



# CITY OF CAMBRIDGE

BOARD OF ZONING APPEAL

831 Massachusetts Avenue, Cambridge MA 02139

617-349-6100

## BZA Application Form

**BZA Number: 220600**

### 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 Ten Canal Park Massachusetts, LLC C/O Adam F. Brailard of Prince Lobel Tye LLP

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

**LOCATION OF PROPERTY:** 10 Canal Pk., Cambridge, MA

**TYPE OF OCCUPANCY:** Business and Telecommunications

**ZONING DISTRICT:** Business A

**REASON FOR PETITION:**

/Telecommunication Facility (antenna)/

**DESCRIPTION OF PETITIONER'S PROPOSAL:**

The Applicant proposes to modify its existing wireless facility currently operating on the rooftop of the Building by replacing the ten (10) existing panel antennas with eight (8) new panel antennas and replacing three (3) existing RRUs with six (6) new RRUs, together with supporting equipment. All new and proposed antennas will be façade mounted to the penthouse on the roof of the penthouse of the existing Building, installed in similar locations as the existing antennas and painted to match the Building. The Applicant also proposes to replace an existing radio cabinet with two (2) similar size cabinets, which will be installed in the same location of the existing cabinet, and out of view behind the Building's existing screen wall.

**SECTIONS OF ZONING ORDINANCE CITED:**

- Article: 4.000            Section: 4.32.G.1 and Sec. 4.40 (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. Brailard, of Prince Lobel Tye, for the  
Applicant, T-Mobile Northeast LLC  
(Print Name)

Address:

One International Place, Suite 3700, Boston MA 02110

2023 MAY -8 PM 3:18  
OFFICE OF THE CITY CLERK  
CAMBRIDGE, MASSACHUSETTS

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 Ten Canal Park Massachusetts, LLC  
(OWNER)

Address: 1270 Soldiers Field Road, Boston, MA

State that I/We own the property located at 10 Canal Park, Cambridge, Massachusetts which is the subject of this zoning application.

The record title of this property is in the name of Ten Canal Park Massachusetts, LLC

\*Pursuant to a deed of duly recorded in the date 5/10/2016, Middlesex South County Registry of Deeds at Book 01489, Page 55; or Middlesex Registry District of Land Court, Certificate No. \_\_\_\_\_  
Book \_\_\_\_\_ Page \_\_\_\_\_

  
SIGNATURE BY LAND OWNER OR AUTHORIZED TRUSTEE, OFFICER OR AGENT\* Thomas Taranto, V.P., duly authorized

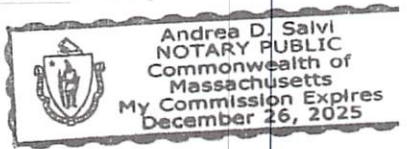
\*Written evidence of Agent's standing to represent petitioner may be requested.

Commonwealth of Massachusetts, County of Suffolk

The above-name Thomas R. Taranto personally appeared before me, this 10<sup>th</sup> of April, 2023, and made oath that the above statement is true.

  
Notary

My commission expires 12/26/25 (Notary Seal).



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

May 1, 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: 10 Canal Park  
Assessor's Map 9, Lot 41 (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 Business A District (BA) 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. The compliance with the Spectrum Act is shown on the Eligible Facilities Request permit application form attached hereto and incorporated herein by reference (the "**EFR**").

The Applicant seeks to modify its existing wireless communications facility by replacing ten (10) existing panel antennas with eight (8) new panel antennas and replacing three (3)

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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.

Remote Radio Units (“RRUs”) with six (6) new RRUs, all mounted to the façade of the penthouse on the roof of the existing building, together with supporting equipment (the “**Proposed Facility**”). All of the proposed antennas will be installed adjacent to the existing antennas and painted to match the façade of the penthouse. The proposed antennas and RRUs will be installed on the façade 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**

As noted above, the Applicant proposes to modify its existing wireless facility currently operating on the rooftop of the Building by replacing the ten (10) existing panel antennas with eight (8) new T-Mobile panel antennas and replacing three (3) existing RRUs with six (6) new RRUs, together with supporting equipment. All new and proposed antennas will be façade mounted to the penthouse on the roof of the existing Building, installed in similar locations as the existing antennas and painted to match the penthouse façade of the Building. The Applicant also proposes to replace an existing radio cabinet with two (2) similar size cabinets, which will be installed in the same location of the existing cabinet, and out of view behind the Building’s existing screen wall. 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 February 17, 2017 (Case No. BZA-012071-2016) (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 BA zoning district is permitted by special permit. The Applicant's Proposed Facility further complies with the provisions set forth in Section 4.32(g), footnote 49 of the Ordinance:

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

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

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

T-Mobile investigated alternative sites in and around the defined geographic area within which its engineers determined that a facility must be located to fill the gap in service coverage and to function effectively within its network of existing and planned facilities. This is an existing location that is being upgraded with new technology to provide the necessary coverage to the subject area of the City of Cambridge. Therefore, the Proposed Facility in the 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.

- 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 no additional visual impact on the existing facility and Building. The Proposed Facility will continue to comply with the Decision 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.**

Not Applicable, the Property and Proposed Facility are located in the BA zoning district.

**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:**

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

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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.

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.

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

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

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

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

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

The Proposed Facility is designed to blend with the existing characteristics of the Property, reducing any visual impacts to the surrounding area. Accordingly, the Proposed Facility's design results in a minimal impact on the underlying and adjacent zoning district and is



consistent with the Ordinance's intention to allow for less intrusive wireless telecommunications facilities in all districts (other than Open Space), including the 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. 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)

Tel. No. 617-456-8153  
 E-Mail Address: abraillard@princelobel.com

Date: \_\_\_\_\_

**BZA Application Form**

**DIMENSIONAL INFORMATION**

**Applicant:** T-Mobile Northeast LLC for Ten Canal Park  
 Massachusetts, LLC  
**Location:** 10 Canal Pk., Cambridge, MA  
**Phone:** 617-456-8153

**Present Use/Occupancy:** Business and  
 Telecommunications  
**Zone:** Business A  
**Requested Use/Occupancy:** Telecommunications

		<u>Existing Conditions</u>	<u>Requested Conditions</u>	<u>Ordinance Requirements</u>	
<u>TOTAL GROSS FLOOR AREA:</u>		N/A	No Change	N/A	(max.)
<u>LOT AREA:</u>		N/A	No Change	N/A	(min.)
<u>RATIO OF GROSS FLOOR AREA TO LOT AREA: <sup>2</sup></u>		N/A	No Change	N/A	
<u>LOT AREA OF EACH DWELLING UNIT</u>		N/A	No Change	N/A	
<u>SIZE OF LOT:</u>	WIDTH	N/A	No Change	N/A	
	DEPTH	N/A	No Change	N/A	
<u>SETBACKS IN FEET:</u>	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	
<u>SIZE OF BUILDING:</u>	HEIGHT	N/A	No Change	N/A	
	WIDTH	N/A	No Change	N/A	
	LENGTH	N/A	No Change	N/A	
<u>RATIO OF USABLE OPEN SPACE TO LOT AREA:</u>		N/A	No Change	N/A	
<u>NO. OF DWELLING UNITS:</u>		N/A	No Change	N/A	
<u>NO. OF PARKING SPACES:</u>		N/A	N/A	N/A	
<u>NO. OF LOADING AREAS:</u>		N/A	No Change	N/A	
<u>DISTANCE TO NEAREST BLDG. ON SAME LOT</u>		N/A	No Change	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, more commonly referred to as a "collocation".

1. SEE CAMBRIDGE ZONING ORDINANCE ARTICLE 5.000, SECTION 5.30 (DISTRICT OF DIMENSIONAL REGULATIONS).
2. TOTAL GROSS FLOOR AREA (INCLUDING BASEMENT 7'-0" IN HEIGHT AND ATTIC AREAS GREATER THAN 5') DIVIDED BY LOT AREA.

## PROJECT INFORMATION

**SITE NAME:** BO035/10 CANAL PARK  
**SITE NUMBER:** 4DE7035F  
**SITE ADDRESS:** 10 CANAL PARK  
CAMBRIDGE, MA  
**COUNTY:** MIDDLESEX  
**MUNICIPALITY:** CITY OF CAMBRIDGE  
**ZONING:** PUD-4  
**LATITUDE:** N 42°22'07.107" (42.36864148°) (NAD83)  
**LONGITUDE:** W 71°04'30.4098" (-71.0751137°) (NAD83)  
**TYPE OF SITE:** ROOFTOP  
**STRUCTURE HEIGHT:** 72'-0" AGL  
**ANTENNA CENTER:** 82'-0" & 83'-0" AGL  
**GROUND ELEVATION:** 6.75'-0" (NAVD 88)  
**BUILDING OWNER NAME:** C/O US REAL ESTATE INVEST FUND, LLC  
**BUILDING OWNER ADDRESS:** 1270 SOLDIERS FIELD ROAD  
CAMBRIDGE, MA 02135  
**APPLICANT:** T-MOBILE NORTHEAST, LLC.  
15 COMMERCE WAY, SUITE B  
NORTON, MASSACHUSETTS 02766  
**APPLICANT PHONE:** (508) 286-2700  
**APPLICANT FAX:** (508) 286-2893

**APPROVED**

By Ryan Monte de Ramos at 2:46 am, Apr 24, 2023

## PROJECT DIRECTORY

**ENGINEERING FIRM:**  
 CENTERLINE COMMUNICATIONS  
 750 WEST CENTER ST, SUITE 301  
 WEST BRIDGEWATER, MA 02379  
 DEREK CREASER (617) 306-3034

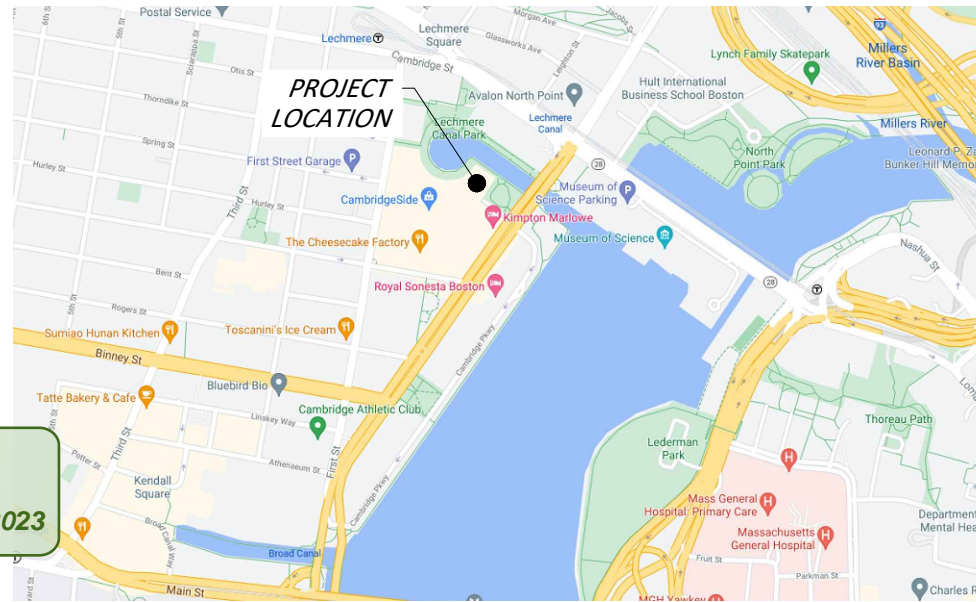
**CARRIER:**  
 T-MOBILE NORTHEAST, LLC.  
 15 COMMERCE WAY, SUITE B  
 NORTON, MA 02766  
 PHONE: (508) 286-2700  
 FAX: (508) 286-2893



Know what's below.  
Call before you dig.



# T-Mobile NORTHEAST LLC



VICINITY MAP  
NOT TO SCALE



LOCATION MAP  
NOT TO SCALE

**SITE NAME:** BO035/10 CANAL PARK  
**SITE ID:** 4DE7035F  
**ADDRESS:** 10 CANAL PARK  
CAMBRIDGE, MA

**TECHNOLOGY:** 67E5D998E 6160  
**MODIFICATION:** ANCHOR\_PHASE 1 L700\_CMP4-4X2

# T-Mobile NORTHEAST LLC

T-MOBILE NORTHEAST, LLC.  
 15 COMMERCE WAY, SUITE B  
 NORTON, MA 02766  
 PHONE: (508) 286-2700  
 FAX: (508) 286-2893



750 W CENTER ST, SUITE 301  
 WEST BRIDGEWATER, MA 02379  
 PHONE: 781.713.4725

### REVISIONS

REV	DATE	DESCRIPTION	BY
4	04/21/23	REVISED PER COMMENTS	AB
3	04/04/23	REVISED PER COMMENTS	SS
2	03/07/23	REVISED TMO DESIGN	AB
1	11/22/21	RFDS UPDATE	MP
0	06/04/21	ISSUED FOR CONSTRUCTION	SS
A	01/22/21	ISSUED FOR REVIEW	KH

**DESIGNED BY:** AB  
**APPROVED BY:** WRD



**DATE: 04/21/2023**

IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT. UNLESS EXPLICITLY AGREED TO BY THE ENGINEER IN WRITING, THE ENGINEER DISCLAIMS ALL LIABILITY ASSOCIATED WITH THE REUSE, ALTERATION OR MODIFICATION OF THE CONTENTS HEREIN.

**SITE NAME:** BO035/10 CANAL PARK  
**SITE ID:** 4DE7035F  
**SITE ADDRESS:** 10 CANAL PARK  
CAMBRIDGE, MA  
MIDDLESEX COUNTY

**SHEET TITLE:** TITLE SHEET

**DRAWING:** T-1

## GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSE OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

## SCOPE OF WORK

1. REMOVE NINE EXISTING ANTENNAS
2. INSTALL EIGHT NEW ANTENNAS
3. REMOVE THREE RRUS
4. INSTALL SIX NEW RRUS
5. INSTALL THREE NEW 6x24 HYBRID CABLES
6. REMOVE RBS 2106 EQUIPMENT CABINET
7. REMOVE ALL UNUSED CABLES AND EQUIPMENT

## DRAWING INDEX

NO.	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES, RF NOTES, CABLING NOTES
A-1	ROOF PLAN
A-2	EQUIPMENT LAYOUT
A-3	EQUIPMENT DETAILS
A-4	NORTHWEST ELEVATION
A-5	ANTENNA PLAN & SCHEDULE
SN-1	STRUCTURAL NOTES & SPECIAL INSPECTIONS
S-1	ANTENNA MOUNTING DETAILS
S-1.1	RRU MOUNTING DETAILS
S-2	STRUCTURAL DETAILS
G-1	GROUNDING & ONE LINE DIAGRAM

## DRAWING SCALE NOTES:

THESE DRAWINGS ARE FORMATTED TO BE FULL SIZE AT 22"x34". CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

## RF NOTES

- ACTUAL LENGTHS SHALL BE DETERMINED PER SITE CONDITION BY SUBCONTRACTOR
- THE DESIGN IS BASED ON RF DATA SHEETS, SIGNED AND APPROVED.
- RADIO SIGNAL CABLE AND RACEWAY SHALL COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC, NFPA 70), CHAPTER 8.
- ALL SPECIFIED MATERIAL FOR EACH LOCATION (E.G. OUT DOORS-OCCUPIED, INDOORS-UNOCCUPIED, PLENUMS, RISER SHAFTS, ETC.) SHALL BE APPROVED, LISTED, OR LABELED AS REQUIRED BY THE NEC.
- RADIO SIGNAL CABLE SHALL BE SUPPORTED AT MINIMUM OF EVERY THREE (3) FEET EXCEPT INSIDE MONOPOLES OR MONOPOLES WHERE CABLE AND CONNECTOR MANUFACTURERS SUPPORT RECOMMENDATIONS SHALL BE FOLLOWED. MANUFACTURER RECOMMENDATION CABLES SUPPORT ACCESSORIES SHALL BE USED.
- THE OUTDOOR CABLE SUPPORT SYSTEM SHALL BE PROVIDED WITH AN ICE SHIELD TO SUPPORT AND PROTECT ANTENNA CABLE RUNS.
- DRIP LOOPS SHALL BE REQUIRED ON ALL OUTSIDE CABLES. CABLES SHALL BE SLOPED AWAY FROM BUILDING OR OUTDOOR BTS CABINETS TO PREVENT WATER FROM ENTERING THROUGH THE COAXIAL CABLE PORT.
- ALL FEEDER LINE AND JUMPER CONNECTORS SHALL BE 7/16 DIN CABLE CONNECTORS THAT MEET IP68 STANDARDS.
- 7/16 DIN CONNECTORS REQUIRE NO ADDITIONAL WEATHER PROOFING IN INDOOR APPLICATIONS IF INSTALLED AND TORQUED PROPERLY. IN OUTDOOR APPLICATIONS WEATHER PROOFING IS REQUIRED AND THE FOLLOWING PROCEDURE SHOULD BE FOLLOWED.
- USING WEATHERPROOFING KIT APPROVED BY CABLE MANUFACTURER AND CONTRACTOR START TAPE APPROXIMATELY 5 INCHES FROM THE CONNECTOR, AND WRAP 2 INCHES TOWARD THE CONNECTOR, THEN REVERSE THE TAPE SO THAT THE STICKY SIDE IS UP. TAPE OVER THE CONNECTOR OR SURGE ARRESTOR UNTIL THREE (3) TO FOUR (4) INCHES BEYOND THE CONNECTOR AND REVERSE AGAIN WITH THE STICKY SIDE DOWN FOR ANOTHER INCH OR TWO. PASS THE BUTYL RUBBER AND FINISH WITH A FINAL LAYER OF TAPE.
- ANTENNAS SHALL BE PAINTED, WHEN REQUIRED, BY THE LANDLORD OR AUTHORITY OF HAVING JURISDICTION IN ACCORDANCE WITH ANTENNA MANUFACTURERS' SURFACES PREPARATION AND PAINTING REQUIREMENTS.
- CABLE SHIELDS AND TOWER CONDUITS SHALL BE GROUNDED AT THE TOP OF THE TOWER WITHIN 10 FEET OF THEIR CONNECTORS, AND AT THE BOTTOM OF THE TOWER ABOUT 6 INCHES BEFORE THEY TURN TOWARD THE FACILITY. THEY SHALL BE GROUNDED AT THE MIDPOINT OF THE TOWERS THAT ARE BETWEEN 60 FEET AND 200 FEET HIGH, AND AT INTERVALS OF 60 FEET OR LESS ON TOWERS THAT ARE HIGHER THAN 200 FEET.

## ANTENNA CABLE & SCHEDULING NOTES

- SUBCONTRACTOR SHALL VERIFY THE ACTUAL LENGTH IN THE FIELD BEFORE INSTALLATION.
- TAG AND COLOR CODE ALL MAIN CABLES AT LOCATIONS PER T-MOBILE ANTENNA CABLE MARKING STANDARD:
  - TOP OF TOWER END OF MAIN COAX
  - BOTTOM OF TOWER END OF MAIN COAX
  - DIRECTLY BEFORE AND AFTER RF EQUIPMENT
  - END OF JUMPERS AT BTS EQUIPMENT
- ANTENNAS SHALL BE PROCURED AND INSTALLED WITH DOWN TILT MOUNTING BRACKETS SUPPLIED BY ANTENNA MANUFACTURER.
- PRIOR APPROVAL IS REQUIRED BEFORE PERFORMING ANY WORK ON EXISTING CELL SITE EQUIPMENT.

## GENERAL NOTES

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
CONTRACTOR - CENTERLINE COMMUNICATIONS  
SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)  
OWNER - T-MOBILE MOBILITY
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED 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.
- "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
- THE SUBCONTRACTOR 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 SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
- THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
- ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

- ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
- CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE MOBILITY SITES."
- SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
- 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.
- APPLICABLE BUILDING CODES:  
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

BUILDING CODE: IBC 2015 & MA STATE BUILDING 780 CMR 9TH EDITION  
ELECTRICAL CODE: 2020 NATIONAL ELECTRICAL CODE  
LIGHTNING CODE: NFPA 780-2020

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

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

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

## ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCEIVER STATION	PROPOSED	NEW	TBR	TO BE REMOVED
EXISTING	EXISTING	N.T.S.	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED		

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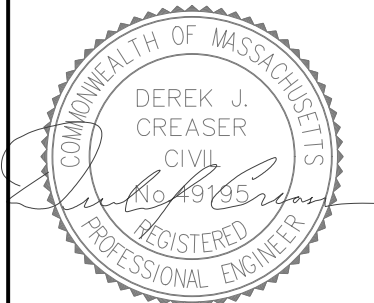


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WEST BRIDGEWATER, MA 02379  
PHONE: 781.713.4725

## REVISIONS

REV	DATE	DESCRIPTION	BY
4	04/21/23	REVISED PER COMMENTS	AB
3	04/04/23	REVISED PER COMMENTS	SS
2	03/07/23	REVISED TMO DESIGN	AB
1	11/22/21	RFDS UPDATE	MP
0	06/04/21	ISSUED FOR CONSTRUCTION	SS
A	01/22/21	ISSUED FOR REVIEW	KH

DESIGNED BY: AB	APPROVED BY: WRD
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**DATE: 04/21/2023**

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SITE NAME:  
**BO035/10 CANAL PARK**

SITE ID:  
**4DE7035F**

SITE ADDRESS:  
**10 CANAL PARK  
CAMBRIDGE, MA  
MIDDLESEX COUNTY**

SHEET TITLE:  
**GENERAL NOTES, RF NOTES,  
CABLING NOTES**

DRAWING:  
**GN-1**

# NOTES

1. CONTRACTOR SHALL MAKE A UTILITY 811 DIG SAFE CALL TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
2. REFERENCE STRUCTURAL ANALYSIS BY CENTERLINE COMMUNICATIONS, DATED 04/07/2023, FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
3. REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA MODELS AND SETTINGS.

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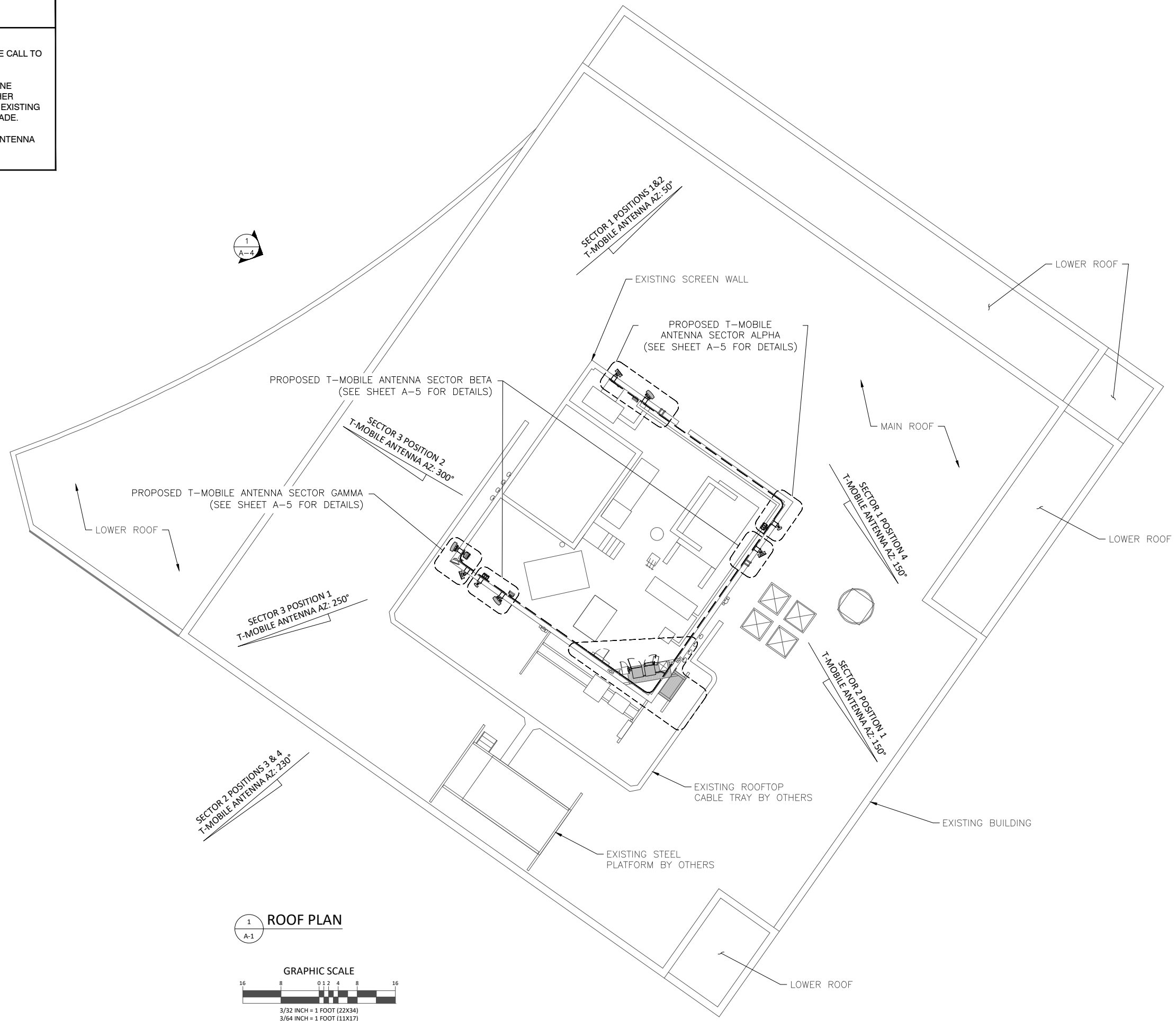


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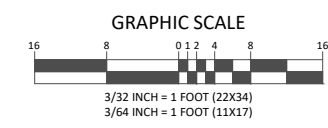
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SHEET TITLE: ROOF PLAN
DRAWING: A-1



1 ROOF PLAN  
A-1





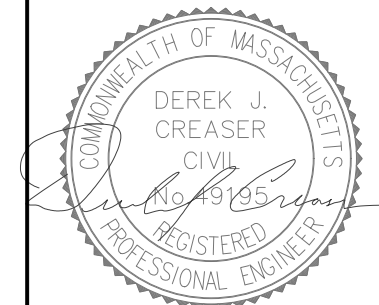


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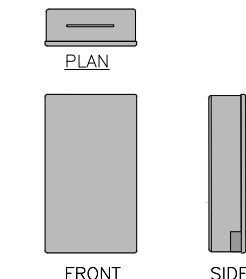
SHEET TITLE:	EQUIPMENT DETAILS
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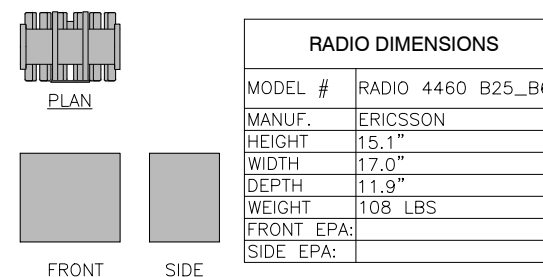
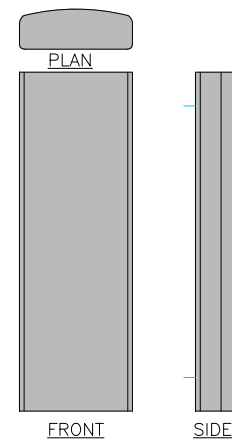
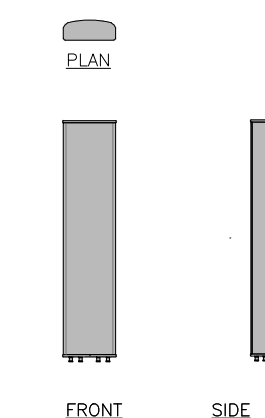
ERICSSON AIR 6419 B41	
MODEL #	AIR 6419 B41
MANUF.	ERICSSON
HEIGHT	34.5"
WIDTH	20.0"
DEPTH	8.0"
WEIGHT	68.5 LBS W/O MTG HARDWARE
FRONT EPA:	4.8 FT <sup>2</sup>
SIDE EPA:	1.92 FT <sup>2</sup>

COMMSCOPE VV-65A-R1	
MODEL #	VV-65A-R1
MANUF.	COMMSCOPE
HEIGHT	54.7"
WIDTH	12.1"
DEPTH	4.6"
WEIGHT	23.81 LBS W/O MTG HARDWARE 32.41 LBS W/ MTG HARDWARE
FRONT EPA:	4.06 FT <sup>2</sup>
SIDE EPA:	1.75 FT <sup>2</sup>

