FAX: 617.695.3310

**SAI**  
12 INDUSTRIAL WAY  
SALEM, NH 03079

**MIT WEST**  
120 VASSAR STREET  
CAMBRIDGE, MA 02139

**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

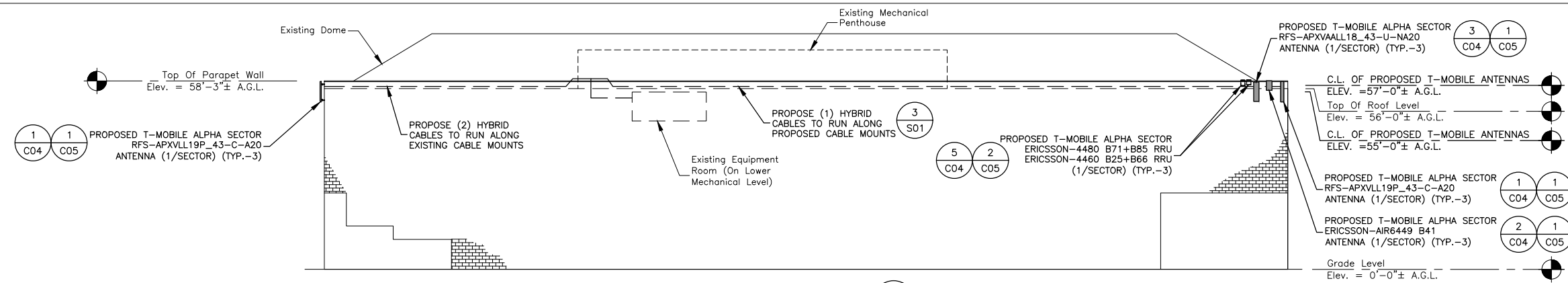
0	04/06/23	ISSUED FOR REVIEW	MR	CDH	DAS
A	03/28/23	ISSUED FOR REVIEW	MR	CDH	DAS
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: CDH	DRAWN BY: MR		



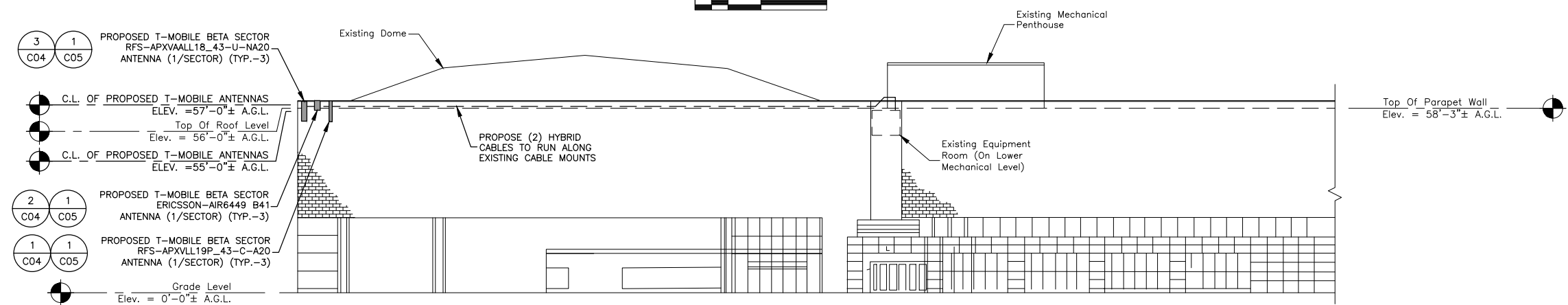
T-MOBILE NORTHEAST LLC  
NORTON, MA 92766

ROOF & EQUIPMENT PLANS

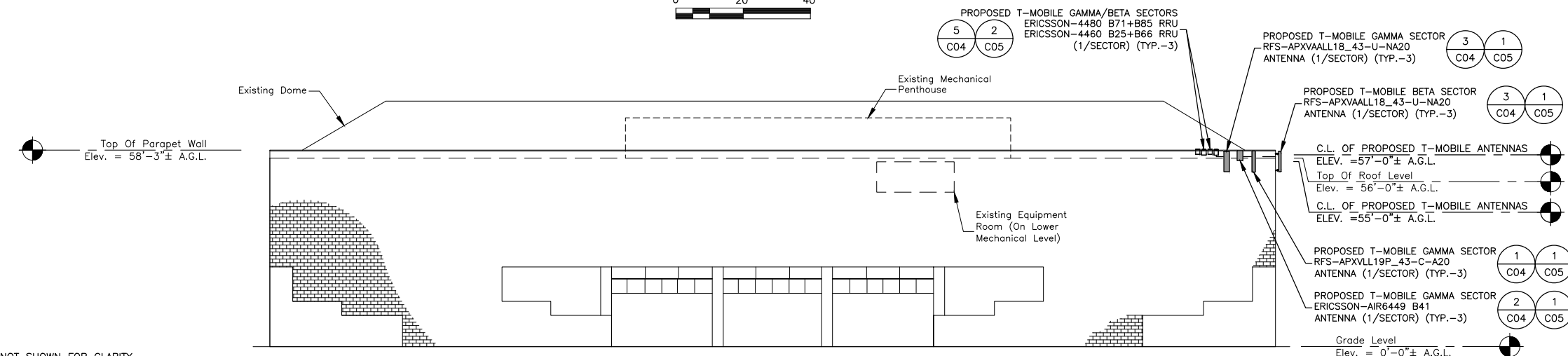
DEWBERRY NO.	DRAWING NUMBER	REV
50122947/50122981	C01	A



**EAST ELEVATION**  
 SCALE: 1"=40' FOR 11"x17"  
 1"=20' FOR 22"x34"  
 0' 20' 40'

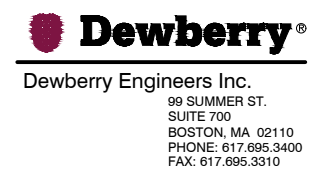


**SOUTH ELEVATION**  
 SCALE: 1"=40' FOR 11"x17"  
 1"=20' FOR 22"x34"  
 0' 20' 40'



**WEST ELEVATION**  
 SCALE: 1"=40' FOR 11"x17"  
 1"=20' FOR 22"x34"  
 0' 20' 40'

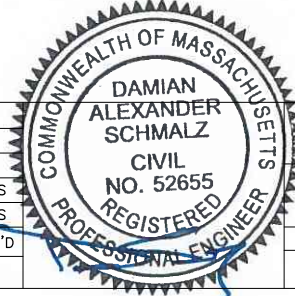
- NOTES:**
- SOME EXISTING & PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
  - ELEVATION SHOWN AS APPROXIMATE.
  - ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, STRUCTURAL ASSESSMENT & MOUNTING DESIGN JC ENGINEERING, INC. DATED 10/05/21.
  - SITE PLAN BASED ON SITE VISIT BY DEWBERRY ENGINEERS INC. ON 03/14/23.
  - CONTRACTOR TO REPAIR ALL ANCHOR PENETRATIONS AFTER REMOVAL & WEATHER SEAL TO MATCH EXISTING CONDITIONS.



**MIT WEST**  
 120 VASSAR STREET  
 CAMBRIDGE, MA 02139



NO.	DATE	REVISIONS	BY	CHK	APP'D
0	04/06/23	ISSUED FOR REVIEW	MR	CDH	DAS
A	03/28/23	ISSUED FOR REVIEW	MR	CDH	DAS
SCALE: AS SHOWN		DESIGNED BY: CDH	DRAWN BY: MR		

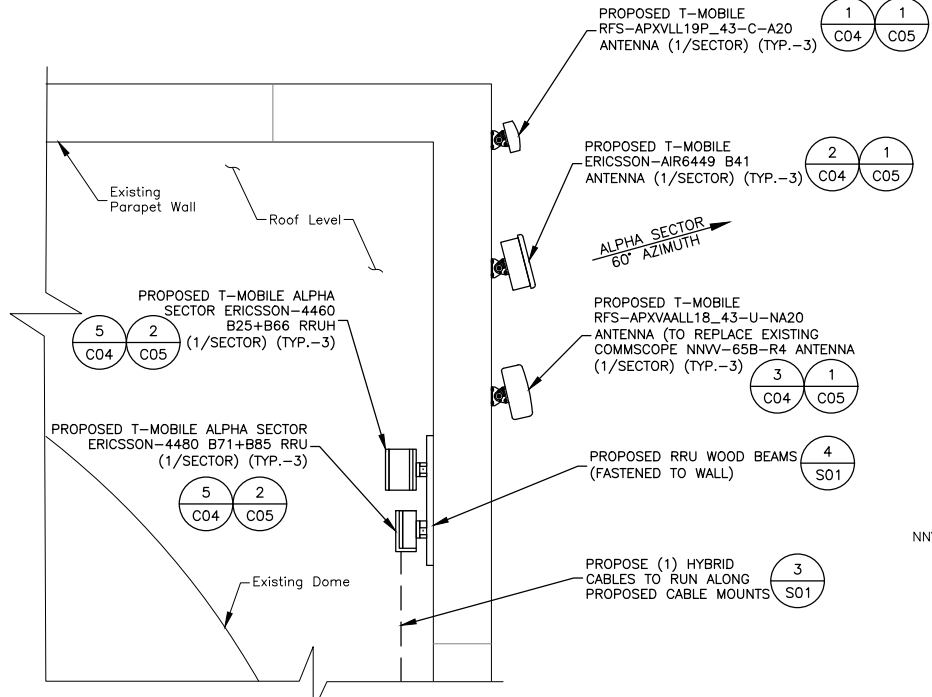


T-MOBILE NORTHEAST LLC  
 NORTON, MA 92766

ELEVATIONS

DEWBERRY NO.	DRAWING NUMBER	REV
50122947/50122981	C02	A



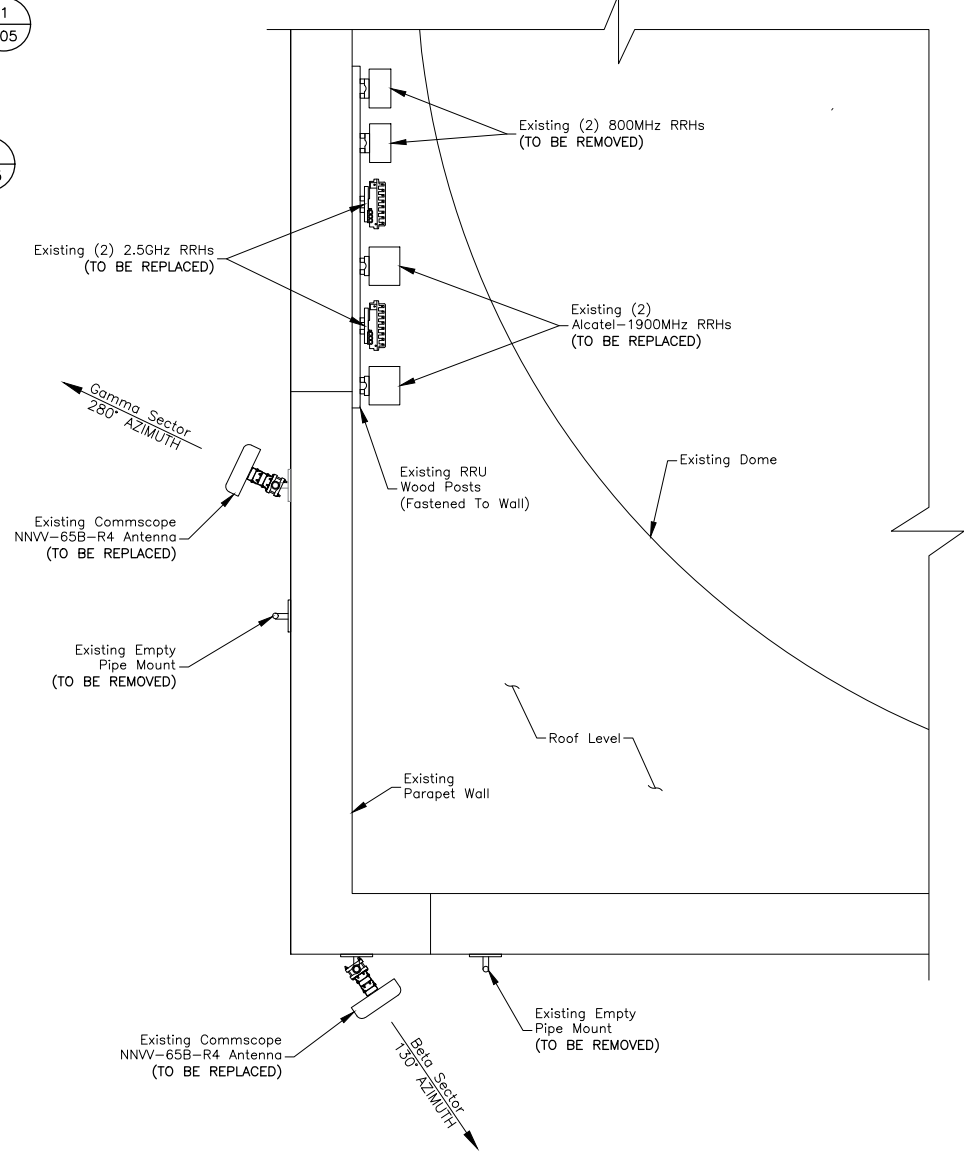


**PROPOSED ANTENNA PLAN ALPHA SECTOR**

SCALE: 1"=6' FOR 11"x17"  
1"=3' FOR 22"x34"

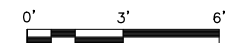


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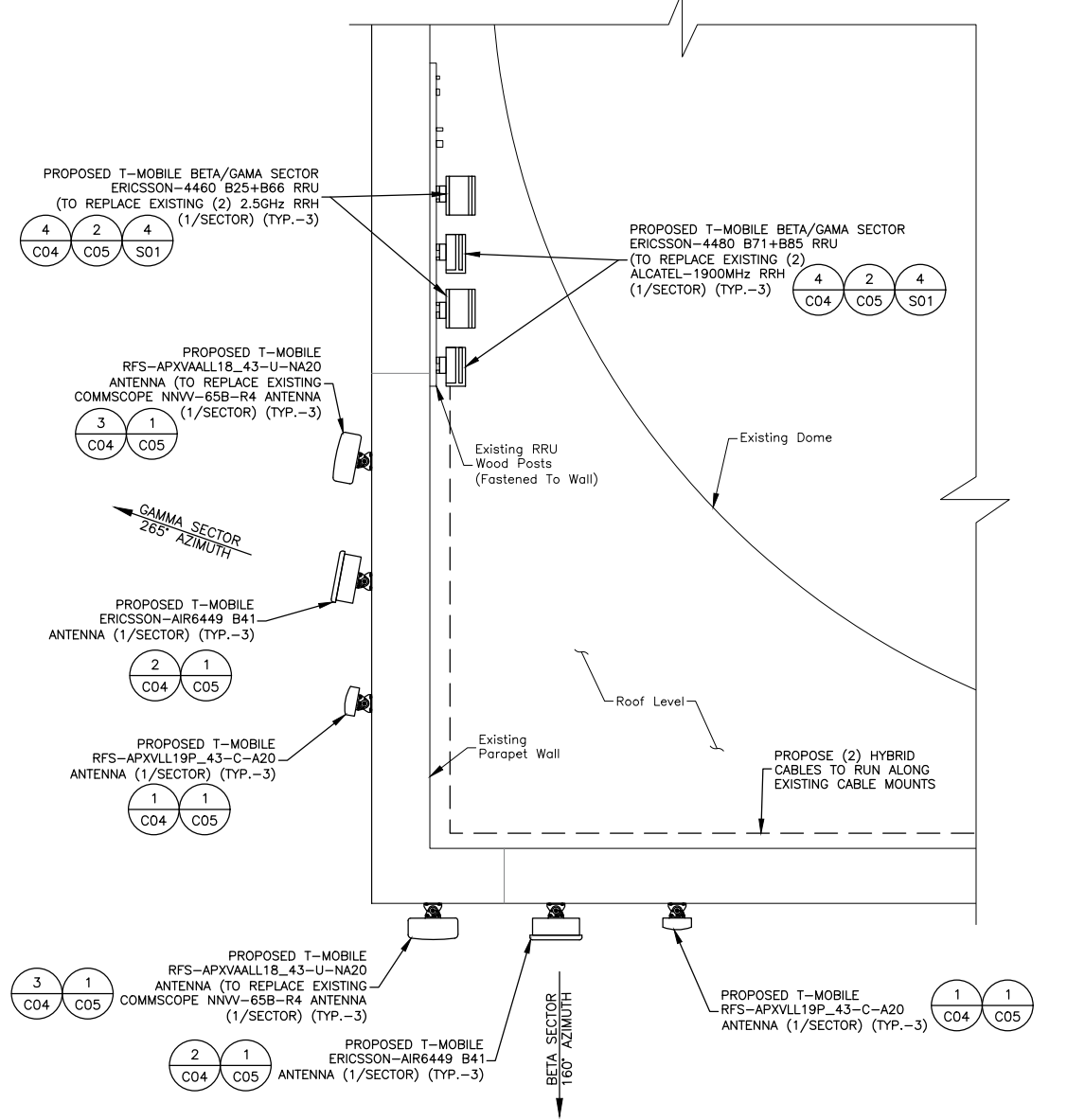


**EXISTING ANTENNA PLAN (BETA & GAMMA SECTORS)**

SCALE: 1"=6' FOR 11"x17"  
1"=3' FOR 22"x34"

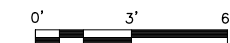


2



**PROPOSED ANTENNA PLAN (BETA & GAMMA SECTORS)**

SCALE: 1"=6' FOR 11"x17"  
1"=3' FOR 22"x34"



3

- NOTES:
- SOME EXISTING & PROPOSED INFORMATION NOT SHOWN FOR CLARITY.
  - NORTH SHOWN AS APPROXIMATE.
  - ALL EQUIPMENT TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS, STRUCTURAL ASSESSMENT & MOUNTING DESIGN JC ENGINEERING, INC. DATED 10/05/21.
  - SITE PLAN BASED ON SITE VISIT BY DEWBERRY ENGINEERS INC. ON 03/14/23.
  - CONTRACTOR TO REPAIR ALL ANCHOR PENETRATIONS AFTER REMOVAL & WEATHER SEAL TO MATCH EXISTING CONDITIONS.

