

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 U.S. REIF Central Plaza Massachusetts LLC
(OWNER)

Address: 675 Intercontinental Deal Estate Corp. 1270 Soldiers Field Road
Boston, MA 02135

State that I/We own the property located at 675 Massachusetts Ave., which is the subject of this zoning application.

The record title of this property is in the name of U.S. REIF
Central Plaza Massachusetts LLC.

*Pursuant to a deed of duly recorded in the date 10/31/2008 Middlesex South County Registry of Deeds at Book 51851, Page 264; or Middlesex Registry District of Land Court, Certificate No. _____ Book _____ Page _____.

[Signature]
SIGNATURE BY HAND OWNER OR AUTHORIZED TRUSTEE, OFFICER OR AGENT*

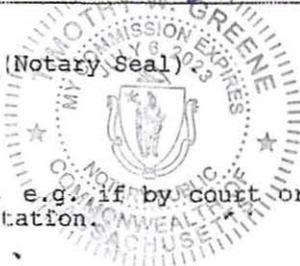
*Written evidence of Agent's standing to represent petitioner may be requested.

Commonwealth of Massachusetts, County of Middlesex

The above-name Scott Kelly personally appeared before me, this 12th of February, 2019, and made oath that the above statement is true.

[Signature] Notary

My commission expires 7/8/23 (Notary Seal)



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

BZA APPLICATION FORM

DIMENSIONAL INFORMATION

APPLICANT: TerraSearch **PRESENT USE/OCCUPANCY:** _____

LOCATION: 675 Massachusetts Ave Cambridge, MA **ZONE:** Business B Zone

PHONE: _____ **REQUESTED USE/OCCUPANCY:** _____

	<u>EXISTING</u> <u>CONDITIONS</u>	<u>REQUESTED</u> <u>CONDITIONS</u>	<u>ORDINANCE</u> <u>REQUIREMENTS</u> ¹	
<u>TOTAL GROSS FLOOR AREA:</u>	<u>0</u>	<u>0</u>	<u>0</u>	(max.)
<u>LOT AREA:</u>	<u>0</u>	<u>0</u>	<u>0</u>	(min.)
<u>RATIO OF GROSS FLOOR AREA</u> <u>TO LOT AREA:</u> ²	<u>0</u>	<u>0</u>	<u>0</u>	(max.)
<u>LOT AREA FOR EACH DWELLING UNIT:</u>	<u>0</u>	<u>0</u>	<u>0</u>	(min.)
<u>SIZE OF LOT:</u>				
WIDTH	<u>0</u>	<u>0</u>	<u>0</u>	(min.)
DEPTH	<u>0</u>	<u>0</u>	<u>0</u>	
<u>SETBACKS IN FEET:</u>				
FRONT	<u>0</u>	<u>0</u>	<u>0</u>	(min.)
REAR	<u>0</u>	<u>0</u>	<u>0</u>	(min.)
LEFT SIDE	<u>0</u>	<u>0</u>	<u>0</u>	(min.)
RIGHT SIDE	<u>0</u>	<u>0</u>	<u>0</u>	(min.)
<u>SIZE OF BLDG.:</u>				
HEIGHT	<u>0</u>	<u>0</u>	<u>0</u>	(max.)
LENGTH	<u>0</u>	<u>0</u>	<u>0</u>	
WIDTH	<u>0</u>	<u>0</u>	<u>0</u>	
<u>RATIO OF USABLE OPEN SPACE</u> <u>TO LOT AREA:</u>	<u>0</u>	<u>0</u>	<u>0</u>	(min.)
<u>NO. OF DWELLING UNITS:</u>	<u>0</u>	<u>0</u>	<u>0</u>	(max.)
<u>NO. OF PARKING SPACES:</u>	<u>0</u>	<u>0</u>	<u>0</u>	(min./max)
<u>NO. OF LOADING AREAS:</u>	<u>0</u>	<u>0</u>	<u>0</u>	(min.)
<u>DISTANCE TO NEAREST BLDG.</u> <u>ON SAME LOT:</u>	<u>0</u>	<u>0</u>	<u>0</u>	(min.)

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

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



February 28, 2019

Donna P. Lopez, City Clerk City of Cambridge City Hall 795 Massachusetts Avenue Cambridge, MA 02139	Constantine Alexander, Chair Board of Zoning Appeal City Hall 795 Massachusetts Avenue Cambridge, MA 02139
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Applicant: New Cingular Wireless PCS, LLC ("AT&T")
Property Address: 675 Massachusetts Ave
Assessor's Map 107, Lot 136 (the "Property")
Re: Application for:
(i) Eligible Facilities Request pursuant to Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012, 47 U.S.C. § 1455; or, in the alternative,
(ii) Special Permit under Cambridge Zoning Ordinance Section 4.32(g)(1) and M.G.L. c. 40A, Section 9; and
(iii) Any other zoning relief required.
(All relief if and to the extent necessary, all rights reserved)

Dear Ms. Lopez, Mr. Alexander and Members of the Board of Zoning Appeal:

Pursuant to Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012 (a/k/a the "Spectrum Act" or "Section 6409"), 47 U.S.C. § 1455, as further implemented by the Federal Communications Commission's Report and Order *In re Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies*, FCC Docket No. 13-238, Report and Order No. 14-153 (October 17, 2014) (the "FCC Order"), New Cingular Wireless PCS, LLC ("AT&T") hereby submits this Eligible Facilities Request ("Request"); and, in the alternative, applies for a special permit from the City of Cambridge Board of Zoning Appeal (the "Board") under Section 432(g)(1) of the Cambridge Zoning Ordinance (the "Ordinance") to modify its existing "Telephone Exchange including Transmission Facilities to serve a Mobile Communication System" (the "Facility") on and within the existing building located at 675 Massachusetts Ave. (the "Special Permit Application").²

² AT&T submits this Request, Special Permit application and supporting materials subject to a full and complete reservation of AT&T's rights under the Spectrum Act and the FCC Order including without limitation its rights with respect to (i) any submittal requirements or approval criteria that are inconsistent with the prohibitions established by the FCC Order, (ii) any delay beyond the deadlines established in the FCC Order, (iii) the imposition of conditions on any approval that are inconsistent with the FCC Order, and (iv) referral or requirement to a discretionary review process such as a special permit.

Under Section 6409, AT&T's proposed modification of its existing transmission equipment on and within the existing building, previously approved by the Board for use as a wireless communication base station, does "not substantially change the physical dimensions" of the existing building. Therefore, AT&T's Request must be approved administratively, including the issuance of a building permit, to enable AT&T to make the proposed modifications to its transmission equipment.

In the alternative, as demonstrated in this application letter, the AT&T's proposed modifications to its existing Facility on the Property located in the Business B zoning district satisfy the requirements for the grant of a special permit pursuant to Section 10.43 of the Ordinance.

I. APPLICATION PACKAGE

Enclosed with this application is a check payable to the City of Cambridge in the amount of \$500.00. In addition to the signed original of this letter are copies of the letter and the following materials:

1. The following completed and signed application forms:
 - a. BZA Application Form – General Information;
 - b. BZA Application Form – Ownership Information;
 - c. BZA Application Form – Dimensional Requirements;
 - d. BZA Application Form – Supporting Statement for a Special Permit; and
 - e. BZA Application Form – Check List;
2. AT&T's relevant FCC License information;
3. Drawings by Hudson Design Group consisting of 11 pages dated 1/24/19;
4. Manufacturer's specification sheets for AT&T's proposed antennas and other featured equipment;
5. Photographs of the existing building by Hudson Design Group., dated 8/24/18;
6. Radio Frequency Coverage Report, demonstrating the public need for the proposed modifications to the Facility, radio frequency coverage maps showing (a) existing or predicted coverage from neighboring facilities; and (b) coverage with the proposed Facility;
7. Structural Analysis by Hudson Design Group LLC dated 12/13/18;
8. Maximum Permissible Exposure Study, Theoretical Report, by SAI Communications, dated December 2, 2015;
9. Letter of Authorization from Owner of Subject Property; and
10. Deed to subject property.

In addition to the supporting materials identified above, submitted simultaneously herewith is a completed building permit application package including:

1. Completed Building Permit Application;
2. Certificate of Liability Insurance;
3. Worker's Compensation Insurance Affidavit;
4. Construction Supervisor License for Keith F Barnard; and
5. 1 copy of the Plans.

II. PROPOSED FACILITY DESIGN

AT&T seeks to modify the existing Facility on and within the building located at the Property. The existing Facility consists of nine (9) panel antennas (Alpha Sector: 3 antennas, Beta Sector: 3 antennas, and Gamma Sector: 3 antennas) that mounted in three (3) locations. The proposed modifications include the addition of one (1) antenna on the Alpha Sector. The replacement antenna will be mounted to the existing antenna mount consistent with the current Facility's design. Three (3) remote radio-head units (RRUs) will be added in close proximity to the antennas and out of public view.

The Facility's design is shown in detail in the Zoning Drawings attached as Exhibit 3 to this application letter and featured equipment is described in the manufacturers' specification sheets attached as Exhibit 4. The photographs (Exhibit 5) show the building rooftop as currently existing from various locations in the neighborhood around the Property. The Alpha Sector is nor readily available to public view due to its location on the roof.. A structural analysis for the Facility demonstrates that the building is capable of supporting AT&T's proposed equipment at or near the locations shown on the Zoning Drawings (*see* Exhibit 7).

The Facility will continue to bring advanced wireless voice, text and data communications services to the surrounding areas. It will allow residents, professionals, government, businesses and students to communicate locally, nationally and internationally from virtually any location within the coverage area. In the event of an emergency, the improved Facility will allow immediate contact with fire, rescue and other emergency personnel. The improved Facility will thus enhance public health, safety and welfare both in ordinary daily living and in the event of fire, accident, medical emergency, natural disaster or other dangers.

III. BACKGROUND

AT&T is licensed by the Federal Communications Commission to construct and operate a wireless telecommunications network in various markets throughout the country, including the Commonwealth of Massachusetts and the City of Cambridge. A copy of the AT&T's FCC license that covers the area of the proposed Facility is included with this application (*see* Exhibit 2). AT&T is in the process of designing and constructing additional wireless facilities to its existing

telecommunications system to serve Massachusetts. One of the key design objectives of its systems is to provide adequate and reliable 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 extent of use of AT&T's wireless services within the network, and the existing topography and obstructions. 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. In urban settings, this dynamic requires the antennas to be located on buildings at heights and in locations where the signal is not obstructed or degraded by other buildings or by topographical features such as hills.

IV. RF COVERAGE DETERMINATION

AT&T has performed a study of radio frequency coverage for the City of Cambridge and from the Property, the results of which are described in the Radio Frequency Report submitted with this application (*see* Exhibit 6). Without the proposed modifications to its existing Facility, AT&T has a substantial coverage gap in this area of Cambridge stretching from both sides of Cambridge Street. AT&T has determined that the proposed modifications to the existing Facility located on the building at the Property will provide needed coverage to the targeted sections of the City and the immediately surrounding area if AT&T's antennas are located on the building's roof at the height and in the configuration requested. The importance of a facility at this location is underscored by AT&T's interest in enhancing its ability to provide its most up-to-date wireless technology, known as long-term evolution technology ("LTE"), in this area to satisfy its customers' ever-increasing needs for high-speed data services. Radio frequency coverage maps included in the report are provided to pictorially and vividly show the differences in existing and proposed wireless coverage at the various bands authorized for AT&T's service. The maps show dramatic improvements to wireless coverage at all three (3) bands with the inclusion of the proposed Facility, namely, at 700, 1900, and 2100 MHz.

V. THE FEDERAL SPECTRUM ACT AND THE FCC ORDER

As set forth below, the proposed modifications constitute an Eligible Facilities Request pursuant to the federal Spectrum Act,³ as further implemented by the FCC Order.⁴

Under the Spectrum Act, as further clarified by the FCC Order, the streamlined process for this Eligible Facilities Request is limited to non-discretionary review. Specifically, the FCC Order

³ Pursuant to Section 6409(a)(2) an "eligible facilities request" means any request for modification of an existing wireless tower or base station that involves—

- (A) collocation of new transmission equipment;
- (B) removal of transmission equipment; or
- (C) replacement of transmission equipment.

47 U.S.C. § 1455(a)(2).

⁴ The Order was effective on February 9, 2015, except for § 1.40001, which became effective on April 8, 2015, except for §§ 1.40001(c)(3)(i), 1.40001(c)(3)(iii), 1.140001(c)(4), and 17.4(c)(1)(vii), which became effective on May 18, 2015, after approval by the Office of Management and Budget. The FCC Order makes clear that under the Spectrum Act discretionary review is not required or permitted for an Eligible Facilities Request.

“adopt[s] an objective standard for determining when a proposed modification will ‘substantially change the physical dimensions’ of an existing tower or base station.” *FCC Order*, ¶ 87. As stated in the FCC Order, Section 6409 “states without equivocation that the reviewing authority ‘may not deny, and shall approve’ any qualifying application. This directive leaves no room for a lengthy and discretionary approach to reviewing an application that meets the statutory criteria.” *FCC Order*, ¶ 116.