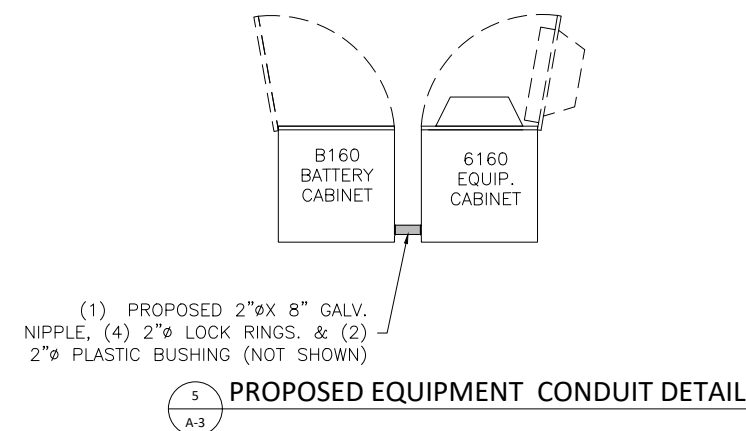
RFS APXVAALL18_43-U-NA20	
MODEL #	APXVAALL18_43-U-NA20
MANUF.	RFS
HEIGHT	72.0"
WIDTH	24.0"
DEPTH	8.5"
WEIGHT	93.0 LBS W/O MTG HARDWARE 118.3 LBS W/ MTG HARDWARE
FRONT EPA:	12.01 FT <sup>2</sup>
SIDE EPA:	4.25 FT <sup>2</sup>



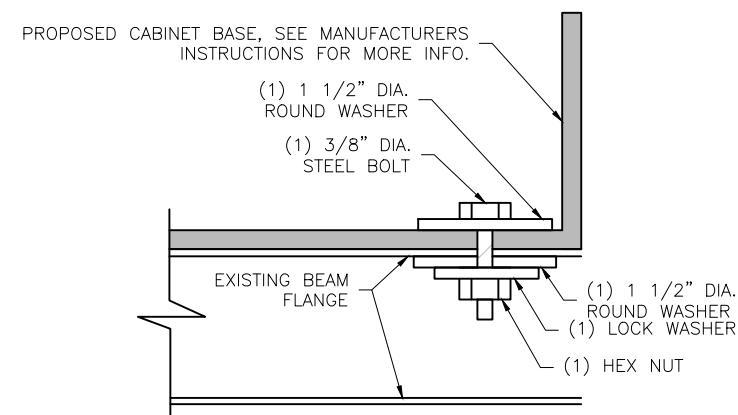
1 ANTENNA DETAILS  
A-3



2 RADIO DETAILS  
A-3



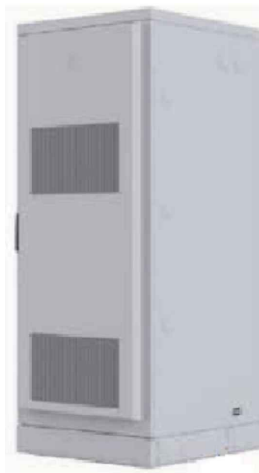
5 PROPOSED EQUIPMENT CONDUIT DETAIL  
A-3



6 CABINET FASTENER DETAIL  
A-2



6160 AC ENCLOSURE	
CAPACITY	19U(19" RACK)
RACK SPACE USER EQUIP. HARDWARE CAPABILITIES	POWER AND CPRI SUPPORT FOR MULTI-STANDARD REMOTE RADIOS (RRU OR AIR) ERS BASEBAND AND TRANSPORT UNITS Li-ION BATTERIES 3PP EQUIPMENT ADDITIONAL POWER FEED OPTIONS AVAILABLE
MECHANICAL SPECIFICATIONS	
WEIGHT	320lbs (INCLUDING ACTIVE EQUIPMENT)
DIMENSIONS (HWD)	63"x26"x26" (INCLUDING BASE FRAME)
BASE FRAME HEIGHT	6"
MOUNTING POSITION	GROUND
ENCLOSURE MATERIAL	ALUMINUM
COLOR	POWDER PAINT NCS 2002-B
DOOR	FRONT ACCESS
RACK TYPE	19" (IEC 60297-3-100)
LOCK TYPE	CYLINDER/PAD LOCK
POWER SYSTEM	
INPUT VOLTAGE	3P+N+PE 346/200-415/240 VAC 2P+N+PE 208/120-220/127 VAC 1P+N+PE 200-250 VAC



B160 BATTERY ENCLOSURE	
CAPACITY	
VRLA12V:	100Ah/150Ah/170Ah/190Ah/210Ah
Li-ION	24U 19"/23"
SODIUM-NICKEL	3xFIAMM
ELECTRICAL SPECIFICATIONS	
DC OUTPUT	-48VDC/200A
BATTERY BREAKERS	2x125/2p
ALARMS	DOOR OPEN, CLIMATE FAILURE, MCB CONNECTION
MECHANICAL SPECIFICATIONS	
WEIGHT	295 lbs (PLUS 3 STRINGS OF RECOMMENDED 190 aHR FOR ADDITIONAL 1588LBS)
DIMENSIONS (HWD)	63"x26"x26" (INCLUDING BASE FRAME)
BASE FRAME HEIGHT	6"
MATERIAL	GALVANIZED STEEL (180g/m <sup>2</sup> )
COLOR	POWDER PAINT NCS 2002-B
LOCKING TYPE	CYLINDER/PAD LOCK

3 PROPOSED EQUIPMENT CABINET SPECIFICATIONS  
A-3

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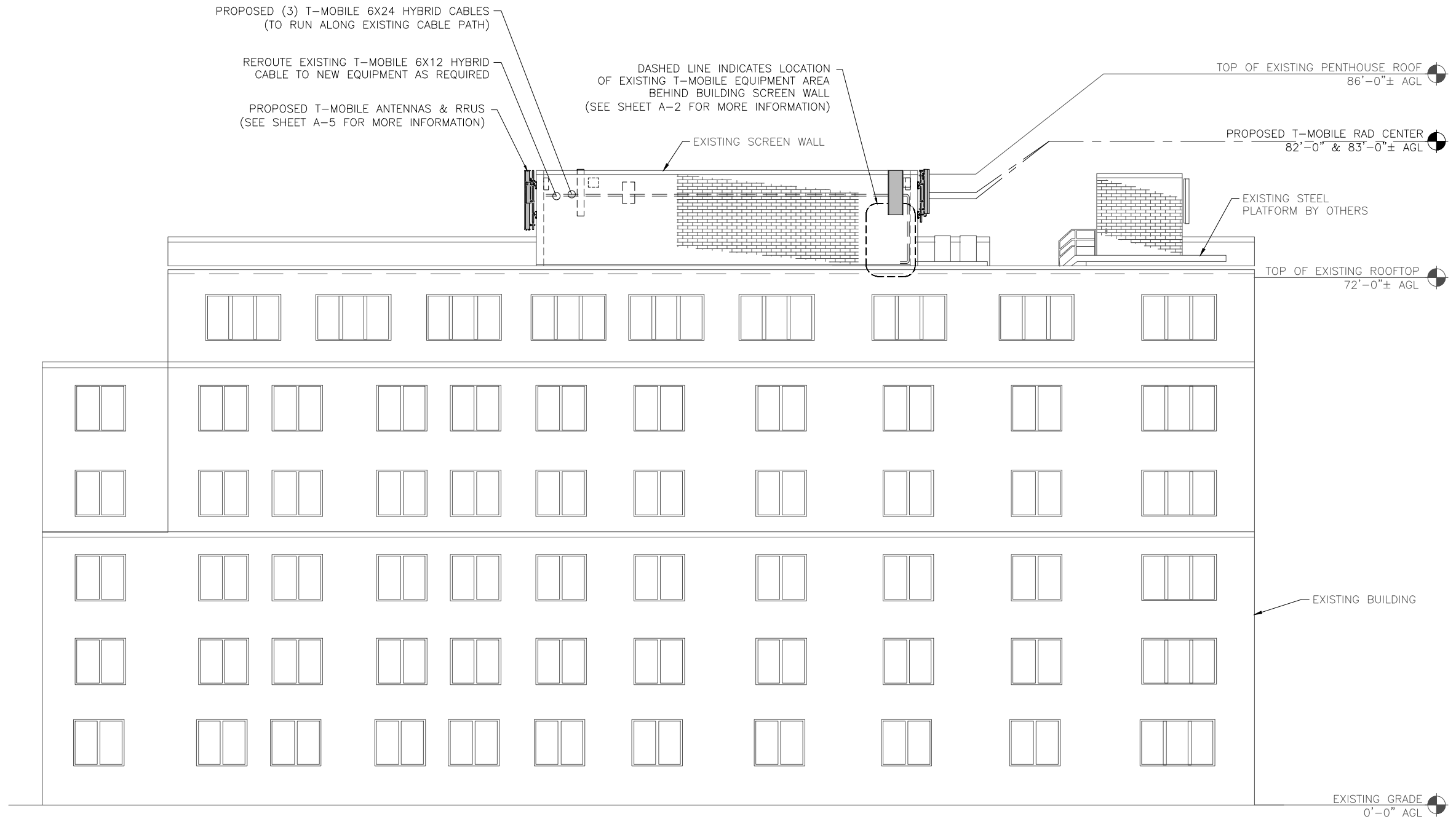
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**BO035/10 CANAL PARK**

SITE ID:  
**4DE7035F**

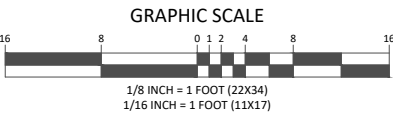
SITE ADDRESS:  
**10 CANAL PARK  
CAMBRIDGE, MA  
MIDDLESEX COUNTY**

SHEET TITLE:  
**NORTHWEST ELEVATION**

DRAWING:  
**A-4**



1 NORTHWEST ELEVATION  
A-4



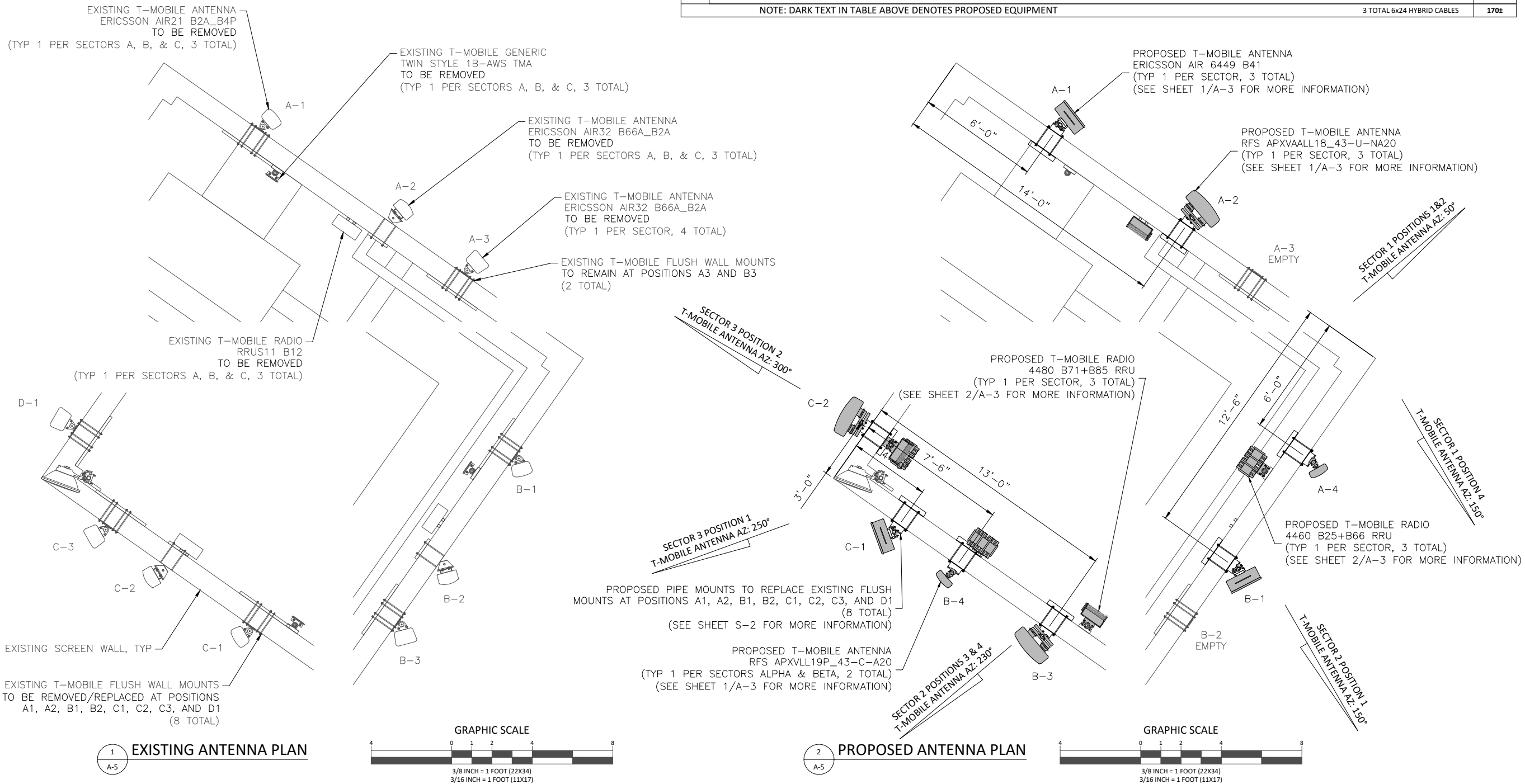




## ANTENNA & CABLE SCHEDULE:

LOCATION	AZIMUTH	RAD CENTER	STATUS	TECHNOLOGY	ANTENNA MODEL NO.	MECH DOWNTILT	ELEC DOWNTILT	CABLES	DIPLEXERS	TMA/RRU	CABLE SIZE	CABLE LENGTH	
ALPHA	A-1	50°	83'-0"	PROPOSED	L2500, N2500	AIR6419 B41	0°	N/A	(2) FIBER JUMPER (x2)	N/A	N/A	SHARED	N/A
	A-2	50°	82'-0"	PROPOSED	L700, L600, N600	APXVAALL18_43-U-NA20	0°	N/A	(2) COAX JUMPER (x2) (2) FIBER JUMPER	N/A	RRUS 4480 B71/B85	6x12 HYBRID	110±
	A-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	SHARED	N/A	
	A-4	150°	83'-0"	PROPOSED	L1900, G1900, L2100, U2100	APXVLL19P_43-C-A20	0°	N/A	(2) FIBER JUMPER 15FT (2) COAX JUMPER 10FT (x2)	N/A	RRUS 4460 B25/B66	SHARED	N/A
BETA	B-1	150°	83'-0"	PROPOSED	L2500, N2500	AIR6419 B41	0°	N/A	(2) FIBER JUMPER (x2)	N/A	N/A	SHARED	N/A
	B-2	150°	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RRUS 4480 B71/B85	6x12 HYBRID	110±	
	B-3	230°	82'-0"	PROPOSED	L700, L600, N600	APXVAALL18_43-U-NA20	0°	N/A	(2) COAX JUMPER (x2) (2) FIBER JUMPER	N/A	N/A	SHARED	N/A
	B-4	230°	83'-0"	PROPOSED	L1900, G1900, L2100, U2100	APXVLL19P_43-C-A20	0°	N/A	(2) FIBER JUMPER 15FT (2) COAX JUMPER 10FT (x2)	N/A	RRUS 4460 B25/B66	SHARED	N/A
GAMMA	G-1	250°	83'-0"	PROPOSED	L2500, N2500	AIR6419 B41	0°	N/A	(2) FIBER JUMPER (x2)	N/A	N/A	SHARED	N/A
	G-2	300°	82'-0"	PROPOSED	L700, L600, N600	APXVAALL18_43-U-NA20	0°	N/A	(2) COAX JUMPER (x2) (2) FIBER JUMPER	N/A	RRUS 4480 B71/B85 RRUS 4460 B25/B66	6x12 HYBRID	110±
NOTE: DARK TEXT IN TABLE ABOVE DENOTES PROPOSED EQUIPMENT											3 TOTAL 6x24 HYBRID CABLES	170±	

- ANTENNA & CABLE NOTES:**
- REFERENCE MOUNT ANALYSIS BY CENTERLINE COMMUNICATIONS, DATED 04/072023, FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
  - REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.
  - REMOVE ALL UNUSED CABLE, RRU'S AND TMAs.
  - PAINT ANTENNAS AND EQUIP. TO MATCH EXISTING.



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SITE NAME: BO035/10 CANAL PARK  
SITE ID: 4DE7035F  
SITE ADDRESS: 10 CANAL PARK  
CAMBRIDGE, MA  
MIDDLESEX COUNTY

SHEET TITLE: ANTENNA PLAN & SCHEDULE

DRAWING: A-5

**STRUCTURAL NOTES:**

- DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
- DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
- STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
- FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D.I.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
- INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
- UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
- EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS, AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
- EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
- WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
- ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

**SPECIAL INSPECTION CHECKLIST**

BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS <sup>1</sup>
N/A	MATERIAL SPECIFICATIONS REPORT <sup>2</sup>
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS <sup>3</sup>

DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS <sup>4</sup>
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION <sup>5</sup>
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT

AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS <sup>6</sup>
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
<b>REQUIRED</b>	PHOTOGRAPHS

**NOTES:**

- REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
- PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
- PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
- HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
- ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
- AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

**NOTES:**

- ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"Ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
- VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
- CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
- EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

**SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):**

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

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

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

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

**REQUIRED INSPECTIONS AND SITE REVIEW DOCUMENT AS A CONDITION OF THE BUILDING PERMIT THE FOLLOWING INSPECTIONS AND SITE REVIEWS IDENTIFIED BY THE BUILDING OFFICIAL ARE REQUIRED FOR WORK PER THE 9TH EDITION OF THE MASSACHUSETTS STATE BUILDING CODE, 780 CMR, SECTION 10 AND CHAPTER 17**

**REQUIRED SITE REVIEW AND DOCUMENTATION FOR PORTIONS OR PHASES CONSTRUCTION <sup>1&6,7</sup>**  
(TO BE PERFORMED BY THE APPROPRIATE REGISTERED DESIGN PROFESSIONAL OF HIS/HER DESIGNEE OR M.G.L.C 112 §81R CONTRACTOR)

SITE REVIEW AND DOCUMENTATION	X	SITE REVIEW AND DOCUMENTATION	X
SOIL CONDITION/ANALYSIS/REPORT		ENERGY EFFICIENCY REQUIREMENTS	
FOOTING AND FOUNDATION (INCLUDING REINFORCEMENT AND FOUNDATION ATTACHMENT)		FIRE ALARM INSTALLATION <sup>2</sup>	
CONCRETE FLOOR AND UNDER FLOOR		FIRE SUPPRESSION AND INSTALLATION <sup>3</sup>	
LOWEST FLOOR FLOOD ELEVATION		FIELD REPORTS <sup>5</sup>	
STRUCTURAL FRAME-WALL/FLOOR/ROOF		CARBON MONOXIDE DETECTION SYSTEM <sup>4</sup>	
LATH AND PLASTER/GYPSUM		SEISMIC REINFORCEMENT	
FIRE RESISTANT WALL/PARTITIONS FINISH ATTACHMENTS		SMOKE CONTROL SYSTEMS	
FIRE RESISTANT WALL/PARTITIONS FINISH ATTACHMENTS		SMOKE AND HEAT VENTS	
ABOVE CEILING INSPECTION		ACCESSIBILITY (521 CMR)	
FIRE BLOCKING/STOPPING SYSTEM		OTHER	
EMERGENCY LIGHTING/EXIT SIGNAGE			
MEANS OF EGRESS COMPONENTS		SPECIAL INSPECTIONS (SECTION 1704):	<b>X</b>
ROOFING, COPING/SYSTEM			
VENTING SYSTEMS (KITCHEN, CHEMICAL, FUME)			
MECHANICAL SYSTEMS			

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

**MASSACHUSETTS AMENDMENTS TO THE IBC**

**(REFERENCE 780 CMR):**

**107.6 CONSTRUCTION CONTROL.**

**107.6.1 GENERAL.** THIS SECTION SHALL APPLY TO THE CONSTRUCTION CONTROLS, PROFESSIONAL SERVICES AND CONTRACTOR SERVICES REQUIRED FOR BUILDINGS AND STRUCTURES NEEDING REGISTERED DESIGN PROFESSIONAL SERVICES.

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

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

- REVIEW, FOR CONFORMANCE TO 780 CMR AND THE DESIGN CONCEPT, SHOP DRAWINGS, SAMPLES AND OTHER SUBMITTALS BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS.
- PERFORM THE DUTIES FOR REGISTERED DESIGN PROFESSIONALS IN 780 CMR 17.00 SPECIAL INSPECTIONS AND TESTS.
- BE PRESENT AT INTERVALS APPROPRIATE TO THE STAGE OF CONSTRUCTION TO BECOME GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF THE WORK AND TO DETERMINE IF THE WORK IS BEING PERFORMED IN A MANNER CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND 780 CMR.

THE PERMIT APPLICATION SHALL NOT BE DEEMED COMPLETED UNTIL ALL OF THE CONSTRUCTION DOCUMENTS REQUIRED BY 780 CMR HAVE BEEN SUBMITTED. DOCUMENTATION INDICATING THAT WORK COMPLIES WITH THE PLANS AND SPECIFICATIONS SHALL BE PROVIDED AT THE COMPLETION OF EACH PHASE WHEN REQUIRED BY THE BUILDING OFFICIAL. UPON COMPLETION OF THE WORK, THE REGISTERED DESIGN PROFESSIONAL SHALL FILE A FINAL DOCUMENT TO THE BUILDING OFFICIAL INDICATING THAT, TO THE BEST OF HIS OR HER KNOWLEDGE AND BELIEF, THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE APPROVED PLANS AND 780 CMR. FORMS FOR CONSTRUCTION CONTROL WHEN REQUIRED BY THE BUILDING OFFICIAL SHALL BE THOSE FOUND AT <http://www.ma.gov/government/oca-agencies/dpl-lp/opsi/>.

**107.6.2.3 SPECIAL INSPECTIONS AND TESTS.** SPECIAL INSPECTIONS AND TESTS. SHALL BE PROVIDED IN ACCORDANCE WITH 780 CMR 17.00 SPECIAL INSPECTIONS AND TESTS.

**107.6.2.3 NON STRUCTURAL SYSTEM TEST AND INSPECTIONS.** TESTS AND INSPECTIONS OF NON-STRUCTURAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE ENGINEERING PRACTICE STANDARDS, REFERENCED STANDARDS LISTED IN 780 CMR 35.00: REFERENCED STANDARDS, OR AS OTHERWISE SPECIFIED IN 780 CMR.

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

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

**107.6.4 PROJECT REPRESENTATION.** A PROJECT REPRESENTATIVE MAY BE REQUIRED BY THE BUILDING OFFICIAL. THIS REPRESENTATIVE SHALL KEEP DAILY RECORDS AND SUBMIT REPORTS AS MAY BE REQUIRED BY THE BUILDING OFFICIAL. THIS PROJECT REPRESENTATION REQUIREMENT SHALL BE DETERMINED PRIOR TO THE ISSUANCE OF THE PERMIT AND MAY BE A PREREQUISITE FOR PERMIT ISSUANCE. REFUSAL BY THE APPLICANT TO PROVIDE SUCH SERVICE IF REQUIRED BY THE BUILDING OFFICIAL SHALL RESULT IN THE DENIAL OF THE PERMIT. ALL FEES AND COSTS RELATED TO THE PERFORMANCE OF PROJECT REPRESENTATION SHALL BE BORNE BY THE OWNER. WHEN APPLICATIONS FOR UNUSUAL DESIGNS OR MAGNITUDE OF CONSTRUCTION ARE FILED, OR WHERE REFERENCE STANDARDS REQUIRE SPECIAL ARCHITECTURAL OR ENGINEERING INSPECTIONS, THE BUILDING OFFICIAL MAY REQUIRE THAT THE PROJECT REPRESENTATIVE BE A REGISTERED DESIGN PROFESSIONAL IN ADDITION TO THOSE REGISTERED DESIGN PROFESSIONALS REQUIRED ELSEWHERE IN ACCORDANCE WITH SECTION 107.6.

**107.6.5 BUILDING OFFICIAL RESPONSIBILITY.** NOTHING CONTAINED IN SECTION 107.6 SHALL HAVE THE EFFECT OF WAIVING OR LIMITING THE BUILDING OFFICIAL'S AUTHORITY TO ENFORCE 780 CMR WITH RESPECT TO EXAMINATION OF THE CONTRACT DOCUMENTS, INCLUDING PLANS, COMPUTATIONS AND SPECIFICATIONS, AND FIELD INSPECTIONS.

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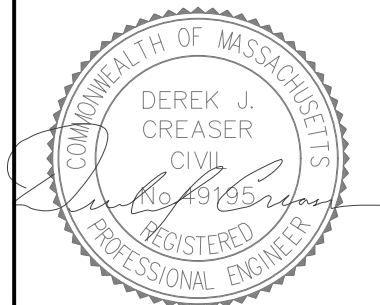


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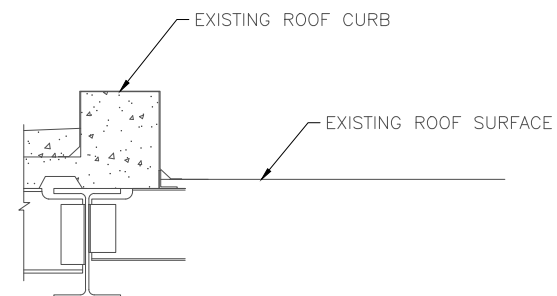
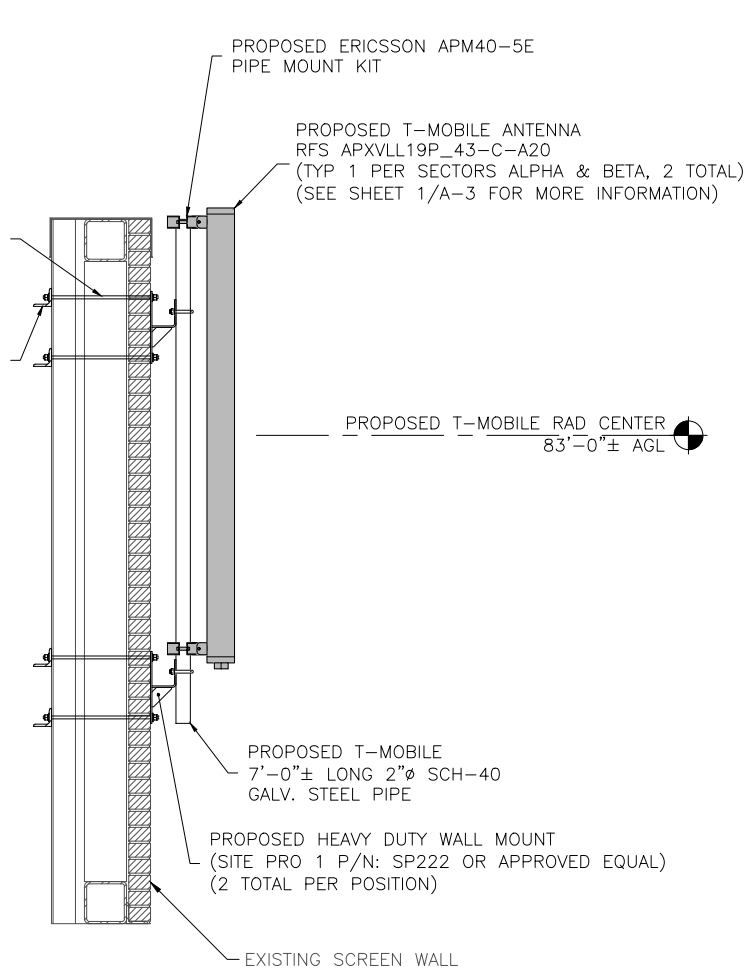
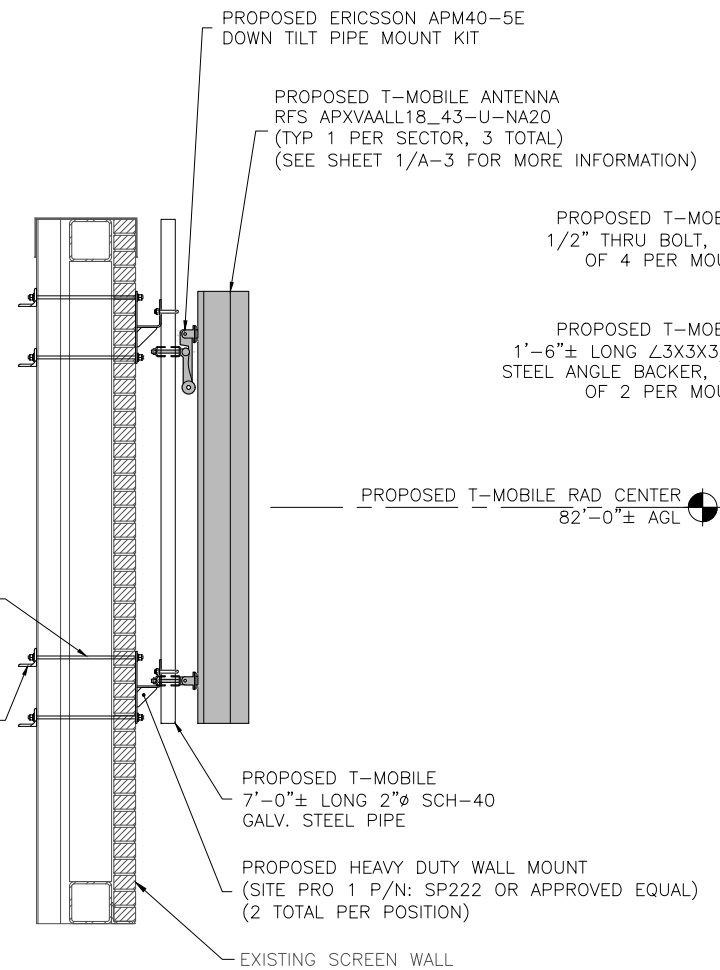
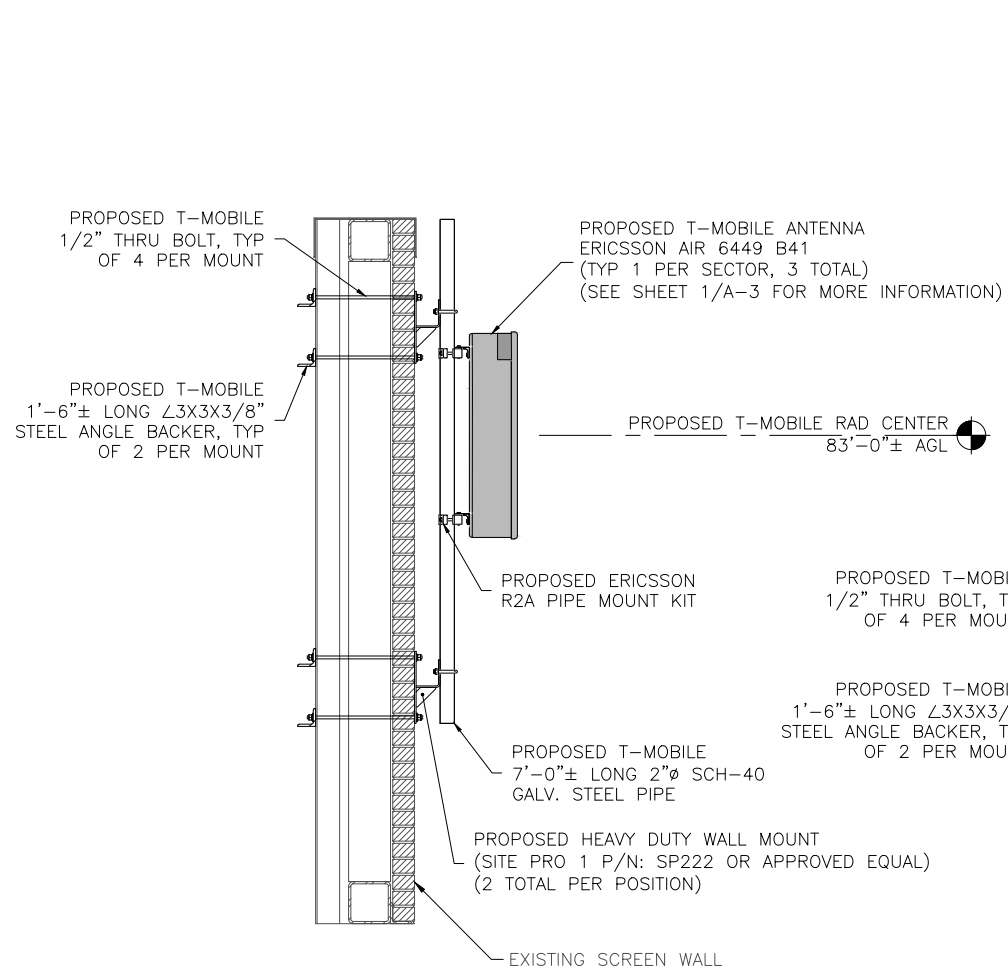
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<b>SITE ADDRESS:</b> 10 CANAL PARK CAMBRIDGE, MA MIDDLESEX COUNTY