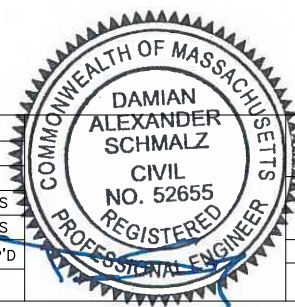
**Dewberry**  
Dewberry Engineers Inc.  
99 SUMMER ST.  
SUITE 700  
BOSTON, MA 02110  
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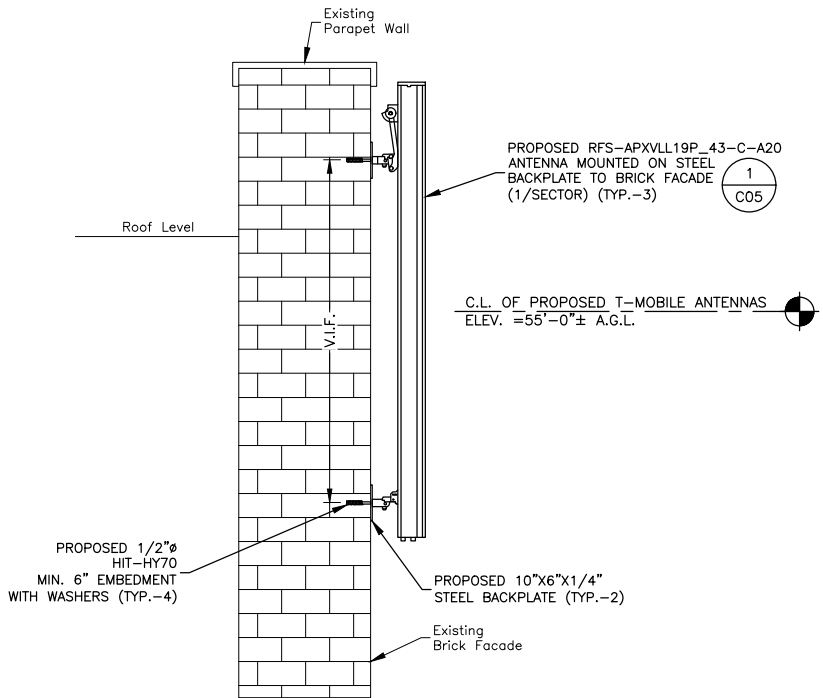
NO.	DATE	REVISIONS	BY	CHK	APP'D
0	04/06/23	ISSUED FOR REVIEW	MR	CDH	DAS
A	03/28/23	ISSUED FOR REVIEW	MR	CDH	DAS
SCALE: AS SHOWN    DESIGNED BY: CDH    DRAWN BY: MR					



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NORTON, MA 92766

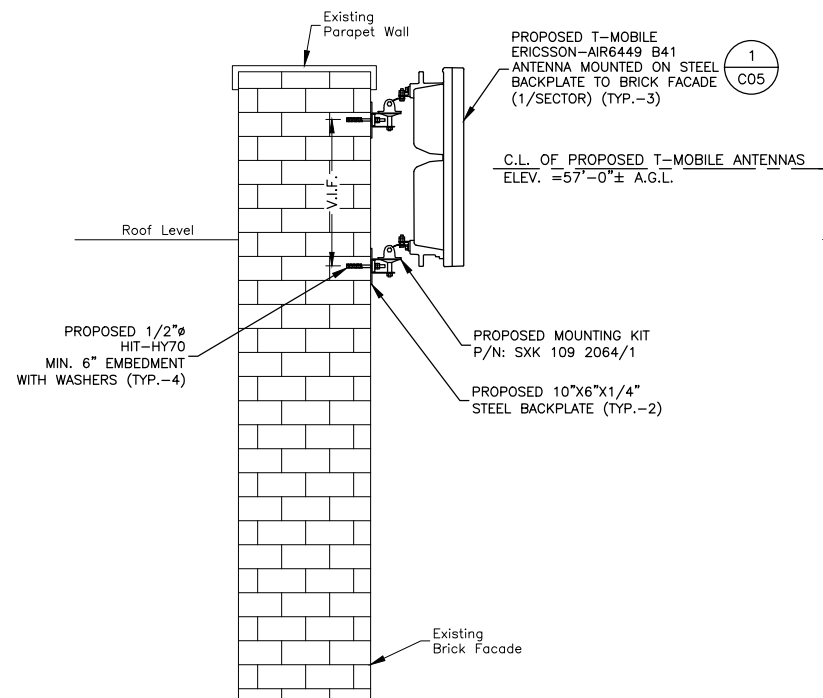
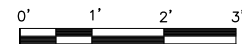
ANTENNAS PLANS

DEWBERRY NO.	DRAWING NUMBER	REV
50122947/50122981	C03	A



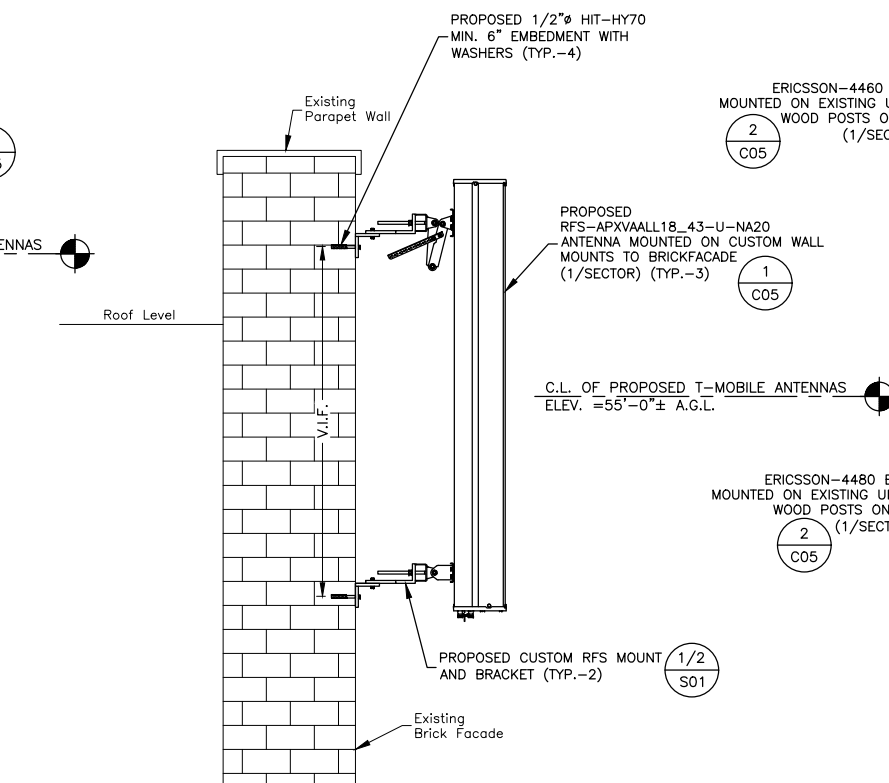
**PROPOSED ANTENNA MOUNTING DETAIL**

SCALE: 3/8"=1' FOR 11"x17"  
3/4"=1' FOR 22"x34"



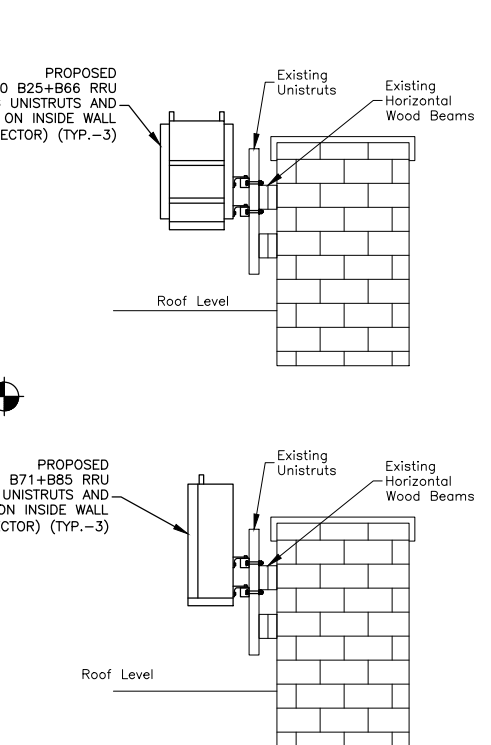
**PROPOSED ANTENNA MOUNTING DETAIL**

SCALE: 3/8"=1' FOR 11"x17"  
3/4"=1' FOR 22"x34"



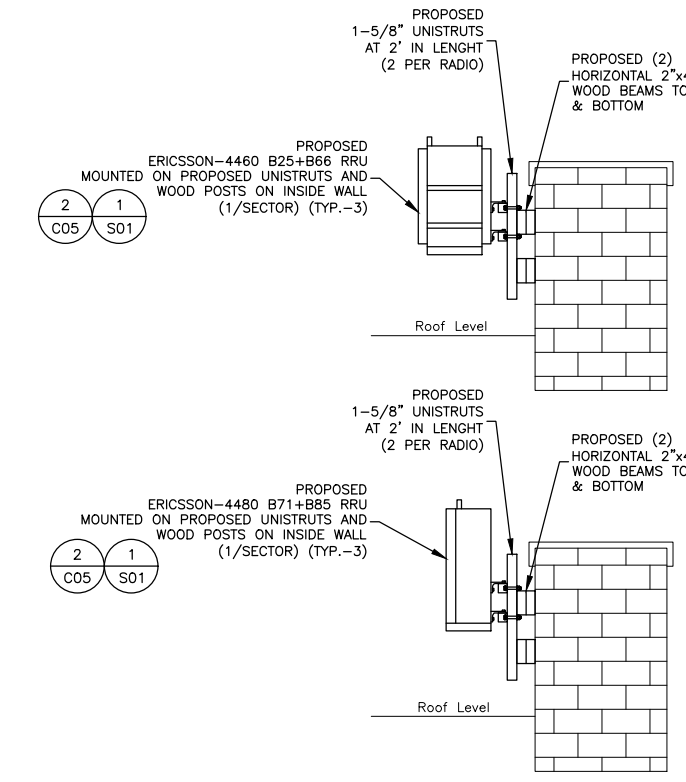
**PROPOSED ANTENNA MOUNTING DETAIL**

SCALE: 3/8"=1' FOR 11"x17"  
3/4"=1' FOR 22"x34"



**PROPOSED RRU MOUNTING DETAILS (BETA/GAMMA)**

SCALE: 3/8"=1' FOR 11"x17"  
3/4"=1' FOR 22"x34"



**PROPOSED RRU MOUNTING DETAILS (ALPHA)**

SCALE: 3/8"=1' FOR 11"x17"  
3/4"=1' FOR 22"x34"



FINAL EQUIPMENT CONFIGURATION							
SECTOR	BAND	ANTENNA	SIZE (INCHES) (LxWxD)	RAD. CENTER	AZIMUTH	RRU	SIZE (INCHES) (LxWxD)
ALPHA	1605-2690MHz	(PROPOSED) RFS-APXVLL19_43-C-A20	75.8x11.3x4.6	57'-0"	60°	(P)(1) RRU-4460 B25+B66	19.6x15.7x12.1
	5G 2.5-2.7GHz	(PROPOSED) ERICSSON AIR6449 B41	33.2x20.5x8.5	57'-0"	60°	-	-
	LTE 600/700/1900	RFS-APXVAALL18-(OCTO)	72.0x24.0x8.5	57'-0"	60°	(P)(1) RRU-4480 B71+B85	21.8x15.7x7.5
BETA	1605-2690MHz	(PROPOSED) RFS-APXVLL19_43-C-A20	75.8x11.3x4.6	57'-0"	160°	(P)(1) RRU-4460 B25+B66	19.6x15.7x12.1
	5G 2.5-2.7GHz	(PROPOSED) ERICSSON AIR6449 B41	33.2x20.5x8.5	57'-0"	160°	-	-
	LTE 600/700/1900	RFS-APXVAALL18-(OCTO)	72.0x24.0x8.5	57'-0"	160°	(P)(1) RRU-4480 B71+B85	21.8x15.7x7.5
GAMMA	1605-2690MHz	(PROPOSED) RFS-APXVLL19_43-C-A20	75.8x11.3x4.6	57'-0"	265°	(P)(1) RRU-4460 B25+B66	19.6x15.7x12.1
	5G 2.5-2.7GHz	(PROPOSED) ERICSSON AIR6449 B41	33.2x20.5x8.5	57'-0"	265°	-	-
	LTE 600/700/1900	RFS-APXVAALL18-(OCTO)	72.0x24.0x8.5	57'-0"	265°	(P)(1) RRU-4480 B71+B85	21.8x15.7x7.5

**NOTES:**

- CONTRACTOR TO VERIFY FINAL EQUIPMENT CONFIGURATION AND SEPARATIONS WITH T-MOBILE PRIOR TO CONSTRUCTION.

**FINAL EQUIPMENT CONFIGURATION**

SCALE: N.T.S.

- ALL ANTENNA EQUIPMENT AND MOUNTING TO BE INSTALLED IN ACCORDANCE TO STRUCTURAL ANALYSIS AND ATTACHMENT DESIGN BY J.C. ENGINEERING, INC. DATED 10/05/21.
- CONTRACTOR TO VERIFY CONDITION OF WOOD BLOCKING IN FIELD AND REPLACE IF DETERIORATED OR DAMAGED.