In issuing the FCC Order and eliminating discretionary review for eligible facilities requests, the FCC’s goal was to “adopt a test that is defined by specific, objective factors rather than the contextual and entirely subjective standard advocated by the IAC and municipalities.” The FCC intentionally sought to reduce “flexibility” and “open ended context-specific approach” engendered by the discretionary review process:

While we acknowledge that the IAC approach would provide municipalities with maximum flexibility to consider potential effects, we are concerned that it would invite lengthy review processes that conflict with Congress’s intent. Indeed, some municipal commenters anticipate their review of covered requests under a subjective, case-by-case approach could take even longer than their review of collocations absent Section 6409(a). We also anticipate that disputes arising from a subjective approach would tend to require longer and more costly litigation to resolve given the more fact-intensive nature of the IAC’s open-ended and context-specific approach. We find that an objective definition, by contrast, will provide an appropriate balance between municipal flexibility and the rapid deployment of covered facilities. We find further support for this approach in State statutes that have implemented Section 6409(a), all of which establish objective standards.

FCC Order, ¶ 88.

As a result, the FCC Order implementing Section 6409 establishes clear and objective criteria for determining eligibility, limits the types of information that a municipality may require when processing an application for an eligible facilities request, and imposes a “deemed granted” remedy for failure to timely process and eligible facilities request.⁵ The FCC Order also establishes significant limits on the information that can be required to be provided with an eligible facilities request and limits it to only that information “reasonably related to determining whether the request meets the requirements of this section. A State or local government may not require an applicant to submit any other documentation”. 47 CFR 1.40001(c)(1).

Both before and after the FCC Order was issued, the Massachusetts Attorney General’s Office provided clear guidance that an eligible request cannot be subjected to a discretionary special permit process. *See* Attorney General’s letters to (i) Town of Mount Washington, dated June 12, 2014, p. 3 (ii) Town of Lynnfield, dated February 10, 2015, p. 3 (the “AG Lynnfield Letter”) and (iii) Town of Montague, dated February 23, 2015, p. 2 (all attached hereto). As set forth in each letter [t]he Act’s requirement that a local government ‘may not deny, and shall approve, any eligible facilities request’ means that a request for modification to an existing facility that does

⁵ *See* 47 CFR §§1.40001(c)(1) - (c)(4).

not substantially change the physical dimensions of the tower or base station must be approved. ***Such qualifying requests also cannot be subject to a discretionary special permit.***”(Emphasis added). In providing these opinions, the Attorney General’s Office specifically opined that provisions in zoning ordinances that specifically required a special permit for modifications to existing facilities could not be applied to eligible facilities requests. While approving the Town of Lynnfield’s Zoning Bylaw, the Attorney General stated that “Section 8.7.5.1 requires that PWSF may only be erected upon the grant of a special permit. The Town cannot apply this requirement to eligible facilities requests for modification to existing facilities that qualify for required approval under Section 6409 of the Act.” *AG Lynnfield Letter*, p. 3.

Therefore, as set forth in the FCC Order and Attorney General’s opinion letters, the City cannot impose a requirement that AT&T obtain a special permit, or an amendment to an existing special permit utilizing the same discretionary review process, in connection with its eligible facilities request. To the extent that the City of Cambridge’s Zoning Ordinance and any prior decisions by the Board include provisions seeking to further regulate the modification of wireless communication facilities, federal law overrules those requirements. See Sprint Spectrum L.P. v. Town of Swansea, 574 F.Supp.2d 227, 236 (2008) (Board is obligated to consider whether its actions would violate federal law even if a different outcome would be permitted under state law). The standard of review for an application to modify an existing wireless communication facility on an existing tower or base station is governed by the Spectrum Act and the FCC Order which require eligible facilities requests to be permitted “by right.”

In addition, the FCC Order establishes a 60-day period for approval from the time of AT&T’s submission. 47 CFR §1.40001(c)(2). Within the context of the Spectrum Act and FCC Order, approval means all necessary approvals to permit the proposed modifications, including the issuance of a building permit, if required. The FCC found that this 60-day period is appropriate due to “the more restricted scope of review applicable to applications under section 6409(a).” *FCC Order*, ¶ 108. If the Request is not acted upon within the 60-day period, it is deemed granted. 47 CFR §1.40001(c)(4).

As set forth below, the proposed modifications constitute an eligible facilities request. Therefore, AT&T respectfully requests the Board to find that Section 4.32(g)(1) of the Ordinance does not apply to its Request.

VI. THE PROPOSED MODIFICATIONS ARE AN ELIGIBLE FACILITIES REQUEST

Under Section 6409 and the FCC Order, a “base station” means “[a] structure or equipment at a fixed location that enables Commission-licensed or authorized wireless communications between user equipment and a communications network.” 47 C.F.R §1.40001(b)(1). A Base Station includes “any structure other than a tower” that supports or houses “authorized wireless communications between user equipment and a communications network.” 47 C.F.R §1.40001(b)(1). Therefore, the existing building that is currently used for FCC-licensed transmissions for personal wireless services is a “base station” for purposes of Section 6409.

AT&T proposes to modify its existing Facility as described above and depicted on the Plans submitted herewith.

The proposed modifications will not require the installation of any part of the facility on the ground outside of the building.

As a result, AT&T's proposed modifications involving the removal and replacement of the existing transmission equipment constitute an "eligible facilities request" under Section 6409. The proposed eligible facilities request is not a "substantial modification" under Section 6409 and the FCC Order because it does not:

- (i) Result in an increase in "the height of the structure by more than 10% or more than ten feet, whichever is greater" because the proposed replacement antennas will be façade mounted and located below the roofline and therefore will not exceed 10 feet above the existing building;
- (ii) Protrude from the edge of the edge of the building by more than six feet because AT&T's proposed antennas will not protrude more than six feet from building façade;
- (iii) Involve the installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets no new radio communications equipment cabinets will be installed;
- (iv) Require any excavation or deployment outside the current site of the tower or base station because all antennas, equipment cabinets and related equipment will be installed entirely on and within the existing building; or
- (v) Otherwise defeat the existing concealment elements of the tower or base station because the proposed replacement antennas will be painted and textured to match the façade of the existing building on which the existing and proposed antennas will be located and will continue to integrate the Facility into the existing architecture of the building. Further, the proposed RRUs and surge arrestor will be mounted behind an existing parapet or otherwise mounted out of view. Therefore, AT&T's proposed Facility will remain aesthetically consistent with the exterior finish of the building as well as maintain the concealment elements of the original design.

See FCC Order, §1.40001(b)(7)(i)-(v).

VII. COMPLIANCE WITH THE CAMBRIDGE ZONING ORDINANCE

In the alternative, AT&T respectfully requests the Board to grant a special permit for the proposed modifications to the existing Facility.⁶

A. AT&T complies with the Wireless Communications provisions set forth in Section 4.32(g)(1), and Section 4.40, Footnote 49 of the Ordinance.

AT&T's proposed modifications comply with Section 4.32(g)(1), and Section 4.40, Footnote 49 of the Ordinance as follows:⁷

Section 4.32(g)(1): Section 4.32(g)(1) of the Ordinance allows for the use of a “[t]elephone exchange (including switching, relay, and transmission facilities serving mobile communications systems) and any towers or antennas accessory thereto.” Under the Table of Use Regulations beginning at Section 4.30, AT&T's proposed use of the Facility as a transmission facility serving a mobile communications system is permitted by special permit in the Business C zoning district (see the table at Section 4.32(g)(1)).

Section 4.40, Footnote 49: Section 4.32(g)(1) includes a reference to Section 4.40, Footnote 49 which sets out the standards for granting the special permit. AT&T's proposed Facility complies with Footnote 49's standards as noted below:

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

AT&T's Response: AT&T's FCC license is included with this application and the license information included shows that AT&T is authorized to provide wireless service in the area served by the Facility (see Exhibit 2).

- 2. The Board of Zoning Appeal shall consider “[t]he 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.”**

⁶ AT&T's request is made, if and to the extent necessary, all rights reserved. As discussed above, the FCC Order establishes a 60-day period for receipt of all necessary approvals from the time of AT&T's submission, including a building permit, if required. 47 CFR §1.40001(c)(2). If the Request is not acted upon within the 60-day period, it is deemed granted. 47 CFR §1.40001(c)(4). Therefore, AT&T expressly reserves its rights under 47 CFR §1.40001(c)(2) and (4).

⁷ To the extent that Section 4.32(g)(1), and Section 4.40, Footnote 49 of the Ordinance purport to require the submission of information that is beyond the scope permitted by the FCC Order or Spectrum Act, AT&T expressly reserves, and does not waive, its right to assert that such information is not required under the Spectrum Act and the submission of such information shall not constitute a waiver of AT&T's rights pursuant thereto.

AT&T's Response: The design of the overall Facility, including the choice and placement of replacement antenna and associated equipment, on the penthouse, minimizes the visual impact of the proposed Facility. This is because the antennas and equipment on the exterior façade surfaces will be painted to match the color and texture of the building so as to be minimally visible and consistent with the concealment elements of the existing Facility. The minimal visual impact of the Facility is shown in the photographs of the existing Facility (*see*, Exhibit 5).

3. **The Board of Zoning Appeal shall consider “[w]here 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 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.**

In granting a special permit the Board of Zoning Appeal shall set forth in its decision under which circumstances or procedures, if any, the permittee shall be allowed to replace and upgrade its equipment without the necessity of seeking a new special permit.”

AT&T's Response: As demonstrated by the Radio Frequency Report and the associated coverage maps, AT&T has demonstrated an immediate and compelling need for the proposed modifications to its existing Facility located at the Property in order to provide substantially improved indoor coverage to residents, businesses, students and faculty, and the general public in that area.⁸ AT&T also seeks to substantially improve its ability to satisfy the ever-increasing need of its customers for data accessibility, navigation and use. This is especially critical in and around the area of Massachusetts Ave. which also serves as home for numerous businesses. AT&T proposes to satisfy its RF coverage needs in the area by adding to the existing Facility the antennas and equipment necessary to provide the latest LTE wireless communications service technology. By modifying its existing Facility, AT&T obviates the need to construct an entirely new facility within this area of Cambridge in order to meet its wireless network coverage needs.

As provided in Footnote 49, AT&T requests that once permission is received from the City to site the Facility at the Property, the Board permit AT&T to replace and upgrade the equipment at this Facility in the future without further zoning proceedings or a new special permit, provided that such equipment shall meet the eligible facilities request criteria set forth in 47 CFR § 1.40001.

B. AT&T complies with the Special Permit Criteria set forth in Section 10.43 of the Ordinance.

⁸ AT&T must generate a signal strength of at least -74 dBm to provide serviceable voice and data coverage on its mobile wireless devices in indoor environments. AT&T also seeks to substantially improve its data navigation service coverage in the area by including antennas and equipment that will provide LTE service.

Section 10.43 of the Ordinance specifies the following criteria for issuance of a special permit: “Special permits will normally be granted where specific provisions of this Ordinance are met, except when particulars of the location or use, not generally true of the district or of the uses permitted in it, would cause granting of such permit to be to the detriment of the public interest because:

(a) The requirements of this Ordinance cannot or will not be met, or

AT&T’s Response: As provided above, AT&T’s proposed modifications comply with the requirements set forth in Section 4.32(g), Footnote 49 of the Ordinance, the Spectrum Act and the eligible facilities request criteria set forth in 47 CFR § 1.40001. Granting the special permit would not be a detriment to the public interest and is consistent with the Board’s obligations pursuant to the Spectrum Act and FCC Order.

(b) Traffic generated or patterns of access or egress would cause congestion, hazard, or substantial change in established neighborhood character for the following reasons, or

AT&T’s Response: The proposed modifications to AT&T’s existing Facility will not result in any change to the existing traffic on or near the Property. The Facility will continue to be unmanned and only require infrequent visits by a technician (typically two times per month for routine diagnostics and/or maintenance, except in cases of emergency), there will be no material increase in traffic or disruption to patterns of access or egress that will cause congestion, hazards or a substantial change in the established neighborhood character. AT&T’s maintenance personnel will make use of the existing access roads and parking at the building. Granting the special permit would not be a detriment to the public interest and is consistent with the Board’s obligations pursuant to the Spectrum Act and FCC Order.

(c) The continued operation of or the development of adjacent uses as permitted in the Zoning Ordinance would be adversely affected by the nature of the proposed use, or

AT&T’s Response: As described above and illustrated on the attached photographs (*see* Exhibit 5) the proposed modifications to the existing Facility will result in a *de minimis* change in the appearance of the building because the equipment will be located on building exterior surfaces. As a result, the Facility as a whole either will be hidden from view or will visually blend with existing characteristics of the building and the surrounding neighborhood. Because the proposed installation will not generate any traffic, smoke, dust, heat or glare, discharge noxious substances, nor pollute waterways or groundwater, it will not adversely affect residential uses on neighboring streets. Conversely, the surrounding properties and general public will benefit from the potential to enjoy improved wireless communications services. Granting the special permit would not be a detriment to the public interest and is consistent with the Board’s obligations pursuant to the Spectrum Act and FCC Order.