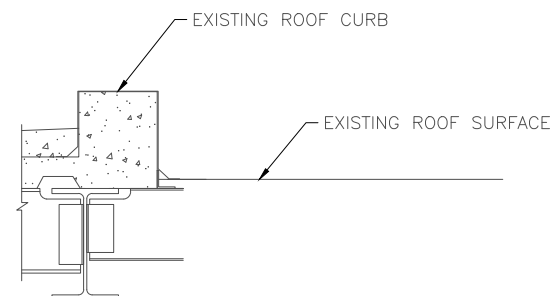
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<b>DRAWING:</b> SN-1
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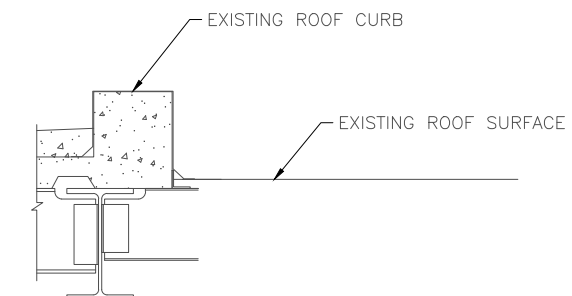
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  - APXVAALL24\_43-U-NA20: RFS APM40-5E DOWN TILT PIPE MOUNT KIT
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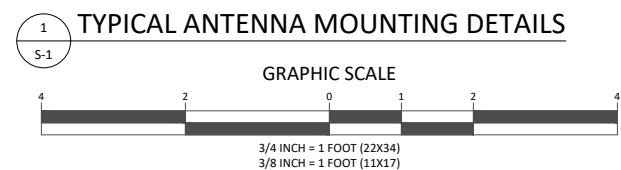
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AT POSITION A4 & B4



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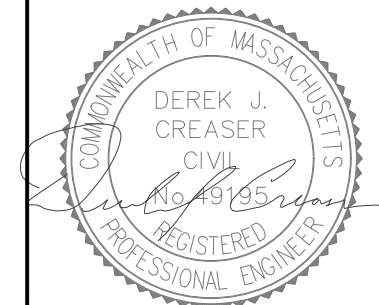


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CAMBRIDGE, MA  
MIDDLESEX COUNTY

**SHEET TITLE:**  
ANTENNA  
MOUNTING DETAILS

**DRAWING:**  
S-1

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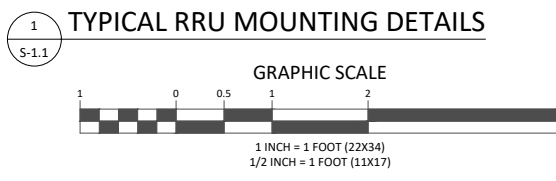
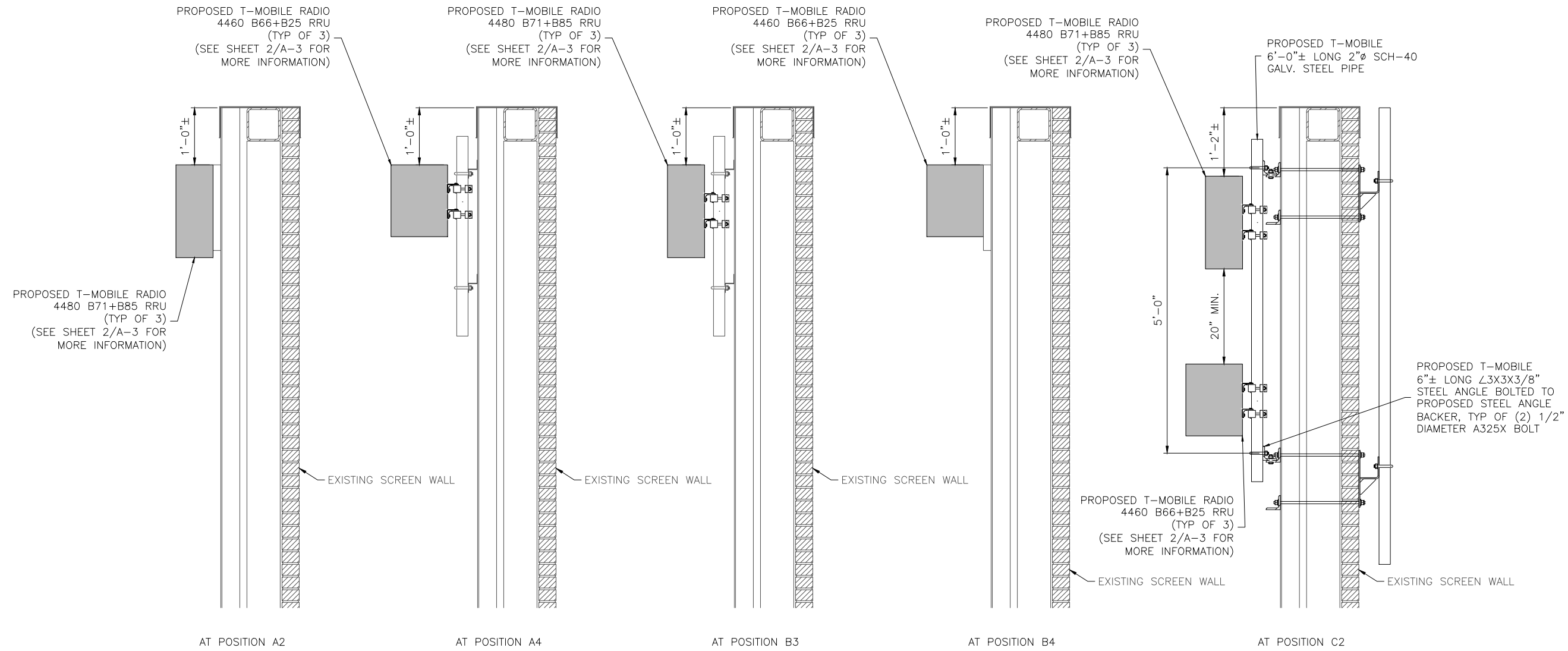
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**DATE: 04/21/2023**

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SITE NAME: <b>BO035/10 CANAL PARK</b>
SITE ID: <b>4DE7035F</b>
SITE ADDRESS: <b>10 CANAL PARK CAMBRIDGE, MA MIDDLESEX COUNTY</b>
SHEET TITLE: <b>RRU MOUNTING DETAILS</b>
DRAWING: <b>S-1.1</b>



### REVISIONS

REV	DATE	DESCRIPTION	BY
4	04/21/23	REVISED PER COMMENTS	AB
3	04/04/23	REVISED PER COMMENTS	SS
2	03/07/23	REVISED TMO DESIGN	AB
1	11/22/21	RFDS UPDATE	MP
0	06/04/21	ISSUED FOR CONSTRUCTION	SS
A	01/22/21	ISSUED FOR REVIEW	KH

DESIGNED BY: AB	APPROVED BY: WRD
--------------------	---------------------



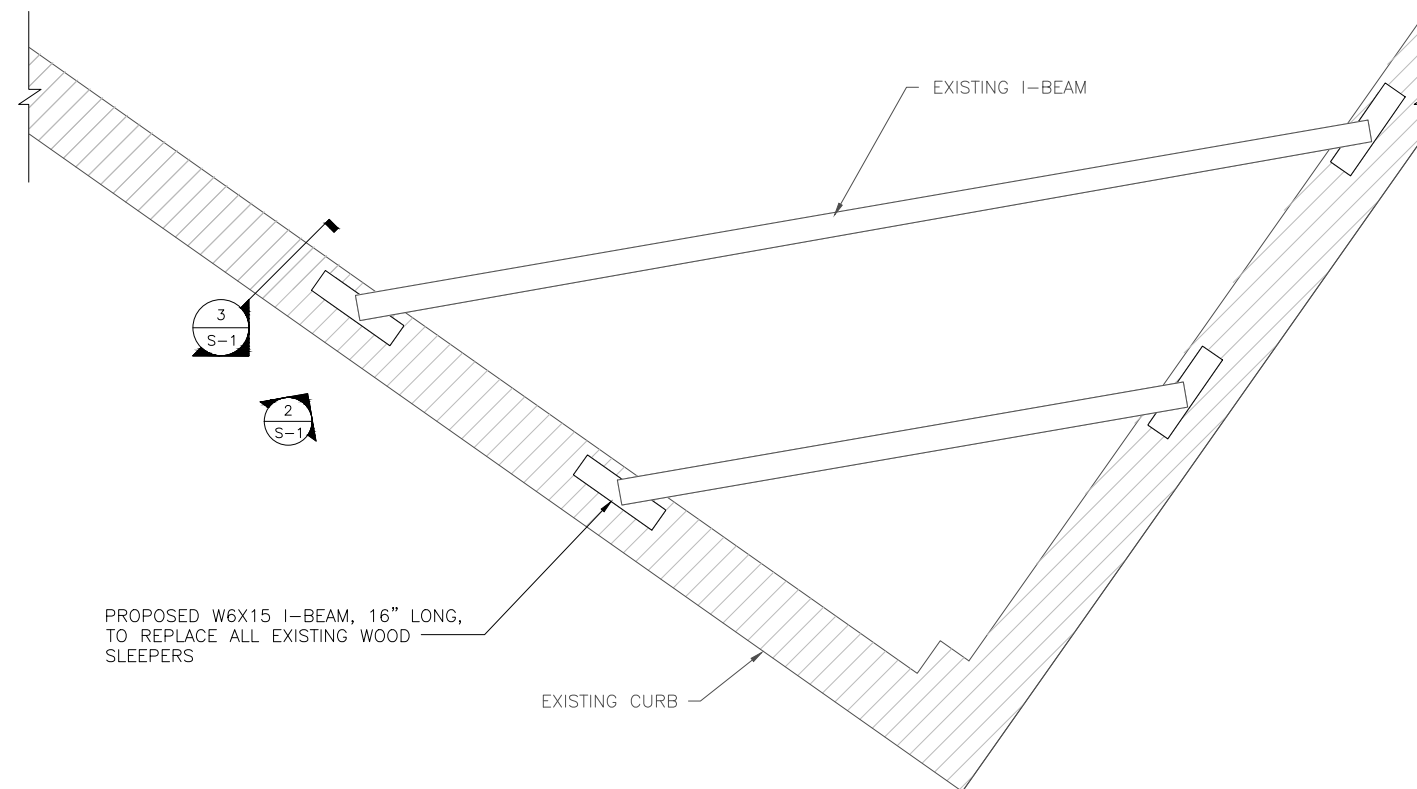
DATE: 04/21/2023

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SITE ADDRESS: <b>10 CANAL PARK CAMBRIDGE, MA MIDDLESEX COUNTY</b>

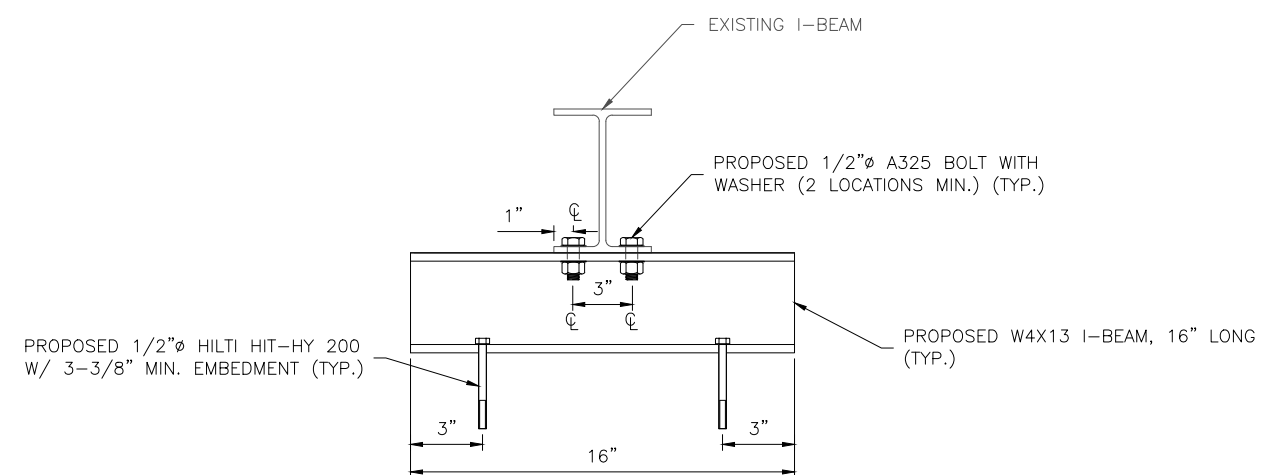
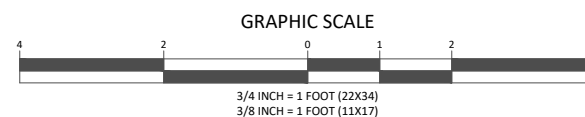
SHEET TITLE:  
**STRUCTURAL DETAILS**

DRAWING:  
**S-2**

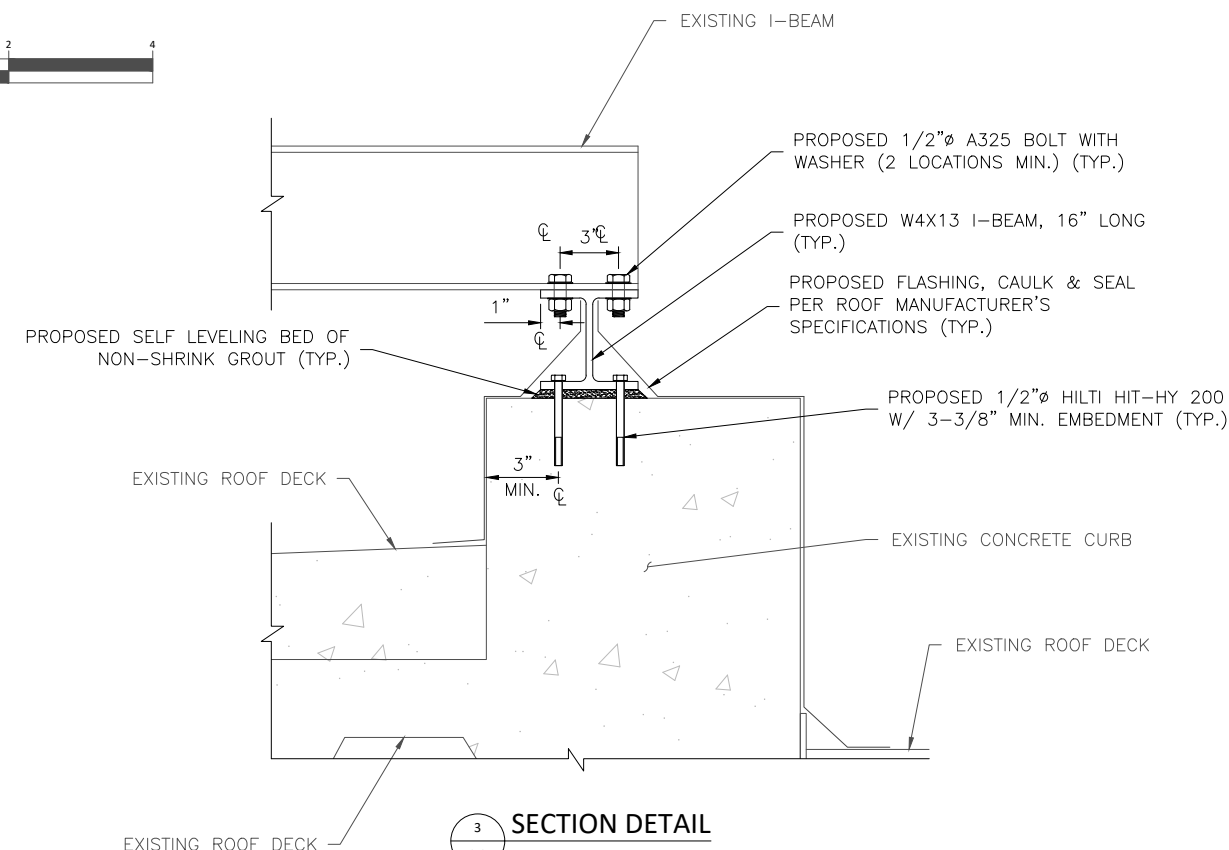
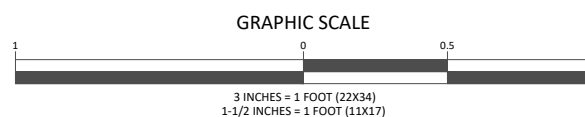


- NOTES:**
- STRUCTURAL STEEL AND HARDWARE TO BE GALVANIZED.
  - MOUNT STEEL PER MANUFACTURE'S SPECIFICATIONS.
  - SEAL ROOF PER MANUFACTURE'S SPECIFICATIONS. ANY MODIFICATIONS MADE TO THE ROOF MEMBRANE SHALL BE DONE SO AS NOT TO VOID THE MEMBRANE WARRANTY.
  - IF FIELD CONDITIONS DIFFER FROM WHAT IS SHOWN IN THE DRAWINGS, CONTRACTOR TO CONTACT THE ENGINEER OF RECORD.

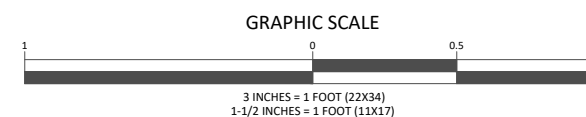
### 1 STRUCTURAL MODIFICATION PLAN



### 2 CONNECTION DETAIL



### 3 SECTION DETAIL





### REVISIONS

REV	DATE	DESCRIPTION	BY
4	04/21/23	REVISED PER COMMENTS	AB
3	04/04/23	REVISED PER COMMENTS	SS
2	03/07/23	REVISED TMO DESIGN	AB
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DESIGNED BY: AB	APPROVED BY: WRD
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DATE: 04/21/2023

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SITE NAME: <b>BO035/10 CANAL PARK</b>
SITE ID: <b>4DE7035F</b>
SITE ADDRESS: <b>10 CANAL PARK CAMBRIDGE, MA MIDDLESEX COUNTY</b>

SHEET TITLE: <b>GROUNDING &amp; ONE LINE DIAGRAM</b>
DRAWING: <b>G-1</b>

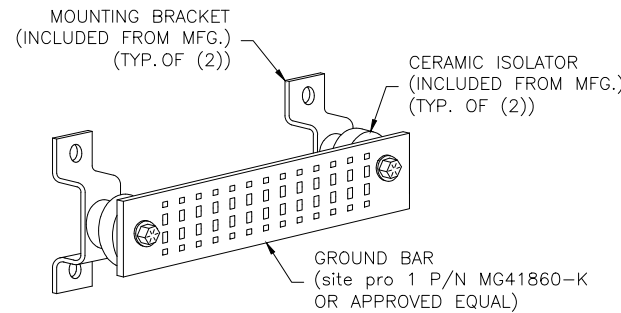
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

### SECTION "P" - SURGE PRODUCERS

- CABLE ENTRY PORTS (HATCH PLATES) (#2)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- +24V POWER SUPPLY RETURN BAR (#2)
- 48V POWER SUPPLY RETURN BAR (#2)
- RECTIFIER FRAMES.

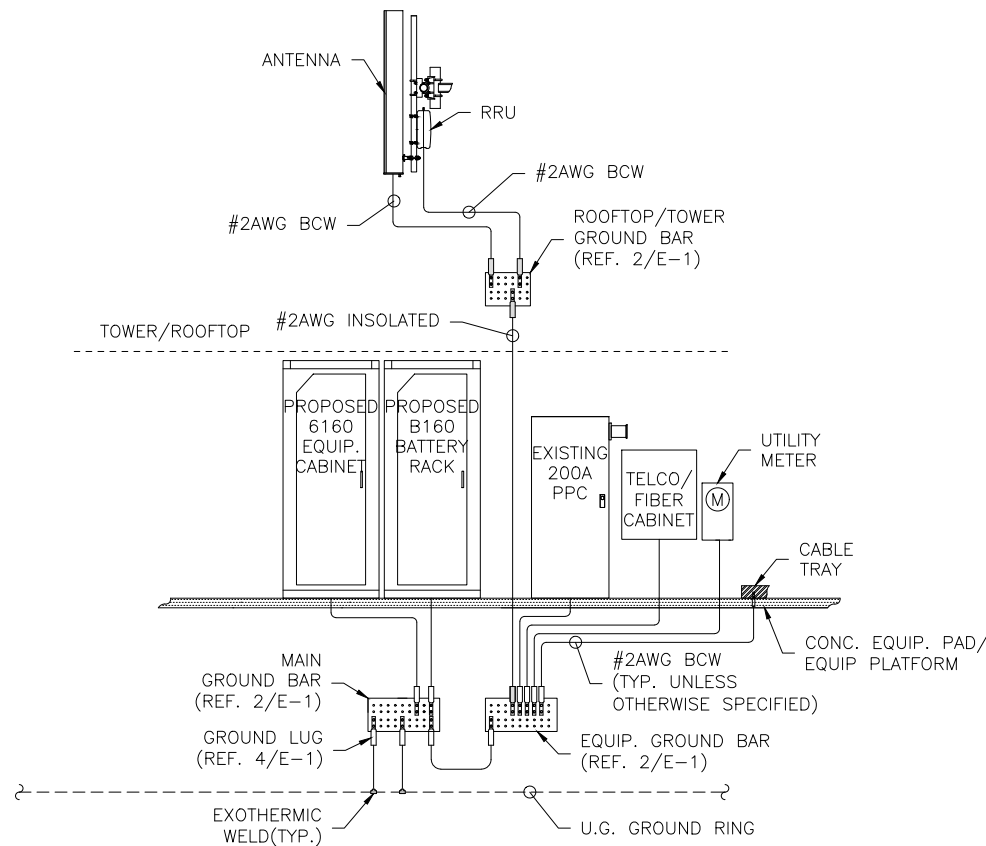
### SECTION "A" - SURGE ABSORBERS

- INTERIOR GROUND RING (#2)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- BUILDING STEEL (IF AVAILABLE) (#2)



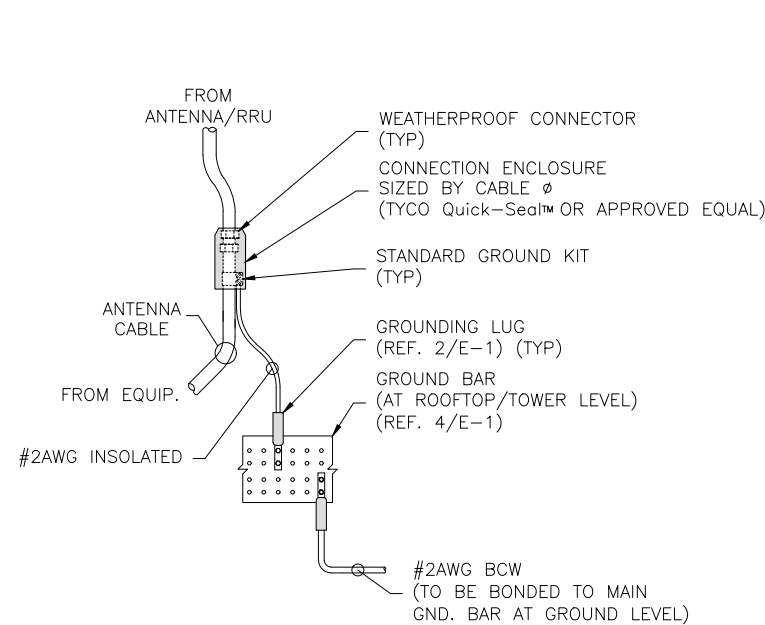
2 GROUND BAR DETAIL  
G-1

3 GROUND WIRE SCHEDULE  
G-1



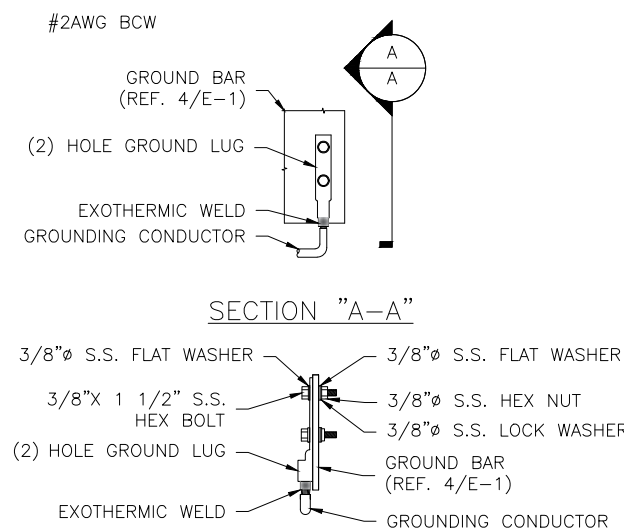
GROUNDING RISER NOTE:  
UNLESS OTHERWISE SPECIFIED ALL GROUNDING CONDUCTORS ARE TO BE #2AWG BCW

1 GROUNDING RISER DIAGRAM  
G-1



- NOTES:
- DO NOT INSTALL CABLE GROUND KIT AT BEND IN CABLE.
  - GROUND CABLES DIRECTLY TO CIGBE
  - JUMPER REQUIRED ONLY WHEN CABLE IS 1 1/4" OR LARGER

4 ANTENNA/RRU GROUNDING DETAIL  
G-1

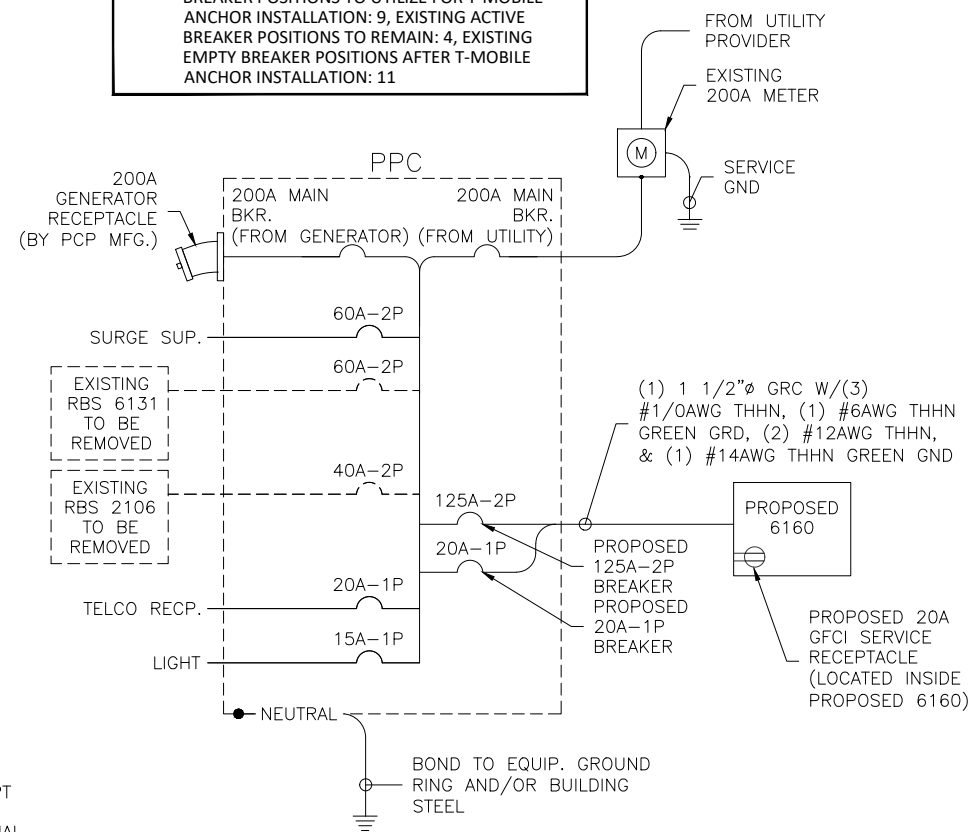


- GROUNDING LUG NOTES:
- DO NOT DOUBLE UP OR STACK LUGS.
  - OXIDE INHIBITING COMPOUND TO BE APPLIED TO ALL LUGS.
  - ALL LUGS ARE TO BE EXOTHERMIC WELDED TO GROUNDING CONDUCTORS.
  - FOR INSULATED GROUNDING CONDUCTORS, EXPOSED BARE COPPER TO BE KEPT TO ABSOLUTE MINIMUM.
  - NO INSULATION IS ALLOWED WITHIN THE BARREL OF THE COMPRESSION TERMINAL.