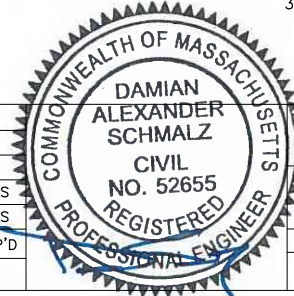
**Dewberry**  
Dewberry Engineers Inc.  
99 SUMMER ST.  
SUITE 700  
BOSTON, MA 02110  
PHONE: 617.695.3400  
FAX: 617.695.3310

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SALEM, NH 03079

**MIT WEST**  
120 VASSAR STREET  
CAMBRIDGE, MA 02139

**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

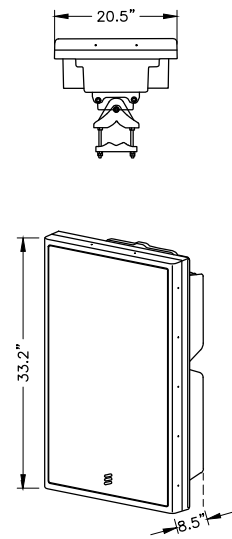
NO.	DATE	REVISIONS	BY	CHK	APP'D
0	04/06/23	ISSUED FOR REVIEW	MR	CDH	DAS
A	03/28/23	ISSUED FOR REVIEW	MR	CDH	DAS
SCALE: AS SHOWN		DESIGNED BY: CDH	DRAWN BY: MR		



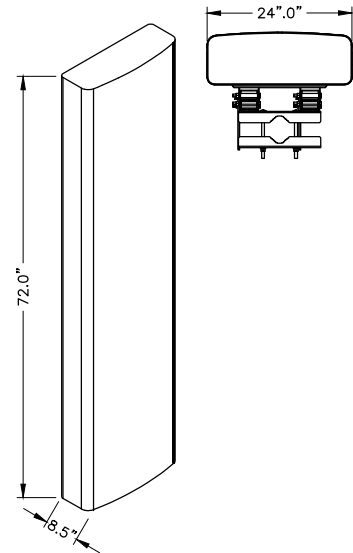
T-MOBILE NORTHEAST LLC  
NORTON, MA 92766

ANTENNA DETAILS & CONFIGURATION

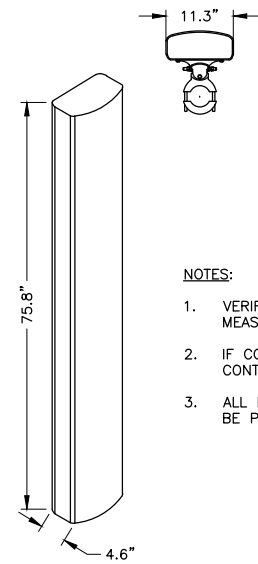
DEWBERRY NO.	DRAWING NUMBER	REV
50122947/50122981	C04	A



MANUFACTURER: ERICSSON  
 PART NUMBER: AIR 6449 B41 MIMO ANTENNA  
 DIMENSIONS: 33.2\"/>



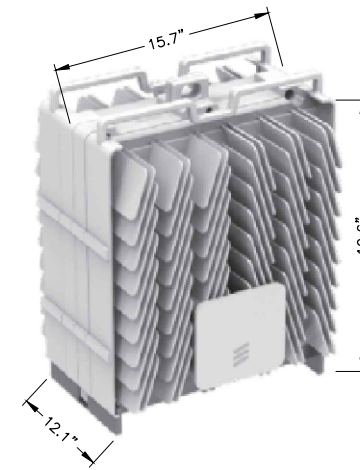
MANUFACTURER: RFS  
 PART NUMBER: APXVAALL18\_43-U-NA20 OCTO ANTENNA  
 DIMENSIONS: 72.0\"/>



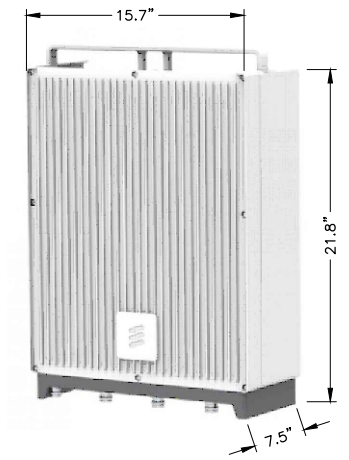
MANUFACTURER: RFS  
 PART NUMBER: APXVLL19P\_43-C-A20 QUAD ANTENNA  
 DIMENSIONS: 75.8\"/>

**NOTES:**

1. VERIFY VERTICAL CENTER TO CENTER MEASUREMENT WITH ANTENNA MANUFACTURER.
2. IF CONDITIONS DIFFER FROM THOSE SHOWN, CONTRACTOR TO NOTIFY C.M. AND ENGINEER.
3. ALL PROPOSED ANTENNAS AND HARDWARE TO BE PAINTED TO MATCH EXISTING BUILDINGS.



MANUFACTURER: ERICSSON  
 PART NUMBER: 4460 B25+B66 RRU  
 DIMENSIONS: 19.6\"/>



MANUFACTURER: ERICSSON  
 PART NUMBER: 4480 B71+85A RRU  
 DIMENSIONS: 21.8\"/>

**ANTENNA DETAILS**

SCALE: N.T.S.

1

**RRU DETAILS**

SCALE: N.T.S.

2

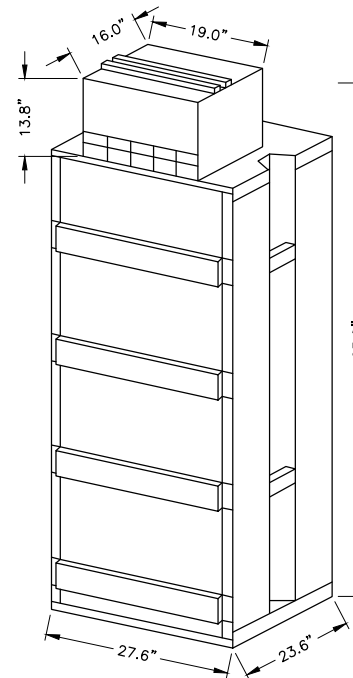


MANUFACTURER: STAR TECH OR EQUIVALENT  
 PART NUMBER: 6U 19\"/>

**(HALF SIZE) 19\"/>**

SCALE: N.T.S.

3



MANUFACTURER: ERICSSON  
 PART NUMBER: 6230 UNIT  
 DIMENSIONS RACK: 63.0\"/>

**6230 UNIT & POWER RACK**

SCALE: N.T.S.

5



MANUFACTURER: STAR TECH OR EQUIVALENT  
 PART NUMBER: 18U 19\"/>

**(FULL SIZE) 19\"/>**

SCALE: N.T.S.

6

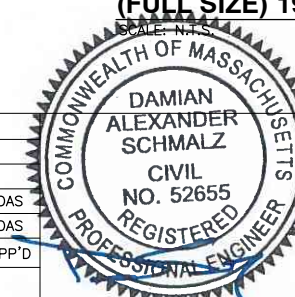
**Dewberry**  
 Dewberry Engineers Inc.  
 99 SUMMER ST.  
 SUITE 700  
 BOSTON, MA 02110  
 PHONE: 617.695.3400  
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 15 COMMERCE WAY, SUITE B  
 NORTON, MA 02766  
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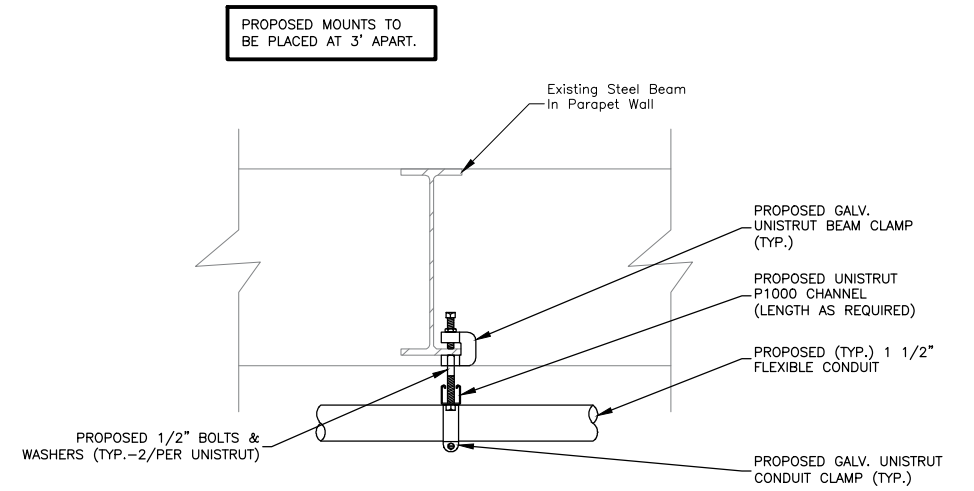
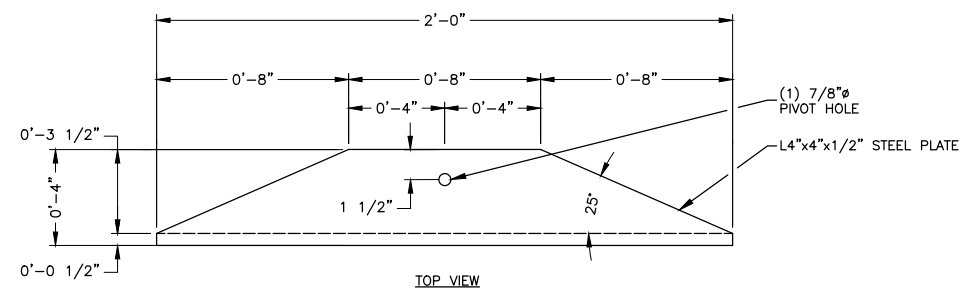
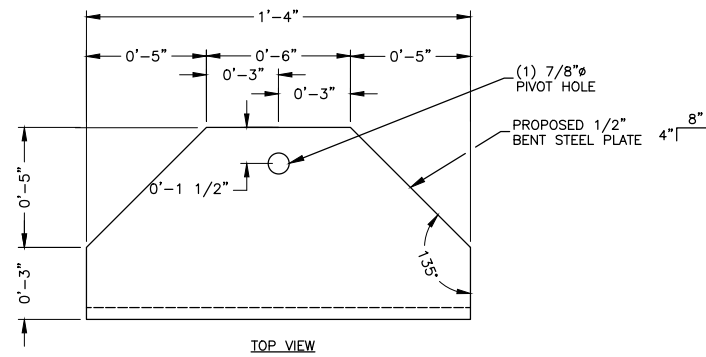
NO.	DATE	REVISIONS	BY	CHK	APP'D
0	04/06/23	ISSUED FOR REVIEW	MR	CDH	DAS
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SCALE: AS SHOWN		DESIGNED BY: CDH	DRAWN BY: MR		



T-MOBILE NORTHEAST LLC  
 NORTON, MA 92766

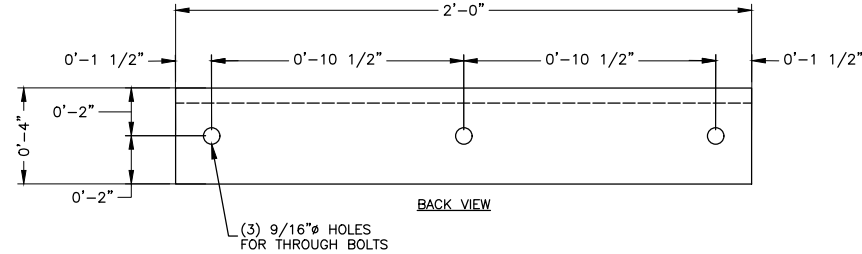
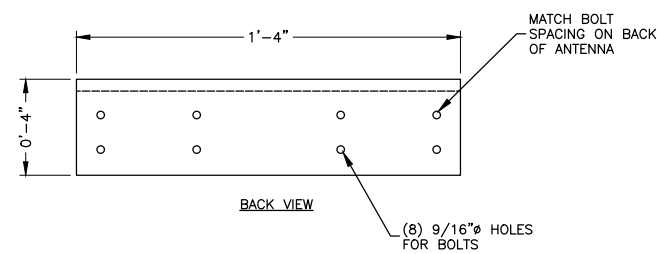
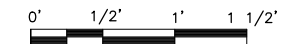
**EQUIPMENT DETAILS**

DEWBERRY NO.	DRAWING NUMBER	REV
50122947/50122981	C05	A



**CONDUIT SUPPORT DETAIL**

SCALE: 3/4"=1' FOR 11"x17"  
1 1/2"=1' FOR 22"x34"



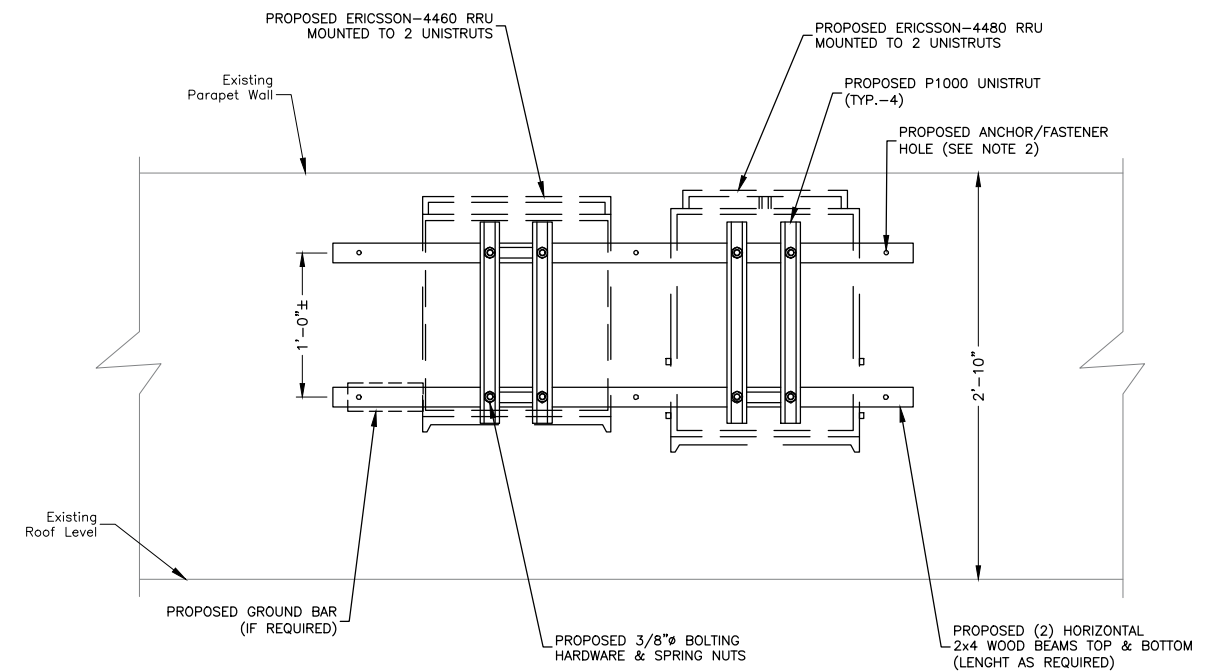
**CUSTON ANTENNA BRACKET DETAIL**

SCALE: 1 1/2"=1' FOR 11"x17"  
3"=1' FOR 22"x34"



**CUSTON WALL MOUNT ANGLE DETAIL**

SCALE: 1 1/2"=1' FOR 11"x17"  
3"=1' FOR 22"x34"



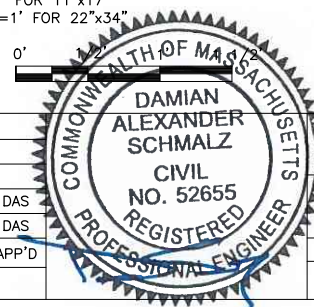
**NOTES:**

1. A SUPPORT FOR A SINGLE RRU SHOULD HAVE 2 MOUNTS FASTENED TO 2 UNISTRUTS, SPACED PER RRU REQUIREMENTS.
2. -WOOD STUDS: 3/8" LAG BOLT WITH 1" EMBEDMENT IN WOOD  
-CONCRETE: 3/8" HILTI KWIK BOLT WITH 1-1/2" EMBEDMENT.  
-THROUGH BOLT: 3/8" A36 THREADED ROD WITH NUTS & WASHERS, ANCHORS, CONNECTORS & UNISTRUT CHANNEL SHALL BE HOT DIPPED GALV.  
-MASONRY: 3/8" HILTI HIT-70 ANCHORING SYSTEM WITH 3-3/8" EMBEDMENT.