- (d) **Nuisance or hazard would be created to the detriment of the health, safety and/or welfare of the occupant of the proposed use or the citizens of the City, or**

AT&T's Response: Because the proposed modifications to the existing Facility will not cause the Facility to generate any traffic, smoke, dust, heat or glare, discharge noxious substances, nor pollute waterways or groundwater, no nuisance or hazard will be created to the detriment of the health, safety, or welfare of the occupants of the building or the residents of the City of Cambridge. To the contrary, the proposed Facility 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 that 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 Facility, as modified, will continue to comply with all federal, state and local safety requirements including the standards established by the FCC and Federal Aviation Administration (FAA). (See Exhibit 8 Maximum Permissible Exposure Study, Theoretical Report). Granting the special permit would not be a detriment to the public interest and is consistent with the Board's obligations pursuant to the Spectrum Act and FCC Order.

- (e) **For other reasons, the proposed installation would impair the integrity of the district or adjoining district or otherwise derogate from the intent or purpose of this Ordinance, or**

AT&T's Response: The purpose of the Ordinance is multifaceted, the relevant aspects of which relating to wireless telecommunications facilities include the lessening of congestion in the streets, conserving health, securing safety from fire, flood, panic and other danger, conserving the value of land and buildings and natural resources, preventing blight and pollution, encouraging the most rational use of land throughout the city, including encouraging appropriate economic development, and protecting residential neighborhoods from incompatible activities.

As noted above, the proposed modifications to the existing Facility directly accord with the purposes of the Ordinance because the modifications will not result in any traffic, smoke, dust, heat or glare, discharge noxious substances, nor pollute waterways or groundwater. As the Facility will improve the ability of residents, businesses, travelers and drivers in the area to access state-of-the-art wireless technology, the City's ability to provide emergency services will be improved, as will the economic development of the City as more people will be able to conduct commerce by virtue of a mobile platform. Because the proposed modifications to the existing Facility will be installed on an existing building that includes the Facility, and the proposed modifications are consistent with the existing concealment elements, the proposed modifications to the existing Facility are in consistent with the building's character and will not affect the value of the building or the natural resources of the City. Because the proposed modifications to the existing Facility are designed to be consistent with the existing concealment elements of the Facility and characteristics of the Property, the visual impact on the underlying and adjacent zoning districts will be *de minimis*. As a result, the proposed modifications to the existing Facility are consistent with the Ordinance's purpose to allow for less intrusive wireless telecommunications facilities in all districts (other than

Open Space) including the applicable overlay districts, and the underlying Business B district. Granting the special permit would not be a detriment to the public interest and is consistent with the Board's obligations pursuant to the Spectrum Act and FCC Order.

(f) The new use or building construction is inconsistent with the Urban Design Objectives set forth in Section 19.30

AT&T's Response: As stated in the Section 19.30, the Citywide Urban Design Objectives ("Objectives") "are intended to provide guidance to property owners and the general public as to the city's policies with regard to the form and character desirable for new development in the city. It is understood that application of these principles can vary with the context of specific building proposals in ways that, nevertheless, fully respect the policies' intent. It is intended that proponents of projects, and city staff, the Planning Board and the general public, where public review or approval is required, should be open to creative variations from the detailed provisions presented in this Section as long as the core values expressed are being served. *A project need not meet all the objectives of this Section 19.30 where this Section serves as the basis for issuance of a special permit. Rather the permit granting authority shall find that on balance the objectives of the city are being served.* Nor shall a project subject to special permit review be required to conform to the Required Building and Site Plan Requirements set forth in Section 11.50." [emphasis added]. For the reasons stated in AT&T's response to this Section 10.43(f) of the Zoning Ordinance and in its application generally, "on balance, the objectives of the city are being served" by the installation of the Facility at the Property so that granting the special permit would not be a detriment to the public interest and is consistent with the Board's obligations pursuant to the Spectrum Act and FCC Order.

The following are the Objectives' headings as appearing in the Ordinance:

19.31: New projects should be responsive to the existing or anticipated pattern of development.

AT&T's Response: The existing Facility is located on and within the existing building, some of the equipment of which is hidden from view behind the parapet and within the building, or otherwise obstructed from view, and the remaining equipment blends with the structures and colors of the building. The proposed modifications to the existing Facility are consistent with the design and concealment elements of the existing Facility. Therefore, the proposed modifications are responsive to the existing pattern of development in the Property's applicable zoning and overlay districts.

19.32: Development should be pedestrian and bicycle-friendly, with a positive relationship to its surroundings.

AT&T's Response: The existing Facility is located on and within the existing building. The Facility is only accessed by authorized AT&T personnel for routine maintenance one to two times per month and is not accessed by the general public. The proposed modifications to the existing Facility will not result in any increase in routine visits nor otherwise result in a change in traffic patterns in the vicinity of the Property that would affect pedestrian flow or cyclists' access to the building or surrounding areas within the Property's applicable zoning districts.

19.33 The building and site design should mitigate adverse environmental impacts of a development upon its neighbors. Indicators include⁹

(1) Mechanical equipment that is carefully designed, well organized or visually screened from its surroundings and is acoustically buffered from neighbors. Consideration is given to the size, complexity and appearance of the equipment, its proximity to residential areas, and its impact on the existing streetscape and skyline. The extent to which screening can bring order, lessen negative visual impacts, and enhance the overall appearance of the equipment should be taken into account. More specifically:

(a) Reasonable attempts have been made to avoid exposing rooftop mechanical equipment to public view from city streets. Among the techniques that might be considered are the inclusion of screens or a parapet around the roof of the building to shield low ducts and other equipment on the roof from view.

(b) Treatment of the mechanical equipment (including design and massing of screening devices as well as exposed mechanical elements) that relates well to the overall design, massing, scale and character of the building.

(c) Placement of mechanical equipment at locations on the site other than on the rooftop (such as in the basement), which reduces the bulk of elements located on the roof; however, at-grade locations external to the building should not be viewed as desirable alternatives.

(d) Tall elements, such as chimneys and air exhaust stacks, which are typically carried above screening devices for functioning reasons, are carefully designed as features of the building, thus creating interest on the skyline.

(e) All aspects of the mechanical equipment have been designed with attention to their visual impact on adjacent areas, particularly with regard to residential neighborhoods and views and vistas.

AT&T's Response: As shown in the photographs (*see* Exhibit 5), the existing Facility, as proposed to be modified herein, will continue to be visually consistent with the color and texture of the building, the concealment elements of the design of the Facility, and with other existing wireless communications facilities from competing carriers located on the building. As a result, AT&T's Facility is in keeping with the building's existing features without adversely affecting the building's overall design, massing, scale or character.

⁹ Inasmuch as Section 19.33 is most relevant to the Facility, it is stated here in full.

(2) Trash that is handled to avoid impacts (noise, odor, and visual quality) on neighbors, e.g. the use of trash compactors or containment of all trash storage and handling within a building is encouraged.

AT&T's Response: The Facility does not generate trash, therefore this design objective is inapplicable.

(3) Loading docks that are located and designed to minimize impacts (visual and operational) on neighbors.

AT&T's Response: The Facility does not utilize any loading dock, therefore this design objective is inapplicable.

(4) Stormwater Best Management Practices and other measures to minimize runoff and improve water quality are implemented.

AT&T's Response: The existing Facility, and the proposed modifications, are located entirely on and within the existing Building on the Property and have no effect on stormwater runoff, therefore this design objective is inapplicable.

(5) Landscaped areas and required Green Area Open Space, in addition to serving as visual amenities, are employed to reduce the rate and volume of stormwater runoff compared to pre-development conditions.

AT&T's Response: The existing Facility and proposed modifications have no effect any landscaped or Green Area Open Space, therefore this design objective is inapplicable.

(6) The structure is designed and sited to minimize shadow impacts on neighboring lots, especially shadows that would have a significant impact on the use and enjoyment of adjacent open space and shadows that might impact the operation of a Registered Solar Energy System as defined in Section 22.60 of this Zoning Ordinance.

AT&T's Response: The existing Facility and proposed modifications are designed so as not to cause shadows on neighboring lots.

(7) Changes in grade across the lot are designed in ways that minimize the need for structural retaining walls close to property lines.

AT&T's Response: The existing Facility and proposed modifications are located entirely on and within the existing building and have no impact on the grade of the Property, therefore this design objective is inapplicable.

(8) Building scale and wall treatment, including the provision of windows, are sensitive to existing residential uses on adjacent lots.

AT&T's Response: The proposed modifications to the existing Facility will not change the building's scale because antennas and equipment will blend with the color and

textures of the building (*see* Exhibit 3). The existing Facility and proposed modifications are consistent with characteristics of the existing building design, maintain the existing concealment elements of the Facility and therefore minimize any visual impact from the Facility.

(9) Outdoor lighting is designed to provide minimum lighting and necessary to ensure adequate safety, night vision, and comfort, while minimizing light pollution.

AT&T's Response: The existing Facility does not use any outdoor lighting. The proposed modifications to the Facility do not include any additional lighting of the Facility or building. As a result, this design objective is inapplicable.

(10) The creation of a Tree Protection Plan that identifies important trees on the site, encourages their protection, or provides for adequate replacement of trees lost to development on the site.

AT&T's Response: The existing Facility and proposed modifications are located entirely on and within the existing building and have no effect on any trees on the Property, therefore this design objective is inapplicable.

19.34: Projects should not overburden the City infrastructure services, including neighborhood roads, city water supply system, and sewer system.

AT&T's Response: The existing Facility, including the proposed modifications, is a passive use and will not generate trash, odor, excess noise, or utilize water or wastewater services. As such, it will not burden the City's infrastructure services.

19.35: New construction should reinforce and enhance the complex urban aspects of Cambridge as it has developed historically.

AT&T's Response: The proposed modification of the existing Facility located on and within the existing building, will obviate the need for AT&T to construct an additional Facility to address its wireless network coverage need in this area of Cambridge. The existing Facility and the proposed modifications blend the equipment with the building texture and color, and are consistent with the concealment elements of the Facility's design. As a result, the Facility will reinforce the existing Cambridge landscape as it currently is manifested at the Property.

19.36: Expansion of the inventory of housing in the city is encouraged.

AT&T's Response: The Facility and proposed modifications provide wireless services and will not adversely impact the City's housing inventory.

19.37. Enhancement and expansion of open space amenities in the city should be incorporated into new development in the city.

AT&T's Response: The Facility and proposed modifications are located on and within the existing building. The Facility and proposed modifications will not adversely impact or otherwise reduce open space amenities within the City.

VIII. SUMMARY

For the foregoing reasons AT&T respectfully requests that the Board to determine that pursuant to the Spectrum Act and the FCC Order, the Request constitutes and eligible facilities request and therefore AT&T's Request must be approved administratively, including the issuance of a building permit, without the need for further relief from the Board. In the alternative, without waiving its rights, AT&T requests the Board grant the foregoing zoning relief in the form of a Special Permit and such other relief as the Board deems necessary to allow the modification and operation of AT&T's proposed Facility.

Best Regards,

Timothy W. Greene
Authorized Agent to New Cingular Wireless PCS, LLC ("AT&T")



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

2019 MAR 20 PM 3:23

OFFICE OF THE CITY CLERK
 CAMBRIDGE, MASSACHUSETTS
 Plan No: BZA-017083-2019

BZA APPLICATION FORM

GENERAL INFORMATION

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

Special Permit : v Variance : _____ Appeal : _____

PETITIONER : New Cingular Wireless PCS, LLC dba AT&T Mobility - C/O Timothy Greene, Terra

PETITIONER'S ADDRESS : 157 Riverside Drive Norwell, MA 02061

LOCATION OF PROPERTY : 675 Massachusetts Ave Cambridge, MA

TYPE OF OCCUPANCY : _____ ZONING DISTRICT : Business B Zone

REASON FOR PETITION :

Other: Telecommunications upgrade

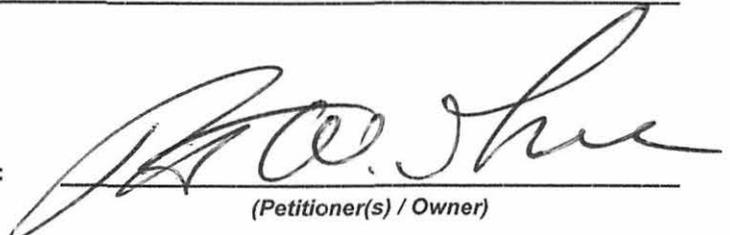
DESCRIPTION OF PETITIONER'S PROPOSAL :

AT&T will be adding 1 antenna to its existing installation on site. AT&T will also be adding and replacing other telecommunication equipments as part of nationwide network upgrades. This application is a Eligible Facilities Request pursuant to Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012

SECTIONS OF ZONING ORDINANCE CITED :

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 and Job Creation Act</u>

Original Signature(s) :



 (Petitioner(s) / Owner)