5 GROUND LUG DETAIL  
G-1

ELECTRIC PANEL NOTES:

- TOTAL BREAKER POSITION: 24, EXISTING EMPTY BREAKER POSITIONS: 16, UNUSED BREAKER POSITIONS TO BE REMOVED: 4, PROPOSED BREAKER POSITIONS TO UTILIZE FOR T-MOBILE ANCHOR INSTALLATION: 9, EXISTING ACTIVE BREAKER POSITIONS TO REMAIN: 4, EXISTING EMPTY BREAKER POSITIONS AFTER T-MOBILE ANCHOR INSTALLATION: 11



6 ONE LINE DIAGRAM  
G-1

May 1, 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: 10 Canal Park  
Assessor's Map 9, Lot 41 (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 Business A District (BA) 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. The compliance with the Spectrum Act is shown on the Eligible Facilities Request permit application form attached hereto and incorporated herein by reference (the "**EFR**").

The Applicant seeks to modify its existing wireless communications facility by replacing ten (10) existing panel antennas with eight (8) new panel antennas and replacing three (3)

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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.

Remote Radio Units (“**RRUs**”) with six (6) new RRUs, all mounted to the façade of the penthouse on the roof of the existing building, together with supporting equipment (the “**Proposed Facility**”). All of the proposed antennas will be installed adjacent to the existing antennas and painted to match the façade of the penthouse. The proposed antennas and RRUs will be installed on the façade 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**

As noted above, the Applicant proposes to modify its existing wireless facility currently operating on the rooftop of the Building by replacing the ten (10) existing panel antennas with eight (8) new T-Mobile panel antennas and replacing three (3) existing RRUs with six (6) new RRUs, together with supporting equipment. All new and proposed antennas will be façade mounted to the penthouse on the roof of the existing Building, installed in similar locations as the existing antennas and painted to match the penthouse façade of the Building. The Applicant also proposes to replace an existing radio cabinet with two (2) similar size cabinets, which will be installed in the same location of the existing cabinet, and out of view behind the Building’s existing screen wall. 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 February 17, 2017 (Case No. BZA-012071-2016) (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 BA zoning district is permitted by special permit. The Applicant's Proposed Facility further complies with the provisions set forth in Section 4.32(g), footnote 49 of the Ordinance:

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

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

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

T-Mobile investigated alternative sites in and around the defined geographic area within which its engineers determined that a facility must be located to fill the gap in service coverage and to function effectively within its network of existing and planned facilities. This is an existing location that is being upgraded with new technology to provide the necessary coverage to the subject area of the City of Cambridge. Therefore, the Proposed Facility in the 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.

- 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 no additional visual impact on the existing facility and Building. The Proposed Facility will continue to comply with the Decision 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.**

Not Applicable, the Property and Proposed Facility are located in the BA zoning district.

**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:**

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

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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.

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.

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

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

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

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

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

The Proposed Facility is designed to blend with the existing characteristics of the Property, reducing any visual impacts to the surrounding area. Accordingly, the Proposed Facility's design results in a minimal impact on the underlying and adjacent zoning district and is

consistent with the Ordinance's intention to allow for less intrusive wireless telecommunications facilities in all districts (other than Open Space), including the 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. 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)



Location 1

Location 2

Location 3

Location 4

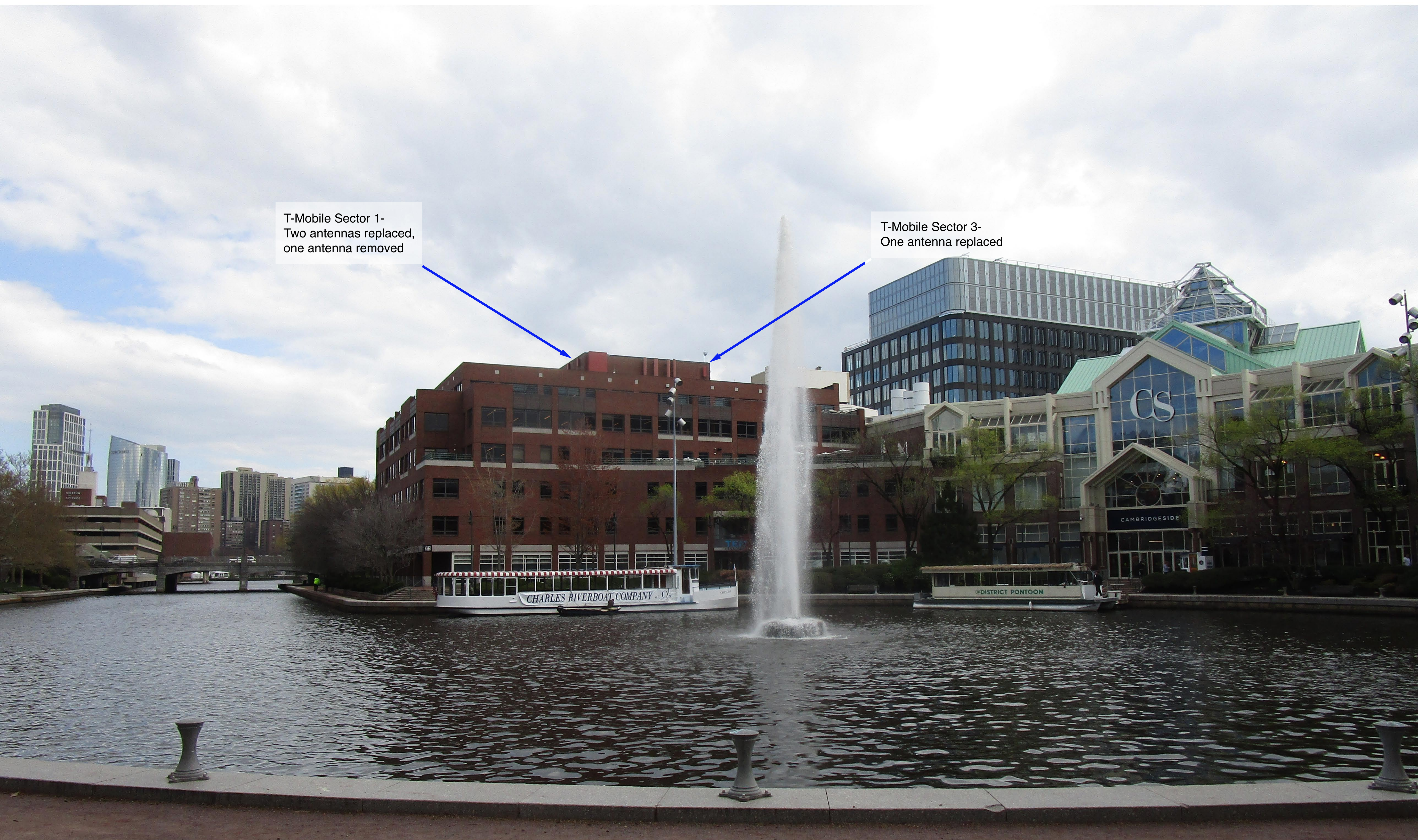


4DE7035F  
Location Map



T-Mobile Sector 1-  
Two antennas replaced,  
one antenna removed

T-Mobile Sector 3-  
One antenna replaced







4DE7035F  
View 2 - Lechmere Canal Park  
View from the North  
Site Not Visible



4DE7035F  
View 3 - Edwin Land Boulevard  
View from the East  
Showing the Existing Site



T-Mobile Sector 2-  
Two antennas replaced,  
one antenna removed



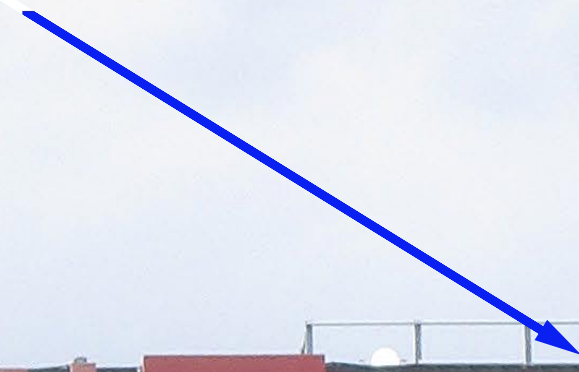
4DE7035F  
View 3 - Edwin Land Boulevard  
View from the East  
Showing the Proposed Site



4DE7035F  
View 4 - Bike Path  
View from the Southeast  
Showing the Existing Site



T-Mobile Sector 2-  
Two antennas replaced,  
one antenna removed

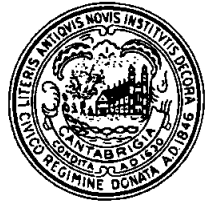


KAYAK

NO PARKING  
DOUBLE  
FINES ENDF



4DE7035F  
View 4 - Bike Path  
View from the Southeast  
Showing the Proposed Site



# City of Cambridge

MASSACHUSETTS

## BOARD OF ZONING APPEAL

831 Mass Avenue, Cambridge, MA.

(617) 349-6100  
OFFICE OF THE CITY CLERK  
CAMBRIDGE, MASSACHUSETTS

2013 JAN 9 PM 4 10

CASE NO: 10354

LOCATION: 10 Canal Park Cambridge, MA Business A/PUD-4 Overlay

PETITIONER: T-Mobile Northeast, LLC - C/o Jackie Slaga, Agent

18934-540

PETITION: Special Permit: In-kind replacement of existing 6 antennas with new antennas; add 1 small cabinet adjacent to existing cabinets. All antennas will be mounted in the same location and painted to match façade of building.

VIOLATION: Art. 4.000, Sec. 4.32.G.1 & 4.10 (Footnote 49) (Telecommunication Facility). Art. 10.000, Sec. 10.40 (Special Permit).

DATE OF PUBLIC NOTICE: November 22 & November 29, 2012

DATE OF PUBLIC HEARING: December 6, 2012

MEMBERS OF THE BOARD:

- BRENDAN SULLIVAN - CHAIR
- CONSTANTINE ALEXANDER - VICE-CHAIR
- TIMOTHY HUGHES
- 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. 10354  
Location: 10 Canal Park  
Petitioner: T-Mobile Northeast, LLC c/o Jackie Slaga, Agent

On December 6, 2012, Petitioner's attorney Ricardo Sousa appeared before the Board of Zoning Appeal requesting a special permit in order to allow the in-kind replacement of six existing antennas with new antennas mounted in the same location and painted to match the façade of building and the addition of one small cabinet adjacent to existing cabinets. 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. Sousa stated that the Petitioner wished to upgrade its existing specially permitted wireless facility as part of a system wide upgrade. He stated that the new antennas would simply swap in for existing antennas, would be mounted on low profile brackets and would be painted a flat finish and colored to match the façade on which they would be attached, so as to reduce visual impacts.

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 allow the in-kind replacement of six existing antennas with new antennas mounted in the same location and painted to match façade of building and the addition of one small cabinet adjacent to existing cabinets based on the finding that the petitioner was duly licensed and there were no the limitations imposed by the license. The Chair moved that the Board find that the visual impact of the installation would be minimized by the new antennas being painted a solid color and a texture to match the background of the surface to which they would be affixed so as to enhance their stealthiness. The Chair moved that the Board find that the site was not in a residential district. The Chair moved that the Board find that the requirements of the Ordinance were met. The Chair moved that the Board find that traffic generated or patterns of access or egress would not cause congestion, hazard, or substantial change in the established neighborhood character. The Chair moved that the Board find that continued operation of or development of adjacent uses as permitted in the Ordinance would not be adversely affected by the nature of the proposed use, but rather would be enhanced with the upgraded equipment and service. The Chair moved that the Board find that there would not be any nuisance or hazard created to the detriment of the health, safety, and/or welfare of the occupant of the proposed use or to the citizens of the city. The Chair moved that the Board note the existence of antennas at the site and the fact that there had not been any reports of any detriment to the health, safety, or welfare of the citizens. 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 or purpose of the Ordinance. The Chair moved that the Board find that the proposed upgrade would enhance telecommunication

services for the citizens of the city. The Chair moved that the Board grant the special permit on the following conditions:

1. that the work be in compliance with the drawings and the photo simulations initialed by the Chair and submitted as part of the application,
2. that should the equipment become obsolete or unused, it be removed within 60 days and the surface to which it was affixed be restored to the condition prior to the installation of these six antennas and the previous antennas which they would replace, and
3. that any change in equipment would require a new special permit.


The five member Board voted unanimously in favor of granting the special permit (Sullivan, Alexander, Scott, Green, and Myers) 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.



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.

  
Brendan Sullivan, Chair

Attest: A true and correct copy of decision filed with the offices of the City Clerk and Planning Board on 1-9-13 by Maria D'Amico, 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: January 4, 2013 Donna P. Lopez City Clerk.



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

2017 FEB 17 AM 10:41

CASE NO: BZA-012071-2016 Business A Zone/PUD-4 Overlay

LOCATION: 10 Canal Pk  
Cambridge, MA

PETITIONER: T-Mobile Northeast, LLC - C/O Ricardo M. Sousa, Esq.

*owner: 10 Canal Park  
LLC*

PETITION: Special Permit: The Applicant proposes to modify its existing Wireless Telecommunications Facility by replacing three (3) existing antennas and collocating three (3) new antennas on the existing building, together with supporting equipment. All proposed antennas will be facade mounted to the existing building, adjacent to the existing antennas and painted to match the existing building. The Applicant's proposal complies with Section 6409 of the Spectrum Act as the collocation of antennas is not a substantial change to the existing base station. Moreover, the Applicants proposal complies with Section 4.32 and 10.4 of the Cambridge Zoning Ordinance.

**VIOLATION :**

Article <u>4.000</u>	Section <u>4.32.G.1 (Telecommunications Facility).</u>
Article <u>4.000</u>	Section <u>4.40 (Footnote 49) (Telecommunications Facility).</u>
Article <u>10.000</u>	Section <u>10.40 (Special Permit).</u>
Article <u>6409</u>	Section <u>Middle Class Tax Relief Act</u>

*18934 - 540*

DATE OF PUBLIC NOTICE: December 29, 2016 and January 05, 2017

DATE OF PUBLIC HEARING: January 12, 2017;

**MEMBERS OF THE BOARD:**

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

*Eric Kallio  
62A West St.  
Swanzey NH  
03746*

**ASSOCIATE MEMBERS:**

- DOUGLAS MYERS \_\_\_\_\_
- SLATER W. ANDERSON \_\_\_\_\_
- ALISON HAMMER \_\_\_\_\_
- JIM MONTEVERDE \_\_\_\_\_
- GEORGE BEST \_\_\_\_\_
- LAURA WERNICK \_\_\_\_\_

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-012071-2016  
Location: 10 Canal Park  
Petitioner: T-Mobile Northeast LLC – c/o Ricardo Sousa, Esq.

On January 12, 2017, Petitioner's attorney Daniel Glissman appeared before the Board of Zoning Appeal requesting a special permit in order to modify its existing wireless telecommunications facility by replacing three existing antennas and collocating three new antennas on the building together with supporting equipment, where all antennas will be façade mounted to the building, adjacent to existing antennas and painted to match the building. The Petitioner requested relief under Article 4, Section 4.32.G.1 and Article 10, Section 10.40 of the Cambridge Zoning Ordinance ("Ordinance") and Section 6409 of the Middle Class Tax Relief & Job Creation Act. The Petitioner submitted materials in support of their application including information about the project, plans, and photographs.

Mr. Glissman stated that the proposal was to add three new antennas and replace three existing antennas at the site. He stated that they would be painted to match the building and other antennas. He stated that the proposed work did not constitute a substantial change under Section 6409, because the height and protrusions were not changing, there would be no new cabinets or excavation, and the existing concealment efforts would not be defeated.

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 modification of the existing 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 Tax Relief and 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 the photo simulations submitted by the petitioner, as initialed by the Chair,

3. that the petitioner at all times maintain the proposed work so that its physical appearance and visual impact remain consistent with the photo simulations previously referred to,
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



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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 STREET  
BELLEVUE, WA 98006

<b>Call Sign</b> WQIZ578	<b>File Number</b> 0008577570
<b>Radio Service</b> WY - 700 MHz Lower Band (Blocks A, B & E)	

FCC Registration Number (FRN): 0001565449

<b>Grant Date</b> 05-30-2019	<b>Effective Date</b> 05-30-2019	<b>Expiration Date</b> 06-13-2029	<b>Print Date</b> 05-31-2019
<b>Market Number</b> BEA003	<b>Channel Block</b> A	<b>Sub-Market Designator</b> 0	
<b>Market Name</b> Boston-Worcester-Lawrence-Lowe			
<b>1st Build-out Date</b>	<b>2nd Build-out Date</b> 06-13-2019	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

**Waivers/Conditions:**

If the facilities authorized herein are used to provide broadcast operations, whether exclusively or in combination with other services, the licensee must seek renewal of the license either within eight years from the commencement of the broadcast service or within the term of the license had the broadcast service not been provided, whichever period is shorter in length. See 47 CFR §27.13(b).

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. 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:** WQIZ578

**File Number:** 0008577570

**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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Proter LLC Corp

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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> WQZL852	<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> B	<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.

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

**Call Sign:** WQZL852

**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

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.

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**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

<b>Call Sign</b> WRAM889	<b>File Number</b> 0008585885
<b>Radio Service</b> CW - PCS Broadband	

FCC Registration Number (FRN): 0001565449

<b>Grant Date</b> 05-30-2019	<b>Effective Date</b> 05-30-2019	<b>Expiration Date</b> 06-30-2029	<b>Print Date</b> 05-31-2019
<b>Market Number</b> BTA201	<b>Channel Block</b> C	<b>Sub-Market Designator</b> 4	
<b>Market Name</b> Hyannis, MA			
<b>1st Build-out Date</b>	<b>2nd Build-out Date</b>	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

**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. 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.

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**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.

RECEIVED  
FCC  
OCT 2017

**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

<b>Call Sign</b> KNLH311	<b>File Number</b> 0007725350
<b>Radio Service</b> CW - PCS Broadband	

FCC Registration Number (FRN): 0001565449

<b>Grant Date</b> 06-08-2017	<b>Effective Date</b> 06-08-2017	<b>Expiration Date</b> 06-27-2027	<b>Print Date</b> 06-09-2017
<b>Market Number</b> BTA201	<b>Channel Block</b> D	<b>Sub-Market Designator</b> 0	
<b>Market Name</b> Hyannis, MA			
<b>1st Build-out Date</b> 06-27-2002	<b>2nd Build-out Date</b>	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

**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. 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.

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**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.



**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

<b>Call Sign</b> WPOJ753	<b>File Number</b> 0008585870
<b>Radio Service</b> CW - PCS Broadband	

**FCC Registration Number (FRN): 0001565449**

<b>Grant Date</b> 05-30-2019	<b>Effective Date</b> 05-30-2019	<b>Expiration Date</b> 06-30-2029	<b>Print Date</b> 05-31-2019
<b>Market Number</b> BTA229	<b>Channel Block</b> C	<b>Sub-Market Designator</b> 3	
<b>Market Name</b> Kingsport-Johnston City, TN-Br			
<b>1st Build-out Date</b> 06-30-2004	<b>2nd Build-out Date</b>	<b>3rd Build-out Date</b>	<b>4th Build-out Date</b>

**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. 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.

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**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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May 1, 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 **10 Canal Park, 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 10 Canal Park, 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 eighty-six feet (86’) 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 eighty-six feet (86’) high. The proposed replacement of nine (9) existing antennas with eight (8) new antennas and the replacing three (3) Remote Radio Heads (RRHs) with six (6) new RRHs 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 eight (8) replacement antennas are façade mounted to the existing penthouse on the roof of the building and will not protrude from the edge of

the building. Similarly, the six (6) replaced RRH's will be façade mounted to the interior of the existing penthouse on the roof of the building. As such, 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 one (1) equipment cabinet existing at the Base Station. The Applicant propose to replace this cabinet with two (2) new like-kind radio cabinets.
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 February 17, 2017 (Case No. BZA-012071-2016) (the “**Decisions**”), the existing panel antennas are located in the preferred location on the building. The replacement of nine (9) existing antennas with eight (8) new antennas and replacing three (3) RRHs with six (6) new RRHs 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 stealth design. The proposed installations will not substantially increase the facility and as such the proposed visual impact will be de minimus for many of the same reasons stated in the Decision 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 at 10 Canal Park, 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,



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: 10 Canal Park

**Existing Facilities**

The Existing Facility is comprised of ten (10) panel antennas all mounted to the façade of the existing penthouse on the roof of the building, together with supporting equipment.



**Height of Base Station**

Height above ground level of the tallest point on the existing base station: 86' (feet)

Height above ground level of the tallest point of the existing base station after the installation of the *proposed* equipment: 86'(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?

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?

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.**

Explanatory Comments:

Question No.5 (b)

Comment: Pursuant to the previous decisions by the Board of Zoning Appeal for the City of Cambridge (the “Board”) for this site, the latest dated February 17, 2017 (Case No. BZA-012071-2016) (the “Decision”), the existing panel antennas are located in the preferred location on the building. The replacement of the ten (10) existing panel antennas with eight (8) new antennas and the replacement of three (3) RRHs with six (6) new RRHs, will not defeat the existing stealth design as all the antennas will be installed at the same locations as the existing antennas and painted to match the existing building. Furthermore, all proposed antennas will be integrated into the building to the extent possible. As such, the proposed modifications to the existing telecommunications facility will be in conformity with the Decision and do not defeat the existing stealth design. The proposed installations will not substantially increase the facility and as such the proposed visual impact will be de minimus for many of the same reasons stated in the Decision attached hereto.

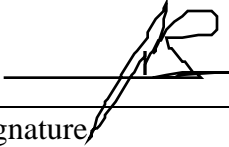
Question No.6 (c)

Comment: Notwithstanding the aforementioned showing that the proposed modification to this site does not substantially change the physical dimensions of the existing Base Station and is subject to the Spectrum Act, this site is the proper location for a wireless installation pursuant to the Decision. Furthermore, in the Decision the Board stated that continued operation of adjacent

uses would not be adversely affected by the previously proposed equipment addition, and no nuisance or hazard would be created to the detriment of the health, safety or welfare of the occupant or the citizens of the City of Cambridge. The proposed modification to this site is very similar to the previous modification approved by this board and as such, we respectfully submit that it will have the same de minimis impact. Moreover, the proposed installation is necessary to accommodate the existing and future customer base as demand for data and cell service has steadily increased and continues to do so.