**RRU FRONT MOUNTING DETAIL**

SCALE: 3/4"=1' FOR 11"x17"  
1 1/2"=1' FOR 22"x34"

1. ALL ANTENNA EQUIPMENT AND MOUNTING TO BE INSTALLED IN ACCORDANCE TO STRUCTURAL ANALYSIS AND ATTACHMENT DESIGN BY J.C. ENGINEERING, INC. DATED 10/05/21.
2. CONTRACTOR TO VERIFY CONDITION OF WOOD BLOCKING IN FIELD AND REPLACE IF DETERIORATED OR DAMAGED.



**Dewberry**  
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SCALE: AS SHOWN    DESIGNED BY: CDH    DRAWN BY: MR

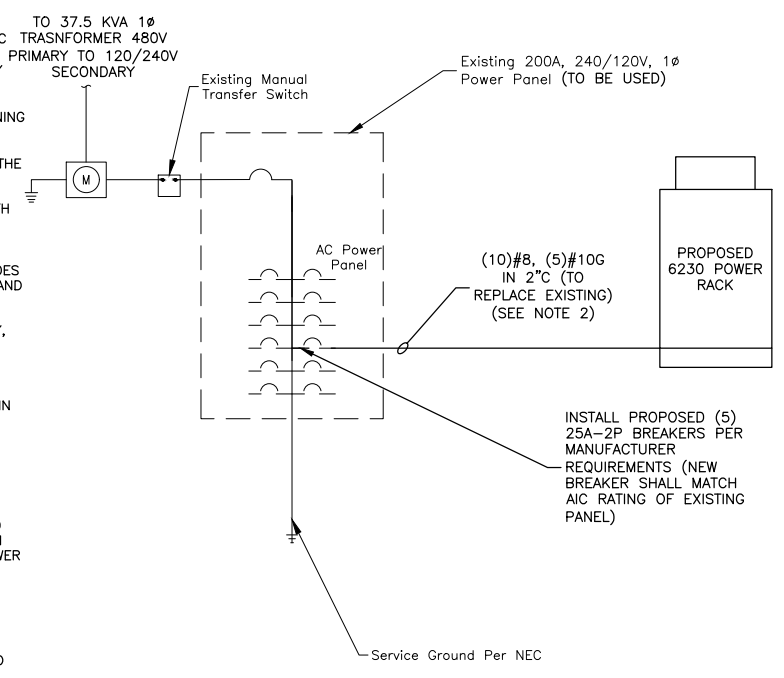
T-MOBILE NORTHEAST LLC  
NORTON, MA 92766

STRUCTURAL DETAILS

DEWBERRY NO.	DRAWING NUMBER	REV
50122947/50122981	S01	A

**GROUNDING NOTES:**

- THE CONTRACTOR 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 CONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
- 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. ALL AVAILABLE GROUNDING ELECTRODES SHALL BE CONNECTED TOGETHER IN ACCORDANCE WITH THE NEC.
- THE CONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR GROUND ELECTRODE SYSTEMS. USE OF OTHER METHODS MUST BE PRE-APPROVED BY CONTRACTOR IN WRITING.
- THE CONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS ON TOWER SITES AND 10 OHMS OR LESS ON ROOFTOP SITES. WHEN ADDING ELECTRODES, CONTRACTOR SHALL MAINTAIN A MINIMUM DISTANCE BETWEEN THE ADDED ELECTRODE AND ANY OTHER EXISTING ELECTRODE EQUAL TO THE BURIED LENGTH OF THE ROD. IDEALLY, CONTRACTOR SHALL STRIVE TO KEEP THE SEPARATION DISTANCE EQUAL TO TWICE THE BURIED LENGTH OF THE RODS.
- THE CONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
- METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWG COPPER WIRE AND UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
- 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 TRANSMISSION EQUIPMENT.
- CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK-TO-BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
- ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
- USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. IN ALL CASES, BENDS SHALL BE MADE WITH A MINIMUM BEND RADIUS OF 8 INCHES.
- EACH INTERIOR TRANSMISSION CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH 6 AWG STRANDED, GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRE UNLESS NOTED OTHERWISE IN THE DETAILS. EACH OUTDOOR CABINET FRAME/PLINTH SHALL BE DIRECTLY CONNECTED TO THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER WIRE UNLESS NOTED OTHERWISE IN THE DETAILS.
- ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE 2 AWG SOLID TIN-PLATED COPPER UNLESS OTHERWISE INDICATED.
- EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE. CONNECTIONS TO ABOVE GRADE UNITS SHALL BE MADE WITH EXOTHERMIC WELDS WHERE PRACTICAL OR WITH 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS. HIGH PRESSURE CRIMP CONNECTORS MAY ONLY BE USED WITH WRITTEN PERMISSION FROM SAI COMMUNICATIONS MARKET REPRESENTATIVE.
- EXOTHERMIC WELDS SHALL BE PERMITTED ON TOWERS ONLY WITH THE EXPRESS APPROVAL OF THE TOWER MANUFACTURER OR THE CONTRACTORS STRUCTURAL ENGINEER.
- ALL WIRE TO WIRE GROUND CONNECTIONS TO THE INTERIOR GROUND RING SHALL BE FORMED USING HIGH PRESS CRIMPS OR SPLIT BOLT CONNECTORS WHERE INDICATED IN THE DETAILS.
- ON ROOFTOP SITES WHERE EXOTHERMIC WELDS ARE A FIRE HAZARD COPPER COMPRESSION CAP CONNECTORS MAY BE USED FOR WIRE TO WIRE CONNECTORS. 2 HOLE MECHANICAL TYPE BRASS CONNECTORS WITH STAINLESS STEEL HARDWARE, INCLUDING SET SCREWS SHALL BE USED FOR CONNECTION TO ALL ROOFTOP TRANSMISSION EQUIPMENT AND STRUCTURAL STEEL.
- COAX BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO THE BRIDGE AND THE TOWER GROUND BAR USING TWO-HOLE MECHANICAL TYPE BRASS CONNECTORS AND STAINLESS STEEL HARDWARE.
- APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
- ALL EXTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
- MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
- BOND ALL METALLIC OBJECTS WITHIN 6 FT OF THE BURIED GROUND RING WITH 2 AWG SOLID TIN-PLATED COPPER GROUND CONDUCTOR. DURING EXCAVATION FOR NEW GROUND CONDUCTORS, IF EXISTING GROUND CONDUCTORS ARE ENCOUNTERED, BOND EXISTING GROUND CONDUCTORS TO NEW CONDUCTORS.
- GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE USED. WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G., NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT WITH LISTED BONDING FITTINGS.



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

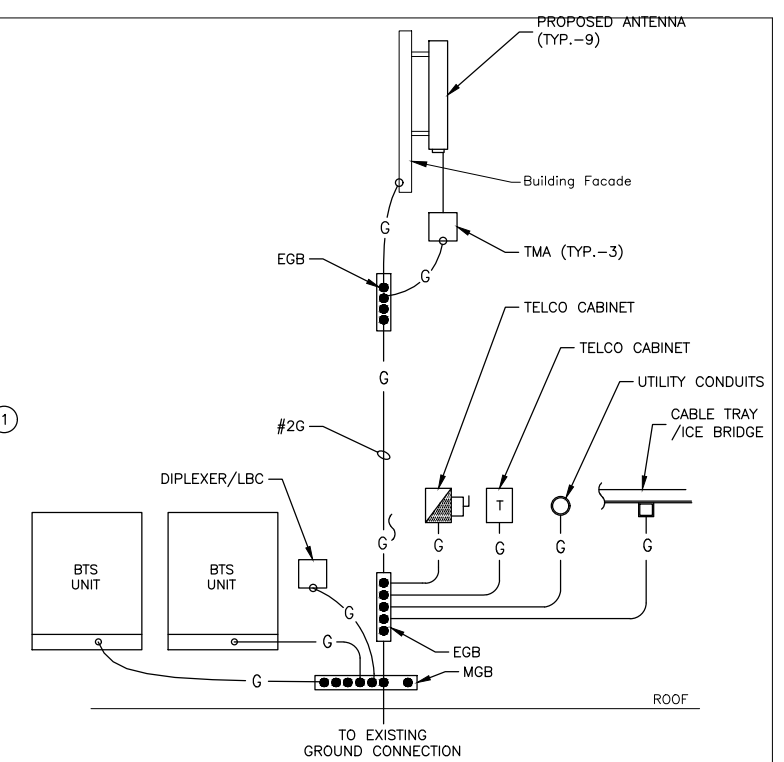
**NOTES:**  
1. ALL ELECTRICAL WORK SHALL TO BE PERFORMED BY A LICENSED ELECTRICAL, ADHERING TO THE N.E.C. AND LOCAL CODE REQUIREMENTS.

**NOTES:**  
1. GENERAL CONTRACTOR TO INSTALL 25 AMP BREAKERS FOR EACH RECTIFIER PER THE POWER 6230 BATTERY RACK REQUIREMENTS.

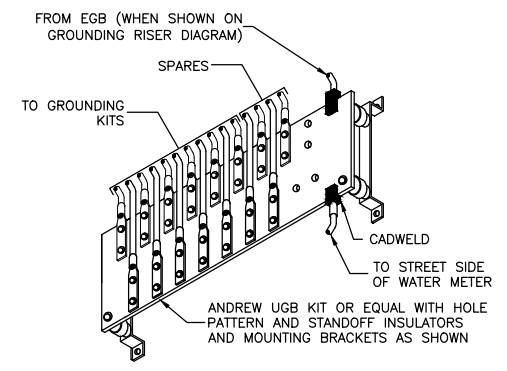
PANEL SCHEDULE							
W/200A MAIN C/B							
CKT #	DESCRIPTION	KVA	AMP	AMP	DESCRIPTION	CKT #	
1	6230 #1 (TO REPLACE EXISTING)	3.1	25	25	6230 #3 (TO REPLACE EXISTING)	2	
3	6230 #1 (TO REPLACE EXISTING)	3.1	25	25	6230 #3 (TO REPLACE EXISTING)	4	
5	6230 #1 (TO REPLACE EXISTING)	3.1	25	25	6230 #3 (TO REPLACE EXISTING)	6	
7	6230 #1 (TO REPLACE EXISTING)	3.1	25	25	6230 #3 (TO REPLACE EXISTING)	8	
9	6230 #1 (TO REPLACE EXISTING)	3.1	25	30	Rectifier #6 (TO BE REMOVED)	10	
11						12	
13	Rectifier #7 (TO BE REMOVED)	-	30	30	3.72	Clearwire Rack	14
15							16
17	Surge Arrestor	0	60		.18	AC GFCI Outside	18
19					.36	Brick Wall Receptacle	20
21	Lights/Exit/Smoke	.24	20	20	.54	Condenser Pump Receptacle	22
23							24
25	AC Condenser #1	10.56	60	15	.72	Air Handler Unit #1	26
27	AC Condenser #2	10.56	60	15	.72	Air Handler Unit #2	28
29							30

**NOTES:**

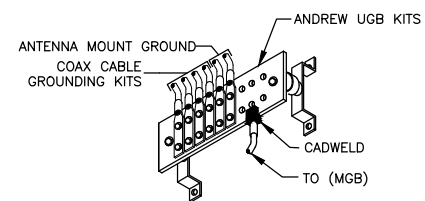
- ELECTRICAL CONTRACTOR SHALL REMOVE EXISTING 30A/2P BREAKER AND REPLACE WITH NEW 25A/2P BREAKER. NEW BREAKERS SHOULD BE 10KAIC RATED AND MATCH THE SQUARE-D PANEL TYPE.
- IF CONTRACTOR TO RE-USE EXISTING CONDUIT AND FEEDERS FROM EXISTING RECTIFIERS, ELECTRICAL CONTRACTOR TO TEST EXISTING WIRES WITH MEG-OHMETER & REPLACE ANY FOUND TO HAVE DAMAGED INSULATION.



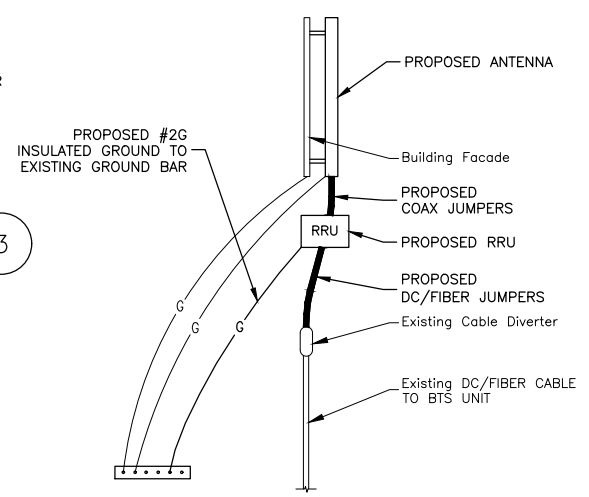
**GROUNDING RISER DIAGRAM**  
SCALE: N.T.S.



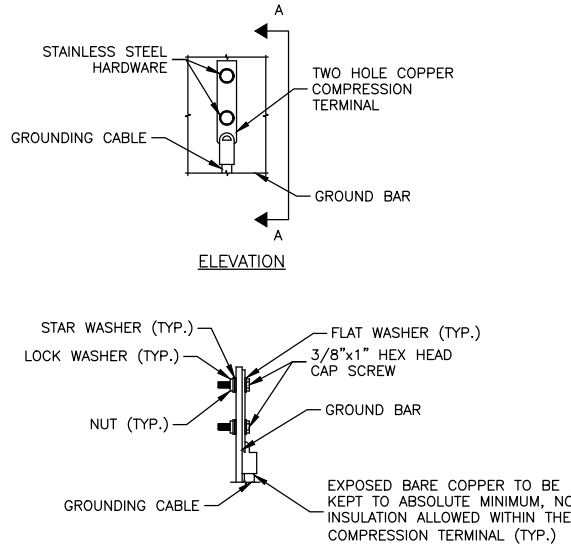
**MASTER GROUND BAR (MGB)**  
SCALE: N.T.S.



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



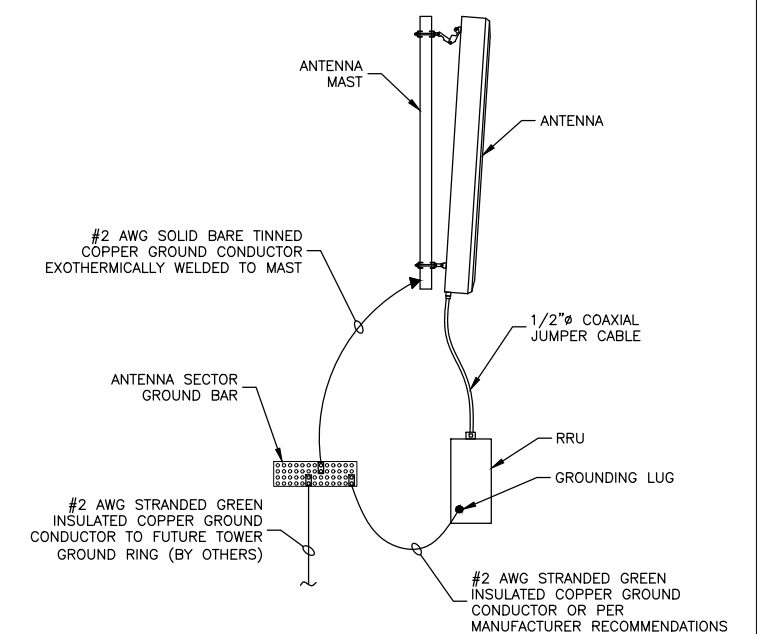
**COAX CABLE CONNECTION AND GROUNDING DETAIL**  
SCALE: N.T.S.