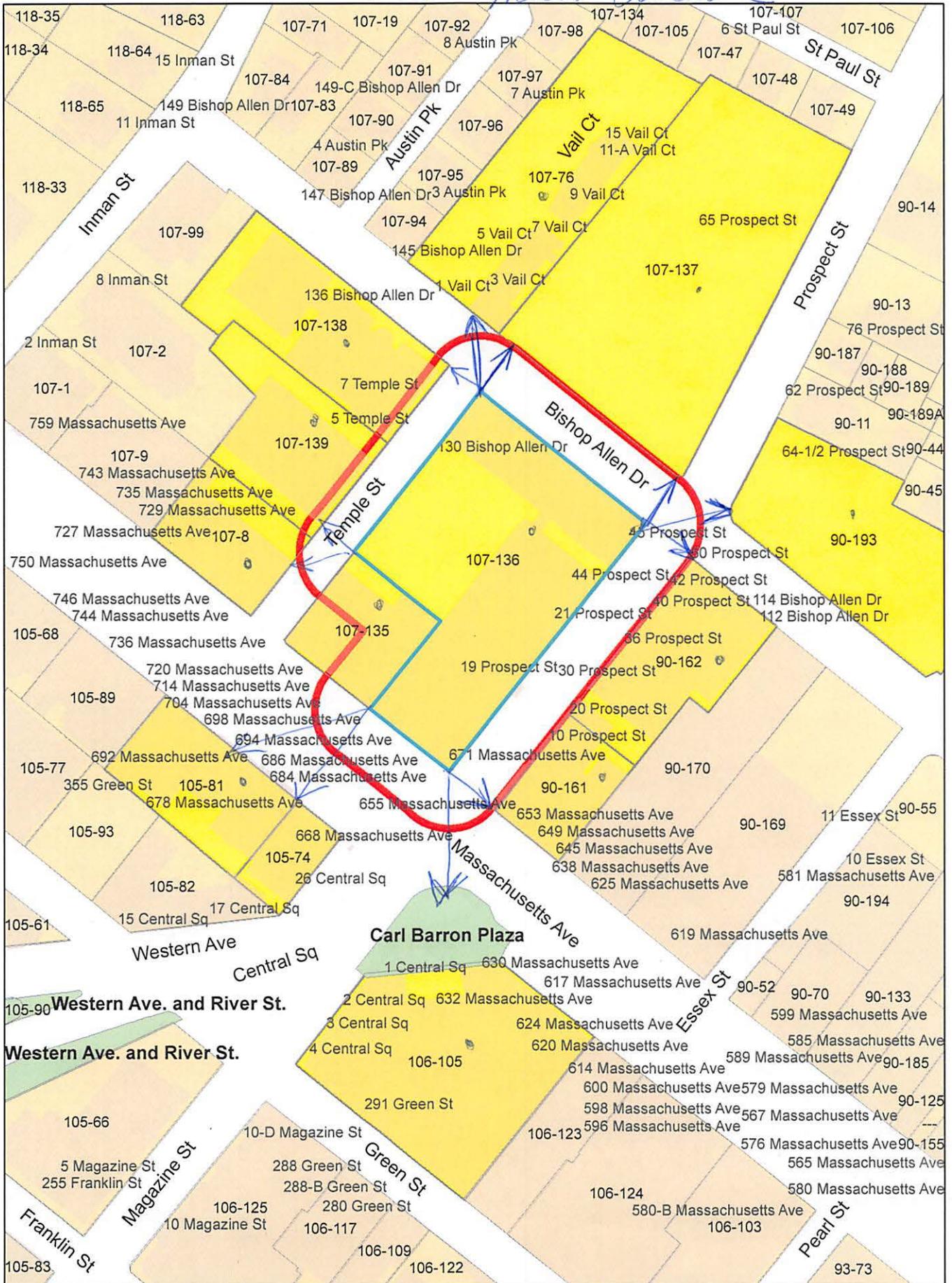
____ TerraSearch _____
 Timothy W. Greene _____
 157 Riverside Drive _____
 Address : _____ Norwell, MA 02061 _____

Tel. No. : 617-877-2950

E-Mail Address : tygreene@terrasearchllc.com

Date : 3/15/19

675 Mass Avenue



675 Mass Ave

90-193 / 107-136-137
U.S. REIF CENTRAL PLAZA MASS. LLC.
C/O INTERCONTINENTAL REAL.
1270 SOLDIERS FIELD RD
BOSTON, MA 02135

90-161-162
CHOICE REALTY LLC
825 BEACON ST., #1
NEWTON CENTRE, MA 02459

Petitioner
TIMOTHY W. GREENE
157 RIVERSIDE DRIVE
NORWELL, MA 02061

105-74
678 MASS AVE. LLC
825 BEACON ST., SUITE 1
NEWTON CENTER, MA 02159

105-81
CENTRAL PROPERTY LIMITED PARTNERSHIP
C/O RIVERSIDE MANAGEMENT
P.O. BOX #440317
WEST SOMERVILLE, MA 02144

106-105
CENTRAL SQUARE LLC,
C/O HUNNEMAN REAL ESTATE CORP.
303 CONGRESS ST.
BOSTON, MA 02210

107-8
GAS LIGHT BUILDING LLC
118 MILK ST
BOSTON, MA 02109

107-76
CITY OF CAMBRIDGE
C/O LOUIS DEPASQUALE
CITY MANAGER

107-138-139
CAMBRIDGE YOUNG WOMENS CHRISTIAN
ASSOCIATION
7 TEMPLE ST
CAMBRIDGE, MA 02139

107-135
THE UNITARIAN UNIVERSALIST SERVICE
COMMITTEE, INC.
689 MASSACHUSETTS AVE
CAMBRIDGE, MA 02139

107-76
CITY OF CAMBRIDGE
C/O NANCY GLOWA
CITY SOLICITOR



February 28, 2019

Donna P. Lopez, City Clerk City of Cambridge City Hall 795 Massachusetts Avenue Cambridge, MA 02139	Constantine Alexander, Chair Board of Zoning Appeal City Hall 795 Massachusetts Avenue Cambridge, MA 02139
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Applicant: New Cingular Wireless PCS, LLC (“AT&T”)
Property Address: 675 Massachusetts Ave
Assessor’s Map 107, Lot 136 (the “Property”)
Re: Application for:
(i) Eligible Facilities Request pursuant to Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012, 47 U.S.C. § 1455; or, in the alternative,
(ii) Special Permit under Cambridge Zoning Ordinance Section 4.32(g)(1) and M.G.L. c. 40A, Section 9; and
(iii) Any other zoning relief required.
(All relief if and to the extent necessary, all rights reserved)

Dear Ms. Lopez, Mr. Alexander and Members of the Board of Zoning Appeal:

Pursuant to Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012 (a/k/a the “Spectrum Act” or “Section 6409”), 47 U.S.C. § 1455, as further implemented by the Federal Communications Commission’s Report and Order *In re Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies*, FCC Docket No. 13-238, Report and Order No. 14-153 (October 17, 2014) (the “FCC Order”), New Cingular Wireless PCS, LLC (“AT&T”) hereby submits this Eligible Facilities Request (“Request”); and, in the alternative, applies for a special permit from the City of Cambridge Board of Zoning Appeal (the “Board”) under Section 432(g)(1) of the Cambridge Zoning Ordinance (the “Ordinance”) to modify its existing “Telephone Exchange including Transmission Facilities to serve a Mobile Communication System” (the “Facility”) on and within the existing building located at 675 Massachusetts Ave. (the “Special Permit Application”).²

² AT&T submits this Request, Special Permit application and supporting materials subject to a full and complete reservation of AT&T’s rights under the Spectrum Act and the FCC Order including without limitation its rights with respect to (i) any submittal requirements or approval criteria that are inconsistent with the prohibitions established by the FCC Order, (ii) any delay beyond the deadlines established in the FCC Order, (iii) the imposition of conditions on any approval that are inconsistent with the FCC Order, and (iv) referral or requirement to a discretionary review process such as a special permit.

Under Section 6409, AT&T's proposed modification of its existing transmission equipment on and within the existing building, previously approved by the Board for use as a wireless communication base station, does "not substantially change the physical dimensions" of the existing building. Therefore, AT&T's Request must be approved administratively, including the issuance of a building permit, to enable AT&T to make the proposed modifications to its transmission equipment.

In the alternative, as demonstrated in this application letter, the AT&T's proposed modifications to its existing Facility on the Property located in the Business B zoning district satisfy the requirements for the grant of a special permit pursuant to Section 10.43 of the Ordinance.

I. APPLICATION PACKAGE

Enclosed with this application is a check payable to the City of Cambridge in the amount of \$500.00. In addition to the signed original of this letter are copies of the letter and the following materials:

1. The following completed and signed application forms:
 - a. BZA Application Form – General Information;
 - b. BZA Application Form – Ownership Information;
 - c. BZA Application Form – Dimensional Requirements;
 - d. BZA Application Form – Supporting Statement for a Special Permit; and
 - e. BZA Application Form – Check List;
2. AT&T's relevant FCC License information;
3. Drawings by Hudson Design Group consisting of 11 pages dated 1/24/19;
4. Manufacturer's specification sheets for AT&T's proposed antennas and other featured equipment;
5. Photographs of the existing building by Hudson Design Group., dated 8/24/18;
6. Radio Frequency Coverage Report, demonstrating the public need for the proposed modifications to the Facility, radio frequency coverage maps showing (a) existing or predicted coverage from neighboring facilities; and (b) coverage with the proposed Facility;
7. Structural Analysis by Hudson Design Group LLC dated 12/13/18;
8. Maximum Permissible Exposure Study, Theoretical Report, by SAI Communications, dated December 2, 2015;
9. Letter of Authorization from Owner of Subject Property; and
10. Deed to subject property.

In addition to the supporting materials identified above, submitted simultaneously herewith is a completed building permit application package including:

1. Completed Building Permit Application;
2. Certificate of Liability Insurance;
3. Worker's Compensation Insurance Affidavit;
4. Construction Supervisor License for Keith F Barnard; and
5. 1 copy of the Plans.

II. PROPOSED FACILITY DESIGN

AT&T seeks to modify the existing Facility on and within the building located at the Property. The existing Facility consists of nine (9) panel antennas (Alpha Sector: 3 antennas, Beta Sector: 3 antennas, and Gamma Sector: 3 antennas) that mounted in three (3) locations. The proposed modifications include the addition of one (1) antenna on the Alpha Sector. The replacement antenna will be mounted to the existing antenna mount consistent with the current Facility's design. Three (3) remote radio-head units (RRUs) will be added in close proximity to the antennas and out of public view.

The Facility's design is shown in detail in the Zoning Drawings attached as Exhibit 3 to this application letter and featured equipment is described in the manufacturers' specification sheets attached as Exhibit 4. The photographs (Exhibit 5) show the building rooftop as currently existing from various locations in the neighborhood around the Property. The Alpha Sector is nor readily available to public view due to its location on the roof.. A structural analysis for the Facility demonstrates that the building is capable of supporting AT&T's proposed equipment at or near the locations shown on the Zoning Drawings (*see* Exhibit 7).

The Facility will continue to bring advanced wireless voice, text and data communications services to the surrounding areas. It will allow residents, professionals, government, businesses and students to communicate locally, nationally and internationally from virtually any location within the coverage area. In the event of an emergency, the improved Facility will allow immediate contact with fire, rescue and other emergency personnel. The improved Facility will thus enhance public health, safety and welfare both in ordinary daily living and in the event of fire, accident, medical emergency, natural disaster or other dangers.

III. BACKGROUND

AT&T is licensed by the Federal Communications Commission to construct and operate a wireless telecommunications network in various markets throughout the country, including the Commonwealth of Massachusetts and the City of Cambridge. A copy of the AT&T's FCC license that covers the area of the proposed Facility is included with this application (*see* Exhibit 2). AT&T is in the process of designing and constructing additional wireless facilities to its existing

telecommunications system to serve Massachusetts. One of the key design objectives of its systems is to provide adequate and reliable 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 extent of use of AT&T's wireless services within the network, and the existing topography and obstructions. 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. In urban settings, this dynamic requires the antennas to be located on buildings at heights and in locations where the signal is not obstructed or degraded by other buildings or by topographical features such as hills.

IV. RF COVERAGE DETERMINATION

AT&T has performed a study of radio frequency coverage for the City of Cambridge and from the Property, the results of which are described in the Radio Frequency Report submitted with this application (*see* Exhibit 6). Without the proposed modifications to its existing Facility, AT&T has a substantial coverage gap in this area of Cambridge stretching from both sides of Cambridge Street. AT&T has determined that the proposed modifications to the existing Facility located on the building at the Property will provide needed coverage to the targeted sections of the City and the immediately surrounding area if AT&T's antennas are located on the building's roof at the height and in the configuration requested. The importance of a facility at this location is underscored by AT&T's interest in enhancing its ability to provide its most up-to-date wireless technology, known as long-term evolution technology ("LTE"), in this area to satisfy its customers' ever-increasing needs for high-speed data services. Radio frequency coverage maps included in the report are provided to pictorially and vividly show the differences in existing and proposed wireless coverage at the various bands authorized for AT&T's service. The maps show dramatic improvements to wireless coverage at all three (3) bands with the inclusion of the proposed Facility, namely, at 700, 1900, and 2100 MHz.

V. THE FEDERAL SPECTRUM ACT AND THE FCC ORDER

As set forth below, the proposed modifications constitute an Eligible Facilities Request pursuant to the federal Spectrum Act,³ as further implemented by the FCC Order.⁴

Under the Spectrum Act, as further clarified by the FCC Order, the streamlined process for this Eligible Facilities Request is limited to non-discretionary review. Specifically, the FCC Order

³ Pursuant to Section 6409(a)(2) an "eligible facilities request" means any request for modification of an existing wireless tower or base station that involves—

- (A) collocation of new transmission equipment;
- (B) removal of transmission equipment; or
- (C) replacement of transmission equipment.