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This certification is dated this 1<sup>st</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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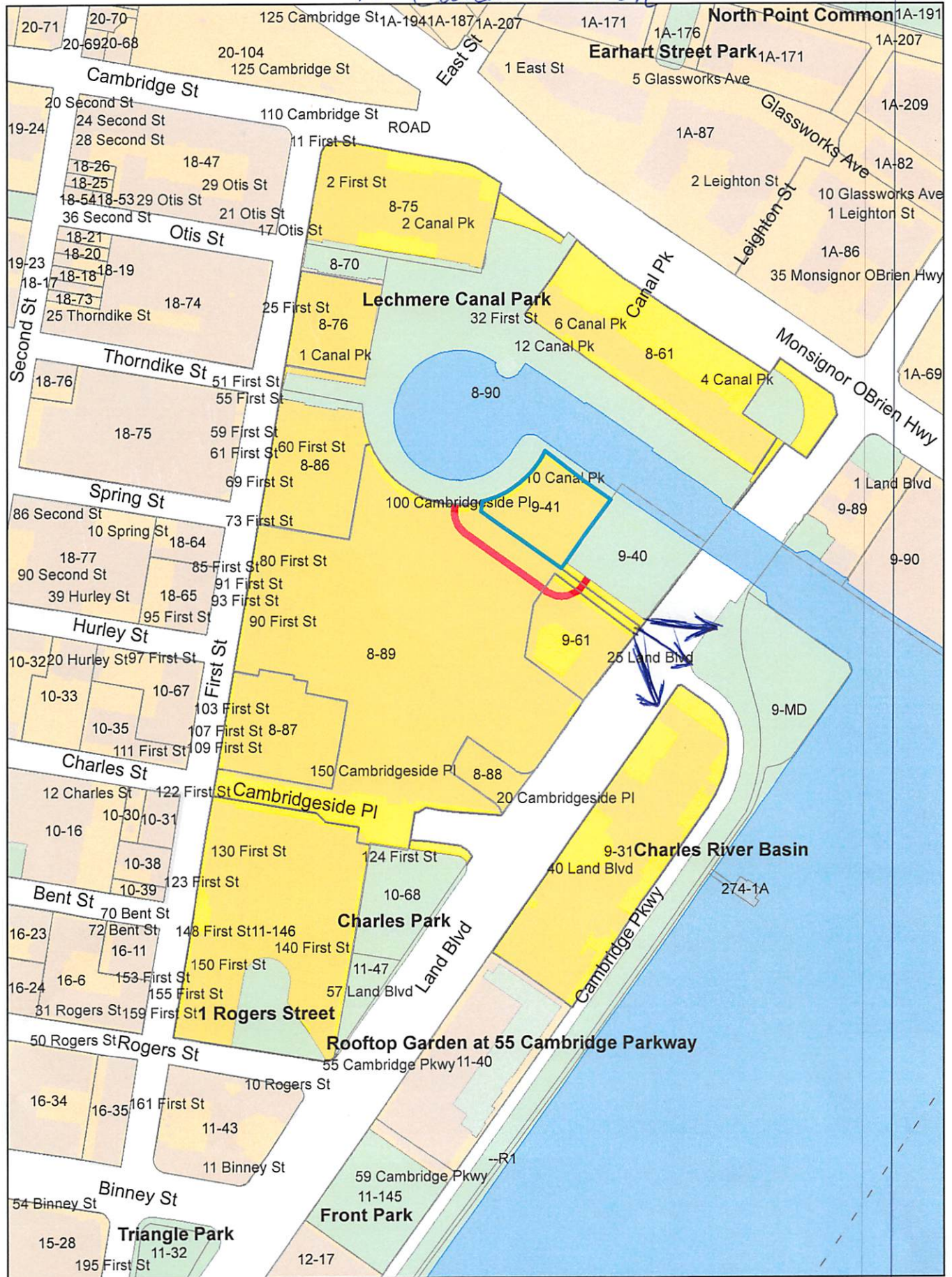
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# 10 Canal Park



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C/O RYAN, LLC PTS DEPT.124  
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C/O NEW ENGLAND DEVELOPMENT  
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BOSTON, MA 02110

8-61  
LAFARGE, MEDELINE R., SUSAN LAFARGE &  
NANCY LAFARGE TRS OF LAFARGE FAMILY TR  
4 CANAL PARK, UNIT 611  
CAMBRIDGE, MA 02141

8-61  
LIN, SHUWAN  
6 CANAL PK., #409/2  
CAMBRIDGE, MA 02141

8-61  
PELON PUTUKIAN REALTY LIMITED  
LIABILITY PARTNERSHIP  
145 TRAPELO RD  
LINCOLN, MA 01773

8-61  
CHO, YOUNG SHIN & HYUK SOO SEO  
143-171 HYDE PARK AVE #153A  
BOSTON, MA 02130

8-61  
WOLFRUM, ARTHUR D.,  
TRUSTEE JEANNE M. WOLFRUM TRUSTEE  
4 CANAL PK., #110  
CAMBRIDGE, MA 02141

10 Canal Pk.

447

8-61  
FANTINI, GEORGE J. JR. &  
CAROLYN K. TRUSTEE OF FANTINI REALTY TR.  
30 CUTLER RD.  
ANDOVER, MA 01810

8-61  
BROWN, ROBERT C. & SUSAN M. LANG TRUSTEE  
THE LANG BROWN TRUST  
4 CANAL PARK. UNIT#206  
CAMBRIDGE, MA 02141

8-61  
KANKOWSKI, STANLEY J. LAURA A. MYLOTT  
82 SUMMER STREET  
MILFORD, NH 03055

8-61  
TEJERO, EDEN N. & JOSE A. TEJERO  
P.O. BOX 29  
ASTOR DRIVE  
RHINEBECK, NY 12572

8-61  
KELLEY, MATTHEW K  
4 CANAL PK #404  
CAMBRIDGE, MA 02141

8-61  
CHANG, JENNY & ALVIN LIN  
4 CANAL PARK., #405  
CAMBRIDGE, MA 02141

8-61  
KIM, RAYMOND  
4 CANAL PK., #504  
CAMBRIDGE, MA 02141

8-61  
BYUN, YOONG KOO & BYUNG HEE BYUN  
4 CANAL PK 507  
CAMBRIDGE, MA 02141

8-61  
ANZALONE, LUIGI & CYNTHIA ANZALONE  
TRUSTEE OF THE ANZALONE FAMILY REVOC TRT  
4 CANAL PK UNIT #605  
CAMBRIDGE, MA 02141

8-61  
ALMANA, ABDULLAH A. &  
ABDULAZIZ I. AL MANA  
4 CANAL PARK, UNIT#608  
CAMBRIDGE, MA 02141

8-61  
KAMALIAN, MOHAMMAD SHERVIN &  
SARA EMAMI  
4 CANAL PK., #701  
CAMBRIDGE, MA 02141

8-61  
MATAVA, MARIE A., WILLIAM L. BROUILLARD  
4 CANAL PARK, UNIT #709  
CAMBRIDGE, MA 02141

8-61  
CYRUS LAB, LLC  
4 CANAL PK UNIT #PH1  
CAMBRIDGE, MA 02139

8-61  
YUAN, ELAINE  
4 CANAL PARK. UNIT#PH5  
CAMBRIDGE, MA 02141

8-61  
MACHANIC, WILLIAM C. &  
MARY ANN MACHANIC  
4 CANAL PK., UNIT PH12  
CAMBRIDGE, MA 02141

8-61  
JOSEPH, JACK & PAULINE JOSEPH  
6 CANAL PK UNIT #106  
CAMBRIDGE, MA 02141

8-61  
CHRIS KWEI-JUEN CHOU  
6 CANAL PK., #205/2  
CAMBRIDGE, MA 02141

8-61  
LAM, YU-ANN & WEN-I CHEN  
4-6 CANAL PARK., UNIT #207/2  
CAMBRIDGE, MA 02141

8-61  
RECZEK, JAKUB T & JAN M. & DANUTA M.  
RECZEK A LIFE ESTATE & ET AL TR.  
54 LEXINGTON STREET  
WESTON, MA 02493

8-61  
MARKUS, M. LYNNE,  
TRUSTEE THE M. LYNNE MARKUS REV TRUST  
6 CANAL PK., #309/2  
CAMBRIDGE, MA 02141

8-61  
RESIDENT  
255 BRUNSWICK ST APT 207  
JERSEY CITY, NJ 07302

8-61  
MENKE, MATTHEW E.  
6 CANAL PK., #609/2  
CAMBRIDGE, MA 02139

8-61  
LU, YI  
6 CANAL PK PH3/2  
CAMBRIDGE, MA 02141

8-61  
HEROLD, JAMES B.,  
TRUSTEE THE JAMES B. HEROLD REV TRUST  
6 CANAL PK., #PH6/2  
CAMBRIDGE, MA 02141

8-61  
ENTEKHABI, DARA  
6 CANAL PARK., UNIT# PH9/2  
CAMBRIDGE, MA 02141

9-41  
TEN CANAL PK MASSACHUSETTS, LLC,  
C/O US REAL ESTATE INVEST FUND, LLC  
1270 SOLDIERS FIELD RD  
CAMBRIDGE, MA 02135

9-61  
CAMBRIDGE, LLC  
C/O JUNSON CAPITAL, UNITS 5211-12, 52/F  
3520 PIEDMONT RD NE SUITE 410  
ATLANTA, GA 30305

8-87  
CAMBRIDGESIDE PARTNERS LLC  
C/O NEW ENGLAND DEVELOPMENT  
75 PARK PLAZA  
ATTN: ACCOUNTING DEPT  
BOSTON, MA 02116

8-61  
O'MALLEY, ANN  
6 CANAL PARK., UNIT 702  
CAMBRIDGE, MA 02141

8-61  
CHUNG, JUNG JA LEE  
1 CENTRAL PARK WEST  
NEW YORK, NY 10023

8-61  
MORRISSEY, MAUREEN S.  
6 CANAL PARK. UNIT#709/2  
CAMBRIDGE, MA 02141

8-61  
MA, STEVE S. & KENT MA  
C/O PREMIER PROPERTY SOLUTIONS, LLC  
190 HIGH ST FLOOR 6  
BOSTON, MA 02210

8-75  
TWO CANAL PARK MASSACHUSETTS, LLC,  
C/O US REAL ESTATE INVESTMENT FUND LLC,  
1270 SOLDIERS FIELD RD  
BOSTON, MA 02135

8-86  
NW CAMBRIDGE PROPERTY OWNER LLC,  
C/O NORTHWOOD INVESTORS LLC,  
1819 WAZEE ST. 2ND FL.OOR  
DENVER, CO 80202

8-61  
PELON PUTUKIAN REALTY LIMITED LIABILITY  
PARTNERSHIP  
145 TRAPELO RD  
LINCOLN, MA 01773

8-61  
UNIT 502, 6 CANAL PARK LLC  
C/O CABOT & COMPANY  
213 NEWBURY ST  
BOSTON, MA 02132

8-61  
HENDERSON, ERIC U. & DONRUTAI  
INTARAKANCHIT HENDERSON  
6 CANAL PARK.,UNIT 505  
CAMBRIDGE, MA 02141

8-61  
REN, XIANFEI  
6 CANAL PK., UNIT 506/2  
CAMBRIDGE, MA 02141

8-61  
MEHRING, JOYCE S., TRUSTEE THE JOYCE S.  
MEHRING 2014 REV TRUST  
6 CANAL PARK., #703/2  
CAMBRIDGE, MA 02141

8-61  
EAMON SAUNDERS & JENNIFER SAUNDERS  
6 CANAL PARK. UNIT#704  
CAMBRIDGE, MA 02141

8-75  
TWO CANAL PARK, LLC  
C/O TA ASSOC. REALTY TRUST  
2 CANAL PARK  
CAMBRIDGE, MA 02141

8-61  
YANG KAIQI YUAN ZHAO  
6 CANAL PARK UNIT #PH8-II  
CAMBRIDGE, MA 02141

8-61  
WELCH, JOHN D., & WISIMA SAMANTHA  
NIPATNANTAPORN, TRS  
4 CANAL PK #402  
CAMBRIDGE, MA 02141

8-61  
LI, GANG, TRS THE AMANDA YI-PEI IRREV TRUST  
170 TREMONT ST  
BOSTON, MA 02110

8-61  
REINGOLD, BARRY J. NORINE  
SIELAWA REINGOLD  
4 CANAL PARK PH6  
CAMBRIDGE, MA 02141

8-61  
LU, HSIAOMING , RUI QI & DIANA Y. LU AS  
TRUSTEES OF THE CANAL PARK NOMINEE TRUST  
4 CANAL PARK UNIT #503  
CAMBRIDGE, MA 02141

8-61  
KATZ, DMITRY  
4 CANAL PARK UNIT PH3  
CAMBRIDGE, MA 02141

8-61  
ZHANG, HANWEI & ERLING ZHAO  
30 CALDWELL ST., #424  
CHARLESTOWN, MA 02129

8-61  
RAMMOHAN, REVATHI NAGARAJAN RAM  
MOHAN BABA  
4 CANAL PARK UNIT #712  
CAMBRIDGE, MA 02141

8-61  
WOOD JONATHAN A DANIELLE R. WOOD  
6 CANAL PARK UNIT PH-10  
CAMBRIDGE, MA 02141

8-61  
TALLURI, RAMESH C. KAVERI TALLURI, TRS  
6 CANAL PK #307/2  
CAMBRIDGE, MA 02141

8-61  
6 CANAL LLC  
9 SHERBURNE RD  
LEXINGTON , MA 02421

8-61  
SAWYER KATHLEEN L &  
ROBERT M SAWYER CO TRS  
210 MAYFLOWER LN  
VINEYARD HAVEN, MA 02568

8-61  
CHEN PATRICK T C YOON SUH YUN  
6 CANAL PARK - UNIT 304  
CAMBRIDGE, MA 02141

8-61  
KARAGEZIAN, JOSEPH TRUSTEE OF THE  
KARAGEZIAN REVOC TRUST 2018  
7 DEBSTON LN  
LYNNFIELD, MA 01940

8-61  
JAKOMIN BERNADETTE VIDA TRS BERNADETTE  
VIDA JAKOMIN TRUST  
4 CANAL PARK - UNIT 311  
CAMBRIDGE, MA 02141

8-61  
CAMBRIDGE CANAL LLC  
10 MUSEUM WAY UNIT 2424  
CAMBRIDGE, MA 02141

8-61  
AQUILANTI ELISA ANNIE  
6 CANAL PARK UNIT 608-II  
CAMBRIDGE, MA 02141

8-61  
GOLDARAZ MATEO NAVARRO  
6 CANAL PARK - UNIT 707  
CAMBRIDGE, MA 02141

8-61  
GOYAL, ROHIT  
4 CANAL PK UNIT 307  
CAMBRIDGE, MA 02141

10 Canal Pk.

6 of 7

8-61  
ABDELAHAD, MARIANNE  
6 CANAL PK #103/2  
CAMBRIDGE, MA 02141

8-61  
MACK ROBERT W  
4 CANAL PARK - PH 11-I  
CAMBRIDGE, MA 02141

8-61  
CASTANO MARIANNE F & GREGORY J CASTANO  
MARIANNE F CASTANO TR  
3 ROBERTS WAY  
STONEHAM, MA 02180

8-76  
1 CANAL OWNER LLC  
10945 VISTA SORRENTO PKWY - STE 150  
SAN DIEGO, CA 92130

8-61  
FAN, XING CHEN  
6 CANAL PK #202/2  
CAMBRIDGE, MA 02141

8-61  
ARANGO, FERNANDO CASTRO  
CITY OF CAMBRIDGE TAX TITLE  
611 NE 56TH ST  
MIAMI, FL 33137

8-61  
NAGARAJAN SUNDAR & PADMA SUNDAR  
6 CANAL PARK - UNIT 607-II  
CAMBRIDGE, MA 02141

8-61  
WOODRUM, MARK  
4 CANAL PK 108  
CAMBRIDGE, MA 02141

8-61  
TANNER ANNE C R  
6 CANAL PARK - UNIT 507-II  
CAMBRIDGE, MA 02141

8-61  
SEN, SAUGAT ISHITA SEN  
6 CANAL PARK UNIT #310/2  
CAMBRIDGE, MA 02141

8-61  
WEYMOUTH MICHAEL STEVEN  
6 CANAL PARK - UNIT 206 II  
CAMBRIDGE, MA 02141

8-61  
SHINETOWN, LLC CITY OF CAMBRIDGE TAX TITLE  
300 ALLSTON ST #105  
BRIGHTON, MA 02135

8-61  
PUNJABI RAHI DILIP  
4 CANAL PARK - UNIT 612-1  
CAMBRIDGE, MA 02141

8-61  
EBERT RONALD S & SUSAN EBERT TRS CANAL PARK 6  
UNIT 604 REALTY TRUST  
6 CANAL PARK - UNIT 604-II  
CAMBRIDGE, MA 02141

8-61  
STASSEN NICOLE NETHERLAND REALTY TRUST  
60 CHALET CIRCLE  
ROCHESTER, NY 14618

8-61  
SUN, LILY  
6 CANAL PARK - UNIT 401  
CAMBRIDGE, MA 02141

8-61  
CHEN PAUL TAK HAO & PATRICK TA CHI CHEN  
LEE ANITA TAYIN CHEN ET AL  
4 CANAL PARK - UNIT 208  
CAMBRIDGE, MA 02141

8-61  
WANG SILAS L TRAN KATHY M  
6 CANAL PARK, 610  
CAMBRIDGE, MA 02141

8-61  
PRASAD HOMES CANAL PARK LLC  
26 LACONIA ST  
LEXINGTON, MA 02420

8-61  
LIM, JONGWON BOOYONG S.LIM  
254 EAST EMERSON RD  
LEXINGTON, MA 02420

8-61  
NG, RANDY SHEK SANG & ALICE NG  
4 CANAL PARK - UNIT 401-1  
CAMBRIDGE, MA 02141

8-61  
ROSENZWEIG, JOSHUA M &  
PRIYADARSHINI S PATHAK  
6 CANAL PARK - UNIT 201-II  
CAMBRIDGE, MA 02141

8-61  
STONE, BETTY W  
6 CANAL PARK - UNIT 605-II  
CAMBRIDGE, MA 02141

8-61  
ALOISI, ANDREW  
TRS CLAUDIA A VIGLIONE REALTY TR  
156 STATE ST  
BOSTON, MA 02109

8-61  
WENTEN, MADE R PARMINDER K WENTEN TRS  
356 MATTISON DR  
CONCORD, MA 01742

8-61  
YAO, XIAOHUA  
4 CANAL PARK - UNIT 511  
CAMBRIDGE, MA 02141

8-61  
BRITTINGHAM, BARBARA E TRS BARBARA  
ELIZABETH BRITTINGHAM REV TR  
6 CANAL PARK - UNIT 701-II  
CAMBRIDGE, MS 02141

8-61  
GRIGOROVA, NATALIA  
4 CANAL PARK - UNIT 408  
CAMBRIDGE, MA 02141

8-89  
CAMBRIDGESIDE PARTNERS LLC,  
10 STATE HOUSE SQ - FLOOR 15  
HARTFORD, CT 06103

8-61  
CABRE-BORES, NURIA TRS THE NURIA CABRE-  
BORES LIVING TR  
4 CANAL PARK - UNIT 207  
CAMBRIDGE, MA 02141

10 Canal Pt

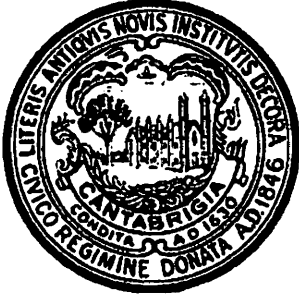
797

11-146  
ARE-MA REGION NO 94 LLC  
26 N EUCLID AVE  
PASADENA, CA 91101

11-47 / 8-90  
CITY OF CAMBRIDGE  
C/O YI-AN HUANG

11-47 / 8-90  
CAMBRIDGE CITY OF COMM. DEV.  
57 INMAN ST  
CAMBRIDGE, MA 02139

11-47 / 8-90  
CITY OF CAMBRIDGE  
C/O NANCY GLOWA  
CITY SOLICITOR



CITY OF CAMBRIDGE, MASSACHUSETTS

# PLANNING BOARD

CITY HALL ANNEX, 344 BROADWAY, CAMBRIDGE, MA 02139

June 15, 2023

To: The Board of Zoning Appeal

From: The Planning Board

RE: BZA-220600 10 Canal Park

The Planning Board reviewed this BZA application to modify the existing wireless communications facility during a meeting on June 13, 2023 and decided to forward the following comments to BZA.

The Board decided to forward to BZA the attached memo from the Community Development Department to consider the suggestions noted in the memo to reduce the visual impacts of the installation.



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**CITY OF CAMBRIDGE**  
Community Development Department

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**IRAM FAROOQ**  
Assistant City Manager for  
Community Development

**SANDRA CLARKE**  
Deputy Director  
Chief of Administration

**KHALIL MOGASSABI**  
Deputy Director  
Chief of Planning

To: Planning Board

From: Community Development Department (CDD) Staff

Date: June 8, 2023

Re: **Wireless Antenna Installations: 10 Canal Park, 51 Brattle Street and 120 Vassar St**

**BZA-220600 (T-Mobile) & BZA-225273 (AT&T), 10 Canal Park**

These two proposals involve modification of an existing wireless antenna installation located on the rooftop penthouse of 10 Canal Park. The T-Mobile proposal involves replacing ten (10) existing panel antennas with eight (8) new panel antennas and associated equipment. The AT&T proposal involves replacing twelve (12) existing panel antennas with nine (9) new panel antennas and associated equipment.

Since the installation is located on the rooftop penthouse, which is setback, it is reasonably well-concealed from public view. Additionally, the number of antennas and RRUs is also being reduced, which helps reduce visual clutter. However, there remains considerable existing antenna equipment in place, and the new antennas have varying dimensions, and appear to interrupt the parapet line.

Staff also note that it is difficult to ascertain the extent of changes as existing and proposed elevations of all penthouse façades are not included in the application materials. In addition, the AT&T proposal utilizes an outdated view (location 3) of the existing northwest façade for the photosimulations.

The following design improvements should be considered:

1. If feasible, the antennas should be moved down the penthouse façade to avoid visually interrupting the coping stone (top of parapet).
2. Since the new antennas all have varying sizes, if feasible, consider utilizing antenna covers/sheaths so that the new antennas have either similar dimensions, or are more symmetrically laid out.
3. Utilize the smallest mounting brackets available so that the antennas can be mounted as close as possible to the chimney surface.
4. Remove unused pipe mounts.
5. All painted and wrapped materials, including existing equipment, cabling, and mounts, should have a consistent matte finish. A darker, reddish-brown finish would better blend with the existing brickwork than the existing color finishes and the proposed color depicted in the photosimulations.

**BZA-221274, 51 Brattle Street**

The proposal involves modification of an existing wireless antenna installation on top of Washington Court in Harvard Square. Nine (9) existing panel antennas will be replaced with 9 new panel antennas and associated equipment. All antennas will be façade mounted in the same locations as the existing antennas and will be painted to match the color of the penthouse façade.

Despite being visible on the penthouse, this installation is generally well-designed and unobtrusive. The existing rooftop incorporates many appurtenances, and the proposed antenna color finish appears to be a good match with the existing façade. Since the new antennas all have varying dimensions, some refinements are suggested to help improve the new layout.

1. If feasible, consider utilizing antenna covers/sheaths so that the new antennas have similar dimensions, or can be more symmetrically laid out.
2. Utilize the smallest mounting brackets available so that the antennas can be mounted as close as possible to the façade.
3. If feasible, all cabling, including existing exposed cables, should be concealed and not located on the exterior of the penthouse.

**BZA-223702, 120 Vassar Street**

The proposal involves expansion of an existing wireless antenna installation on the façade of MIT's Howard Johnson Athletics Center. Two (2) existing panel antennas will be replaced with nine (9) new panel antennas and eight (8) existing RRUs will be replaced with six (6) new RRUs. All visible replaced and added antennas will be painted to match the color of the existing building.

Since this proposal expands the existing installation there are some additional visual impacts. Furthermore, as in the cases above, the new antennas all have varying dimensions and appear to interrupt the parapet line. The following refinements are suggested to help improve the new layout.

1. If feasible, the antennas should be moved down the façade to avoid visually interrupting the coping stone (top of parapet).
2. If feasible, consider utilizing antenna covers/sheaths so that the new antennas have similar dimensions.
3. Utilize the smallest mounting brackets available so that the antennas can be mounted as close as possible to the façade.
4. Ensure all exposed cables, mounts and wires are tightly fixed to the façade.



## PROJECT INFORMATION

**SITE NAME:** BO035/10 CANAL PARK  
**SITE NUMBER:** 4DE7035F  
**SITE ADDRESS:** 10 CANAL PARK  
CAMBRIDGE, MA  
**COUNTY:** MIDDLESEX  
**MUNICIPALITY:** CITY OF CAMBRIDGE  
**ZONING:** PUD-4  
**LATITUDE:** N 42°22'07.107" (42.36864148°) (NAD83)  
**LONGITUDE:** W 71°04'30.4098" (-71.0751137°) (NAD83)  
**TYPE OF SITE:** ROOFTOP  
**STRUCTURE HEIGHT:** 72'-0" AGL  
**ANTENNA CENTER:** 82'-0" & 83'-0" AGL  
**GROUND ELEVATION:** 6.75'-0" (NAVD 88)  
**BUILDING OWNER NAME:** C/O US REAL ESTATE INVEST FUND, LLC  
**BUILDING OWNER ADDRESS:** 1270 SOLDIERS FIELD ROAD  
CAMBRIDGE, MA 02135  
**APPLICANT:** T-MOBILE NORTHEAST, LLC.  
15 COMMERCE WAY, SUITE B  
NORTON, MASSACHUSETTS 02766  
**APPLICANT PHONE:** (508) 286-2700  
**APPLICANT FAX:** (508) 286-2893



# T-Mobile NORTHEAST LLC

**SITE NAME:** BO035/10 CANAL PARK  
**SITE ID:** 4DE7035F  
**ADDRESS:** 10 CANAL PARK  
CAMBRIDGE, MA

**TECHNOLOGY:** 67E5D998E 6160  
**MODIFICATION:** ANCHOR\_PHASE 1 L700\_CMP4-4X2

## T-Mobile NORTHEAST LLC

T-MOBILE NORTHEAST, LLC.  
 15 COMMERCE WAY, SUITE B  
 NORTON, MA 02766  
 PHONE: (508) 286-2700  
 FAX: (508) 286-2893



750 W CENTER ST, SUITE 301  
 WEST BRIDGEWATER, MA 02379  
 PHONE: 781.713.4725

### REVISIONS

REV	DATE	DESCRIPTION	BY
5	06/19/23	ISSUED FOR CONSTRUCTION	SS
4	04/21/23	REVISED PER COMMENTS	AB
3	04/04/23	REVISED PER COMMENTS	SS
2	03/07/23	REVISED TMO DESIGN	AB
1	11/22/21	RFDS UPDATE	MP
0	06/04/21	ISSUED FOR CONSTRUCTION	SS
A	01/22/21	ISSUED FOR REVIEW	KH

**DESIGNED BY:** AB  
**APPROVED BY:** WRD



**DATE: 04/21/2023**

IT IS A VIOLATION OF LAW FOR ANY PERSON UNLESS THEY ARE ACTING UNDER THE DIRECTION OF A LICENSED PROFESSIONAL ENGINEER TO ALTER THIS DOCUMENT. UNLESS EXPLICITLY AGREED TO BY THE ENGINEER IN WRITING, THE ENGINEER DISCLAIMS ALL LIABILITY ASSOCIATED WITH THE REUSE, ALTERATION OR MODIFICATION OF THE CONTENTS HEREIN.

**SITE NAME:** BO035/10 CANAL PARK

**SITE ID:** 4DE7035F

**SITE ADDRESS:** 10 CANAL PARK  
CAMBRIDGE, MA  
MIDDLESEX COUNTY

**SHEET TITLE:** TITLE SHEET

**DRAWING:** T-1

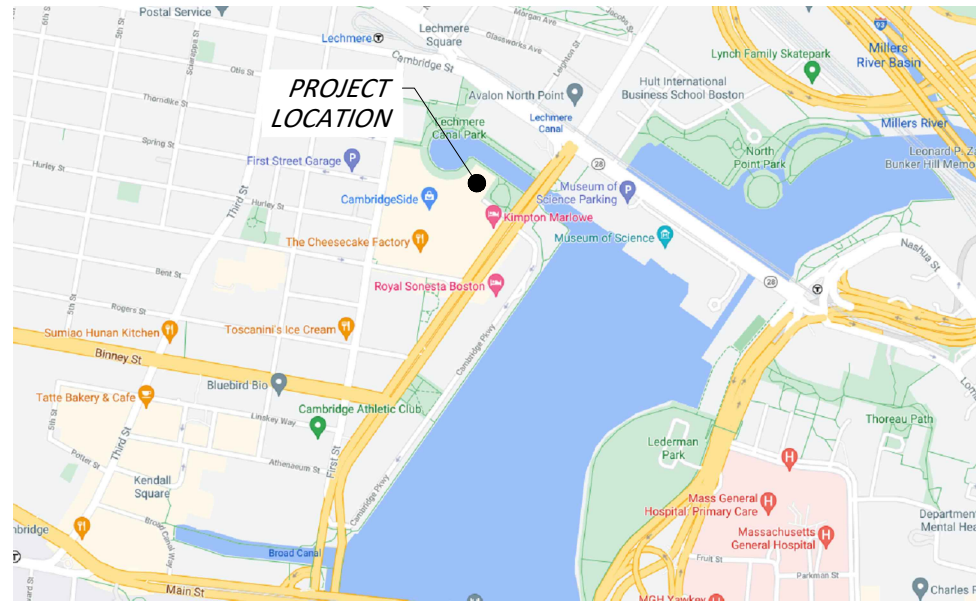
## PROJECT DIRECTORY

**ENGINEERING FIRM:**  
 CENTERLINE COMMUNICATIONS  
 750 WEST CENTER ST, SUITE 301  
 WEST BRIDGEWATER, MA 02379  
 DEREK CREASER (617) 306-3034

**CARRIER:**  
 T-MOBILE NORTHEAST, LLC.  
 15 COMMERCE WAY, SUITE B  
 NORTON, MA 02766  
 PHONE: (508) 286-2700  
 FAX: (508) 286-2893



Know what's below.  
 Call before you dig.



VICINITY MAP  
NOT TO SCALE



LOCATION MAP  
NOT TO SCALE

## GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF T-MOBILE. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSE OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
2. THE FACILITY IS AN UNMANNED PRIVATE AND SECURED EQUIPMENT INSTALLATION. IT IS ONLY ACCESSED BY TRAINED TECHNICIANS FOR PERIODIC ROUTINE MAINTENANCE AND THEREFORE DOES NOT REQUIRE ANY WATER OR SANITARY SEWER SERVICE. THE FACILITY IS NOT GOVERNED BY REGULATIONS REQUIRING PUBLIC ACCESS PER ADA REQUIREMENTS.
3. CONTRACTOR SHALL VERIFY ALL PLANS AND EXISTING DIMENSIONS AND CONDITIONS ON THE JOB SITE AND SHALL IMMEDIATELY NOTIFY THE T-MOBILE REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

## SCOPE OF WORK

1. REMOVE NINE EXISTING ANTENNAS
2. INSTALL EIGHT NEW ANTENNAS
3. REMOVE THREE RRUS
4. INSTALL SIX NEW RRUS
5. INSTALL THREE NEW 6x24 HYBRID CABLES
6. REMOVE RBS 2106 EQUIPMENT CABINET
7. REMOVE ALL UNUSED CABLES AND EQUIPMENT

## DRAWING INDEX

NO.	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES, RF NOTES, CABLING NOTES
A-1	ROOF PLAN
A-2	EQUIPMENT LAYOUT
A-3	EQUIPMENT DETAILS
A-4	NORTHWEST ELEVATION
A-5	ANTENNA PLAN & SCHEDULE
SN-1	STRUCTURAL NOTES & SPECIAL INSPECTIONS
S-1	ANTENNA MOUNTING DETAILS
S-1.1	RRU MOUNTING DETAILS
S-2	STRUCTURAL DETAILS
G-1	GROUNDING & ONE LINE DIAGRAM

## DRAWING SCALE NOTES:

THESE DRAWINGS ARE FORMATTED TO BE FULL SIZE AT 22"x34". CONTRACTOR SHALL VERIFY ALL PLANS & EXISTING DIMENSIONS & CONDITIONS ON THE JOB SITE & SHALL IMMEDIATELY NOTIFY THE ENGINEER IN WRITING OF ANY DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.