**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.



**NOTES:**

- VERIFY EXISTING GROUNDING SYSTEM IS INSTALLED PER T-MOBILE STANDARDS.
- BOND NEW EQUIPMENT INTO EXISTING GROUND SYSTEM IN ACCORDANCE WITH T-MOBILE STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.

**TYPICAL ANTENNA/RRU GROUNDING DETAIL**  
SCALE: N.T.S.

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Dewberry Engineers Inc.  
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SUITE 700  
BOSTON, MA 02110  
PHONE: 617.695.3400  
FAX: 617.695.3310

**SAI**  
12 INDUSTRIAL WAY  
SALEM, NH 03079

**MIT WEST**  
120 VASSAR STREET  
CAMBRIDGE, MA 02139

**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

NO.	DATE	REVISIONS	BY	CHK	APP'D
0	04/06/23	ISSUED FOR REVIEW	MR	CDH	DAS
A	03/28/23	ISSUED FOR REVIEW	MR	CDH	DAS

SCALE: AS SHOWN    DESIGNED BY: CDH    DRAWN BY: MR

**JOSEPH M. GIGANTE**  
ELECTRICIAN  
No. 49692  
REGISTERED PROFESSIONAL ENGINEER  
04/06/23

T-MOBILE NORTHEAST LLC  
NORTON, MA 92766  
ELECTRICAL & GROUNDING DETAILS

DEWBERRY NO.	DRAWING NUMBER	REV
50122947/50122981	E01	A

May 17, 2023

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: 120 Vassar Street  
Assessor's Map 57, Lot 173 (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**" or 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 Residential C-3 (**C-3**) 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 Board<sup>1</sup>. 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. Compliance with the Spectrum Act is

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<sup>1</sup> 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.

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shown on the Eligible Facilities Request permit application form attached hereto and incorporated herein by reference (the “**EFR**”).

The Applicant seeks to modify its existing wireless communications facility by replacing two (2) existing panel antennas with nine (9) new panel antennas and remove eight (8) existing Remote Radio Units (“**RRUs**”) and replace those with six (6) new RRUs, all mounted on the roof of the existing building, together with supporting equipment (the “**Proposed Facility**”). All of the proposed antennas will be installed at the same locations as the existing antennas. As noted, the proposed antennas and RRUs will be installed on the rooftop of the existing building located at the Property (the “**Building**”). 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**

The Applicant’s existing facility currently operating on the rooftop of the Building consists of two (2) sectors (Sectors Gamma and Beta) of one (1) panel antenna each and four (4) RRUs each. The Applicant proposes to modify its existing wireless facility by:

- Replacing each of the panel antennas with three (3) new like kind panel antennas per sector;
- Adding a third sector (Alpha) to the facility and including three (3) new panel antennas.
- Replacing eight (8) existing RRUs currently located at the Gamma and Beta sectors, with four (4) new RRUs,

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- Assing two (2) new RRUs to the new Alpha sector,
- Add and replace ancillary equipment within the existing equipment room, out of view.

In total, the panel antenna count will go from two (2) panel antennas to nine (9) panel antennas and the RRU count will be reduced from eight (8) to six (6) RRUs. All panel antennas will be mounted on the façade of the Building and painted to match the finish of the Building. The RRUs will be installed behind the Building’s parapet and out of view. All new equipment will be installed to be consistent with the previous decisions of the Board for this facility, the most recent of which is dated December 20, 2018 (Case No. BZA-016980-2018) (the “**Decisions**”). 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 B-3 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.

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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 BA 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 BA 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.

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- 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 Proposed Facility has a minimal additional visual impact on the existing facility and Building. The Proposed Facility will continue to comply with the Decisions, and such will have a de-minimus impact on the existing visual conditions of the Building.

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 Property and Proposed Facility are located in the C-3 zoning district, but nonresidential uses predominate in the area. Pursuant to the requirement that the Board shall grant a special permit to erect a Telecommunications Facility only upon a finding that non-residential uses predominate in the vicinity of the proposed facility's location the Applicant hereby states that this is a modification of an existing wireless facility and as such respectfully submits to the Board that it has previously found that nonresidential uses predominate in the vicinity of this Proposed Facility. The Board has reached a decision to grant a special permit for the Applicant's Existing Facility the previous Decisions. As such, the Applicant respectfully requests that, in keeping with its prior decisions, the Board find that

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nonresidential uses predominate in the vicinity of the Proposed Facility and that the Proposed Facility is not inconsistent with the character that does prevail in the surrounding neighborhood.

Further, notwithstanding anything contained herein to the contrary, and in agreement with the aforementioned predominately nonresidential use finding, upon an inspection of the vicinity of the Proposed Facility the Applicant respectfully submits that said finding is reasonable as the character of the surrounding neighborhood consists of nonresidential uses such as, the numerous sporting fields and stadiums in the vicinity along Vassar Street, the MIT Recreational Center on Vassar Street, and numerous non-residential building and uses along Vassar Street in the vicinity of the Proposed Facility.

Moreover, the proposed changes to the Existing Facility are de minimis and therefore, the Proposed Facility is not inconsistent with the character that does prevail in the surrounding neighborhood. Finally, as noted above, the proposed installation is a modification to the Applicant's Facility and as such is the preferred location for additional equipment, pursuant to the TCA, as referenced above.

**B. The Applicant complies with the Special Permit Criteria set forth in Section 10-43 of the Ordinance<sup>2</sup>:**

**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:**

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<sup>2</sup> 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 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 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.

**3. 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

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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 BA 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.

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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,



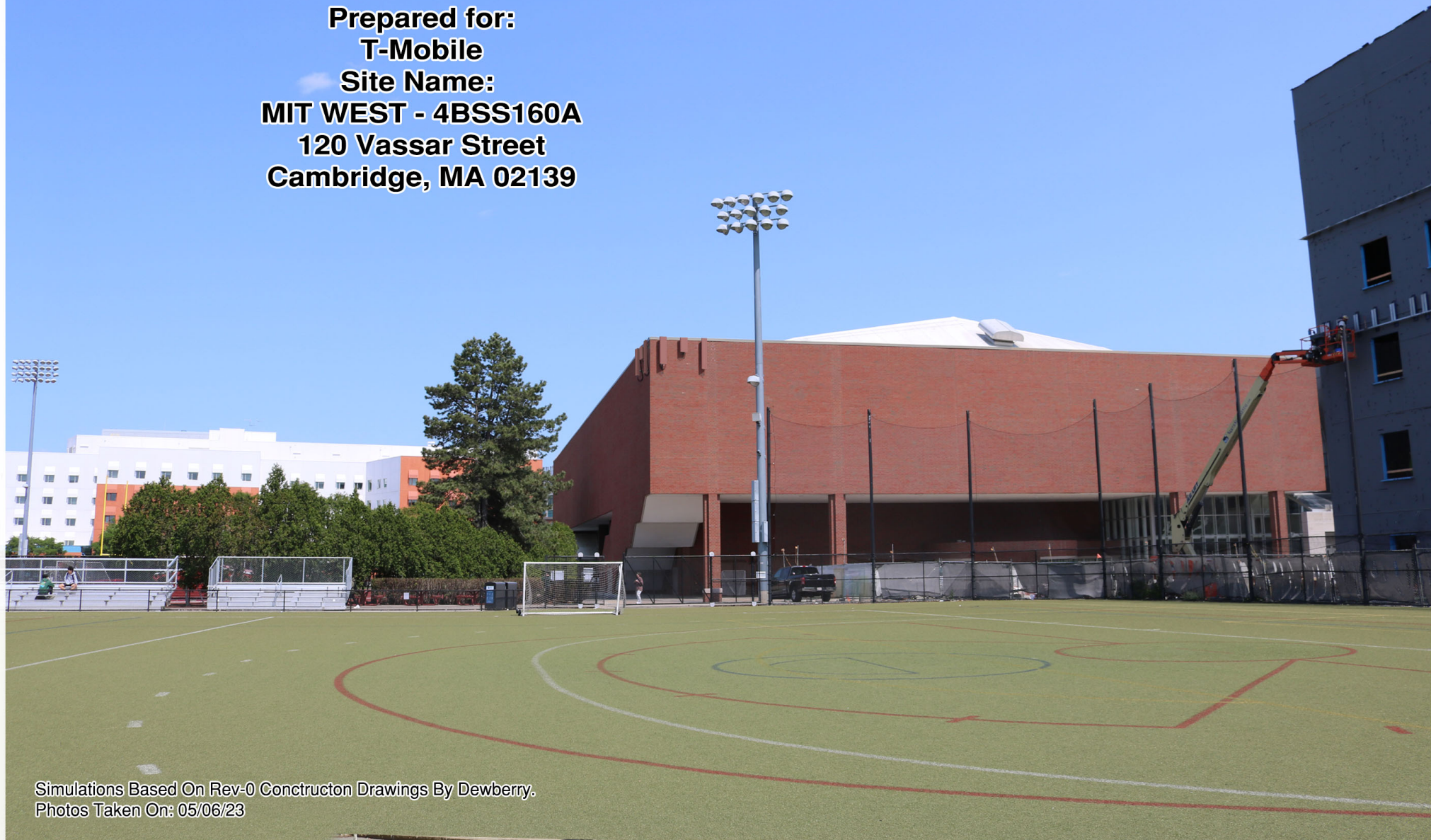
Adam F. Braillard

Direct: 617-456-8153

Email: [abraillard@princelobel.com](mailto:abraillard@princelobel.com)

Prince Lobel Tye LLP  
One International Place  
Suite 3700  
Boston, MA 02110  
TEL: 617 456 8000  
FAX: 617 456 8100

**Prepared for:  
T-Mobile  
Site Name:  
MIT WEST - 4BSS160A  
120 Vassar Street  
Cambridge, MA 02139**



Simulations Based On Rev-0 Constructon Drawings By Dewberry.  
Photos Taken On: 05/06/23



**MIT WEST - 4BSS160A**

120 Vassar Street  
Cambridge, MA 02139

(Page 1 of 8)



# Aerial View

PHOTO 1

SITE LOCATION

PHOTO 2

PHOTO 3



**MIT WEST - 4BSS160A**

120 Vassar Street  
Cambridge, MA 02139  
(Page 2 of 8)





**Existing View**



# Proposed View

Proposed Facade Mounted Alpha Sector Antennas (Typ.-3)

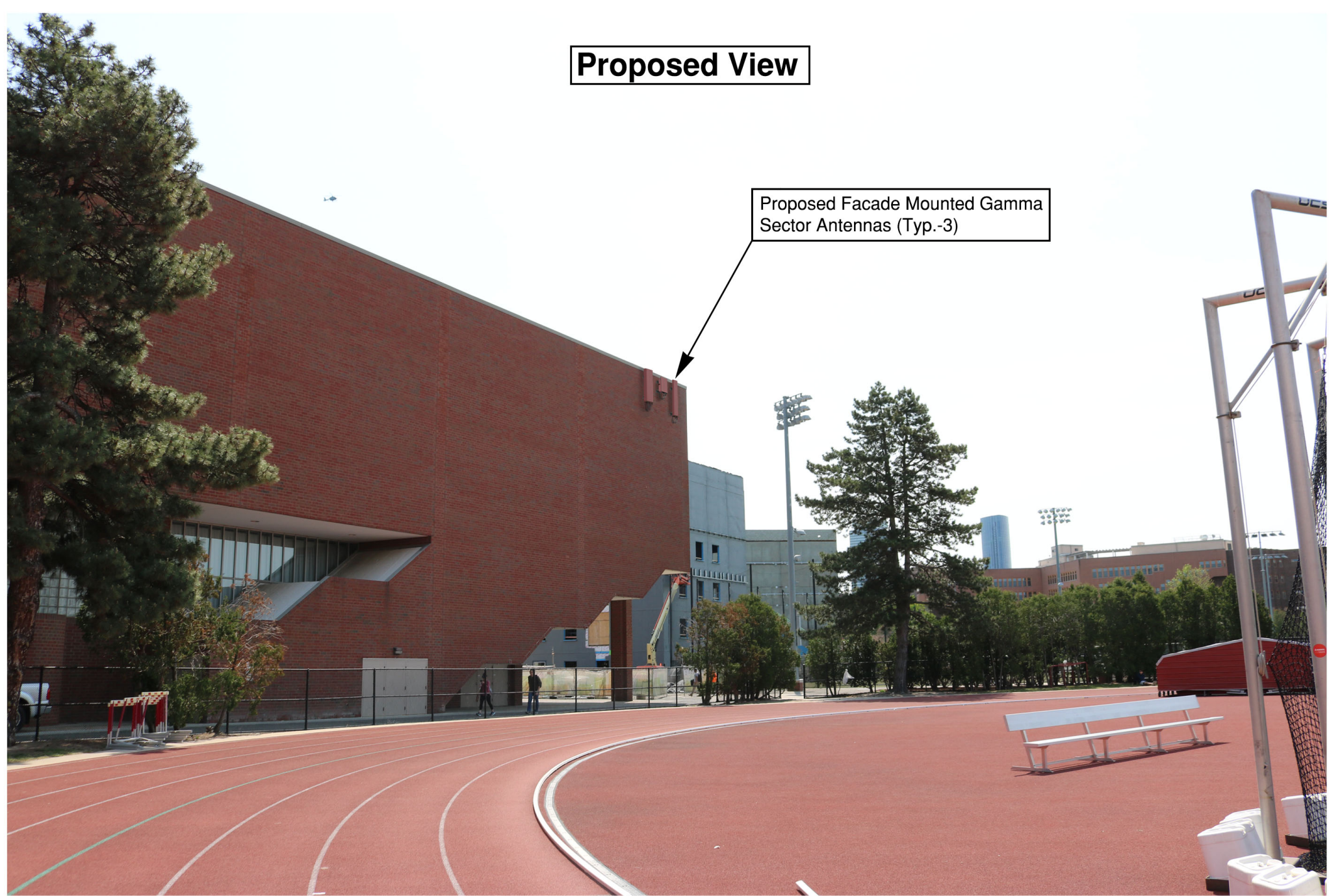


# Existing View



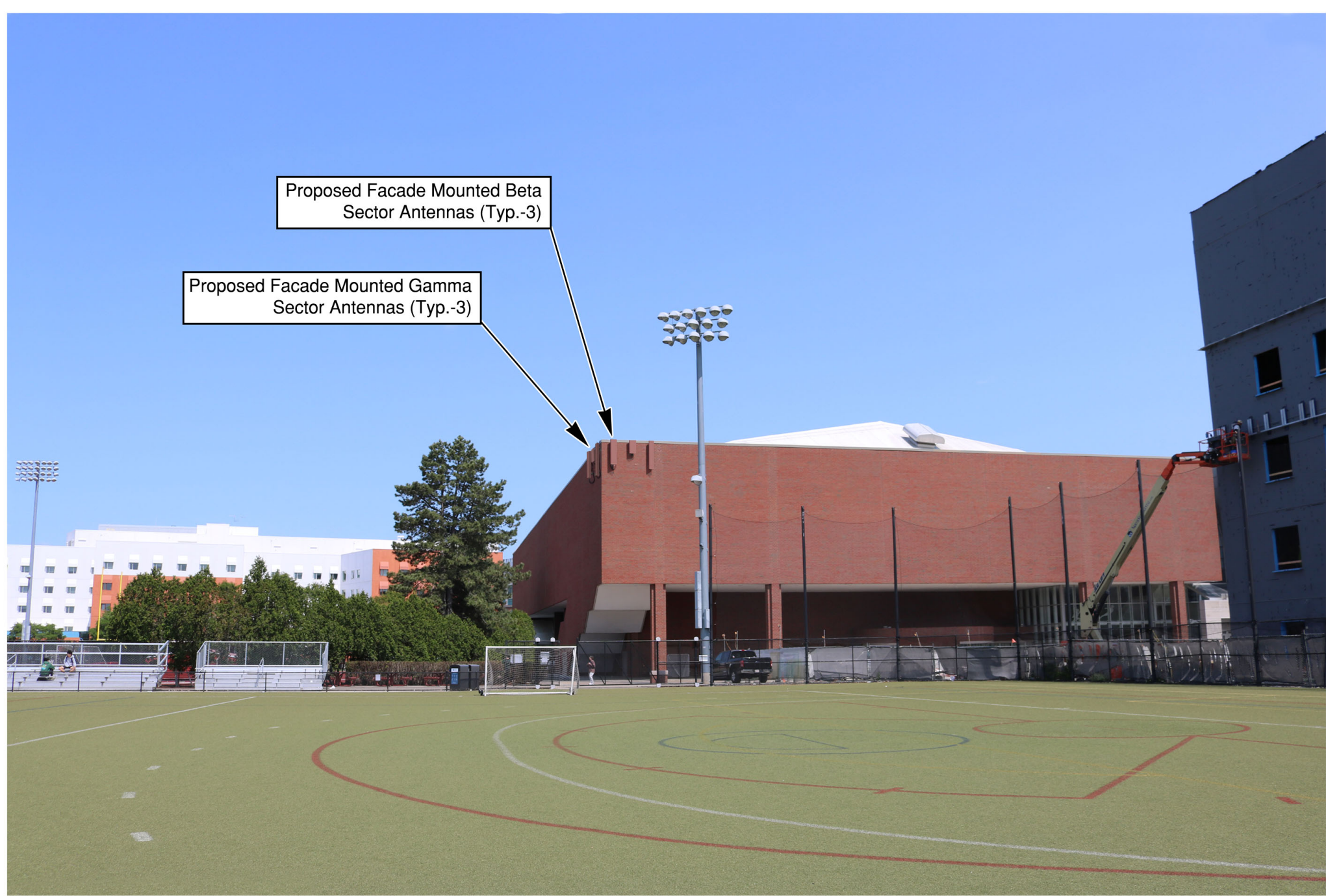
# Proposed View

Proposed Facade Mounted Gamma Sector Antennas (Typ.-3)