47 U.S.C. § 1455(a)(2).

⁴ The Order was effective on February 9, 2015, except for § 1.40001, which became effective on April 8, 2015, except for §§ 1.40001(c)(3)(i), 1.40001(c)(3)(iii), 1.40001(c)(4), and 17.4(c)(1)(vii), which became effective on May 18, 2015, after approval by the Office of Management and Budget. The FCC Order makes clear that under the Spectrum Act discretionary review is not required or permitted for an Eligible Facilities Request.

“adopt[s] an objective standard for determining when a proposed modification will ‘substantially change the physical dimensions’ of an existing tower or base station.” *FCC Order*, ¶ 87. As stated in the FCC Order, Section 6409 “states without equivocation that the reviewing authority ‘may not deny, and shall approve’ any qualifying application. This directive leaves no room for a lengthy and discretionary approach to reviewing an application that meets the statutory criteria.” *FCC Order*, ¶ 116.

In issuing the FCC Order and eliminating discretionary review for eligible facilities requests, the FCC’s goal was to “adopt a test that is defined by specific, objective factors rather than the contextual and entirely subjective standard advocated by the IAC and municipalities.” The FCC intentionally sought to reduce “flexibility” and “open ended context-specific approach” engendered by the discretionary review process:

While we acknowledge that the IAC approach would provide municipalities with maximum flexibility to consider potential effects, we are concerned that it would invite lengthy review processes that conflict with Congress’s intent. Indeed, some municipal commenters anticipate their review of covered requests under a subjective, case-by-case approach could take even longer than their review of collocations absent Section 6409(a). We also anticipate that disputes arising from a subjective approach would tend to require longer and more costly litigation to resolve given the more fact-intensive nature of the IAC’s open-ended and context-specific approach. We find that an objective definition, by contrast, will provide an appropriate balance between municipal flexibility and the rapid deployment of covered facilities. We find further support for this approach in State statutes that have implemented Section 6409(a), all of which establish objective standards.

FCC Order, ¶ 88.

As a result, the FCC Order implementing Section 6409 establishes clear and objective criteria for determining eligibility, limits the types of information that a municipality may require when processing an application for an eligible facilities request, and imposes a “deemed granted” remedy for failure to timely process and eligible facilities request.⁵ The FCC Order also establishes significant limits on the information that can be required to be provided with an eligible facilities request and limits it to only that information “reasonably related to determining whether the request meets the requirements of this section. A State or local government may not require an applicant to submit any other documentation”. 47 CFR 1.40001(c)(1).

Both before and after the FCC Order was issued, the Massachusetts Attorney General’s Office provided clear guidance that an eligible request cannot be subjected to a discretionary special permit process. *See* Attorney General’s letters to (i) Town of Mount Washington, dated June 12, 2014, p. 3 (ii) Town of Lynnfield, dated February 10, 2015, p. 3 (the “AG Lynnfield Letter”) and (iii) Town of Montague, dated February 23, 2015, p. 2 (all attached hereto). As set forth in each letter [t]he Act’s requirement that a local government ‘may not deny, and shall approve, any eligible facilities request’ means that a request for modification to an existing facility that does

⁵ *See* 47 CFR §§1.40001(c)(1) - (c)(4).

not substantially change the physical dimensions of the tower or base station must be approved. *Such qualifying requests also cannot be subject to a discretionary special permit.*”(Emphasis added). In providing these opinions, the Attorney General’s Office specifically opined that provisions in zoning ordinances that specifically required a special permit for modifications to existing facilities could not be applied to eligible facilities requests. While approving the Town of Lynnfield’s Zoning Bylaw, the Attorney General stated that “Section 8.7.5.1 requires that PWSF may only be erected upon the grant of a special permit. The Town cannot apply this requirement to eligible facilities requests for modification to existing facilities that qualify for required approval under Section 6409 of the Act.” *AG Lynnfield Letter*, p. 3.

Therefore, as set forth in the FCC Order and Attorney General’s opinion letters, the City cannot impose a requirement that AT&T obtain a special permit, or an amendment to an existing special permit utilizing the same discretionary review process, in connection with its eligible facilities request. To the extent that the City of Cambridge’s Zoning Ordinance and any prior decisions by the Board include provisions seeking to further regulate the modification of wireless communication facilities, federal law overrules those requirements. *See Sprint Spectrum L.P. v. Town of Swansea*, 574 F.Supp.2d 227, 236 (2008) (Board is obligated to consider whether its actions would violate federal law even if a different outcome would be permitted under state law). The standard of review for an application to modify an existing wireless communication facility on an existing tower or base station is governed by the Spectrum Act and the FCC Order which require eligible facilities requests to be permitted “by right.”

In addition, the FCC Order establishes a 60-day period for approval from the time of AT&T’s submission. 47 CFR §1.40001(c)(2). Within the context of the Spectrum Act and FCC Order, approval means all necessary approvals to permit the proposed modifications, including the issuance of a building permit, if required. The FCC found that this 60-day period is appropriate due to “the more restricted scope of review applicable to applications under section 6409(a).” *FCC Order*, ¶ 108. If the Request is not acted upon within the 60-day period, it is deemed granted. 47 CFR §1.40001(c)(4).

As set forth below, the proposed modifications constitute an eligible facilities request. Therefore, AT&T respectfully requests the Board to find that Section 4.32(g)(1) of the Ordinance does not apply to its Request.

VI. THE PROPOSED MODIFICATIONS ARE AN ELIGIBLE FACILITIES REQUEST

Under Section 6409 and the FCC Order, a “base station” means “[a] structure or equipment at a fixed location that enables Commission-licensed or authorized wireless communications between user equipment and a communications network.” 47 C.F.R §1.40001(b)(1). A Base Station includes “any structure other than a tower” that supports or houses “authorized wireless communications between user equipment and a communications network.” 47 C.F.R §1.40001(b)(1). Therefore, the existing building that is currently used for FCC-licensed transmissions for personal wireless services is a “base station” for purposes of Section 6409.

AT&T proposes to modify its existing Facility as described above and depicted on the Plans submitted herewith.

The proposed modifications will not require the installation of any part of the facility on the ground outside of the building.

As a result, AT&T's proposed modifications involving the removal and replacement of the existing transmission equipment constitute an "eligible facilities request" under Section 6409. The proposed eligible facilities request is not a "substantial modification" under Section 6409 and the FCC Order because it does not:

- (i) Result in an increase in "the height of the structure by more than 10% or more than ten feet, whichever is greater" because the proposed replacement antennas will be façade mounted and located below the roofline and therefore will not exceed 10 feet above the existing building;
- (ii) Protrude from the edge of the edge of the building by more than six feet because AT&T's proposed antennas will not protrude more than six feet from building façade;
- (iii) Involve the installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets no new radio communications equipment cabinets will be installed;
- (iv) Require any excavation or deployment outside the current site of the tower or base station because all antennas, equipment cabinets and related equipment will be installed entirely on and within the existing building; or
- (v) Otherwise defeat the existing concealment elements of the tower or base station because the proposed replacement antennas will be painted and textured to match the façade of the existing building on which the existing and proposed antennas will be located and will continue to integrate the Facility into the existing architecture of the building. Further, the proposed RRUs and surge arrestor will be mounted behind an existing parapet or otherwise mounted out of view. Therefore, AT&T's proposed Facility will remain aesthetically consistent with the exterior finish of the building as well as maintain the concealment elements of the original design.

See FCC Order, §1.40001(b)(7)(i)-(v).

VII. COMPLIANCE WITH THE CAMBRIDGE ZONING ORDINANCE

In the alternative, AT&T respectfully requests the Board to grant a special permit for the proposed modifications to the existing Facility.⁶

A. **AT&T complies with the Wireless Communications provisions set forth in Section 4.32(g)(1), and Section 4.40, Footnote 49 of the Ordinance.**

AT&T's proposed modifications comply with Section 4.32(g)(1), and Section 4.40, Footnote 49 of the Ordinance as follows:⁷

Section 4.32(g)(1): Section 4.32(g)(1) of the Ordinance allows for the use of a “[t]elephone exchange (including switching, relay, and transmission facilities serving mobile communications systems) and any towers or antennas accessory thereto.” Under the Table of Use Regulations beginning at Section 4.30, AT&T's proposed use of the Facility as a transmission facility serving a mobile communications system is permitted by special permit in the Business C zoning district (see the table at Section 4.32(g)(1)).

Section 4.40, Footnote 49: Section 4.32(g)(1) includes a reference to Section 4.40, Footnote 49 which sets out the standards for granting the special permit. AT&T's proposed Facility complies with Footnote 49's standards as noted below:

1. The Board of Zoning Appeal shall consider “[t]he scope of or limitations imposed by any license secured from any state or federal agency having jurisdiction over such matters.”

AT&T's Response: AT&T's FCC license is included with this application and the license information included shows that AT&T is authorized to provide wireless service in the area served by the Facility (see Exhibit 2).

2. The Board of Zoning Appeal shall consider “[t]he 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.”

⁶ AT&T's request is made, if and to the extent necessary, all rights reserved. As discussed above, the FCC Order establishes a 60-day period for receipt of all necessary approvals from the time of AT&T's submission, including a building permit, if required. 47 CFR §1.40001(c)(2). If the Request is not acted upon within the 60-day period, it is deemed granted. 47 CFR §1.40001(c)(4). Therefore, AT&T expressly reserves its rights under 47 CFR §1.40001(c)(2) and (4).

⁷ To the extent that Section 4.32(g)(1), and Section 4.40, Footnote 49 of the Ordinance purport to require the submission of information that is beyond the scope permitted by the FCC Order or Spectrum Act, AT&T expressly reserves, and does not waive, its right to assert that such information is not required under the Spectrum Act and the submission of such information shall not constitute a waiver of AT&T's rights pursuant thereto.

AT&T's Response: The design of the overall Facility, including the choice and placement of replacement antenna and associated equipment, on the penthouse, minimizes the visual impact of the proposed Facility. This is because the antennas and equipment on the exterior façade surfaces will be painted to match the color and texture of the building so as to be minimally visible and consistent with the concealment elements of the existing Facility. The minimal visual impact of the Facility is shown in the photographs of the existing Facility (*see*, Exhibit 5).

- 3. The Board of Zoning Appeal shall consider “[w]here 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 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.**

In granting a special permit the Board of Zoning Appeal shall set forth in its decision under which circumstances or procedures, if any, the permittee shall be allowed to replace and upgrade its equipment without the necessity of seeking a new special permit.”

AT&T's Response: As demonstrated by the Radio Frequency Report and the associated coverage maps, AT&T has demonstrated an immediate and compelling need for the proposed modifications to its existing Facility located at the Property in order to provide substantially improved indoor coverage to residents, businesses, students and faculty, and the general public in that area.⁸ AT&T also seeks to substantially improve its ability to satisfy the ever-increasing need of its customers for data accessibility, navigation and use. This is especially critical in and around the area of Massachusetts Ave. which also serves as home for numerous businesses. AT&T proposes to satisfy its RF coverage needs in the area by adding to the existing Facility the antennas and equipment necessary to provide the latest LTE wireless communications service technology. By modifying its existing Facility, AT&T obviates the need to construct an entirely new facility within this area of Cambridge in order to meet its wireless network coverage needs.

As provided in Footnote 49, AT&T requests that once permission is received from the City to site the Facility at the Property, the Board permit AT&T to replace and upgrade the equipment at this Facility in the future without further zoning proceedings or a new special permit, provided that such equipment shall meet the eligible facilities request criteria set forth in 47 CFR § 1.40001.

B. AT&T complies with the Special Permit Criteria set forth in Section 10.43 of the Ordinance.

⁸ AT&T must generate a signal strength of at least -74 dBm to provide serviceable voice and data coverage on its mobile wireless devices in indoor environments. AT&T also seeks to substantially improve its data navigation service coverage in the area by including antennas and equipment that will provide LTE service.

Section 10.43 of the Ordinance specifies the following criteria for issuance of a special permit: “Special permits will normally be granted where specific provisions of this Ordinance are met, except when particulars of the location or use, not generally true of the district or of the uses permitted in it, would cause granting of such permit to be to the detriment of the public interest because:

(a) The requirements of this Ordinance cannot or will not be met, or

AT&T’s Response: As provided above, AT&T’s proposed modifications comply with the requirements set forth in Section 4.32(g), Footnote 49 of the Ordinance, the Spectrum Act and the eligible facilities request criteria set forth in 47 CFR § 1.40001. Granting the special permit would not be a detriment to the public interest and is consistent with the Board’s obligations pursuant to the Spectrum Act and FCC Order.

(b) Traffic generated or patterns of access or egress would cause congestion, hazard, or substantial change in established neighborhood character for the following reasons, or

AT&T’s Response: The proposed modifications to AT&T’s existing Facility will not result in any change to the existing traffic on or near the Property. The Facility will continue to be unmanned and only require infrequent visits by a technician (typically two times per month for routine diagnostics and/or maintenance, except in cases of emergency), there will be no material increase in traffic or disruption to patterns of access or egress that will cause congestion, hazards or a substantial change in the established neighborhood character. AT&T’s maintenance personnel will make use of the existing access roads and parking at the building. Granting the special permit would not be a detriment to the public interest and is consistent with the Board’s obligations pursuant to the Spectrum Act and FCC Order.