## RF NOTES

- ACTUAL LENGTHS SHALL BE DETERMINED PER SITE CONDITION BY SUBCONTRACTOR
- THE DESIGN IS BASED ON RF DATA SHEETS, SIGNED AND APPROVED.
- RADIO SIGNAL CABLE AND RACEWAY SHALL COMPLY WITH THE REQUIREMENTS OF THE NATIONAL ELECTRICAL CODE (NEC, NFPA 70), CHAPTER 8.
- ALL SPECIFIED MATERIAL FOR EACH LOCATION (E.G. OUT DOORS-OCCUPIED, INDOORS-UNOCCUPIED, PLENUMS, RISER SHAFTS, ETC.) SHALL BE APPROVED, LISTED, OR LABELED AS REQUIRED BY THE NEC.
- RADIO SIGNAL CABLE SHALL BE SUPPORTED AT MINIMUM OF EVERY THREE (3) FEET EXCEPT INSIDE MONOPOLES OR MONOPOLES WHERE CABLE AND CONNECTOR MANUFACTURERS SUPPORT RECOMMENDATIONS SHALL BE FOLLOWED. MANUFACTURER RECOMMENDATION CABLES SUPPORT ACCESSORIES SHALL BE USED.
- THE OUTDOOR CABLE SUPPORT SYSTEM SHALL BE PROVIDED WITH AN ICE SHIELD TO SUPPORT AND PROTECT ANTENNA CABLE RUNS.
- DRIP LOOPS SHALL BE REQUIRED ON ALL OUTSIDE CABLES. CABLES SHALL BE SLOPED AWAY FROM BUILDING OR OUTDOOR BTS CABINETS TO PREVENT WATER FROM ENTERING THROUGH THE COAXIAL CABLE PORT.
- ALL FEEDER LINE AND JUMPER CONNECTORS SHALL BE 7/16 DIN CABLE CONNECTORS THAT MEET IP68 STANDARDS.
- 7/16 DIN CONNECTORS REQUIRE NO ADDITIONAL WEATHER PROOFING IN INDOOR APPLICATIONS IF INSTALLED AND TORQUED PROPERLY. IN OUTDOOR APPLICATIONS WEATHER PROOFING IS REQUIRED AND THE FOLLOWING PROCEDURE SHOULD BE FOLLOWED.
- USING WEATHERPROOFING KIT APPROVED BY CABLE MANUFACTURER AND CONTRACTOR START TAPE APPROXIMATELY 5 INCHES FROM THE CONNECTOR, AND WRAP 2 INCHES TOWARD THE CONNECTOR, THEN REVERSE THE TAPE SO THAT THE STICKY SIDE IS UP. TAPE OVER THE CONNECTOR OR SURGE ARRESTOR UNTIL THREE (3) TO FOUR (4) INCHES BEYOND THE CONNECTOR AND REVERSE AGAIN WITH THE STICKY SIDE DOWN FOR ANOTHER INCH OR TWO. PASS THE BUTYL RUBBER AND FINISH WITH A FINAL LAYER OF TAPE.
- ANTENNAS SHALL BE PAINTED, WHEN REQUIRED, BY THE LANDLORD OR AUTHORITY OF HAVING JURISDICTION IN ACCORDANCE WITH ANTENNA MANUFACTURERS' SURFACES PREPARATION AND PAINTING REQUIREMENTS.
- CABLE SHIELDS AND TOWER CONDUITS SHALL BE GROUNDED AT THE TOP OF THE TOWER WITHIN 10 FEET OF THEIR CONNECTORS, AND AT THE BOTTOM OF THE TOWER ABOUT 6 INCHES BEFORE THEY TURN TOWARD THE FACILITY. THEY SHALL BE GROUNDED AT THE MIDPOINT OF THE TOWERS THAT ARE BETWEEN 60 FEET AND 200 FEET HIGH, AND AT INTERVALS OF 60 FEET OR LESS ON TOWERS THAT ARE HIGHER THAN 200 FEET.

## ANTENNA CABLE & SCHEDULING NOTES

- SUBCONTRACTOR SHALL VERIFY THE ACTUAL LENGTH IN THE FIELD BEFORE INSTALLATION.
- TAG AND COLOR CODE ALL MAIN CABLES AT LOCATIONS PER T-MOBILE ANTENNA CABLE MARKING STANDARD:
  - TOP OF TOWER END OF MAIN COAX
  - BOTTOM OF TOWER END OF MAIN COAX
  - DIRECTLY BEFORE AND AFTER RF EQUIPMENT
  - END OF JUMPERS AT BTS EQUIPMENT
- ANTENNAS SHALL BE PROCURED AND INSTALLED WITH DOWN TILT MOUNTING BRACKETS SUPPLIED BY ANTENNA MANUFACTURER.
- PRIOR APPROVAL IS REQUIRED BEFORE PERFORMING ANY WORK ON EXISTING CELL SITE EQUIPMENT.

## GENERAL NOTES

- FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:  
CONTRACTOR - CENTERLINE COMMUNICATIONS  
SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)  
OWNER - T-MOBILE MOBILITY
- PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.
- ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
- DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED 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.
- "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.
- THE SUBCONTRACTOR 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 SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
- SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
- THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
- SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.
- SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
- ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
- ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

- ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
- CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF T-MOBILE MOBILITY SITES."
- SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
- THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
- 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.
- APPLICABLE BUILDING CODES:  
SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.

18. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION. ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.

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BUILDING CODE: IBC 2015 & MA STATE BUILDING 780 CMR 9TH EDITION  
ELECTRICAL CODE: 2020 NATIONAL ELECTRICAL CODE  
LIGHTNING CODE: NFPA 780-2020

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

AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE;

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

MANUAL OF STEEL CONSTRUCTION, ASD, FIFTEENTH EDITION;

TELECOMMUNICATIONS INDUSTRY ASSOCIATION (TIA) 222-H, STRUCTURAL STANDARDS FOR STEEL

ANTENNA TOWER AND ANTENNA SUPPORTING STRUCTURES; REFER TO ELECTRICAL DRAWINGS FOR SPECIFIC ELECTRICAL STANDARDS.

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

# T-Mobile NORTHEAST LLC

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WEST BRIDGEWATER, MA 02379  
PHONE: 781.713.4725

### REVISIONS

NO.	DATE	DESCRIPTION	BY
5	06/19/23	ISSUED FOR CONSTRUCTION	SS
4	04/21/23	REVISED PER COMMENTS	AB
3	04/04/23	REVISED PER COMMENTS	SS
2	03/07/23	REVISED TMO DESIGN	AB
1	11/22/21	RFDS UPDATE	MP
0	06/04/21	ISSUED FOR CONSTRUCTION	SS
A	01/22/21	ISSUED FOR REVIEW	KH
REV	DATE	DESCRIPTION	BY

DESIGNED BY: AB	APPROVED BY: WRD
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**DATE: 04/21/2023**

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SITE NAME:  
**BO035/10 CANAL PARK**

SITE ID:  
**4DE7035F**

SITE ADDRESS:  
**10 CANAL PARK  
CAMBRIDGE, MA  
MIDDLESEX COUNTY**

SHEET TITLE:  
**GENERAL NOTES, RF NOTES,  
CABLING NOTES**

DRAWING:  
**GN-1**

## ABBREVIATIONS

AGL	ABOVE GRADE LEVEL	G.C.	GENERAL CONTRACTOR	RF	RADIO FREQUENCY
AWG	AMERICAN WIRE GAUGE	MGB	MASTER GROUND BUS		
BCW	BARE COPPER WIRE	MIN	MINIMUM	TBD	TO BE DETERMINED
BTS	BASE TRANSCEIVER STATION	PROPOSED	NEW	TBR	TO BE REMOVED
EXISTING	EXISTING	N.T.S.	NOT TO SCALE	TBRR	TO BE REMOVED AND REPLACED
EG	EQUIPMENT GROUND	REF	REFERENCE	TYP	TYPICAL
EGR	EQUIPMENT GROUND RING	REQ	REQUIRED		

# NOTES

- CONTRACTOR SHALL MAKE A UTILITY 811 DIG SAFE CALL TO LOCATE ALL UTILITIES PRIOR TO EXCAVATING.
- REFERENCE STRUCTURAL ANALYSIS BY CENTERLINE COMMUNICATIONS, DATED 04/07/2023, FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
- REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA MODELS AND SETTINGS.

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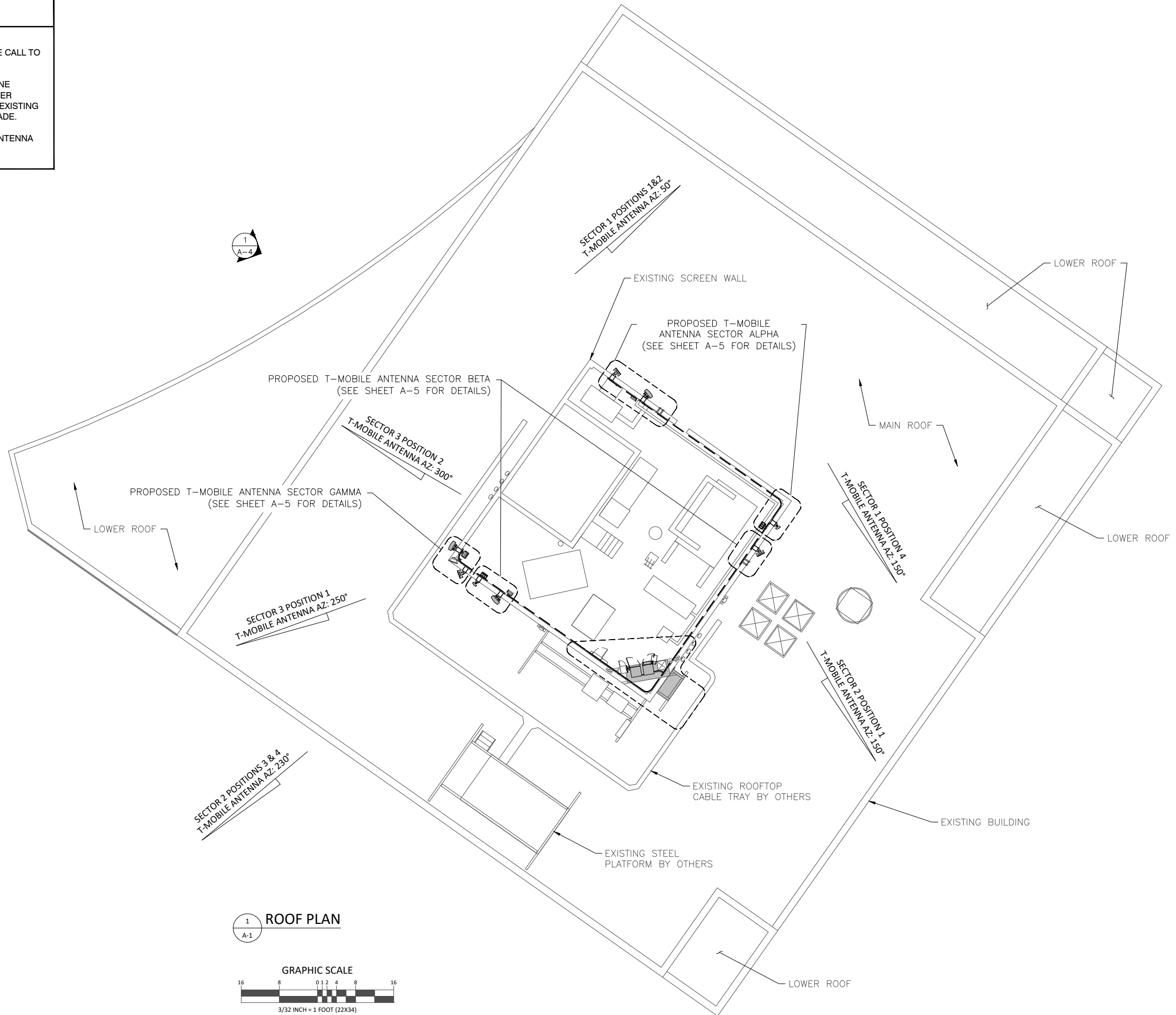


DATE: 04/21/2023

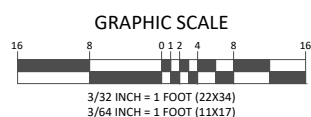
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SITE ID: <b>4DE7035F</b>
SITE ADDRESS: <b>10 CANAL PARK CAMBRIDGE, MA MIDDLESEX COUNTY</b>

SHEET TITLE: <b>ROOF PLAN</b>
DRAWING: <b>A-1</b>



1 ROOF PLAN  
A-1

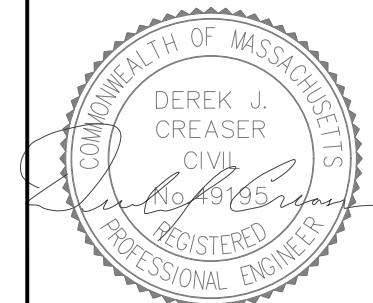




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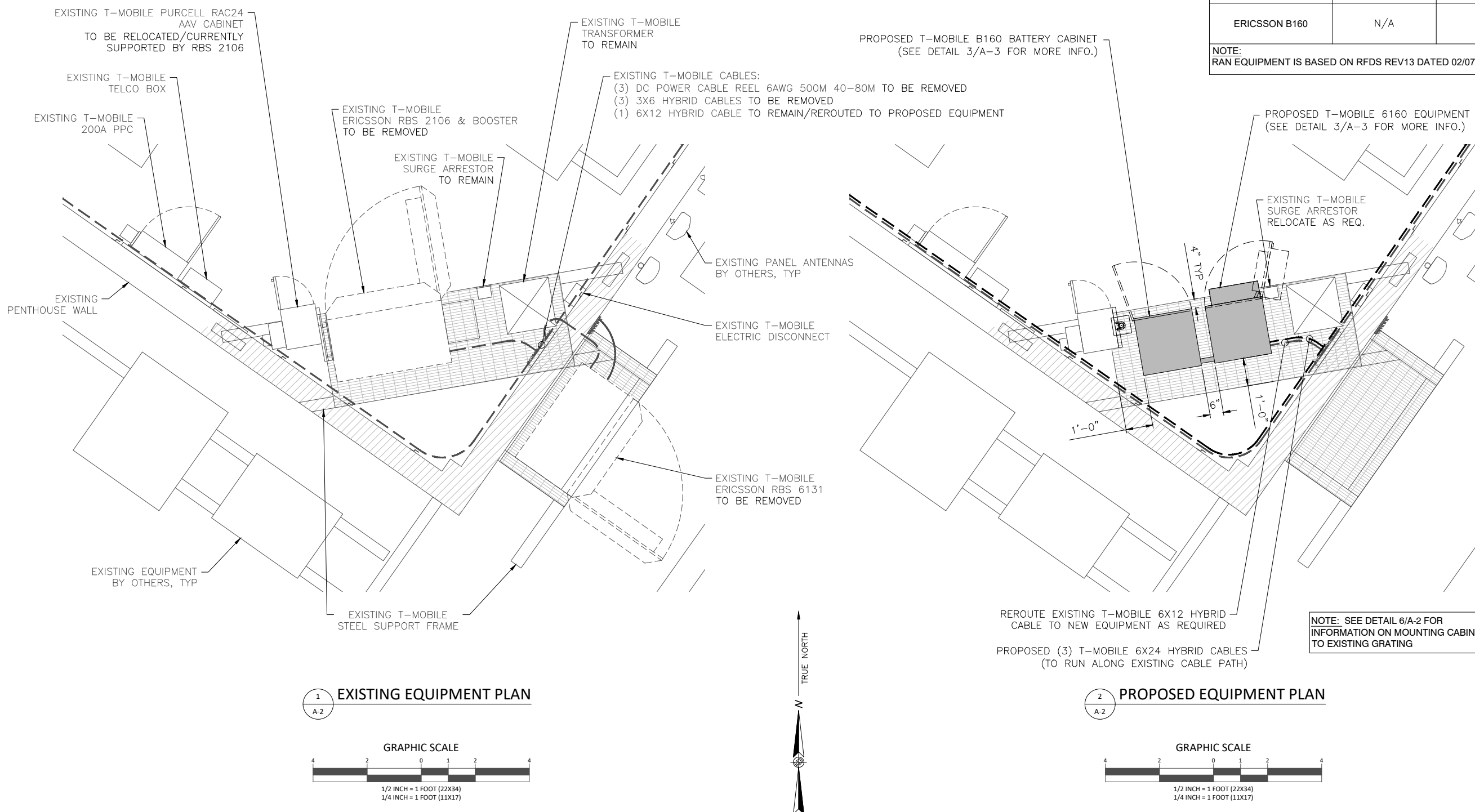
SHEET TITLE:  
**EQUIPMENT LAYOUT**

DRAWING:  
**A-2**

RAN EQUIPMENT		
CABINET	EXISTING	PROPOSED
ERICSSON RBS 2106	N/A	N/A (REMOVED)
ERICSSON RBS 6131	(6) RU22 RADIOS (1) DUW30 (1) DUG20 (1) BB 5216 (1) XMU	N/A (REMOVED)
ERICSSON 6160 AC V1	N/A	(3) RP 6651 (1) RBS 6601 w/ (1) DUG20 FROM 6131
ERICSSON B160	N/A	N/A

NOTE:  
RAN EQUIPMENT IS BASED ON RFDS REV13 DATED 02/07/2023

NOTE:  
REMOVE THE EXISTING WOOD SLEEPER BLOCKS AT EACH CORNER OF THE PLATFORM AND ANCHOR THE PLATFORM TO THE EXISTING CONCRETE CURB. FURTHER DESIGN MAY BE REQUIRED. FOR MORE INFORMATION REFER TO THE STRUCTURAL ANALYSIS REPORT COMPLETED BY CENTERLINE COMMUNICATIONS DATED 1/11/2021.



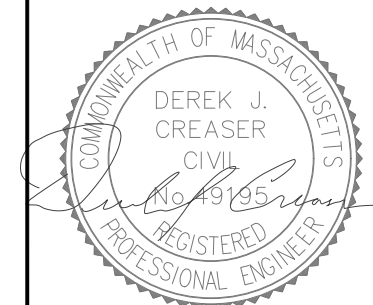


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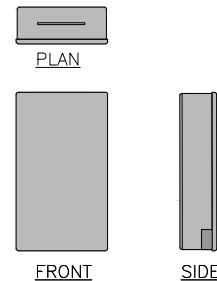
SHEET TITLE:	EQUIPMENT DETAILS
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DRAWING: **A-3**

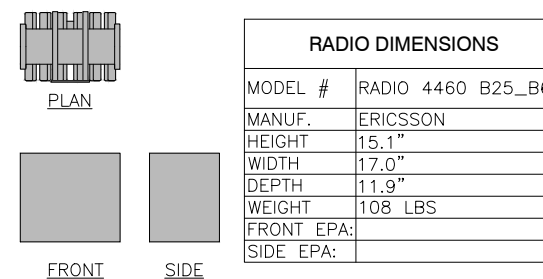
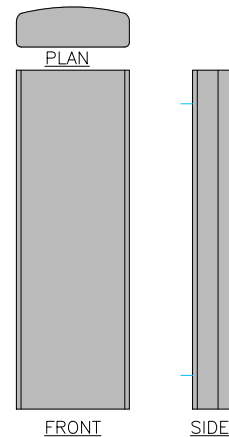
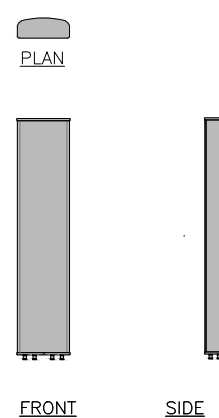
ERICSSON AIR 6419 B41	
MODEL #	AIR 6419 B41
MANUF.	ERICSSON
HEIGHT	34.5"
WIDTH	20.0"
DEPTH	8.0"
WEIGHT	68.5 LBS W/O MTG HARDWARE
FRONT EPA:	4.8 FT <sup>2</sup>
SIDE EPA:	1.92 FT <sup>2</sup>

COMMSCOPE VV-65A-R1	
MODEL #	VV-65A-R1
MANUF.	COMMSCOPE
HEIGHT	54.7"
WIDTH	12.1"
DEPTH	4.6"
WEIGHT	23.81 LBS W/O MTG HARDWARE 32.41 LBS W/ MTG HARDWARE
FRONT EPA:	4.06 FT <sup>2</sup>
SIDE EPA:	1.75 FT <sup>2</sup>

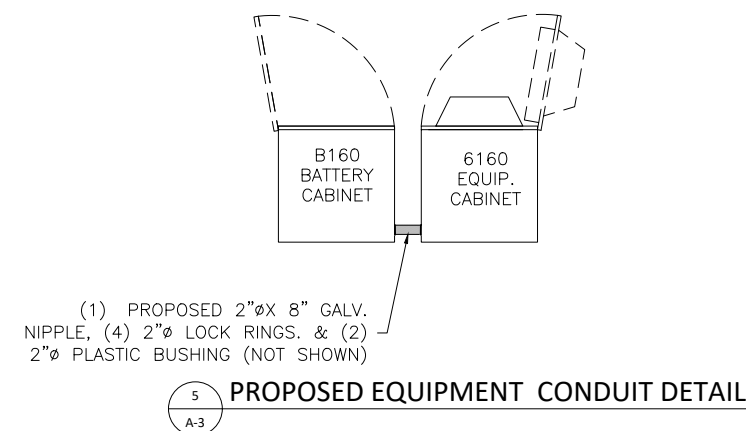
RFS APXVAALL18_43-U-NA20	
MODEL #	APXVAALL18_43-U-NA20
MANUF.	RFS
HEIGHT	72.0"
WIDTH	24.0"
DEPTH	8.5"
WEIGHT	93.0 LBS W/O MTG HARDWARE 118.3 LBS W/ MTG HARDWARE
FRONT EPA:	12.01 FT <sup>2</sup>
SIDE EPA:	4.25 FT <sup>2</sup>



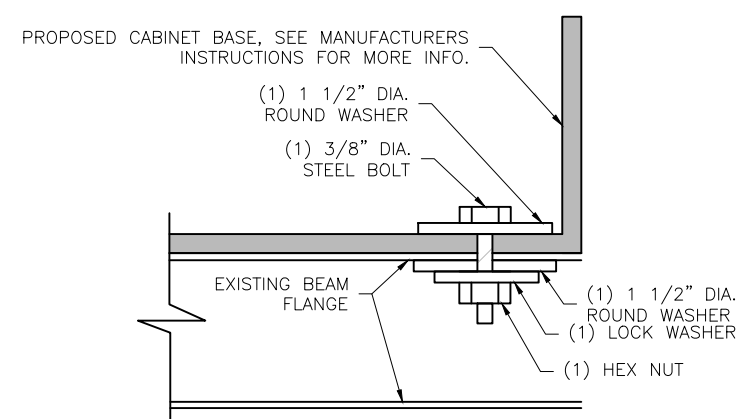
1 ANTENNA DETAILS  
A-3



2 RADIO DETAILS  
A-3



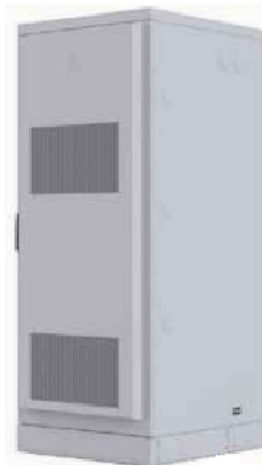
5 PROPOSED EQUIPMENT CONDUIT DETAIL  
A-3



6 CABINET FASTENER DETAIL  
A-2



6160 AC ENCLOSURE	
CAPACITY	19U(19" RACK)
RACK SPACE USER EQUIP. HARDWARE CAPABILITIES	POWER AND CPRI SUPPORT FOR MULTI-STANDARD REMOTE RADIOS (RRU OR AIR) ERS BASEBAND AND TRANSPORT UNITS Li-ION BATTERIES 3PP EQUIPMENT ADDITIONAL POWER FEED OPTIONS AVAILABLE
MECHANICAL SPECIFICATIONS	
WEIGHT	320lbs (INCLUDING ACTIVE EQUIPMENT)
DIMENSIONS (HWD)	63"x26"x26" (INCLUDING BASE FRAME)
BASE FRAME HEIGHT	6"
MOUNTING POSITION	GROUND
ENCLOSURE MATERIAL	ALUMINUM
COLOR	POWDER PAINT NCS 2002-B
DOOR	FRONT ACCESS
RACK TYPE	19" (IEC 60297-3-100)
LOCK TYPE	CYLINDER/PAD LOCK
POWER SYSTEM	
INPUT VOLTAGE	3P+N+PE 346/200-415/240 VAC 2P+N+PE 208/120-220/127 VAC 1P+N+PE 200-250 VAC



B160 BATTERY ENCLOSURE	
CAPACITY	
VRLA12V:	100Ah/150Ah/170Ah/190Ah/210Ah
Li-ION	24U 19"/23"
SODIUM-NICKEL	3xFIAMM
ELECTRICAL SPECIFICATIONS	
DC OUTPUT	-48VDC/200A
BATTERY BREAKERS	2x125/2p
ALARMS	DOOR OPEN, CLIMATE FAILURE, MCB CONNECTION
MECHANICAL SPECIFICATIONS	
WEIGHT	295 lbs (PLUS 3 STRINGS OF RECOMMENDED 190 aHR FOR ADDITIONAL 1588LBS)
DIMENSIONS (HWD)	63"x26"x26" (INCLUDING BASE FRAME)
BASE FRAME HEIGHT	6"
MATERIAL	GALVANIZED STEEL (180g/m <sup>2</sup> )
COLOR	POWDER PAINT NCS 2002-B
LOCKING TYPE	CYLINDER/PAD LOCK

3 PROPOSED EQUIPMENT CABINET SPECIFICATIONS  
A-3

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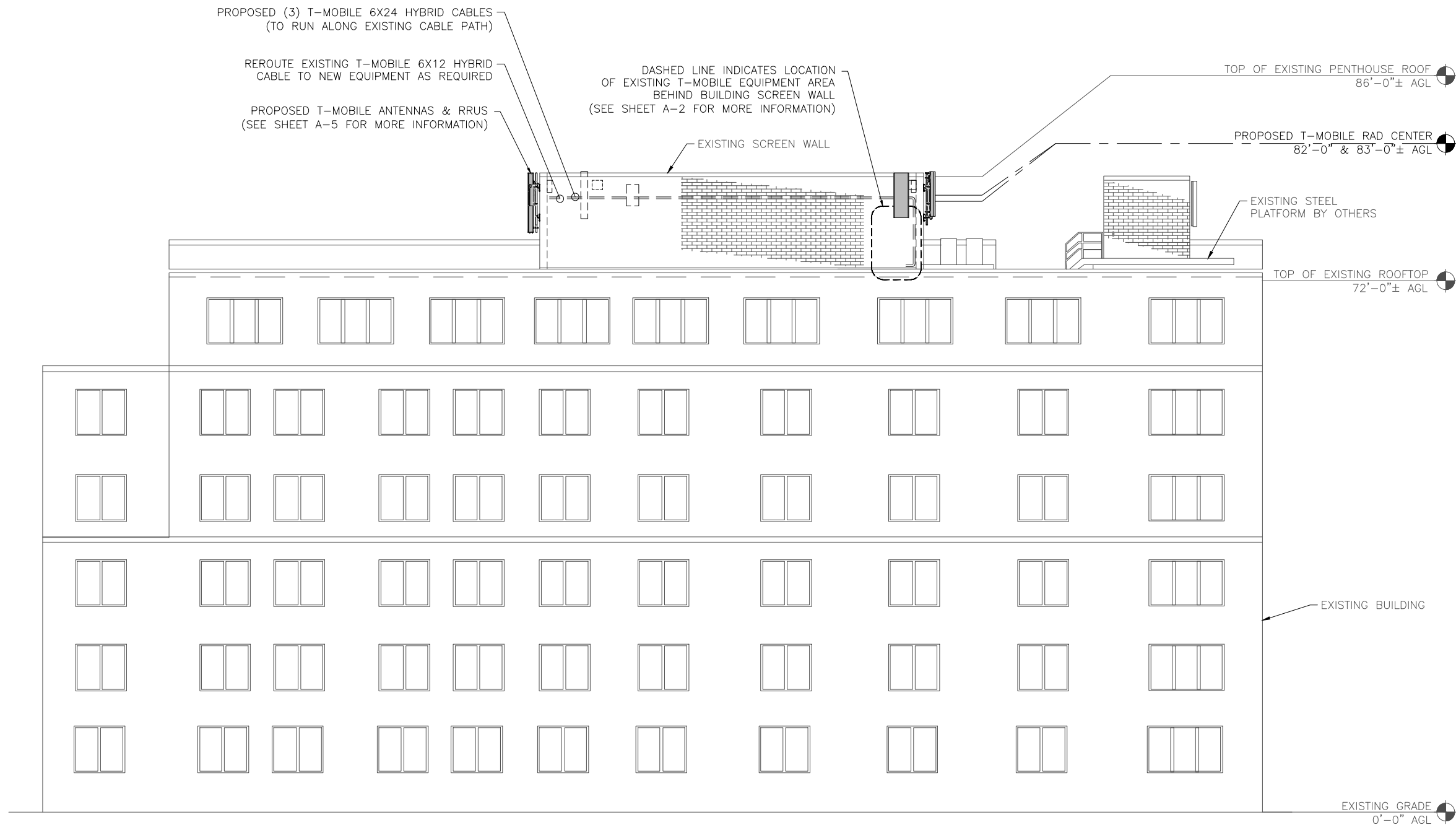
SITE NAME:  
BO035/10 CANAL PARK

SITE ID:  
4DE7035F

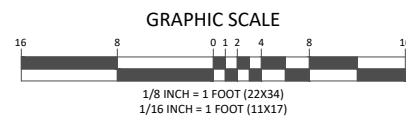
SITE ADDRESS:  
10 CANAL PARK  
CAMBRIDGE, MA  
MIDDLESEX COUNTY

SHEET TITLE:  
NORTHWEST ELEVATION

DRAWING:  
A-4



1 NORTHWEST ELEVATION  
A-4





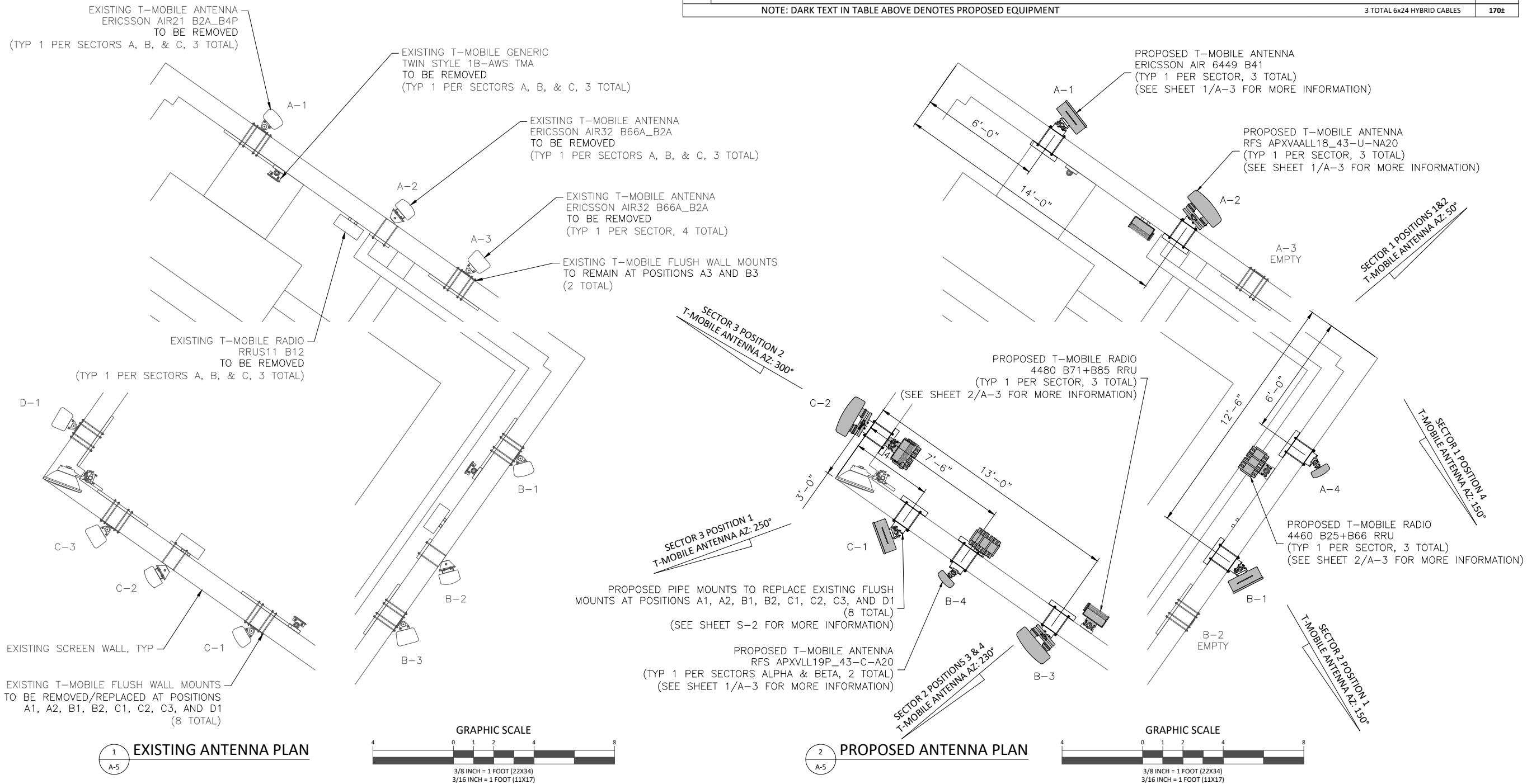
- ANTENNA & CABLE NOTES:**
- REFERENCE MOUNT ANALYSIS BY CENTERLINE COMMUNICATIONS, DATED 04/072023, FOR FURTHER INFORMATION REGARDING THE CAPACITY OF THE EXISTING STRUCTURE TO SUPPORT THIS EQUIPMENT UPGRADE.
  - REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.
  - REMOVE ALL UNUSED CABLE, RRU'S AND TMAs.
  - PAINT ANTENNAS AND EQUIP. TO MATCH EXISTING.