# Existing View





Proposed Facade Mounted Beta  
Sector Antennas (Typ.-3)

Proposed Facade Mounted Gamma  
Sector Antennas (Typ.-3)



# City of Cambridge

MASSACHUSETTS

BOARD OF ZONING APPEAL

831 Mass Avenue, Cambridge, MA.  
(617) 349-6100



## NOTICE OF DECISION

DECISION FILED WITH THE OFFICE OF THE CITY CLERK ON DEC 15 2006

Any person aggrieved by a decision of the Board of Zoning Appeal may appeal to the Superior Court or Land Court. Appeals, if any, shall be made pursuant to Section 17, Chapter 40A, Massachusetts General Laws and shall be filed within twenty calendar days from the above date, and a copy thereof shall be filed with the Cambridge City Clerk's office by that same date.

PREMISES: 120 Vassar Street (MIT Bldgs. W34 & W35)  
Cambridge, MA

Owner: Massachusetts Institute of Technology  
Title Reference: Book 9620, Page 252

PETITIONER: William J. Hanrahan, Project Manager  
Nextel Communications

PETITION: Special Permit: To install and operate a Wireless Telecommunication facility at 120 Vassar Street and to be located on MIT Buildings W34 & W35.

DECISION: **GRANTED W/ CONDITIONS**

CASE NO: 9380

**PRINCE, LOBEL, GLOVSKY & TYE LLP**  
ATTORNEYS AT LAW  
100 CAMBRIDGE STREET  
SUITE 2200  
BOSTON, MASSACHUSETTS 02114

\*For full details, please refer to the decision available at Inspectional Services Dept.



# City of Cambridge

MASSACHUSETTS

BOARD OF ZONING APPEAL

2006 DEC 15 A 11:04

831 Mass Avenue, Cambridge, MA 02139  
(617) 349-6100

CITY CLERK  
CAMBRIDGE, MASSACHUSETTS

CASE NO: 9380 Residence C-3 Zone

LOCATION: 120 Vassar Street (MIT BLDGS. W34 & W35)  
Cambridge, MA

PETITIONER: William J. Hanrahan, Project Manager  
Nextel Communications

PETITION: Special Permit: To install and operate a Wireless Telecommunication facility a 120 Vassar Street and to be located on MIT Buildings W34 & W35.

VIOLATIONS: Art. 4.000, Sec. 4.32.G.1 (Telecommunication Facility).  
Art. 10.000, Sec. 10.40 (Special Permit).

DATE OF PUBLIC NOTICE: October 13 & 20, 2006

DATE OF PUBLIC HEARING: November 2, 2006

MEMBERS OF THE BOARD: THOMAS SIENIEWICZ – CHAIR \_\_\_\_\_  
 JENNIFER PINCK – VICE CHAIR \_\_\_\_\_  
 SUSAN SPURLOCK \_\_\_\_\_ ✓  
 CONSTANTINE ALEXANDER \_\_\_\_\_ ✓

ASSOCIATE MEMBERS: BRENDAN SULLIVAN \_\_\_\_\_ ✓  
 CHRISTOPHER CHAN \_\_\_\_\_ ✓  
 PAUL D. GRIFFIN \_\_\_\_\_  
 EDWARD W. WAYLAND \_\_\_\_\_  
 TIMOTHY HUGHES \_\_\_\_\_  
 STACYJHON THOMAS \_\_\_\_\_

Members of the Board of Zoning Appeal heard testimony and viewed materials submitted regarding the above request for relief from the requirements of the Cambridge Zoning Ordinance. The Board is familiar with the location of the petitioner's property, the layout and other characteristics as well as the surrounding district.



Case No. 9380  
Location: 120 Vassar Street  
Petitioner: William Hanrahan, Project Manager

On November 2, 2006, Petitioner William Hanrahan project manager for Nextel Communications of the Mid-Atlantic, Inc. appeared before the Board of Zoning Appeal requesting a special permit in order to install and operate a Wireless Telecommunication facility at 120 Vassar Street on MIT buildings W34 and W35. The Petitioner requested relief from Article 4, Section 4.32.g.1 and Article 10, Section 10.40 of the Cambridge Zoning Ordinance ("Ordinance"). The Petitioner submitted application materials including information about the project, plans, and photographs.

Prior to the meeting, the Petitioner was informed that a five member Board was not available and was given a choice between continuing the case until a five member Board could be assembled or proceeding with the available four member Board. The Petitioner was informed that if he chose to proceed with the four member Board, a unanimous vote would be required in order to prevail. The Petitioner chose to proceed with the sitting four member Board.

Mr. Hanrahan stated that the arrays would be mounted on MIT buildings within a residential district. He stated that they were needed to cover gaps in service and that the arrays would be camouflaged to the extent possible. He stated that the operator was fully FCC licensed. He stated explained with the help of a map, that the facilities were in an area where residential uses did not predominate and discussed why there were no viable alternative sites outside the residential district.

Dave Barber, a member of MIT's emergency response network, stated that the added service was necessary for emergency communications. Tran Le, a student at MIT, spoke in support of the proposal stating that there are some buildings on the MIT campus currently lacking a telecommunications signal.

After discussion, the Acting-Chair moved that the Board grant the special permit for relief in order to install and operate a Wireless Telecommunication facility at 120 Vassar Street on MIT buildings W34 and W35 based on the finding that non-residential uses predominate in the vicinity and that the telecommunications facility is not inconsistent with the character that prevails in the surrounding neighborhood. The Acting-Chair moved that the Board make the additional findings that the requirements of the Ordinance cannot be met without the granting of the special permit, that there will be no congestion, hazard, or substantial change in neighborhood character that would result from granting relief, that there will be no adverse affect on adjacent properties, that no nuisance or hazard would be created to the detriment of the health, safety, and welfare of the occupant, and

that there is no basis that the proposed use would impair the integrity of the district or otherwise derogate from the intent and purpose of the Ordinance. The Acting-Chair moved that the Board grant the special permit on the following conditions:

1. that the work be done substantially in accordance with the plans submitted, prepared by Dewberry Goodkind, dated 7/10/06, being Sheets No. T1, Z1, Z2, and Z3,
2. that the antennae be painted or otherwise treated in a way to minimize the visual impact, so that it will blend in with the façade of the building to the maximum extent feasible, and
3. that should the facility no longer be used because the lease expires or for some other reason, the antennae be promptly removed from the façade of the building.

The four member Board voted unanimously in favor of granting the special permit (Alexander, Sullivan, Spurlock, and Chan) with the above conditions. Therefore, the special permit is granted.

The Board based its decision upon all the information presented, the above findings and upon the following:

- 1) The meeting of the requirements of the Ordinance;
- 2) Traffic generated or patterns of access or egress would not cause congestion, hazard, or substantial change in the established neighborhood character;
- 3) The continued operation of or the development of adjacent uses as permitted in the Ordinance would not be adversely affected by the nature of the proposed uses:
- 4) Nuisance or hazard would not be created to the detriment of the health, safety and /or welfare of the occupants of the proposed use;
- 5) The proposed use would not impair the integrity of the district or adjoining district or otherwise derogate from the Ordinance, and in fact would be a significant improvement to the structure and benefit the neighborhood, and;
- 6) The new use or building construction is not inconsistent with the Urban Design Objectives set forth in Section 19.30 of the Cambridge Zoning Ordinance.





# City of Cambridge

MASSACHUSETTS

## BOARD OF ZONING APPEAL

831 Mass Avenue, Cambridge, MA.  
(617) 349-6100

2009 NOV -9 P 12:02

Princi, Label, Givostys Typ, LLC  
c/o Anne Grant  
100 Cambridge Street, Ste. 200  
Boston, MA 02114

CASE NO: 9845

LOCATION: 120 Vassar Street - Bldgs. W34 & W35  
Cambridge, MA

Residence C-3 Zone

PETITIONER: Sprint Spectrum, LLC & Nextel Communications  
C/o Adam F. Braillard, Esq.

Owner:  
Massachusetts  
Institute of Technology

PETITION: Special Permit: To install (2) sectors (4 antenna panels per sector) to be mounted on the upper façade of the adjacent southerly corner of building W34, as well as, the interior installation of an equipment shelter to be located in the mechanical level of the adjacent W35 building. Power & Telco area to come from existing sources within the buildings.

VIOLATIONS: Art. 4.000, Sec. 4.32.G.1 (Telecommunication Facility).  
Art. 10.000, Sec. 10.40 (Special Permit).

DATE OF PUBLIC NOTICE: September 18 & 25, 2009

DATE OF PUBLIC HEARING: October 8, 2009



2010 00062945

Bk: 54571 Pg: 120 Doc: DECIS  
Page: 1 of 4 04/21/2010 02:15 PM

### MEMBERS OF THE BOARD:

CONSTANTINE ALEXANDER - CHAIR  
TIMOTHY HUGHES - VICE CHAIR  
BRENDAN SULLIVAN  
THOMAS SCOTT

✓  
✓  
✓  
✓

### ASSOCIATE MEMBERS:

CHRISTOPHER CHAN  
MAHMOOD R. FIROUZBAKHT  
DOUGLAS MYERS  
SLATER W. ANDERSON  
TAD HEUER

✓  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

Members of the Board of Zoning Appeal heard testimony and viewed materials submitted regarding the above request for relief from the requirements of the Cambridge Zoning Ordinance. The Board is familiar with the location of the petitioner's property, the layout and other characteristics as well as the surrounding district.

Case No. 9845  
Location: 120 Vassar Street – Bldgs. W34 & W35  
Petitioner: Sprint Spectrum & Nextel Communications – c/o Adam Brillard

On October 8, 2009, Petitioner's attorney Scott Lacy appeared before the Board of Zoning Appeal requesting a special permit in order to install two sectors of antennas mounted on the upper façade of the southerly corner of building W34 and to install an interior equipment shelter located in the mechanical level of building W35, with power and telco coming from existing sources in the building. The Petitioner requested relief from Article 4, Section 4.32.G.1 of the Cambridge Zoning Ordinance ("Ordinance"). The Petitioner submitted application materials including information about the project, plans, and photographs.

Mr. Lacy stated that the proposal had previously received a special permit, but it had lapsed. He stated that the antennas would be mounted on the side of the building and painted to match the building in order to minimize its visibility. He stated that the installation was in the middle of the MIT campus and so was not in a predominately residential neighborhood. He stated that there was a need for the installation in order to close a gap in coverage. He stated that no suitable alternative sites were available.

The Chair read a letter of support from the Planning Board. The Chair asked if anyone wished to be heard on the matter, no one indicated such.

After discussion, the Chair moved that the Board grant the special permit for relief in order to install two sectors of antennas mounted on the upper façade of the southerly corner of building W34 and to install an interior equipment shelter located in the mechanical level of building W35, with power and telco coming from existing sources in the building based on the finding that the petitioner is an licensed FCC carrier in good standing. The Chair moved that the Board find that although this array is to be erected in a residential zoning district, there is a demonstrated public need for the facility. The Chair moved that the Board find that the array will facilitate the safety of the students, employees, and others at MIT. The Chair moved that the Board find that there are not alternative functionally suitable sites in non-residential locations. The Chair moved that the Board find that nonresidential uses predominate in the vicinity, regardless of the fact that the property is zoned residential. The Chair moved that the Board find that the antenna would not cause any congestion, hazard or substantial change in neighborhood character. The Chair moved that the Board find that the antennas would have no adverse effect on adjacent properties. The Chair moved that the Board find that no nuisance or hazard will be created to the detriment of the health, safety and welfare of the occupants of the building. The Chair moved that the Board grant the special permit on the following conditions:

1. that the work proceed in accordance with plans submitted by the petitioner, prepared by Dewberry Goodkind, Inc., dated 8/30/06, numbered T-1, Z-1, Z-2, and Z-3, with the first page being initialed by the Chair and in accordance with photo simulations, submitted by the petitioner, prepared by Dewberry, dated July 27, 2005, and also initialed by the Chair,
2. that the visual impact of the equipment be minimized to the maximum extent possible, by conforming the color of the antenna to the color of the facade of the building, and
3. that if the telecommunication facility is abandoned or not used for a period of six months, the petitioner promptly remove all of the antennas and restore the facade to its current condition, as well as possible.

The five member Board voted unanimously in favor of granting the special permit (Alexander, Hughes, Sullivan, Firouzbakht, and Scott) with the above conditions. Therefore, the special permit is granted.

The Board based its decision upon all the information presented, the above findings and upon the following:

- 1) The meeting of the requirements of the Ordinance;
- 2) Traffic generated or patterns of access or egress would not cause congestion, hazard, or substantial change in the established neighborhood character;
- 3) The continued operation of or the development of adjacent uses as permitted in the Ordinance would not be adversely affected by the nature of the proposed uses;
- 4) Nuisance or hazard would not be created to the detriment of the health, safety and /or welfare of the occupants of the proposed use;
- 5) The proposed use would not impair the integrity of the district or adjoining district or otherwise derogate from the Ordinance, and in fact would be a significant improvement to the structure and benefit the neighborhood, and;
- 6) The new use or building construction is not inconsistent with the Urban Design Objectives set forth in Section 19.30 of the Cambridge Zoning Ordinance.





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# City of Cambridge

MASSACHUSETTS

## BOARD OF ZONING APPEAL

831 Mass Avenue, Cambridge, MA 02139  
(617) 349-6100

OFFICE OF THE CITY CLERK  
CAMBRIDGE, MASSACHUSETTS

CASE NO: 10410

LOCATION: 120 Vassar Street (MIT Bldg. W34 & W35) Residence C-3 Zone  
Cambridge, MA

PETITIONER: Sprint - C/o David Archambault, Agent / M.I.T

PETITION: Special Permit: To replace existing antennas with new upgraded antennas, (8 antennas existing will end with 2 antennas) replace existing equipment with new updated equipment, replace existing cables and GPS with new cables and GPS, add 4 Remote Radio Head Units.

VIOLATION: Art. 4.000, Sec. 4.32.G.1 (Footnote 49) (Telecommunications Facility).  
Art. 10.000, Sec. 10.40 (Special Permit).