(c) The continued operation of or the development of adjacent uses as permitted in the Zoning Ordinance would be adversely affected by the nature of the proposed use, or

AT&T’s Response: As described above and illustrated on the attached photographs (*see Exhibit 5*) the proposed modifications to the existing Facility will result in a *de minimis* change in the appearance of the building because the equipment will be located on building exterior surfaces. As a result, the Facility as a whole either will be hidden from view or will visually blend with existing characteristics of the building and the surrounding neighborhood. Because the proposed installation will not generate any traffic, smoke, dust, heat or glare, discharge noxious substances, nor pollute waterways or groundwater, it will not adversely affect residential uses on neighboring streets. Conversely, the surrounding properties and general public will benefit from the potential to enjoy improved wireless communications services. Granting the special permit would not be a detriment to the public interest and is consistent with the Board’s obligations pursuant to the Spectrum Act and FCC Order.

(d) Nuisance or hazard would be created to the detriment of the health, safety and/or welfare of the occupant of the proposed use or the citizens of the City, or

AT&T's Response: Because the proposed modifications to the existing Facility will not cause the Facility to generate any traffic, smoke, dust, heat or glare, discharge noxious substances, nor pollute waterways or groundwater, no nuisance or hazard will be created to the detriment of the health, safety, or welfare of the occupants of the building or the residents of the City of Cambridge. To the contrary, the proposed Facility 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 that 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 Facility, as modified, will continue to comply with all federal, state and local safety requirements including the standards established by the FCC and Federal Aviation Administration (FAA). (*See Exhibit 8 Maximum Permissible Exposure Study, Theoretical Report*). Granting the special permit would not be a detriment to the public interest and is consistent with the Board's obligations pursuant to the Spectrum Act and FCC Order.

(e) For other reasons, the proposed installation would impair the integrity of the district or adjoining district or otherwise derogate from the intent or purpose of this Ordinance, or

AT&T's Response: The purpose of the Ordinance is multifaceted, the relevant aspects of which relating to wireless telecommunications facilities include the lessening of congestion in the streets, conserving health, securing safety from fire, flood, panic and other danger, conserving the value of land and buildings and natural resources, preventing blight and pollution, encouraging the most rational use of land throughout the city, including encouraging appropriate economic development, and protecting residential neighborhoods from incompatible activities.

As noted above, the proposed modifications to the existing Facility directly accord with the purposes of the Ordinance because the modifications will not result in any traffic, smoke, dust, heat or glare, discharge noxious substances, nor pollute waterways or groundwater. As the Facility will improve the ability of residents, businesses, travelers and drivers in the area to access state-of-the-art wireless technology, the City's ability to provide emergency services will be improved, as will the economic development of the City as more people will be able to conduct commerce by virtue of a mobile platform. Because the proposed modifications to the existing Facility will be installed on an existing building that includes the Facility, and the proposed modifications are consistent with the existing concealment elements, the proposed modifications to the existing Facility are in consistent with the building's character and will not affect the value of the building or the natural resources of the City. Because the proposed modifications to the existing Facility are designed to be consistent with the existing concealment elements of the Facility and characteristics of the Property, the visual impact on the underlying and adjacent zoning districts will be *de minimis*. As a result, the proposed modifications to the existing Facility are consistent with the Ordinance's purpose to allow for less intrusive wireless telecommunications facilities in all districts (other than

Open Space) including the applicable overlay districts, and the underlying Business B district. Granting the special permit would not be a detriment to the public interest and is consistent with the Board's obligations pursuant to the Spectrum Act and FCC Order.

(f) The new use or building construction is inconsistent with the Urban Design Objectives set forth in Section 19.30

AT&T's Response: As stated in the Section 19.30, the Citywide Urban Design Objectives ("Objectives") "are intended to provide guidance to property owners and the general public as to the city's policies with regard to the form and character desirable for new development in the city. It is understood that application of these principles can vary with the context of specific building proposals in ways that, nevertheless, fully respect the policies' intent. It is intended that proponents of projects, and city staff, the Planning Board and the general public, where public review or approval is required, should be open to creative variations from the detailed provisions presented in this Section as long as the core values expressed are being served. *A project need not meet all the objectives of this Section 19.30 where this Section serves as the basis for issuance of a special permit. Rather the permit granting authority shall find that on balance the objectives of the city are being served.* Nor shall a project subject to special permit review be required to conform to the Required Building and Site Plan Requirements set forth in Section 11.50." [emphasis added]. For the reasons stated in AT&T's response to this Section 10.43(f) of the Zoning Ordinance and in its application generally, "on balance, the objectives of the city are being served" by the installation of the Facility at the Property so that granting the special permit would not be a detriment to the public interest and is consistent with the Board's obligations pursuant to the Spectrum Act and FCC Order.

The following are the Objectives' headings as appearing in the Ordinance:

19.31: New projects should be responsive to the existing or anticipated pattern of development.

AT&T's Response: The existing Facility is located on and within the existing building, some of the equipment of which is hidden from view behind the parapet and within the building, or otherwise obstructed from view, and the remaining equipment blends with the structures and colors of the building. The proposed modifications to the existing Facility are consistent with the design and concealment elements of the existing Facility. Therefore, the proposed modifications are responsive to the existing pattern of development in the Property's applicable zoning and overlay districts.

19.32: Development should be pedestrian and bicycle-friendly, with a positive relationship to its surroundings.

AT&T's Response: The existing Facility is located on and within the existing building. The Facility is only accessed by authorized AT&T personnel for routine maintenance one to two times per month and is not accessed by the general public. The proposed modifications to the existing Facility will not result in any increase in routine visits nor otherwise result in a change in traffic patterns in the vicinity of the Property that would affect pedestrian flow or cyclists' access to the building or surrounding areas within the Property's applicable zoning districts.

19.33 The building and site design should mitigate adverse environmental impacts of a development upon its neighbors. Indicators include⁹

(1) Mechanical equipment that is carefully designed, well organized or visually screened from its surroundings and is acoustically buffered from neighbors. Consideration is given to the size, complexity and appearance of the equipment, its proximity to residential areas, and its impact on the existing streetscape and skyline. The extent to which screening can bring order, lessen negative visual impacts, and enhance the overall appearance of the equipment should be taken into account. More specifically:

(a) Reasonable attempts have been made to avoid exposing rooftop mechanical equipment to public view from city streets. Among the techniques that might be considered are the inclusion of screens or a parapet around the roof of the building to shield low ducts and other equipment on the roof from view.

(b) Treatment of the mechanical equipment (including design and massing of screening devices as well as exposed mechanical elements) that relates well to the overall design, massing, scale and character of the building.

(c) Placement of mechanical equipment at locations on the site other than on the rooftop (such as in the basement), which reduces the bulk of elements located on the roof; however, at-grade locations external to the building should not be viewed as desirable alternatives.

(d) Tall elements, such as chimneys and air exhaust stacks, which are typically carried above screening devices for functioning reasons, are carefully designed as features of the building, thus creating interest on the skyline.

(e) All aspects of the mechanical equipment have been designed with attention to their visual impact on adjacent areas, particularly with regard to residential neighborhoods and views and vistas.

AT&T's Response: As shown in the photographs (*see* Exhibit 5), the existing Facility, as proposed to be modified herein, will continue to be visually consistent with the color and texture of the building, the concealment elements of the design of the Facility, and with other existing wireless communications facilities from competing carriers located on the building. As a result, AT&T's Facility is in keeping with the building's existing features without adversely affecting the building's overall design, massing, scale or character.

⁹ Inasmuch as Section 19.33 is most relevant to the Facility, it is stated here in full.

(2) Trash that is handled to avoid impacts (noise, odor, and visual quality) on neighbors, e.g. the use of trash compactors or containment of all trash storage and handling within a building is encouraged.

AT&T's Response: The Facility does not generate trash, therefore this design objective is inapplicable.

(3) Loading docks that are located and designed to minimize impacts (visual and operational) on neighbors.

AT&T's Response: The Facility does not utilize any loading dock, therefore this design objective is inapplicable.

(4) Stormwater Best Management Practices and other measures to minimize runoff and improve water quality are implemented.

AT&T's Response: The existing Facility, and the proposed modifications, are located entirely on and within the existing Building on the Property and have no effect on stormwater runoff, therefore this design objective is inapplicable.

(5) Landscaped areas and required Green Area Open Space, in addition to serving as visual amenities, are employed to reduce the rate and volume of stormwater runoff compared to pre-development conditions.

AT&T's Response: The existing Facility and proposed modifications have no effect any landscaped or Green Area Open Space, therefore this design objective is inapplicable.

(6) The structure is designed and sited to minimize shadow impacts on neighboring lots, especially shadows that would have a significant impact on the use and enjoyment of adjacent open space and shadows that might impact the operation of a Registered Solar Energy System as defined in Section 22.60 of this Zoning Ordinance.

AT&T's Response: The existing Facility and proposed modifications are designed so as not to cause shadows on neighboring lots.

(7) Changes in grade across the lot are designed in ways that minimize the need for structural retaining walls close to property lines.

AT&T's Response: The existing Facility and proposed modifications are located entirely on and within the existing building and have no impact on the grade of the Property, therefore this design objective is inapplicable.

(8) Building scale and wall treatment, including the provision of windows, are sensitive to existing residential uses on adjacent lots.

AT&T's Response: The proposed modifications to the existing Facility will not change the building's scale because antennas and equipment will blend with the color and

textures of the building (*see* Exhibit 3). The existing Facility and proposed modifications are consistent with characteristics of the existing building design, maintain the existing concealment elements of the Facility and therefore minimize any visual impact from the Facility.

(9) Outdoor lighting is designed to provide minimum lighting and necessary to ensure adequate safety, night vision, and comfort, while minimizing light pollution.

AT&T's Response: The existing Facility does not use any outdoor lighting. The proposed modifications to the Facility do not include any additional lighting of the Facility or building. As a result, this design objective is inapplicable.

(10) The creation of a Tree Protection Plan that identifies important trees on the site, encourages their protection, or provides for adequate replacement of trees lost to development on the site.

AT&T's Response: The existing Facility and proposed modifications are located entirely on and within the existing building and have no effect on any trees on the Property, therefore this design objective is inapplicable.

19.34: Projects should not overburden the City infrastructure services, including neighborhood roads, city water supply system, and sewer system.

AT&T's Response: The existing Facility, including the proposed modifications, is a passive use and will not generate trash, odor, excess noise, or utilize water or wastewater services. As such, it will not burden the City's infrastructure services.

19.35: New construction should reinforce and enhance the complex urban aspects of Cambridge as it has developed historically.

AT&T's Response: The proposed modification of the existing Facility located on and within the existing building, will obviate the need for AT&T to construct an additional Facility to address its wireless network coverage need in this area of Cambridge. The existing Facility and the proposed modifications blend the equipment with the building texture and color, and are consistent with the concealment elements of the Facility's design. As a result, the Facility will reinforce the existing Cambridge landscape as it currently is manifested at the Property.

19.36: Expansion of the inventory of housing in the city is encouraged.

AT&T's Response: The Facility and proposed modifications provide wireless services and will not adversely impact the City's housing inventory.

19.37: Enhancement and expansion of open space amenities in the city should be incorporated into new development in the city.

AT&T's Response: The Facility and proposed modifications are located on and within the existing building. The Facility and proposed modifications will not adversely impact or otherwise reduce open space amenities within the City.

VIII. SUMMARY

For the foregoing reasons AT&T respectfully requests that the Board to determine that pursuant to the Spectrum Act and the FCC Order, the Request constitutes and eligible facilities request and therefore AT&T's Request must be approved administratively, including the issuance of a building permit, without the need for further relief from the Board. In the alternative, without waiving its rights, AT&T requests the Board grant the foregoing zoning relief in the form of a Special Permit and such other relief as the Board deems necessary to allow the modification and operation of AT&T's proposed Facility.

Best Regards,

Timothy W. Greene
Authorized Agent to New Cingular Wireless PCS, LLC ("AT&T")

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T MOBILITY SPECTRUM LLC

ATTN: REGINALD YOUNGBLOOD
AT&T MOBILITY SPECTRUM LLC
3300 E. RENNER ROAD, B3132
RICHARDSON, TX 75082

Table with Call Sign (WQJU427), File Number, and Radio Service (WY - 700 MHz Lower Band).

FCC Registration Number (FRN): 0014980726

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

Waivers/Conditions:

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).

This license is subject to compliance with the conditions set forth in the Commission's Order of Modification, WT Docket No. 12-69, DA 14-43, released January 16, 2014.