### ANTENNA & CABLE SCHEDULE:

LOCATION	AZIMUTH	RAD CENTER	STATUS	TECHNOLOGY	ANTENNA MODEL NO.	MECH DOWNTILT	ELEC DOWNTILT	CABLES	DIPLEXERS	TMA/RRU	CABLE SIZE	CABLE LENGTH	
ALPHA	A-1	50°	83'-0"	PROPOSED	L2500, N2500	AIR6419 B41	0°	N/A	(2) FIBER JUMPER (x2)	N/A	N/A	SHARED	N/A
	A-2	50°	82'-0"	PROPOSED	L700, L600, N600	APXVAALL18_43-U-NA20	0°	N/A	(2) COAX JUMPER (X2) (2) FIBER JUMPER	N/A	RRUS 4480 B71/B85	6x12 HYBRID	110±
	A-3	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A	SHARED	N/A	
	A-4	150°	82'-0"	PROPOSED	L1900, G1900, L2100, U2100	APXVLL19P_43-C-A20	0°	N/A	(2) FIBER JUMPER 15FT (2) COAX JUMPER 10FT (x2)	N/A	RRUS 4460 B25/B66	SHARED	N/A
BETA	B-1	150°	83'-0"	PROPOSED	L2500, N2500	AIR6419 B41	0°	N/A	(2) FIBER JUMPER (x2)	N/A	N/A	SHARED	N/A
	B-2	150°	N/A	N/A	N/A	N/A	N/A	N/A	N/A	RRUS 4480 B71/B85	6x12 HYBRID	110±	
	B-3	230°	82'-0"	PROPOSED	L700, L600, N600	APXVAALL18_43-U-NA20	0°	N/A	(2) COAX JUMPER (X2) (2) FIBER JUMPER	N/A	N/A	SHARED	N/A
	B-4	230°	82'-0"	PROPOSED	L1900, G1900, L2100, U2100	APXVLL19P_43-C-A20	0°	N/A	(2) FIBER JUMPER 15FT (2) COAX JUMPER 10FT (x2)	N/A	RRUS 4460 B25/B66	SHARED	N/A
GAMMA	G-1	250°	83'-0"	PROPOSED	L2500, N2500	AIR6419 B41	0°	N/A	(2) FIBER JUMPER (x2)	N/A	N/A	SHARED	N/A
	G-2	300°	82'-0"	PROPOSED	L700, L600, N600	APXVAALL18_43-U-NA20	0°	N/A	(2) COAX JUMPER (X2) (2) FIBER JUMPER	N/A	RRUS 4480 B71/B85 RRUS 4460 B25/B66	6x12 HYBRID	110±

NOTE: DARK TEXT IN TABLE ABOVE DENOTES PROPOSED EQUIPMENT

3 TOTAL 6x24 HYBRID CABLES      170±



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**REVISIONS**

REV	DATE	DESCRIPTION	BY
5	06/19/23	ISSUED FOR CONSTRUCTION	SS
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3	04/04/23	REVISED PER COMMENTS	SS
2	03/07/23	REVISED TMO DESIGN	AB
1	11/22/21	RFDS UPDATE	MP
0	06/04/21	ISSUED FOR CONSTRUCTION	SS
A	01/22/21	ISSUED FOR REVIEW	KH

DESIGNED BY: AB      APPROVED BY: WRD



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SITE NAME: BO035/10 CANAL PARK

SITE ID: 4DE7035F

SITE ADDRESS: 10 CANAL PARK  
CAMBRIDGE, MA  
MIDDLESEX COUNTY

SHEET TITLE: **ANTENNA PLAN & SCHEDULE**

DRAWING: **A-5**

**STRUCTURAL NOTES:**

- DESIGN REQUIREMENTS ARE PER STATE BUILDING CODE AND APPLICABLE SUPPLEMENTS, INTERNATIONAL BUILDING CODE, EIA/TIA-222-G STRUCTURAL STANDARDS FOR STEEL ANTENNA, TOWERS AND ANTENNA SUPPORTING STRUCTURES.
- CONTRACTOR SHALL VERIFY ALL DIMENSIONS AND CONDITIONS IN THE FIELD PRIOR TO FABRICATION AND ERECTION OF ANY MATERIAL. ANY UNUSUAL CONDITIONS SHALL BE REPORTED TO THE ATTENTION OF THE CONSTRUCTION MANAGER AND ENGINEER OF RECORD.
- DESIGN AND CONSTRUCTION OF STRUCTURAL STEEL SHALL CONFORM TO THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
- STRUCTURAL STEEL SHALL CONFORM TO ASTM A992 (Fy=50 ksi), MISCELLANEOUS STEEL SHALL CONFORM TO ASTM A36 UNLESS OTHERWISE INDICATED.
- STEEL PIPE SHALL CONFORM TO ASTM A500 "COLD-FORMED WELDED & SEAMLESS CARBON STEEL STRUCTURAL TUBING", GRADE B, OR ASTM A53 PIPE STEEL BLACK AND HOT-DIPPED ZINC-COATED WELDED AND SEAMLESS TYPE E OR S, GRADE B. PIPE SIZES INDICATED ARE NOMINAL. ACTUAL OUTSIDE DIAMETER IS LARGER.
- STRUCTURAL CONNECTION BOLTS SHALL BE HIGH STRENGTH BOLTS (BEARING TYPE) AND CONFORM TO ASTM A325 TYPE-X "HIGH STRENGTH BOLTS FOR STRUCTURAL JOINTS, INCLUDING SUITABLE NUTS AND PLAIN HARDENED WASHERS". ALL BOLTS SHALL BE 3/4" DIA UON.
- ALL STEEL MATERIALS SHALL BE GALVANIZED AFTER FABRICATION IN ACCORDANCE WITH ASTM A123 "ZINC (HOT-DIP GALVANIZED) COATINGS ON IRON AND STEEL PRODUCTS", UNLESS OTHERWISE NOTED.
- ALL BOLTS, ANCHORS AND MISCELLANEOUS HARDWARE SHALL BE GALVANIZED IN ACCORDANCE WITH ASTM A153 "ZINC-COATING (HOT-DIP) ON IRON AND STEEL HARDWARE", UNLESS OTHERWISE NOTED.
- FIELD WELDS, DRILL HOLES, SAW CUTS AND ALL DAMAGED GALVANIZED SURFACES SHALL BE REPAIRED WITH AN ORGANIC ZINC REPAIR PAINT COMPLYING WITH REQUIREMENTS OF ASTM A780. GALVANIZING REPAIR PAINT SHALL HAVE 65 PERCENT ZINC BY WEIGHT, ZIRP BY DUNCAN GALVANIZING, GALVA BRIGHT PREMIUM BY CROWN OR EQUAL. THICKNESS OF APPLIED GALVANIZING REPAIR PAINT SHALL BE NOT NOT LESS THAN 4 COATS (ALLOW TIME TO DRY BETWEEN COATS) WITH A RESULTING COATING THICKNESS REQUIRED BY ASTM A123 OR A153 AS APPLICABLE.
- CONTRACTOR SHALL COMPLY WITH AWS CODE FOR PROCEDURES, APPEARANCE AND QUALITY OF WELDS, AND FOR METHODS USED IN CORRECTING WELDING. ALL WELDERS AND WELDING PROCESSES SHALL BE QUALIFIED IN ACCORDANCE WITH AWS "STANDARD QUALIFICATION PROCEDURES". ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND D.I.I. WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "STEEL CONSTRUCTION MANUAL". 14TH EDITION.
- INCORRECTLY FABRICATED, DAMAGED OR OTHERWISE MISFITTING OR NON-CONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE CONSTRUCTION MANAGER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH ACTION SHALL REQUIRE CONSTRUCTION MANAGER APPROVAL.
- UNISTRUT SHALL BE FORMED STEEL CHANNEL STRUT FRAMING AS MANUFACTURED BY UNISTRUT CORP., WAYNE, MI OR EQUAL. STRUT MEMBERS SHALL BE 1 5/8"x1 5/8"x12GA, UNLESS OTHERWISE NOTED, AND SHALL BE HOT-DIP GALVANIZED AFTER FABRICATION.
- EPOXY ANCHOR ASSEMBLY SHALL CONSIST OF STAINLESS STEEL ANCHOR ROD WITH NUTS & WASHERS, AN INTERNALLY THREADED INSERT, A SCREEN TUBE AND A EPOXY ADHESIVE. THE ANCHORING SYSTEM SHALL BE THE HILTI-HIT HY-270 AND OR HY-200 SYSTEMS (AS SPECIFIED IN DWG.) OR ENGINEERS APPROVED EQUAL.
- EXPANSION BOLTS SHALL CONFORM TO FEDERAL SPECIFICATION FF-S-325, GROUP II, TYPE 4, CLASS I, HILTI KWIK BOLT III OR APPROVED EQUAL. INSTALLATION SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- LUMBER SHALL COMPLY WITH THE REQUIREMENTS OF THE AMERICAN INSTITUTE OF TIMBER CONSTRUCTION AND THE NATIONAL FOREST PRODUCTS ASSOCIATION'S NATIONAL DESIGN SPECIFICATION FOR WOOD CONSTRUCTION. ALL LUMBER SHALL BE PRESSURE TREATED AND SHALL BE STRUCTURAL GRADE NO. 2 OR BETTER.
- WHERE ROOF PENETRATIONS ARE REQUIRED, THE CONTRACTOR SHALL CONTACT AND COORDINATE RELATED WORK WITH THE BUILDING OWNER AND THE EXISTING ROOF INSTALLER. WORK SHALL BE PERFORMED IN SUCH A MANNER AS TO VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
- ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

**SPECIAL INSPECTION CHECKLIST**

BEFORE CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
N/A	ENGINEER OF RECORD APPROVED SHOP DRAWINGS <sup>1</sup>
N/A	MATERIAL SPECIFICATIONS REPORT <sup>2</sup>
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS <sup>3</sup>

DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS <sup>4</sup>
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION <sup>5</sup>
N/A	GROUT VERIFICATION
N/A	CERTIFIED WELD INSPECTION
N/A	EARTHWORK: LIFT AND DENSITY
N/A	ON SITE COLD GALVANIZING VERIFICATION
N/A	GUY WIRE TENSION REPORT

AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
<b>REQUIRED</b>	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS <sup>6</sup>
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
<b>REQUIRED</b>	PHOTOGRAPHS

**NOTES:**

- REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
- PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
- PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
- HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
- ADHESIVE FOR REBAR AND ANCHORS SHALL HAVE BEEN TESTED IN ACCORDANCE WITH ACI 355.4 AND ICC-ES AC308 FOR CRACKED CONCRETE AND SEISMIC APPLICATIONS. DESIGN ADHESIVE BOND STRENGTH HAS BEEN BASED ON ACI 355.4 TEMPERATURE CATEGORY B WITH INSTALLATIONS INTO DRY HOLES DRILLED USING A CARBIDE BIT INTO CRACKED CONCRETE THAT HAS CURED FOR AT LEAST 21 DAYS. ADHESIVE ANCHORS REQUIRING CERTIFIED INSTALLATIONS SHALL BE INSTALLED BY A CERTIFIED ADHESIVE ANCHOR INSTALLER PER ACI 318-11 D.9.2.2. INSTALLATIONS REQUIRING CERTIFIED INSTALLERS SHALL BE INSPECTED PER ACI 318-11 D.8.2.4.
- AS REQUIRED; FOR ANY FIELD CHANGES TO THE ITEMS IN THIS TABLE.

**NOTES:**

- ALL CONNECTIONS TO BE SHOP WELDED & FIELD BOLTED USING 3/4"Ø A325-X BOLTS, UNLESS OTHERWISE NOTIFIED.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED BEFORE ORDERING MATERIAL.
- SHOP DRAWING ENGINEER REVIEW & APPROVAL REQUIRED PRIOR TO STEEL FABRICATION.
- VERIFICATION OF EXISTING ROOF CONSTRUCTION IS REQUIRED PRIOR TO THE INSTALLATION OF THE ROOF PLATFORM. ENGINEER OF RECORD IS TO APPROVE EXISTING CONDITIONS IN ORDER TO MOVE FORWARD.
- CENTERLINE OF PROPOSED STEEL PLATFORM SUPPORT COLUMNS TO BE CENTRALLY LOCATED OVER THE EXISTING BUILDING COLUMNS.
- EXISTING BRICK MASONRY COLUMNS/BEARING TO BE REPAIRED/REPLACED AT ALL PROPOSED PLATFORM SUPPORT POINTS. ENGINEER OF RECORD TO REVIEW AND APPROVE.

**SPECIAL INSPECTIONS (REFERENCE IBC CHAPTER 17):**

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

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

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

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

**REQUIRED INSPECTIONS AND SITE REVIEW DOCUMENT AS A CONDITION OF THE BUILDING PERMIT THE FOLLOWING INSPECTIONS AND SITE REVIEWS IDENTIFIED BY THE BUILDING OFFICIAL ARE REQUIRED FOR WORK PER THE 9TH EDITION OF THE MASSACHUSETTS STATE BUILDING CODE, 780 CMR, SECTION 10 AND CHAPTER 17**

**REQUIRED SITE REVIEW AND DOCUMENTATION FOR PORTIONS OR PHASES CONSTRUCTION <sup>1&7</sup>**  
(TO BE PERFORMED BY THE APPROPRIATE REGISTERED DESIGN PROFESSIONAL OF HIS/HER DESIGNEE OR M.G.L.C 112 §81R CONTRACTOR)

SITE REVIEW AND DOCUMENTATION	X	SITE REVIEW AND DOCUMENTATION	X
SOIL CONDITION/ANALYSIS/REPORT		ENERGY EFFICIENCY REQUIREMENTS	
FOOTING AND FOUNDATION (INCLUDING REINFORCEMENT AND FOUNDATION ATTACHMENT)		FIRE ALARM INSTALLATION <sup>2</sup>	
CONCRETE FLOOR AND UNDER FLOOR		FIRE SUPPRESSION AND INSTALLATION <sup>3</sup>	
LOWEST FLOOR FLOOD ELEVATION		FIELD REPORTS <sup>5</sup>	
STRUCTURAL FRAME--WALL/FLOOR/ROOF		CARBON MONOXIDE DETECTION SYSTEM <sup>4</sup>	
LATH AND PLASTER/GYPSUM		SEISMIC REINFORCEMENT	
FIRE RESISTANT WALL/PARTITIONS FINISH ATTACHMENTS		SMOKE CONTROL SYSTEMS	
FIRE RESISTANT WALL/PARTITIONS FINISH ATTACHMENTS		SMOKE AND HEAT VENTS	
ABOVE CEILING INSPECTION		ACCESSIBILITY (521 CMR)	
FIRE BLOCKING/STOPPING SYSTEM		OTHER	
EMERGENCY LIGHTING/EXIT SIGNAGE			
MEANS OF EGRESS COMPONENTS		SPECIAL INSPECTIONS (SECTION 1704):	X
ROOFING, COPING/SYSTEM			
VENTING SYSTEMS (KITCHEN, CHEMICAL, FUME)			
MECHANICAL SYSTEMS			

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

**MASSACHUSETTS AMENDMENTS TO THE IBC**

**(REFERENCE 780 CMR):**

**107.6 CONSTRUCTION CONTROL.**

**107.6.1 GENERAL.** THIS SECTION SHALL APPLY TO THE CONSTRUCTION CONTROLS, PROFESSIONAL SERVICES AND CONTRACTOR SERVICES REQUIRED FOR BUILDINGS AND STRUCTURES NEEDING REGISTERED DESIGN PROFESSIONAL SERVICES.

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

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

- REVIEW, FOR CONFORMANCE TO 780 CMR AND THE DESIGN CONCEPT, SHOP DRAWINGS, SAMPLES AND OTHER SUBMITTALS BY THE CONTRACTOR IN ACCORDANCE WITH THE REQUIREMENTS OF THE CONSTRUCTION DOCUMENTS.
- PERFORM THE DUTIES FOR REGISTERED DESIGN PROFESSIONALS IN 780 CMR 17.00 SPECIAL INSPECTIONS AND TESTS.
- BE PRESENT AT INTERVALS APPROPRIATE TO THE STAGE OF CONSTRUCTION TO BECOME GENERALLY FAMILIAR WITH THE PROGRESS AND QUALITY OF THE WORK AND TO DETERMINE IF THE WORK IS BEING PERFORMED IN A MANNER CONSISTENT WITH THE CONSTRUCTION DOCUMENTS AND 780 CMR.

THE PERMIT APPLICATION SHALL NOT BE DEEMED COMPLETED UNTIL ALL OF THE CONSTRUCTION DOCUMENTS REQUIRED BY 780 CMR HAVE BEEN SUBMITTED. DOCUMENTATION INDICATING THAT WORK COMPLIES WITH TEH PLANS AND SPECIFICATIONS SHALL BE PROVIDED AT THE COMPLETION OF EACH PHASE WHEN REQUIRED BY THE BUILDING OFFICIAL. UPON COMPLETION OF THE WORK, TEH REGISTERED DESIGN PROFESSIONAL SHALL FILE A FINAL DOCUMENT TO TEH BUILDING OFFICIAL INDICATING THAT, TO THE BEST IF HIS OR HER KNOWLEDGE AND BELIEF, THE WORK HAS BEEN PERFORMED IN ACCORDANCE WITH THE APPROVED PLANS AND 780 CMR. FORMS FOR CONSTRUCTION CONTROL WHEN REQUIRED BY THE BUILDING OFFICIAL SHALL BE THOSE FOUND AT <http://www.ma.gov/government/oca-agencies/dpl-lp/opsi/>.

**107.6.2.3 SPECIAL INSPECTIONS AND TESTS.** SPECIAL INSPECTIONS AND TESTS. SHALL BE PROVIDED IN ACCORDANCE WITH 780 CMR 17.00 SPECIAL INSPECTIONS AND TESTS.

**107.6.2.3 NON STRUCTURAL SYSTEM TEST AND INSPECTIONS.** TESTS AND INSPECTIONS OF NON-STRUCTURAL SYSTEMS SHALL BE PERFORMED IN ACCORDANCE WITH APPLICABLE ENGINEERING PRACTICE STANDARDS, REFERENCED STANDARDS LISTED IN 780 CMR 35.00: REFERENCED STANDARDS, OR AS OTHERWISE SPECIFIED IN 780 CMR.

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

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

**107.6.4 PROJECT REPRESENTATION.** A PROJECT REPRESENTATIVE MAY BE REQUIRED BY THE BUILDING OFFICIAL. THIS REPRESENTATIVE SHALL KEEP DAILY RECORDS AND SUBMIT REPORTS AS MAY BE REQUIRED BY THE BUILDING OFFICIAL. THIS PROJECT REPRESENTATION REQUIREMENT SHALL BE DETERMINED PRIOR TO THE ISSUANCE OF THE PERMIT AND MAY BE A PREREQUISITE FOR PERMIT ISSUANCE. REFUSAL BY THE APPLICANT TO PROVIDE SUCH SERVICE IF REQUIRED BY THE BUILDING OFFICIAL SHALL RESULT IN THE DENIAL OF THE PERMIT. ALL FEES AND COSTS RELATED TO THE PERFORMANCE OF PROJECT REPRESENTATION SHALL BE BORNE BY THE OWNER. WHEN APPLICATIONS FOR UNUSUAL DESIGNS OR MAGNITUDE OF CONSTRUCTION ARE FILED, OR WHERE REFERENCE STANDARDS REQUIRE SPECIAL ARCHITECTURAL OR ENGINEERING INSPECTIONS, THE BUILDING OFFICIAL MAY REQUIRE THAT THE PROJECT REPRESENTATIVE BE A REGISTERED DESIGN PROFESSIONAL IN ADDITION TO THOSE REGISTERED DESIGN PROFESSIONALS REQUIRED ELSEWHERE IN ACCORDANCE WITH SECTION 107.6.

**107.6.5 BUILDING OFFICIAL RESPONSIBILITY.** NOTHING CONTAINED IN SECTION 107.6 SHALL HAVE THE EFFECT OF WAIVING OR LIMITING THE BUILDING OFFICIAL'S AUTHORITY TO ENFORCE 780 CMR WITH RESPECT TO EXAMINATION OF THE CONTRACT DOCUMENTS, INCLUDING PLANS, COMPUTATIONS AND SPECIFICATIONS, AND FIELD INSPECTIONS.

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<b>SITE NAME:</b> BO035/10 CANAL PARK
<b>SITE ID:</b> 4DE7035F
<b>SITE ADDRESS:</b> 10 CANAL PARK CAMBRIDGE, MA MIDDLESEX COUNTY

**SHEET TITLE:**  
STRUCTURAL NOTES &  
SPECIAL INSPECTIONS

**DRAWING:**  
SN-1



- NOTES FOR ANTENNA MOUNTS:**
- AIR 6449 B41: ERICSSON R2A PIPE MOUNT KIT
  - APXVAALL24\_43-U-NA20: RFS APM40-5E DOWN TILT PIPE MOUNT KIT
  - APXVLL19P\_43-C-A20: RFS APM4-5E PIPE MOUNT KIT

**T-Mobile  
NORTHEAST LLC**

T-MOBILE NORTHEAST, LLC.  
15 COMMERCE WAY, SUITE B  
NORTON, MA 02766  
PHONE: (508) 286-2700  
FAX: (508) 286-2893



750 W CENTER ST, SUITE 301  
WEST BRIDGEWATER, MA 02379  
PHONE: 781.713.4725

**REVISIONS**

REV	DATE	DESCRIPTION	BY
5	06/19/23	ISSUED FOR CONSTRUCTION	SS
4	04/21/23	REVISED PER COMMENTS	AB
3	04/04/23	REVISED PER COMMENTS	SS
2	03/07/23	REVISED TMO DESIGN	AB
1	11/22/21	RFDS UPDATE	MP
0	06/04/21	ISSUED FOR CONSTRUCTION	SS
A	01/22/21	ISSUED FOR REVIEW	KH

DESIGNED BY: AB      APPROVED BY: WRD



**DATE: 04/21/2023**

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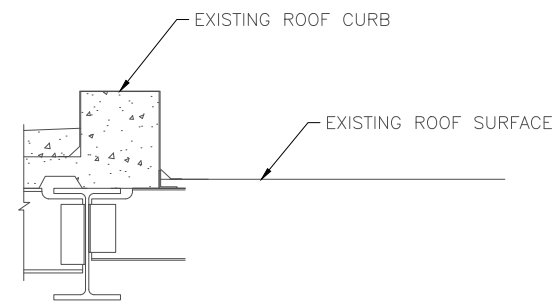
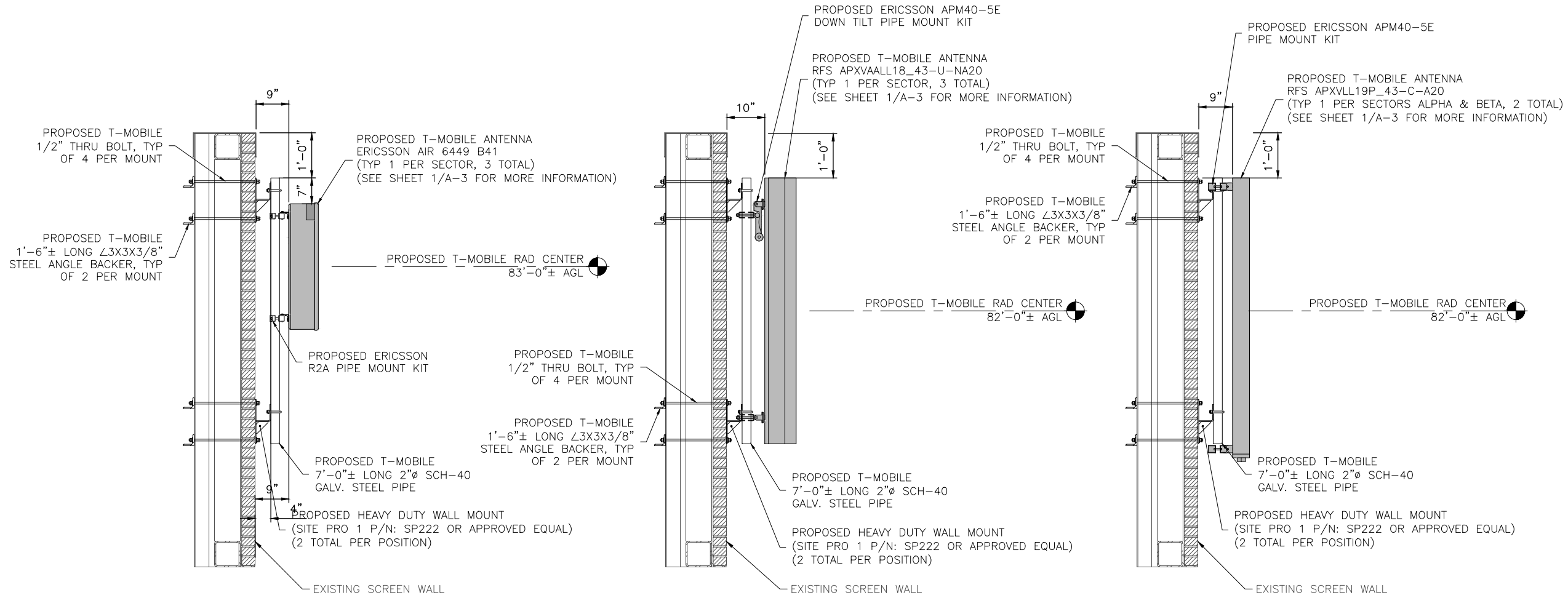
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BO035/10 CANAL PARK