9620-252

DATE OF PUBLIC NOTICE: March 14 & March 21, 2013

DATE OF PUBLIC HEARING: March 28, 2013

MEMBERS OF THE BOARD:

- CONSTANTINE ALEXANDER - CHAIR
- TIMOTHY HUGHES - VICE-CHAIR
- BRENDAN SULLIVAN
- THOMAS SCOTT
- JANET O. GREEN

ASSOCIATE MEMBERS:

- MAHMOOD R. FIROUZBAKHT
- DOUGLAS MYERS
- SLATER W. ANDERSON
- LINDSEY T. THORNE-BINGHAM
- ANDREA A. HICKEY
- KEVIN C. McAVEY

Members of the Board of Zoning Appeal heard testimony and viewed materials submitted regarding the above request for relief from the requirements of the Cambridge Zoning Ordinance. The Board is familiar with the location of the petitioner's property, the layout and other characteristics as well as the surrounding district.



Case No. 10410  
Location: 120 Vassar Street  
Petitioner: Sprint, c/o David Archambault, Agent

On March 28, 2013, Petitioner's agent David Archambault appeared before the Board of Zoning Appeal requesting a special permit in order to replace eight existing antennas with two new upgraded antennas, to replace existing equipment with new updated equipment, to replace existing cables and GPS with new cables and GPS, and to add four remote radio head units. The Petitioner requested relief from Article 4, Section 4.32.G.1 of the Cambridge Zoning Ordinance ("Ordinance"). The Petitioner submitted application materials including information about the project, plans, and photographs.

Mr. Archambault stated that the proposal was to alter an existing specially permitted telecommunications site resulting in the reduction of the number of antennas from eight to two. He stated that the petitioner was FCC licensed. He stated that the building was in a residential zone. He stated that there was a need to upgrade the existing antennas. He stated that no alternative suitable sites in non residential areas were available. He stated that residential uses did not predominate in the vicinity, which largely contained an institutional use. He stated that the proposed new antenna would not extend above the roofline and that the proposed new antenna was longer than the existing, but would extend down instead of up.

The Chair asked if anyone wished to be heard on the matter, no one indicated such.

After discussion, the Chair moved that the Board grant the special permit for relief in order to replace eight existing antennas with two new upgraded antennas, to replace existing equipment with new updated equipment, to replace existing cables and GPS with new cables and GPS, and to add four remote radio head units based on the finding that the petitioner was a duly FCC licensed carrier in good standing. The Chair moved that the Board find that the proposed work was designed to minimize the visual impact of the various elements of the proposed facility by matching the new antennas in color to the facade of the building to which they would be attached. The Chair moved that the Board find that the antennas and other equipment would be put in a residentially zoned district. The Chair moved that the Board find that there was a demonstrated public need for the facility at the location. The Chair moved that the Board find that there was a need to upgrade the systems and to improve the telecommunication service. The Chair moved that the Board find that there were no other functionally suitable sites in nonresidential

districts. The Chair moved that the Board find that the prevailing uses in the area were consistent with the proposed facility. The Chair moved that the Board find that nonresidential uses did not predominate in the vicinity and that the telecommunication facility would not be inconsistent with the character that did prevail in the surrounding neighborhood. The Chair moved that the Board find that these same or similar findings were made in the prior case granting relief for the existing antennas. The Chair moved that the Board find that granting the relief would not cause congestion, hazard, or substantial change in established neighborhood character. The Chair moved that the Board find that the proposal was to attach the two antennas high up on the side of a building. The Chair moved that the Board find that the development and operation of adjacent uses would not be adversely affected by the nature of the proposed use. The Chair moved that the Board find that no nuisance or hazard would be created to the detriment of the health, safety, and/or welfare of the occupant or to the citizens of the city. The Chair moved that the Board find that the proposed use would not impair the integrity of the district or adjoining district or otherwise derogate from the intent and purpose of the Ordinance. The Chair moved that the Board find that these telecommunication facilities improve the quality of telecommunications services in the city, which was a goal of the city. The Chair moved that the Board grant the special permit on the following conditions:

1. that the work proceed in accordance with plans submitted by the Petitioner, the first page, entitled T-1, being initialed by the Chair, and in accordance with photo simulations, submitted by the Petitioner, dated 12/10/12, with the first page initialed by the Chair,
2. that any existing unused antennas, brackets, and equipment be removed from the building as promptly as practicable with any remaining holes and plugs visually minimized, and
3. that should the use be discontinued for any period of six months or more, all equipment be promptly removed and the facade of the building be restored to its current state as nearly as practicable.

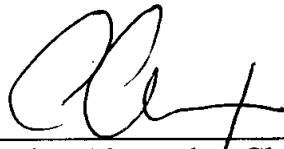
The five member Board voted unanimously in favor of granting the special permit (Alexander, Hughes, Sullivan, Green, and Myers) with the above condition. Therefore, the special permit is granted.

The Board based its decision upon all the information presented, the above findings and upon the following:

- 1) The meeting of the requirements of the Ordinance;
- 2) Traffic generated or patterns of access or egress would not cause congestion, hazard, or substantial change in the established neighborhood character;
- 3) The continued operation of or the development of adjacent uses as permitted in the Ordinance would not be adversely affected by the nature of the proposed uses;

- 4) Nuisance or hazard would not be created to the detriment of the health, safety and /or welfare of the occupants of the proposed use;
- 5) The proposed use would not impair the integrity of the district or adjoining district or otherwise derogate from the Ordinance, and in fact would be a significant improvement to the structure and benefit the neighborhood, and;
- 6) The new use or building construction is not inconsistent with the Urban Design Objectives set forth in Section 19.30 of the Cambridge Zoning Ordinance.

The Board of Zoning Appeal is empowered to waive local zoning regulations only. This decision therefore does not relieve the petitioner in any way from the duty to comply with local ordinances and regulations of the other local agencies, including, but not limited to the Historical Commission, License Commission and/or compliance with requirements pursuant to the Building Code and other applicable codes.



Constantine Alexander, Chair

Attest: A true and correct copy of decision filed with the offices of the City Clerk and Planning Board on 5-8-13 by Mania Pacheco, Clerk.

Twenty days have elapsed since the filing of this decision.

No appeal has been filed ✓.

Appeal has been filed and dismissed or denied.

Date: May 31, 2013 Donna P. Lopez City Clerk.  
*INTERIM*

83



CITY OF CAMBRIDGE  
MASSACHUSETTS  
BOARD OF ZONING APPEAL  
831 MASSACHUSETTS AVENUE  
CAMBRIDGE, MA 02139  
617 349-6100

2018 DEC 20 AM 11:32  
OFFICE OF THE CITY CLERK  
CAMBRIDGE, MASSACHUSETTS

CASE NO: BZA-016980-2018 Residence C-3 Zone

LOCATION: 120 Vassar St  
Cambridge, MA 02139

PETITIONER: Sprint Spectrum Realty - C/O Simon Brighenti, Centerline Communications

PETITION: Special Permit: To replace existing telecommunications equipment with upgraded equipment. There will be no significant change to the operational or visual aspects of the current facility.

**VIOLATION :**

Article <u>4.000</u>	Section <u>4.32.G.1 (Telecommunication Facility).</u>
Article <u>4.000</u>	Section <u>Footnote 49 (Telecommunication Facility).</u>
Article <u>10.000</u>	Section <u>10.40 (Special Permit).</u>
Article <u>6409</u>	Section <u>47 USC Section 6409 (a)</u>

DATE OF PUBLIC NOTICE: November 15, 2018 and November 22, 2018

DATE OF PUBLIC HEARING: November 29, 2018;

9620-252

**MEMBERS OF THE BOARD:**

- CONSTANTINE ALEXANDER - CHAIR
- BRENDAN SULLIVAN - VICE-CHAIR
- JANET O. GREEN
- ANDREA A. HICKEY

✓  
✓  
✓  
✓

**ASSOCIATE MEMBERS:**

- SLATER W. ANDERSON
- ALISON HAMMER
- JIM MONTEVERDE
- LAURA WERNICK

\_\_\_\_\_  
\_\_\_\_\_  
✓  
\_\_\_\_\_



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Members of the Board of Zoning Appeal heard testimony and viewed materials submitted regarding the above request for relief from the requirements of the Cambridge Zoning Ordinance. The Board is familiar with the location of the petitioner's property, the layout and other characteristics as well as the surrounding district.

Case No. BZA-016980-2018  
Location: 120 Vassar Street  
Petitioner: Sprint Spectrum Realty - c/o Simon Brighenti

On November 29, 2018, Petitioner's attorney Simon Brighenti appeared before the Board of Zoning Appeal requesting a special permit in order to replace existing telecommunication equipment with upgraded equipment. The Petitioner requested relief under Article 4, Sections 4.32.G.1 and 4.40 of the Cambridge Zoning Ordinance ("Ordinance"). The Petitioner submitted materials in support of the application including information about the project, plans, and photographs.

Mr. Brighenti stated that the proposal was to modify an existing permitted telecommunications facility by swapping façade mounted antennas with antennas of the same dimension and mounted in the same location. He stated that there would be one additional similar antenna, mounted like the others. He stated that while the site was in a residential zone, commercial and institutional uses predominated. He stated that the modifications would not create traffic or noise or otherwise be a detriment to the neighborhood.

The Chair asked if anyone wished to be heard on the matter, no one indicated such.

After discussion, the Chair moved that the Board make the following findings based upon the application materials submitted and all evidence before the Board and that based upon the findings the Board grant the requested relief as described in the Petitioner's submitted materials and the evidence before the Board: that the Board find that the requirements of the Ordinance could not be met without the special permit sought; that the Board find that traffic generated or patterns of access or egress resulting from what was proposed would not cause congestion, hazard, or substantial change in established neighborhood character; that the Board find that the proposal was simply to substitute antennas, so that there would be no impact on congestion or hazard or substantial change in established neighborhood character; that the Board find that the continued operation or development of adjacent uses as permitted in the Ordinance would not be adversely affected by what was proposed; that the Board find that no nuisance or hazard would 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; that the Board find that generally what was proposed would not impair the integrity of the district or adjoining district or otherwise derogate from the intent and purpose of the Ordinance; that the Board find that, as found in the previous special permit grant, nonresidential uses predominate in the vicinity of the structure; that the Board find that what was proposed was not inconsistent with the character that did prevail in the surrounding neighborhood and was consistent with the existing facility; that the Board find that the proposed modification of the telecommunication facility at the site proposed by the petitioner did not substantially change the physical dimensions of the

existing wireless tower or base station at such facility within the meaning of Section 6409(a) of The Middle Class Job Creation Act of 2012, also known as The Spectrum Act.

The Chair further moved that based upon all the information presented the Board grant the requested relief as described in the Petitioner's submitted materials and the evidence before the Board on the following conditions:

1. that the work proceed in accordance with plans submitted by the petitioner, as initialed by the Chair,
2. that upon completion of the work, the physical appearance and visual impact of the proposed work be consistent with what existed on site,
3. that the petitioner at all times maintain the proposed work so that its physical appearance and visual impact remain consistent,
4. that should the petitioner cease to utilize the equipment approved tonight for a continuous period of six months or more, it promptly thereafter remove such equipment and restore the building on which it was located to its prior condition and appearance to an extent reasonably practicable,
5. that the petitioner continue to comply with the conditions imposed by the Board with respect to previous Special Permits granted to the petitioner with regard to the site in question,
6. that inasmuch as the health effects of the transmission of electromagnetic energy waves is a matter of ongoing societal concern and scientific study, the Special Permit is also subject to the following conditions:
  - A. that the petitioner shall file with the Inspectional Services Department each report it files with the federal authorities regarding electromagnetic energy wave emissions emanating from all of the petitioner's equipment on the site. Each such report shall be filed with the Inspectional Services Department no later than ten business days after the report has been filed with the federal authorities. Failure to timely file any such report with the Inspectional Services Department shall ipso facto terminate the Special Permit granted tonight.
  - B. that in the event that at any time federal authorities notify the petitioner that its equipment on the site, including, but not limited to the special permit granted tonight, fails to comply with the requirements of law or governmental regulations, whether with regard to the emissions of electromagnetic energy waves or otherwise, the petitioner, within ten business days of receipt of such notification of such failure, shall file with the Inspectional Services Department a report disclosing in reasonable detail that such failure has occurred and the basis for such claimed failure. The special permit shall ipso facto terminate if any of the petitioner's federal licenses are suspended, revoked, or terminated.
  - C. that to the extent a special permit has terminated pursuant to the foregoing paragraphs A and B, the petitioner may apply to this Board for a new special permit provided that the public notice containing such

application discloses in reasonable detail that the application has been filed because of a termination of the special permit pursuant to paragraphs A or B above. Any such new application shall not be deemed a repetitive petition and therefore will not be subject to the two-year period during which repetitive petitions may not be filed.

- D. that within ten business days after receipt of a Building Permit for installation of equipment subject to this petition, the petitioner shall file with the Inspectional Services Department a sworn Affidavit of the person in charge of the installation of equipment by the petitioner of the geographical area that includes Cambridge. Stating that A, he or she has such responsibility, and B that the equipment being installed pursuant to the special permit will comply with all federal safety rules and will be situated and maintained in locations with appropriate barricades and other protections, such that individuals, including nearby residents and occupants of nearby structures, will be sufficiently protected from excessive radio frequency radiation under federal law.

The five-member Board voted unanimously in favor of granting the special permit with the above conditions (Alexander, Sullivan, Green, Hickey, and Monteverde). Therefore, the special permit is granted as conditioned.

The Board of Zoning Appeal is empowered to waive local zoning regulations only. This decision therefore does not relieve the petitioner in any way from the duty to comply with local ordinances and regulations of the other local agencies, including, but not limited to the Historical Commission, License Commission and/or compliance with requirements pursuant to the Building Code and other applicable codes.

Constantine Alexander, Chair

ATTEST: A true and accurate copy of the above decision has been filed on 12-20-18 with the Offices of the City Clerk and the Planning Board by Maria Pacheco, duly authorized representative of the Board of Zoning Appeal.

Twenty days have elapsed since the above decision was filed in the office of the City Clerk and:

no appeal has been filed; or

an appeal has been filed within such twenty days.

The person exercising rights under a duly appealed special permit does so at risk that a court will reverse the permit and that any construction performed under the permit may be ordered undone. This certification shall in no event terminate or shorten the tolling, during the pendency of any appeals, of the periods provided under the second paragraph of G.L. c. 40A, §6.

Date: 1/10/19 Donna P. Lopez, City Clerk

Appeal has been dismissed or denied.

Date: \_\_\_\_\_, City Clerk



May 17, 2023

**VIA HAND DELIVERY**

Ranjit Singanayagam  
Commissioner of Inspectional Services/Building Commissioner  
City of Cambridge  
831 Massachusetts Avenue  
Cambridge, MA 02139

Re: Eligible Facilities Request to Modify Transmission Equipment at an Existing Base Station located at **120 Vassar Street, Cambridge, MA 02141.**

Dear Mr. Singanayagam:

A. T-Mobile is Filing an Eligible Facilities Request

Prince Lobel Tye LLP, on behalf of T-Mobile Northeast LLC is submitting the attached Eligible Facilities Request application to add, remove, modify, or replace Transmission Equipment at an Existing Base Station located at 120 Vassar Street, Cambridge, MA 02141.

Because this jurisdiction has not yet developed an Eligible Facilities Request permit application form that complies with Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012, commonly known as the “Spectrum Act” (Pub. Law No. 112-96, 126 Stat 156) (codified at 47 U.S.C. § 1455), this Eligible Facilities Request is attached to the Building Permit Application form which was customarily used by this jurisdiction when reviewing requests to collocate or modify wireless telecommunications facilities. Because federal law now preempts many of the permit application requirements that this jurisdiction would previously have required from an applicant, this Eligible Facilities Request application provides only the information that federal law allows this jurisdiction to consider when reviewing an Eligible Facilities Request.

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.