Conditions:

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

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

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**Federal Communications Commission
Wireless Telecommunications Bureau**

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: REGINALD YOUNGBLOOD
NEW CINGULAR WIRELESS PCS, LLC
3300 E. RENNER ROAD, B3132
RICHARDSON, TX 75082

Call Sign KNKA226	File Number
Radio Service CL - Cellular	
Market Numer CMA006	Channel Block A
Sub-Market Designator 0	

FCC Registration Number (FRN): 0003291192

Market Name Boston-Lowell-Brockton-Lawrenc
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Grant Date 10-05-2004	Effective Date 02-13-2014	Expiration Date 10-01-2014	Five Yr Build-Out Date	Print Date
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Site Information:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
15	42-37-42.3 N	070-39-16.8 W	45.7	58.8	

Address: 40 DORY ROAD

City: GLOUCESTER **County:** ESSEX **State:** MA **Construction Deadline:**

Antenna	1	2	3	4	5	6	7	8	9
Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315	
Antenna Height AAT (meters)	93.100	97.500	101.800	101.800	100.800	88.700	85.700	101.800	
Transmitting ERP (watts)	158.853	205.617	68.628	9.427	0.642	0.431	2.268	29.488	
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315	
Antenna Height AAT (meters)	93.100	97.500	101.800	101.800	100.800	88.700	85.700	101.800	
Transmitting ERP (watts)	0.459	5.462	56.429	198.529	168.403	38.276	3.953	0.786	
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315	
Antenna Height AAT (meters)	93.100	97.500	101.800	101.800	100.800	88.700	85.700	101.800	
Transmitting ERP (watts)	12.078	0.668	0.599	1.024	10.050	68.014	123.413	62.132	

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.

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKA226

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
20	43-03-11.8 N	071-16-02.1 W	179.2	59.4	

Address: 80 Diamond Hill Road

City: Candia County: ROCKINGHAM State: NH Construction Deadline:

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	73.200	111.000	159.400	159.000	98.400	148.300	88.600	75.600
Transmitting ERP (watts)	52.325	70.778	16.988	1.425	0.187	0.144	0.491	7.084
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	73.200	111.000	159.400	159.000	98.400	148.300	88.600	75.600
Transmitting ERP (watts)	0.343	3.851	33.085	100.313	84.855	19.494	2.061	0.299
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	73.200	111.000	159.400	159.000	98.400	148.300	88.600	75.600
Transmitting ERP (watts)	6.845	0.890	0.107	1.038	6.652	7.633	3.304	6.905

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
24	42-54-55.1 N	071-21-37.4 W	100.9	46.3	1011624

Address: 15 INDEPENDENCE DRIVE

City: LONDONDERRY County: ROCKINGHAM State: NH Construction Deadline:

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	35.900	30.000	44.800	52.100	54.500	72.000	68.000	66.500
Transmitting ERP (watts)	161.221	224.756	47.602	3.692	0.510	0.437	1.233	19.454
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	35.900	30.000	44.800	52.100	54.500	72.000	68.000	66.500
Transmitting ERP (watts)	0.510	3.172	43.604	213.248	156.639	22.374	1.350	0.496
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	35.900	30.000	44.800	52.100	54.500	72.000	68.000	66.500
Transmitting ERP (watts)	11.168	0.691	0.533	0.586	7.854	87.092	266.329	94.294

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKA226

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
25	42-00-32.6 N	071-19-15.2 W	90.5	51.8	

Address: 75 WASHINGTON SST

City: PLAINVILLE County: NORFOLK State: MA Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.500	61.200	95.600	96.100	94.300	64.100	46.000	48.800
Transmitting ERP (watts)	84.752	97.052	31.772	5.158	0.550	0.224	2.803	20.645
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.500	61.200	95.600	96.100	94.300	64.100	46.000	48.800
Transmitting ERP (watts)	0.380	5.181	37.013	100.829	79.042	20.699	2.118	0.824
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	64.500	61.200	95.600	96.100	94.300	64.100	46.000	48.800
Transmitting ERP (watts)	24.577	1.736	0.715	2.292	18.444	139.378	281.180	142.336

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
26	41-46-57.1 N	070-44-06.5 W	12.5	58.8	

Address: KENDRICK ROAD

City: WAREHAM County: PLYMOUTH State: MA Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	30.000	46.500	56.700	59.800	50.600	39.100	32.800
Transmitting ERP (watts)	186.898	242.551	75.777	10.617	0.738	0.508	2.730	35.860
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	30.000	46.500	56.700	59.800	50.600	39.100	32.800
Transmitting ERP (watts)	0.361	5.818	47.861	150.309	121.062	28.493	2.933	0.991
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	30.000	46.500	56.700	59.800	50.600	39.100	32.800
Transmitting ERP (watts)	18.390	1.111	0.538	1.628	13.482	98.897	203.625	103.938

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKA226

File Number:

Print Date:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
27	41-53-35.2 N	070-56-35.0 W	17.7	106.1	1210211

Address: 326 W GROVE ST

City: Middleboro County: PLYMOUTH State: MA Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	47.500	46.300	30.000	37.000	40.900	39.500	51.600	42.300
Transmitting ERP (watts)	125.283	153.432	54.208	6.550	0.674	0.363	2.675	27.340
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	47.500	46.300	30.000	37.000	40.900	39.500	51.600	42.300
Transmitting ERP (watts)	0.351	5.901	52.455	151.828	120.612	27.887	2.679	0.991
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	47.500	46.300	30.000	37.000	40.900	39.500	51.600	42.300
Transmitting ERP (watts)	14.428	1.006	0.875	1.215	13.317	87.541	159.641	85.795

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
28	42-14-21.9 N	070-51-09.3 W	54.9	55.8	

Address: 168 Turkey Hill Lane

City: Cohasset County: NORFOLK State: MA Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	99.800	98.300	97.600	71.700	64.800	62.900	86.700	99.100
Transmitting ERP (watts)	185.522	243.217	80.727	11.598	0.756	0.499	2.589	34.953
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	99.800	98.300	97.600	71.700	64.800	62.900	86.700	99.100
Transmitting ERP (watts)	0.521	6.371	65.693	238.024	196.107	43.191	4.256	0.906
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	99.800	98.300	97.600	71.700	64.800	62.900	86.700	99.100
Transmitting ERP (watts)	9.488	0.543	0.538	1.234	8.977	53.553	85.290	45.661

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKA226

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
29	41-56-02.0 N	070-35-08.0 W	82.9	128.0	1007828

Address: 265 STATE ROAD

City: PLYMOUTH County: PLYMOUTH State: MA Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	128.000	128.000	128.000	123.500	92.200	86.600	84.900	120.500
Transmitting ERP (watts)	23.222	24.154	10.475	1.931	0.466	0.109	1.398	6.965
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	128.000	128.000	128.000	123.500	92.200	86.600	84.900	120.500
Transmitting ERP (watts)	0.346	4.427	33.055	88.168	72.485	17.790	1.831	0.701
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	128.000	128.000	128.000	123.500	92.200	86.600	84.900	120.500
Transmitting ERP (watts)	9.680	0.561	0.550	1.216	9.292	54.685	90.439	45.409

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
30	42-12-47.6 N	071-32-33.4 W	128.0	58.5	

Address: 26 LUMBER STREET

City: HOPKINTON County: MIDDLESEX State: MA Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	68.900	93.200	99.800	91.500	55.300	59.600	35.700	76.400
Transmitting ERP (watts)	158.662	188.312	64.228	8.830	0.704	0.395	4.080	30.535
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	68.900	93.200	99.800	91.500	55.300	59.600	35.700	76.400
Transmitting ERP (watts)	0.432	6.612	61.028	195.296	166.263	35.500	3.748	0.703
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	68.900	93.200	99.800	91.500	55.300	59.600	35.700	76.400
Transmitting ERP (watts)	18.831	1.074	0.590	1.783	15.144	103.799	219.501	97.060

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKA226

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
31	42-38-27.0 N	070-36-24.8 W	36.6	38.7	
Address: 38 Thatcher Rd					
City: ROCKLAND County: ESSEX State: MA Construction Deadline: 03-29-2013					

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.500	69.500	69.500	69.500	69.500	66.700	58.400	60.100
Transmitting ERP (watts)	170.519	227.554	76.127	10.393	0.706	0.470	2.520	32.796
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.500	69.500	69.500	69.500	69.500	66.700	58.400	60.100
Transmitting ERP (watts)	0.462	5.689	58.840	206.264	174.760	39.385	4.197	0.837
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.500	69.500	69.500	69.500	69.500	66.700	58.400	60.100
Transmitting ERP (watts)	20.761	1.510	0.812	1.238	15.269	110.467	237.338	124.965

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
32	42-36-37.9 N	071-33-28.9 W	148.4	46.3	
Address: 142 LOWELL RD					
City: GROTON County: MIDDLESEX State: MA Construction Deadline: 03-29-2013					

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	129.600	133.000	121.700	118.300	83.000	99.300	81.700	86.000
Transmitting ERP (watts)	209.658	291.175	91.511	11.206	1.156	0.596	4.998	40.617
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	129.600	133.000	121.700	118.300	83.000	99.300	81.700	86.000
Transmitting ERP (watts)	0.597	10.042	80.421	284.569	246.599	46.898	5.186	0.906
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	129.600	133.000	121.700	118.300	83.000	99.300	81.700	86.000
Transmitting ERP (watts)	18.748	1.375	0.781	1.196	15.487	106.791	230.014	118.184

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
33	42-08-01.1 N	070-43-57.5 W	68.3	80.5	1017973

Address: 178 EAMES WAY

City: Marshfield County: PLYMOUTH State: MA Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	125.300	128.600	128.200	125.800	107.800	113.100	97.600	105.400
Transmitting ERP (watts)	156.993	202.510	73.503	10.210	0.666	0.415	2.429	32.615
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	125.300	128.600	128.200	125.800	107.800	113.100	97.600	105.400
Transmitting ERP (watts)	0.482	5.988	62.083	217.536	187.313	40.576	4.382	0.869
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	125.300	128.600	128.200	125.800	107.800	113.100	97.600	105.400
Transmitting ERP (watts)	21.007	1.466	0.829	1.219	15.907	109.305	228.002	122.541

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
34	41-42-11.1 N	070-46-47.1 W	14.3	59.4	

Address: 55 BENSONBROOK ROAD

City: MARION County: PLYMOUTH State: MA Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	51.300	62.700	66.200	68.700	66.600	60.600	47.100	51.900
Transmitting ERP (watts)	161.079	196.082	67.519	9.213	0.702	0.419	4.077	32.479
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	51.300	62.700	66.200	68.700	66.600	60.600	47.100	51.900
Transmitting ERP (watts)	0.446	6.712	62.074	197.767	163.770	38.273	3.886	0.801
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	51.300	62.700	66.200	68.700	66.600	60.600	47.100	51.900
Transmitting ERP (watts)	3.819	0.784	0.433	6.729	64.256	202.261	164.916	37.606

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKA226

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
35	42-21-20.1 N	071-33-16.6 W	156.1	26.5	

Address: 157 UNION STREET

City: MARLBOROUGH County: MIDDLESEX State: MA Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	97.800	119.900	113.500	108.400	76.200	73.000	51.900	77.300
Transmitting ERP (watts)	280.304	377.489	119.970	14.810	1.525	0.802	6.660	52.209
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	97.800	119.900	113.500	108.400	76.200	73.000	51.900	77.300
Transmitting ERP (watts)	0.801	13.105	105.660	375.949	325.389	63.339	6.978	1.142
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	97.800	119.900	113.500	108.400	76.200	73.000	51.900	77.300
Transmitting ERP (watts)	30.606	2.831	1.046	2.632	27.909	187.774	419.392	197.441

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
36	42-39-54.6 N	070-38-19.9 W	59.4	44.5	

Address: 68 JOHNSON ROAD

City: ROCKPORT County: ESSEX State: MA Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	103.000	103.000	103.000	100.400	95.400	85.100	98.100	103.000
Transmitting ERP (watts)	126.741	159.124	54.189	7.443	0.564	0.334	3.098	25.685
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	103.000	103.000	103.000	100.400	95.400	85.100	98.100	103.000
Transmitting ERP (watts)	0.353	5.360	49.103	157.255	130.117	30.639	2.895	0.641
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	103.000	103.000	103.000	100.400	95.400	85.100	98.100	103.000
Transmitting ERP (watts)	15.787	0.974	0.495	1.442	11.730	84.942	168.331	87.120

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
37	42-41-29.8 N	071-47-30.8 W	233.8	47.9	

Address: 1140 Greenville Rd

City: ASHBY County: MIDDLESEX State: MA Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	138.200	163.500	145.000	68.800	30.000	30.000	30.000
Transmitting ERP (watts)	301.383	343.844	123.915	17.212	1.267	0.862	4.339	57.968
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	138.200	163.500	145.000	68.800	30.000	30.000	30.000
Transmitting ERP (watts)	0.559	6.546	72.077	254.800	226.824	50.359	4.678	0.979
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	138.200	163.500	145.000	68.800	30.000	30.000	30.000
Transmitting ERP (watts)	35.557	2.084	1.375	2.194	29.159	209.483	410.600	215.057

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
38	42-38-54.9 N	071-47-40.6 W	240.8	47.2	

Address: 601-603 FITCHBURG STATE ROAD

City: ASHBY County: MIDDLESEX State: MA Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	31.100	159.800	170.800	147.700	56.300	30.000	30.000	30.000
Transmitting ERP (watts)	204.865	233.420	85.530	11.768	0.897	0.575	2.961	39.554
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	31.100	159.800	170.800	147.700	56.300	30.000	30.000	30.000
Transmitting ERP (watts)	0.570	6.676	74.271	261.076	238.587	50.169	4.787	1.001
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	31.100	159.800	170.800	147.700	56.300	30.000	30.000	30.000
Transmitting ERP (watts)	24.123	1.410	0.948	1.499	20.272	140.599	280.157	146.756