**SITE ID:**  
4DE7035F

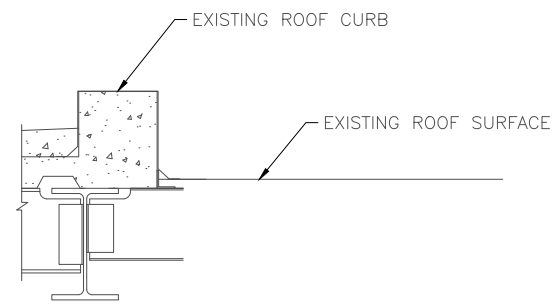
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10 CANAL PARK  
CAMBRIDGE, MA  
MIDDLESEX COUNTY

**SHEET TITLE:**  
ANTENNA  
MOUNTING DETAILS

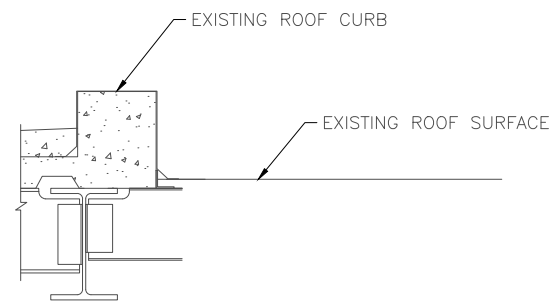
**DRAWING:**  
S-1



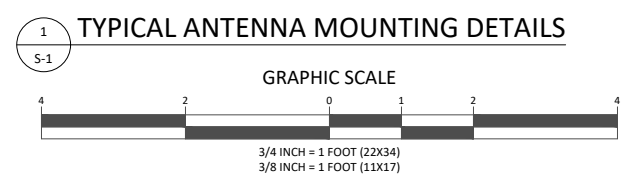
AT POSITION A1, B1 & C1



AT POSITION A2, B3 & C2



AT POSITION A4 & B4



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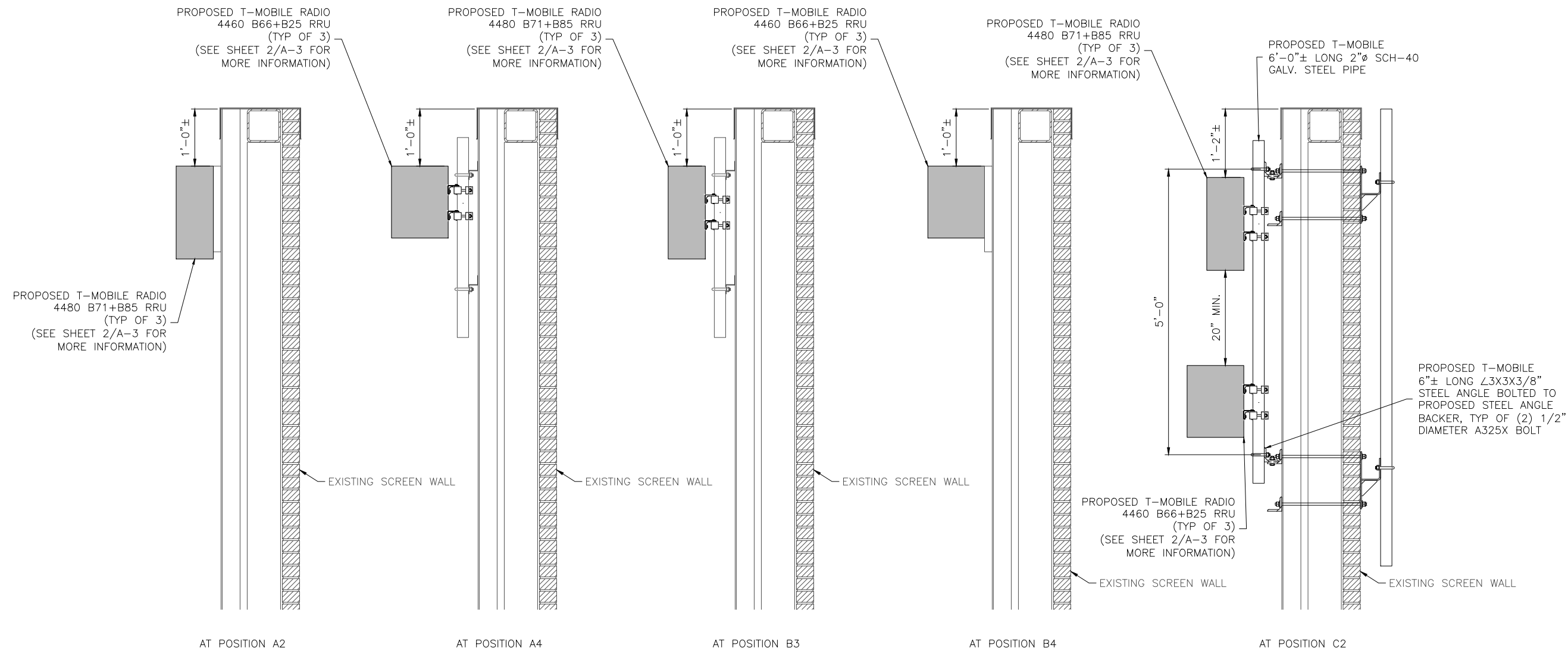
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BO035/10 CANAL PARK

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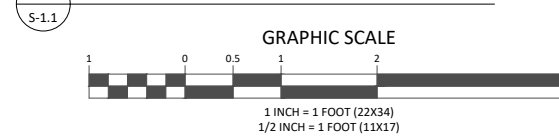
SITE ADDRESS:  
10 CANAL PARK  
CAMBRIDGE, MA  
MIDDLESEX COUNTY

SHEET TITLE:  
RRU  
MOUNTING DETAILS

DRAWING:  
S-1.1



### 1 TYPICAL RRU MOUNTING DETAILS



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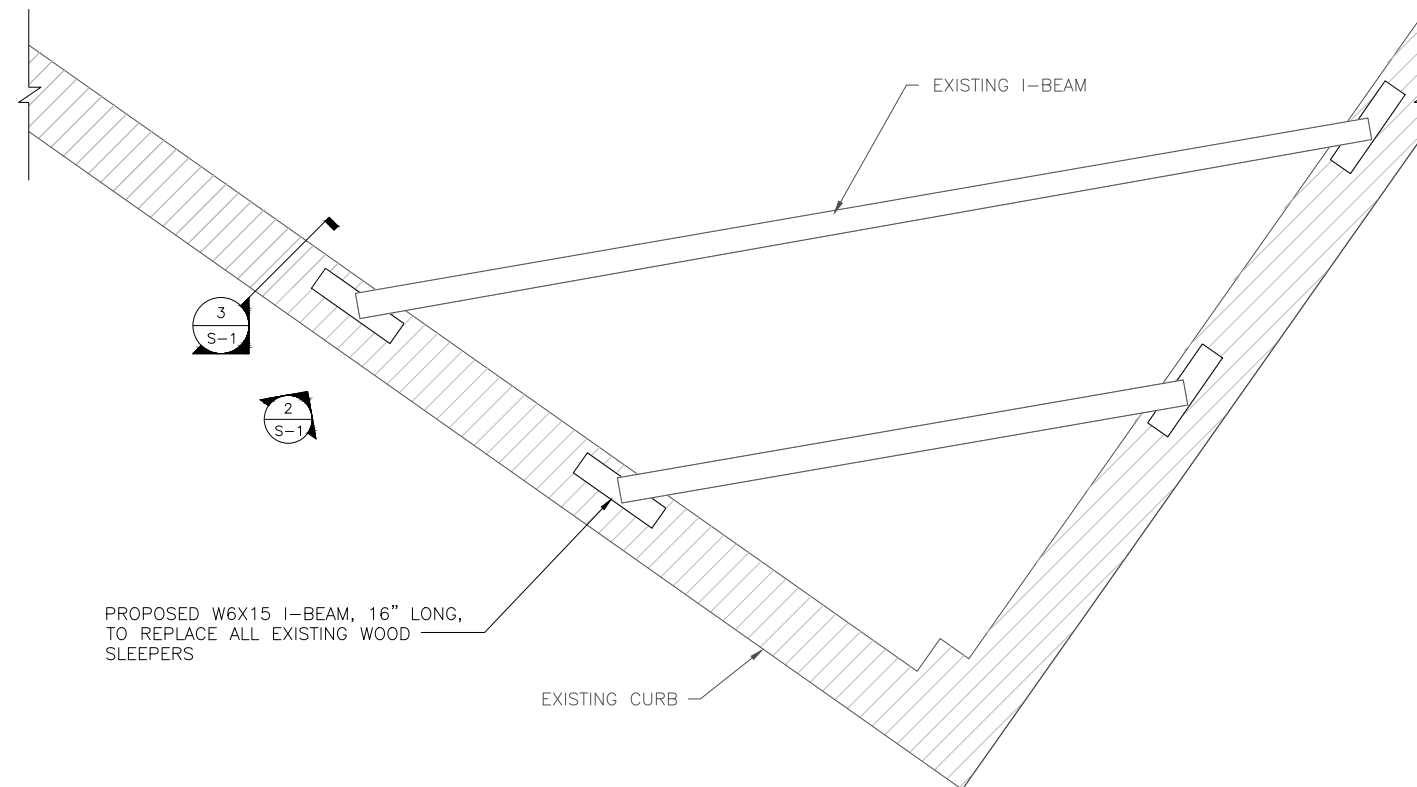
DATE: 04/21/2023

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SITE ID: <b>4DE7035F</b>
SITE ADDRESS: <b>10 CANAL PARK CAMBRIDGE, MA MIDDLESEX COUNTY</b>

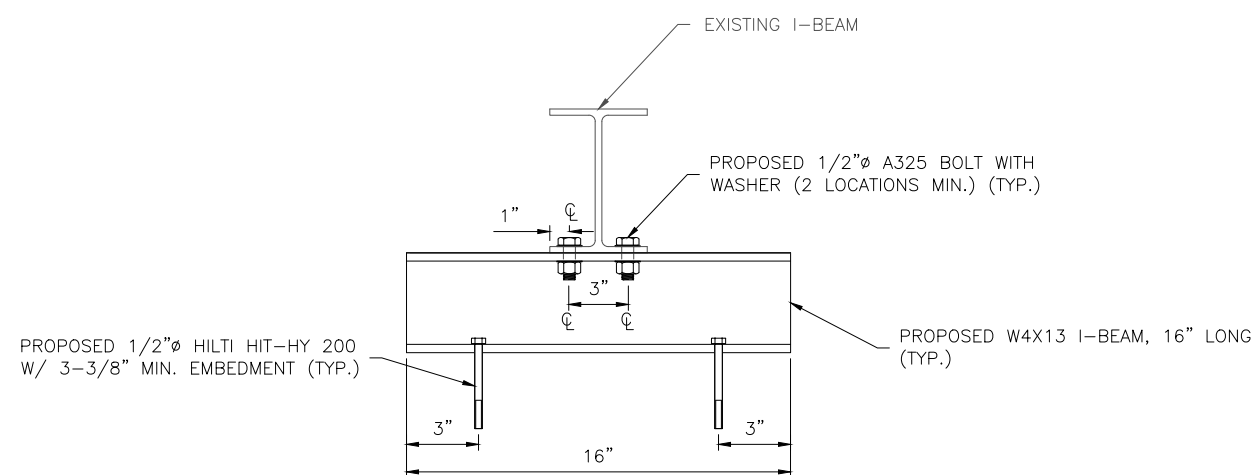
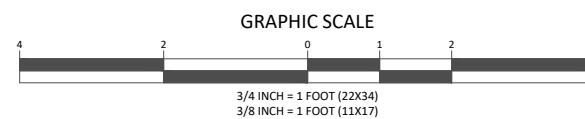
SHEET TITLE:  
**STRUCTURAL DETAILS**

DRAWING:  
**S-2**

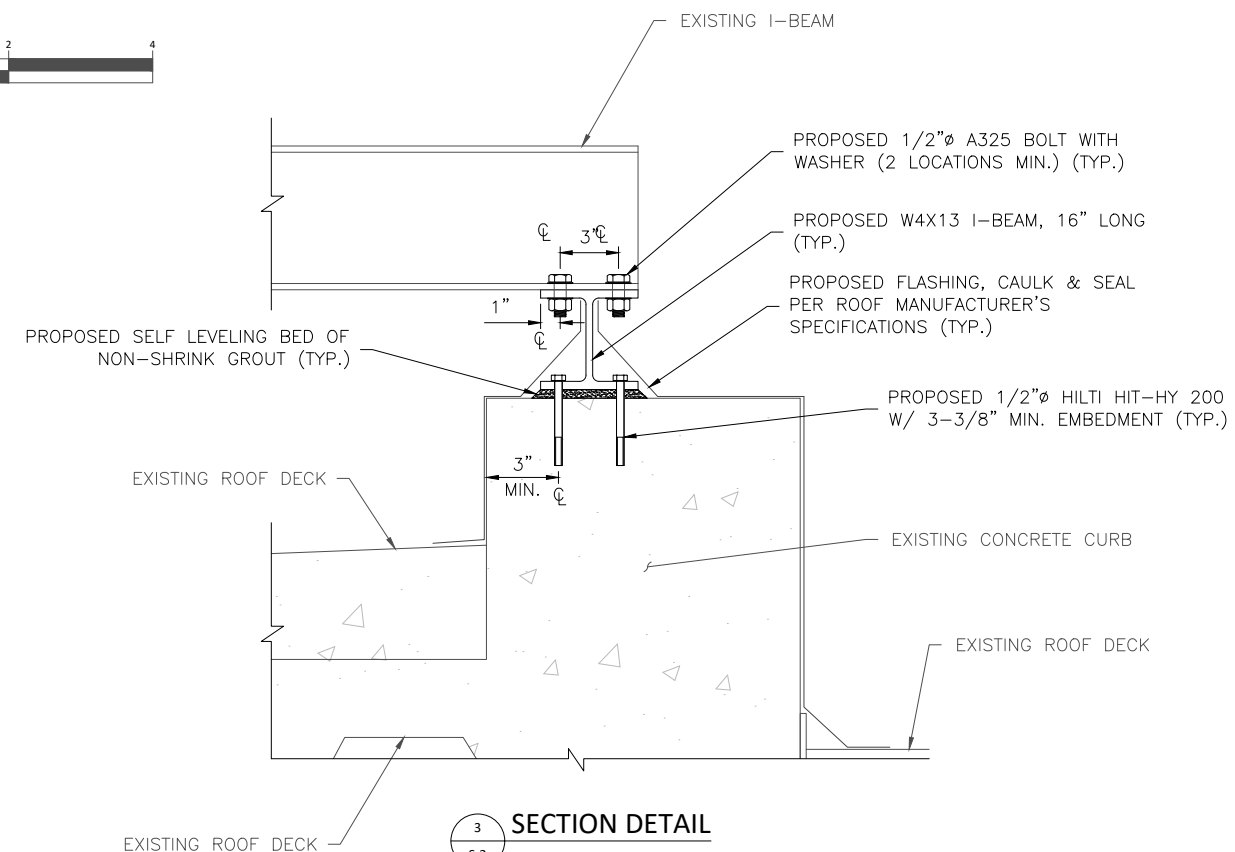
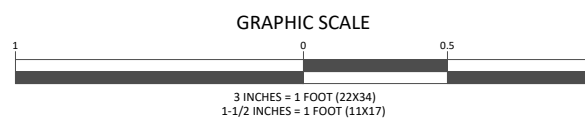


- NOTES:**
- STRUCTURAL STEEL AND HARDWARE TO BE GALVANIZED.
  - MOUNT STEEL PER MANUFACTURE'S SPECIFICATIONS.
  - SEAL ROOF PER MANUFACTURE'S SPECIFICATIONS. ANY MODIFICATIONS MADE TO THE ROOF MEMBRANE SHALL BE DONE SO AS NOT TO VOID THE MEMBRANE WARRANTY.
  - IF FIELD CONDITIONS DIFFER FROM WHAT IS SHOWN IN THE DRAWINGS, CONTRACTOR TO CONTACT THE ENGINEER OF RECORD.

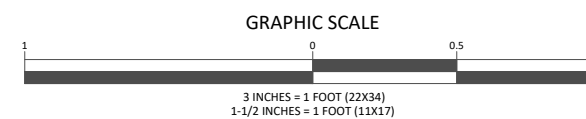
### 1 STRUCTURAL MODIFICATION PLAN



### 2 CONNECTION DETAIL



### 3 SECTION DETAIL

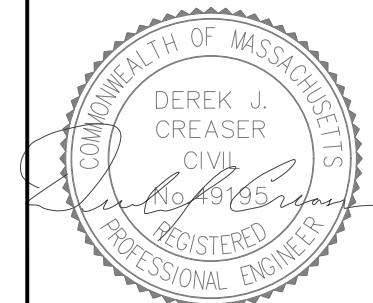




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SITE ID: <b>4DE7035F</b>
SITE ADDRESS: <b>10 CANAL PARK CAMBRIDGE, MA MIDDLESEX COUNTY</b>

SHEET TITLE: <b>GROUNDING &amp; ONE LINE DIAGRAM</b>
DRAWING: <b>G-1</b>

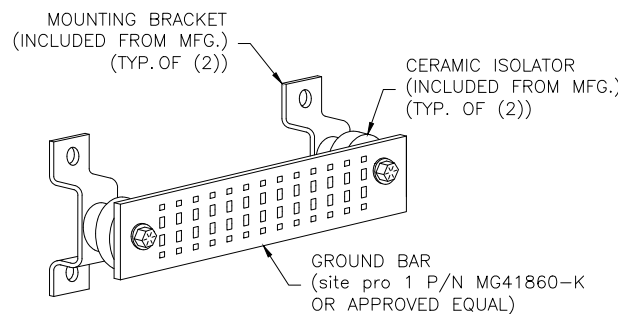
EACH GROUND CONDUCTOR TERMINATING ON ANY GROUND BAR SHALL HAVE AN IDENTIFICATION TAG ATTACHED AT EACH END THAT WILL IDENTIFY ITS ORIGIN AND DESTINATION.

#### SECTION "P" - SURGE PRODUCERS

- CABLE ENTRY PORTS (HATCH PLATES) (#2)
- GENERATOR FRAMEWORK (IF AVAILABLE) (#2)
- TELCO GROUND BAR
- COMMERCIAL POWER COMMON NEUTRAL/GROUND BOND (#2)
- +24V POWER SUPPLY RETURN BAR (#2)
- 48V POWER SUPPLY RETURN BAR (#2)
- RECTIFIER FRAMES.

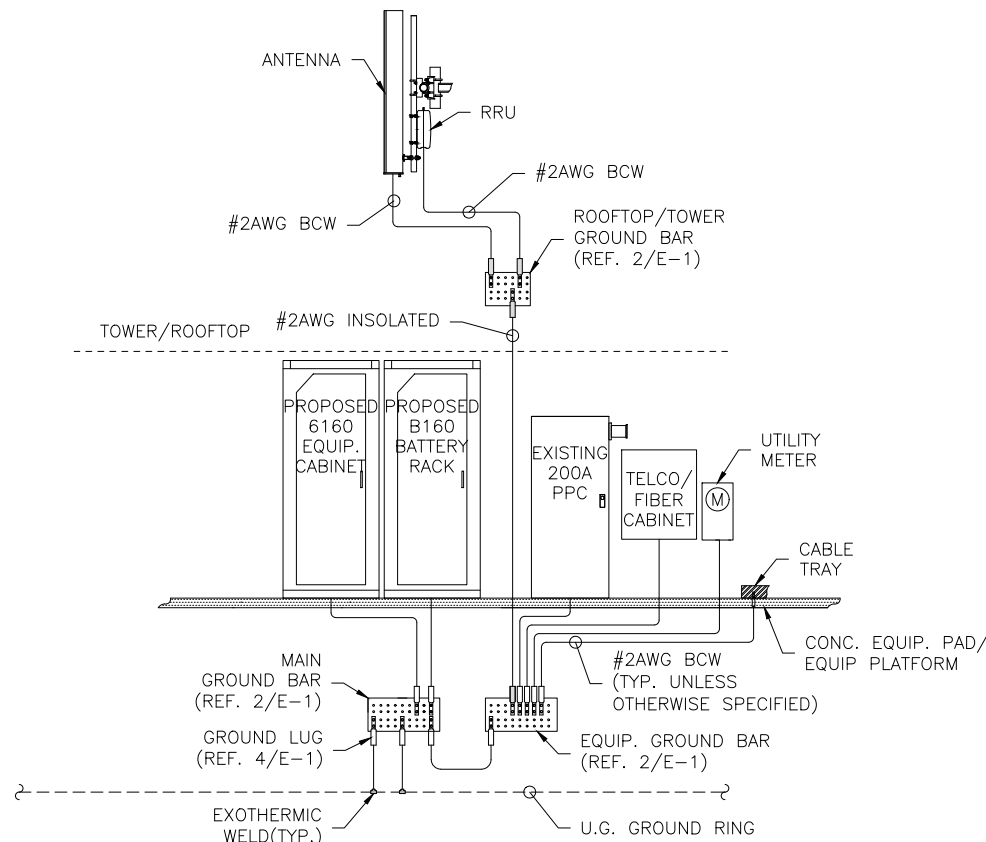
#### SECTION "A" - SURGE ABSORBERS

- INTERIOR GROUND RING (#2)
- EXTERNAL EARTH GROUND FIELD (BURIED GROUND RING) (#2)
- METALLIC COLD WATER PIPE (IF AVAILABLE) (#2)
- BUILDING STEEL (IF AVAILABLE) (#2)



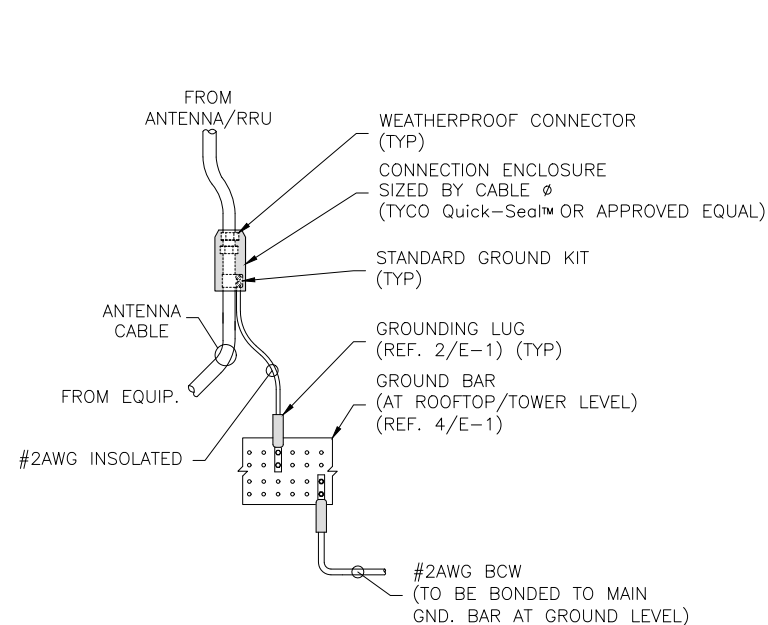
2 GROUND BAR DETAIL  
G-1

3 GROUND WIRE SCHEDULE  
G-1



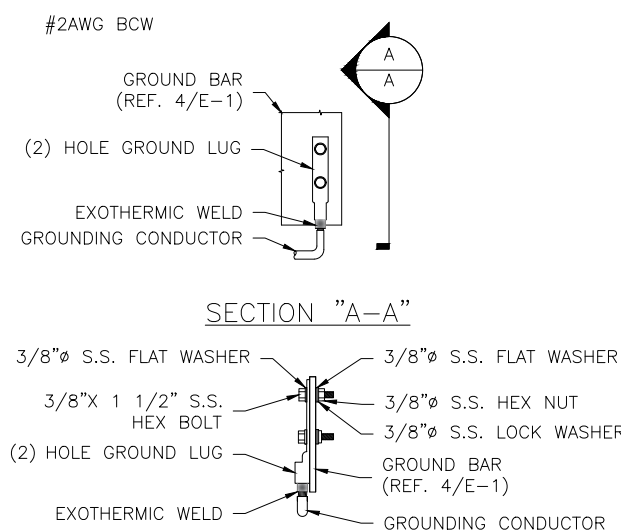
GROUNDING RISER NOTE:  
UNLESS OTHERWISE SPECIFIED ALL GROUNDING CONDUCTORS ARE TO BE #2AWG BCW

1 GROUNDING RISER DIAGRAM  
G-1



- NOTES:
- DO NOT INSTALL CABLE GROUND KIT AT BEND IN CABLE.
  - GROUND CABLES DIRECTLY TO CIGBE
  - JUMPER REQUIRED ONLY WHEN CABLE IS 1 1/4" OR LARGER

4 ANTENNA/RRU GROUNDING DETAIL  
G-1

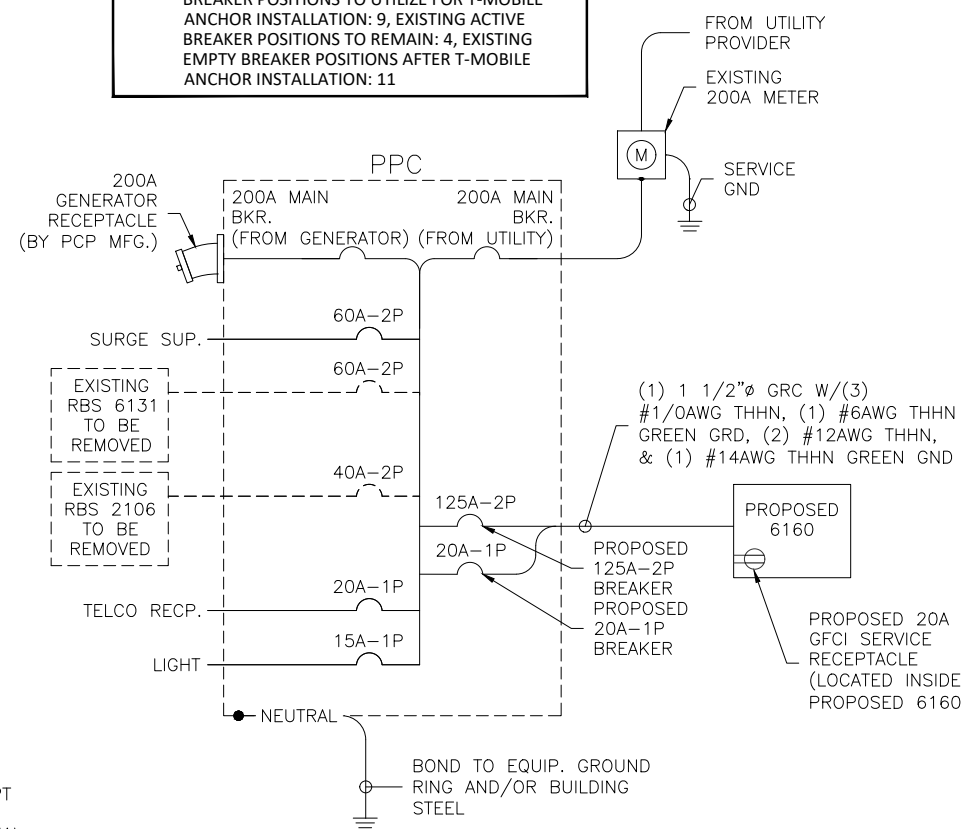


- GROUNDING LUG NOTES:
- DO NOT DOUBLE UP OR STACK LUGS.
  - OXIDE INHIBITING COMPOUND TO BE APPLIED TO ALL LUGS.
  - ALL LUGS ARE TO BE EXOTHERMIC WELDED TO GROUNDING CONDUCTORS.
  - FOR INSULATED GROUNDING CONDUCTORS, EXPOSED BARE COPPER TO BE KEPT TO ABSOLUTE MINIMUM.
  - NO INSULATION IS ALLOWED WITHIN THE BARREL OF THE COMPRESSION TERMINAL.

5 GROUND LUG DETAIL  
G-1

ELECTRIC PANEL NOTES:

- TOTAL BREAKER POSITION: 24, EXISTING EMPTY BREAKER POSITIONS: 16, UNUSED BREAKER POSITIONS TO BE REMOVED: 4, PROPOSED BREAKER POSITIONS TO UTILIZE FOR T-MOBILE ANCHOR INSTALLATION: 9, EXISTING ACTIVE BREAKER POSITIONS TO REMAIN: 4, EXISTING EMPTY BREAKER POSITIONS AFTER T-MOBILE ANCHOR INSTALLATION: 11



6 ONE LINE DIAGRAM  
G-1