B. Why this Eligible Facilities Request Must Be Granted

This Eligible Facilities Request involves an effort to collocate, remove, modify, or replace Transmission Equipment at an existing Base Station operated by a Federal Communications Commission (“**FCC**”) licensed wireless carrier. The FCC has defined Base Station as “the equipment and non-tower supporting structure at a fixed location that enable Commission-licensed or authorized wireless communications between user equipment and a communications

network . . . the term includes equipment associated with wireless communications service including, but not limited to, radio transceivers, antennas, coaxial or fiber-optic cable, regular and backup power supply, and comparable equipment.” The term existing base station also includes a structure that currently houses or supports an antenna, transceiver or other associated equipment that constitutes part of a Base Station at the time the application is filed even if the structure was not built solely or primarily to provide such support. The existing Base Station in this application is approximately fifty-eight feet (58’) high and presently contains wireless facilities. The existing Base Station meets the FCC definition of a Base Station.

The list of equipment identified in the Eligible Facilities Request application that will be collocated, removed, or replaced at the Base Station also is Transmission Equipment as determined by the FCC. 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, antennas 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, in a Report and Order adopted on October 17, 2014, determined that any modification to an existing telecommunications Base Station that meets the following six criteria does not substantially change the physical dimensions of the existing 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 Base Station by more than 10 percent (10%) or ten (10) feet, whichever is greater.*
  - a. The height of the Base Station is approximately fifty-eight (58’) high. The proposed replacement of the existing antennas will not affect the height of the Base Station.
2. *The modifications to the Transmission Equipment do not protrude from the edge of the support structure by more than six (6) feet.*
  - a. The proposed modification will not protrude from the edge of the building by more than six (6) feet.
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.*
  - a. There is currently an equipment room existing at the Base Station. The Applicant propose no additional equipment rooms or shelters at this location.

4. *The modifications to the Transmission Equipment do not entail any excavation or deployment outside of the Base Station site.*
  - a. There will be no excavation or deployment outside of the Base Station site.
5. *The modifications to the Transmission Equipment do not defeat any existing concealed or stealth-design.*
  - a. Pursuant to the previous decisions by the Board of Zoning Appeal for the City of Cambridge (the “**Board**”) for this site, the last of which is dated December 2018 (the “**Decisions**”), the existing panel antennas are located in the preferred location on the building, and the proposed modifications to the equipment will not defeat the existing stealth design as all the antennas will be installed on low profile mounts painted to match the existing building. Furthermore, all proposed antennas will be integrated into the building to the extent possible. As such, the proposal will be in conformity with the Decision and do not defeat the existing camouflage design. Finally, any visual change to the Facility will be de minimus for many of the same reasons stated in the Decisions attached hereto.
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.*
  - a. Based on the foregoing, the proposed modifications to the Base Station fully conform to Section 6409(a) of the Spectrum Act and comply with the prior conditions of approval of the Base Station.

There is a certification attached to the accompanying Eligible Facilities Request that identifies how each of the six review criteria identified by the FCC is met. The modifications to the Transmission Equipment at the Base Station located in Cambridge, MA 02141 contained in this Eligible Facilities Request fully conform to Section 6409(a) as enacted by Congress and as interpreted by the FCC. Accordingly, this Eligible Facilities Request must be approved within 60 days, as required by federal law and FCC implementing regulations.

#### C. Notice of Federal Law Expedited Permit Processing and Deemed Granted

Under federal law, an Eligible Facilities Request is deemed granted sixty (60) days after a complete application is filed with a local jurisdiction. If sixty days pass after the submission of T-Mobile’s accompanying Eligible Facilities Request and the City of Cambridge has not acted to grant or deny the request, it will be deemed granted. At that time, the applicant may advise the City of Cambridge that the application has been deemed granted. If the City of Cambridge wishes to contest whether the Eligible Facilities Request has been deemed granted, the burden is on the City of Cambridge to file a lawsuit in a court of competent jurisdiction within 30 days after receipt of a written communication notifying it that the Eligible Facilities Request has been

deemed granted. Failure to file a lawsuit in a timely manner may forever bar this jurisdiction from contesting that this Eligible Facilities Request has been deemed granted.

T-Mobile is committed to working cooperatively with you, and all jurisdictions around the country, to secure expeditious approval of requests to modify existing personal wireless service facilities. Please do not hesitate to contact me if you have questions.

Sincerely,

A handwritten signature in black ink, appearing to read 'A. Braillard', is written over a solid horizontal line.

Adam F. Braillard

Direct: 617-456-8153

Email: [abraillard@princelobel.com](mailto:abraillard@princelobel.com)

**ELIGIBLE FACILITIES REQUEST CERTIFICATION FOR NON-SUBSTANTIAL  
CHANGES  
TO AN EXISTING BASE STATION**

“Base Station” means the equipment and non-tower supporting structure at a fixed location that allow Commission-licensed or authorized wireless communications between user equipment and a communications network. The term base station includes any equipment associated with wireless communications services including but not limited to radio transceivers, antennas, coaxial or fiber-optic cables, regular or back up power supply, and comparable equipment. The term existing base station also includes a structure that currently houses or supports an antenna, transceiver or other associated equipment that constitutes part of a base station at the time the application is filed even if the structure was not built solely or primarily to provide such support. “Base Station” includes the relevant equipment in any technological configuration, including small cells and DAS. Remember “Base Station” has two separate meanings: (1) the supporting structure that houses FCC licensed or authorized wireless equipment and (2) the wireless equipment itself. Keep this distinction in mind when calculating a substantial change in physical dimensions.

“Transmission Equipment” means any equipment that facilitates transmission for any FCC licensed or authorized wireless communication service, including but not limited to, radio transceivers, antennas 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.

“Collocation” means the addition, removal or replacement of Transmission Equipment to an existing tower or a base station. This means that the existing support structure, be it a tower or a building or some other structure, must presently support FCC licensed or authorized wireless facilities. The FCC further requires that the site (tower, building, or other structure) was previously approved by the appropriate agency of government to house wireless facilities. Illegal wireless installations cannot be the basis for an eligible facilities request. However, if a communications Tower was erected at a time when it was exempt from zoning, the Tower can be modified through the Eligible Facilities Request process even if the Tower is no longer exempt from zoning.

Site Address: 120 Vassar Street

**Existing Facilities**

The Existing Facility is comprised of two (2) panel antennas mounted at two different locations on the façade of the building, together with supporting equipment.

### Height of Base Station

Height above ground level of the tallest point on the existing base station: 58' (feet)

Height above ground level of the tallest point of the existing base station after the installation of the *proposed* equipment: 58'(feet)

- 1) Does the height above ground level of the proposed equipment exceed the height of the tallest point on the existing base station by more than 10 percent (10%) or ten (10) feet, whichever is greater?

Yes  No

### Width of Base Station

- 2) Will any of the proposed equipment protrude from the edge of the support structure by more than six (6) feet?

Yes  No

### Excavation or Equipment Placement

- 3) Will the proposed changes in Transmission Equipment involve excavation or placement of new equipment outside the existing Base Station site or outside any access or utility easements currently related to the site?

Yes  No

### Equipment Cabinets

- 4) Will the proposed modification in Transmission Equipment involve installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four?

Yes  No

### Concealed or Stealth-Designed Wireless Facilities

5)

- a) Is the existing wireless facility concealed or stealth- designed?

Yes  No

- b) If the answer to 5a) is “Yes,” will the proposed modification in Transmission Equipment defeat the existing concealed or stealth-design? **N/A**

Yes  No

## Compliance with Preexisting Conditions of Approval for the Base Station

6)

- a) Were there any conditions of approval stated in the original government approval of the Base Station?

Yes  No

- b) Will the proposed modification in Transmission Equipment comply with conditions of approval imposed on the Base Station prior to February 22, 2012?

Yes  No

- c) If the answer to 6b) is “No,” is the non-compliance due solely to any of the conditions addressed in Questions 1-5 above? N/A

Yes  No

**If the answers to questions 1-4 are “No,” the answer to either 5a) or b) is “No,” and the answers to 6a) is “No” or the answers to either 6b) or 6c) are “Yes,” then the proposed modifications do not substantially change the physical dimensions of the existing Base Station.**

This certification is dated this 17<sup>th</sup> day of May, 2023.



\_\_\_\_\_  
Signature

Adam F. Braillard, Attorney for Applicant  
Name & Title

**Eligible Facilities Request (EFR) Application Form**

Date of Submittal: \_\_\_\_\_

Submitted by:

Name: \_\_\_\_\_

Title: \_\_\_\_\_

Contact information: \_\_\_\_\_

Name of Jurisdiction: \_\_\_\_\_

Address of Jurisdiction: \_\_\_\_\_

Contact Name for Jurisdiction: \_\_\_\_\_

Name of Local Government Permit Application: \_\_\_\_\_

Local Government File #: \_\_\_\_\_

Street Address of Site: \_\_\_\_\_

Tax Parcel # of Site: \_\_\_\_\_

Latitude/Longitude of Site: \_\_\_\_\_

List Each Piece of Transmission Equipment that will be Collocated or Added:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_

List Each Piece of Transmission Equipment that will be Removed:

\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_  
\_\_\_\_\_



List Cabinets that will be Collocated or Added at the Site:

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List Cabinets that will be Removed at the Site:

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**Federal Communications Commission  
Wireless Telecommunications Bureau**

**RADIO STATION AUTHORIZATION**

LICENSEE: T-MOBILE LICENSE LLC

T-MOBILE LICENSE LLC  
12920 SE 38TH STREET  
BELLEVUE, WA 98006

<b>Call Sign</b> WQZL853	<b>File Number</b>
<b>Radio Service</b> WT - 600 MHz Band	

FCC Registration Number (FRN): 0001565449

<b>Grant Date</b> 06-14-2017	<b>Effective Date</b> 06-15-2017	<b>Expiration Date</b> 06-14-2029	<b>Print Date</b>
<b>Market Number</b> PEA007	<b>Channel Block</b> C	<b>Sub-Market Designator</b> 0	
<b>Market Name</b> Boston, MA			
<b>1st Build-out Date</b> 06-14-2023	<b>2nd Build-out Date</b> 06-14-2029	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

**Waivers/Conditions:**

NONE

**Conditions:**

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein. Neither the license nor the right granted thereunder shall be assigned or otherwise transferred in violation of the Communications Act of 1934, as amended. See 47 U.S.C. § 310(d). This license is subject in terms to the right of use or control conferred by §706 of the Communications Act of 1934, as amended. See 47 U.S.C. §606.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS). To view the license record, go to the ULS homepage at <http://wireless.fcc.gov/uls/index.htm?job=home> and select "License Search". Follow the instructions on how to search for license information.

**Licensee Name:** T-MOBILE LICENSE LLC

**Call Sign:** WQZL853

**File Number:**

**Print Date:**

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: T-MOBILE LICENSE LLC

ATTN: FCC REGULATORY COMPLIANCE
T-MOBILE LICENSE LLC
12920 SE 38TH ST.
BELLEVUE, WA 98006

Table with Call Sign (WRAM889), File Number (0008585885), and Radio Service (CW - PCS Broadband).

FCC Registration Number (FRN): 0001565449

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).

**Licensee Name:** T-MOBILE LICENSE LLC

**Call Sign:** WRAM889

**File Number:** 0008585885

**Print Date:** 05-31-2019

Spectrum Lease associated with this license. See Spectrum Leasing Arrangement Letter dated 07/27/2004 and File No. 0001765259.

Reference Copy

**Licensee Name:** T-MOBILE LICENSE LLC

**Call Sign:** WRAM889

**File Number:** 0008585885

**Print Date:** 05-31-2019

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: T-MOBILE LICENSE LLC

ATTN: FCC REGULATORY COMPLIANCE
T-MOBILE LICENSE LLC
12920 S.E. 38TH STREET
BELLEVUE, WA 98006

Table with Call Sign (KNLH311), File Number (0007725350), and Radio Service (CW - PCS Broadband).

FCC Registration Number (FRN): 0001565449

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).

**Licensee Name:** T-MOBILE LICENSE LLC

**Call Sign:** KNLH311

**File Number:** 0007725350

**Print Date:** 06-09-2017

This authorization is subject to the condition that the remaining balance of the winning bid amount will be paid in accordance with Part 1 of the Commission's rules, 47 C.F.R. Part 1.

Preferred  
Copy



Licensee Name: T-MOBILE LICENSE LLC

Call Sign: KNLH311

File Number: 0007725350

Print Date: 06-09-2017

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: T-MOBILE LICENSE LLC

ATTN: FCC REGULATORY COMPLIANCE
T-MOBILE LICENSE LLC
12920 SE 38TH ST.
BELLEVUE, WA 98006

Table with Call Sign (WPOJ753), File Number (0008585870), and Radio Service (CW - PCS Broadband).

FCC Registration Number (FRN): 0001565449

Table with columns: Grant Date, Effective Date, Expiration Date, Print Date, Market Number, Channel Block, Sub-Market Designator, Market Name, 1st Build-out Date, 2nd Build-out Date, 3rd Build-out Date, 4th Build-out Date.

Waivers/Conditions:

This authorization is subject to the condition that, in the event that systems using the same frequencies as granted herein are authorized in an adjacent foreign territory (Canada/United States), future coordination of any base station transmitters within 72 km (45 miles) of the United States/Canada border shall be required to eliminate any harmful interference to operations in the adjacent foreign territory and to ensure continuance of equal access to the frequencies by both countries.

License renewal granted on a conditional basis, subject to the outcome of FCC proceeding WT Docket No. 10-112 (see FCC 10-86, paras. 113 and 126).

Conditions:

Pursuant to §309(h) of the Communications Act of 1934, as amended, 47 U.S.C. §309(h), this license is subject to the following conditions: This license shall not vest in the licensee any right to operate the station nor any right in the use of the frequencies designated in the license beyond the term thereof nor in any other manner than authorized herein.

This license may not authorize operation throughout the entire geographic area or spectrum identified on the hardcopy version. To view the specific geographic area and spectrum authorized by this license, refer to the Spectrum and Market Area information under the Market Tab of the license record in the Universal Licensing System (ULS).

**Licensee Name:** T-MOBILE LICENSE LLC

**Call Sign:** WPOJ753

**File Number:** 0008585870

**Print Date:** 05-31-2019

**700 MHz Relicensed Area Information:**

<b>Market</b>	<b>Market Name</b>	<b>Buildout Deadline</b>	<b>Buildout Notification</b>	<b>Status</b>
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Reference Copy

*130 Vassar St*



120 Vassar St.

Petitioner

54-28-25 / 55-27-16 / 56-4 / 57-170-169-173 / 58-74-  
95-109-120-157-158-161-162-165 / 59-37-39-40-41  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
C/O MIT INVESTMENTS MANAGEMENT CO  
ONE BROADWAY, SUITE 09-200  
CAMBRIDGE, MA 02142

60-6 / 61-13-14 / 62-18-34-41-42 / 53-54/ 52A-41  
MASSACHUSETTS INSTITUTE OF TECHNOLOGY  
C/O MIT INVESTMENTS MANAGEMENT CO  
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PRINCE LOBEL TYE LLP  
C/O ADAM F. BRAILLARD, ESQ.  
ONE INTERNATIONAL PLACE, SUITE 3700  
BOSTON, MA 02110

58-166  
COMMONWEALTH OF MASS  
STATE HOUSE  
BOSTON, MA 02133

59-32  
TAU CHAPTER ASSOCIATION INC  
C/O PETER WENDER  
10 DANA ST  
CAMBRIDGE, MA 02138

58-163  
THETA DEUTERON HOUSE CORP.  
C/O EDWING ADLERMAN  
40 E. 9TH ST. APT 11G  
NEW YORK, NY 10003

274-1D  
HAROLD WHITWORTH PIERCE BOATHOUSE/MIT  
406 MEMORIAL DR  
CAMBRIDGE, MA 02139

59-34  
ASSOCIATION OF SIGMA TAU C/O TODD HIERS  
411 TERRACE DR  
HOUSTON, TX 77007

59-35  
PHI BETA EPSILON CORPORATION  
C/O JOSEPH G. KUBIT, TREASURER - C/O TOM WARNER  
10 PAUL REVERE RD  
BEDFORD, MA 01730

DEPARTMENT OF CONSERVATION &  
RECREATION  
251 CAUSEWAY STREET - SUITE 600  
BOSTON, MA 02114-2119