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKA226

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
40	43-05-58.2 N	070-47-28.6 W	7.6	67.4	

Address: 165 GOSLING RD

City: NEWINGTON County: ROCKINGHAM State: NH Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	34.000	45.500	68.500	72.400	58.800	51.900	57.200	52.000
Transmitting ERP (watts)	205.727	278.300	62.928	5.059	0.711	0.597	1.577	25.136
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	34.000	45.500	68.500	72.400	58.800	51.900	57.200	52.000
Transmitting ERP (watts)	0.559	3.335	47.419	236.351	181.187	26.867	1.510	0.563
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	34.000	45.500	68.500	72.400	58.800	51.900	57.200	52.000
Transmitting ERP (watts)	10.525	0.618	0.497	0.555	7.391	82.592	243.998	90.540

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
41	43-04-39.1 N	071-07-30.3 W	107.0	60.7	1231475

Address: 150 Raymond Road

City: Nottingham County: ROCKINGHAM State: NH Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	54.900	95.800	122.100	119.300	102.200	66.300	44.100	30.000
Transmitting ERP (watts)	160.334	230.049	54.265	4.271	0.586	0.522	1.415	21.993
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	54.900	95.800	122.100	119.300	102.200	66.300	44.100	30.000
Transmitting ERP (watts)	0.493	3.289	48.427	238.724	177.920	27.618	1.619	0.581
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	54.900	95.800	122.100	119.300	102.200	66.300	44.100	30.000
Transmitting ERP (watts)	10.353	0.693	0.601	0.662	8.753	100.864	305.315	110.743

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

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Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
42	43-13-24.3 N	071-14-23.2 W	189.0	38.7	

Address: 50 OLD CANTERBURY RD

City: NORTHWOOD County: ROCKINGHAM State: NH Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	30.000	43.800	80.800	68.900	30.000	53.500	30.000
Transmitting ERP (watts)	114.248	162.456	37.049	2.808	0.392	0.366	0.961	16.015
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	30.000	43.800	80.800	68.900	30.000	53.500	30.000
Transmitting ERP (watts)	0.544	3.573	49.915	233.638	184.420	30.453	1.413	0.618
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	30.000	30.000	43.800	80.800	68.900	30.000	53.500	30.000
Transmitting ERP (watts)	8.132	0.494	0.387	0.467	6.390	72.302	182.164	77.916

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
43	42-59-40.7 N	070-46-58.5 W	12.5	59.4	

Address: 96 GROVE RD

City: RYE County: ROCKINGHAM State: NH Construction Deadline: 03-29-2013

Antenna: 1 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	49.700	62.100	64.000	64.300	63.700	45.100	38.900	54.200
Transmitting ERP (watts)	146.515	206.846	49.164	3.766	0.505	0.452	1.193	17.877
Antenna: 2 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	49.700	62.100	64.000	64.300	63.700	45.100	38.900	54.200
Transmitting ERP (watts)	0.464	2.913	42.460	206.462	152.606	24.148	1.373	0.460
Antenna: 3 Azimuth (from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	49.700	62.100	64.000	64.300	63.700	45.100	38.900	54.200
Transmitting ERP (watts)	10.168	0.644	0.536	0.576	7.457	86.483	257.603	87.494

Control Points:

Control Pt. No. 2

Address: 100 LOWDER BROOK DR

City: WESTWOOD County: NORFOLK State: MA Telephone Number: (617)462-7094

Licensee Name: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: KNKA226

File Number:

Print Date:

Waivers/Conditions:

Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T MOBILITY SPECTRUM LLC

ATTN: REGINALD YOUNGBLOOD
AT&T MOBILITY SPECTRUM LLC
3300 E. RENNER ROAD, B3132
RICHARDSON, TX 75082

Call Sign KNLB200	File Number
Radio Service WS - Wireless Communications Service	

FCC Registration Number (FRN): 0014980726

Grant Date 09-27-2010	Effective Date 02-12-2014	Expiration Date 07-21-2017	Print Date
Market Number MEA001	Channel Block B	Sub-Market Designator 0	
Market Name Boston			
1st Build-out Date 03-13-2017	2nd Build-out Date 09-13-2019	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

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).

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/Mexico), future coordination of any base station transmitters 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.

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: AT&T MOBILITY SPECTRUM LLC

Call Sign: KNLB200

File Number:

Print Date:

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.

Spectrum Lease associated with this license. See Spectrum Leasing Arrangement Letter dated 04/01/2005 and File No. 0001999501.

License renewal is 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).

Pursuant to WCS Order on Reconsideration, FCC 12-130, in order to obtain a renewal expectancy at the 7/21/17 renewal deadline, a licensee must, for each license area, certify that it has maintained, or exceeded, the level of coverage demonstrated for that license area at the 3/13/2017 construction deadline.

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T MOBILITY SPECTRUM LLC

ATTN: REGINALD YOUNGBLOOD
AT&T MOBILITY SPECTRUM LLC
3300 E. RENNER ROAD, B3132
RICHARDSON, TX 75082

Table with Call Sign (KNLB210), File Number, and Radio Service (WS - Wireless Communications Service).

FCC Registration Number (FRN): 0014980726

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

Waivers/Conditions:

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).

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/Mexico), future coordination of any base station transmitters 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.

Conditions:

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

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

Licensee Name: AT&T MOBILITY SPECTRUM LLC

Call Sign: KNLB210

File Number:

Print Date:

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.

License renewal is 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).

Pursuant to WCS Order on Reconsideration, FCC 12-130, in order to obtain a renewal expectancy at the 7/21/17 renewal deadline, a licensee must, for each license area, certify that it has maintained, or exceeded, the level of coverage demonstrated for that license area at the 3/13/2017 construction deadline.

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T MOBILITY SPECTRUM LLC

ATTN: REGINALD YOUNGBLOOD
AT&T MOBILITY SPECTRUM LLC
3300 E. RENNER ROAD, B3132
RICHARDSON, TX 75082

Table with Call Sign (KNLB297), File Number, and Radio Service (WS - Wireless Communications Service).

FCC Registration Number (FRN): 0014980726

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

Waivers/Conditions:

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).

License renewal is 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).

Pursuant to WCS Order on Reconsideration, FCC 12-130, in order to obtain a renewal expectancy at the 7/21/17 renewal deadline, a licensee must, for each license area, certify that it has maintained, or exceeded, the level of coverage demonstrated for that license area at the 3/13/2017 construction deadline.

Conditions:

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

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

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: REGINALD YOUNGBLOOD
NEW CINGULAR WIRELESS PCS, LLC
2200 N. GREENVILLE AVE, 1W
RICHARDSON, TX 75082

Table with Call Sign (KNLF216), File Number, and Radio Service (CW - PCS Broadband).

FCC Registration Number (FRN): 0003291192

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

Waivers/Conditions:

This license is conditioned upon compliance with the provisions of Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation For Consent to Transfer Control of Licenses and Authorizations, Memorandum Opinion and Order, FCC 04-255 (rel. Oct. 26, 2004).

Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

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.

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: REGINALD YOUNGBLOOD
NEW CINGULAR WIRELESS PCS, LLC
2200 N. GREENVILLE AVE, 1W
RICHARDSON, TX 75082

Call Sign WPOI214	File Number
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0003291192

Grant Date 07-07-2005	Effective Date 11-24-2012	Expiration Date 06-23-2015	Print Date
Market Number MTA008	Channel Block A	Sub-Market Designator 7	
Market Name Boston-Providence			
1st Build-out Date 06-23-2000	2nd Build-out Date 06-23-2005	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

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

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.

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: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: WPOI214

File Number:

Print Date:

This license is conditioned upon compliance with the provisions of Applications of AT&T Wireless Services, Inc. and Cingular Wireless Corporation For Consent to Transfer Control of Licenses and Authorizations, Memorandum Opinion and Order, FCC 04-255 (rel. Oct. 26, 2004).

Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T MOBILITY II LLC

ATTN: REGINALD YOUNGBLOOD
AT&T MOBILITY II LLC
3300 E. RENNER ROAD, B3132
RICHARDSON, TX 75082

Call Sign WPWU950	File Number
Radio Service WZ - 700 MHz Lower Band (Blocks C, D)	

FCC Registration Number (FRN): 0016982233

Grant Date 01-24-2003	Effective Date 02-11-2014	Expiration Date 06-13-2019	Print Date
Market Number CMA006	Channel Block C	Sub-Market Designator 0	
Market Name Boston-Lowell-Brockton-Lawrenc			
1st Build-out Date 06-13-2019	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

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).

Operation of the facilities authorized herein, are subject to the condition that harmful interference may not be caused to, but must be accepted from UHF TV transmitters in Canada and Mexico as identified in existing and any future agreements with those countries.

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: AT&T MOBILITY II LLC

Call Sign: WPWU950

File Number:

Print Date:

This license is subject to compliance with the conditions set forth in the Commission's Order of Modification, WT Docket No. 12-69, DA 14-43, released January 16, 2014.

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: NEW CINGULAR WIRELESS PCS, LLC

ATTN: REGINALD YOUNGBLOOD
NEW CINGULAR WIRELESS PCS, LLC
3300 E. RENNER ROAD, B3132
RICHARDSON, TX 75082

Table with Call Sign (WPZY689), File Number, and Radio Service (CW - PCS Broadband).

FCC Registration Number (FRN): 0003291192

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

Waivers/Conditions:

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

This authorization is conditioned upon the full and timely payment of all monies due pursuant to Sections 1.2110 and 24.711 of the Commission's Rules and the terms of the Commission's installment plan as set forth in the Note and Security Agreement executed by the licensee. Failure to comply with this condition will result in the automatic cancellation of this authorization.

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: NEW CINGULAR WIRELESS PCS, LLC

Call Sign: WPZY689

File Number:

Print Date:

Pursuant to Order DA 03-617 (rel. March 3, 2003), the designated entity holding period for this license is extended by 703 days, or until the licensee meets its five-year construction requirement, whichever is sooner.

Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AT&T MOBILITY SPECTRUM LLC

ATTN: REGINALD YOUNGBLOOD
AT&T MOBILITY SPECTRUM LLC
2200 N. GREENVILLE AVE, 1W
RICHARDSON, TX 75082

Table with Call Sign (WQGA763), File Number, and Radio Service (AW - AWS, 1710-1755/2110-2155 MHz bands).

FCC Registration Number (FRN): 0014980726

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

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations.

Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station is licensed under the prior name.

Conditions:

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

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

Licensee Name: AT&T MOBILITY SPECTRUM LLC

Call Sign: WQGA763

File Number:

Print Date:

AWS operations must not cause harmful interference across the Canadian or Mexican Border. The authority granted herein is subject to future international agreements with Canada or Mexico, as applicable.

Commission approval of this application and the licenses contained therein are subject to the conditions set forth in the Memorandum Opinion and Order, adopted on December 29, 2006 and released on March 26, 2007, and revised in the Order on Reconsideration, adopted and released on March 26, 2007. See AT&T Inc. and BellSouth Corporation Application for Transfer of Control, WC Docket No. 06-74, Memorandum Opinion and Order, FCC 06-189 (rel. Mar. 26, 2007); AT&T Inc. and BellSouth Corporation, WC Docket No. 06-74, Order on Reconsideration, FCC 07-44 (rel. Mar. 26, 2007).

PROJECT INFORMATION

SCOPE OF WORK: ITEMS TO BE MOUNTED ON THE EXISTING ROOFTOP (ALPHA SECTOR ONLY):

- NEW AT&T LTE ANTENNA (800-10964) @ POSITION 2 (TOTAL OF 1).
- NEW AT&T RRUS 4426 B66 (AWS) (TOTAL OF 1).
- NEW AT&T RRUS 4478 B5 (850) (TOTAL OF 1).
- NEW AT&T RRUS RRUS 4478 B14 (700) (TOTAL OF 1).
- NEW SURGE ARRESTOR (DC6-48-60-18-8C) (TOTAL OF 1) WITH (2) DC POWER & (1) FIBER RUN.
- NEW LOW BAND COMBINERS (DBCT108F1V92-1) (TOTAL OF 2).

ITEMS TO BE MOUNTED AT EQUIPMENT LOCATION:

- SWAP DUS FOR 5216.
- ADD 6630.
- ADD XMU.
- BASEBAND CONFIGURATION AS PER PD / SECTION-7.

ITEMS TO REMAIN (ALPHA SECTOR ONLY ONLY):

- (3) ANTENNAS, (4) RRU'S, (1) TMA, (2) TRIPLEXERS, (1) SURGE ARRESTOR, (4) COAX CABLES, (2) DC POWER & (1) FIBER.

SITE ADDRESS: 675 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02139

LATITUDE: 42.365824 N, 42° 21' 56.96" N
LONGITUDE: 71.103888 W, 71° 06' 14.00" W
TYPE OF SITE: ROOFTOP / INDOOR EQUIPMENT
STRUCTURE HEIGHT: 185'±
RAD CENTER: 189'±
CURRENT USE: TELECOMMUNICATIONS FACILITY
PROPOSED USE: TELECOMMUNICATIONS FACILITY



SITE NUMBER: MA2035

SITE NAME: CAMBRIDGE

FA CODE: 10014119

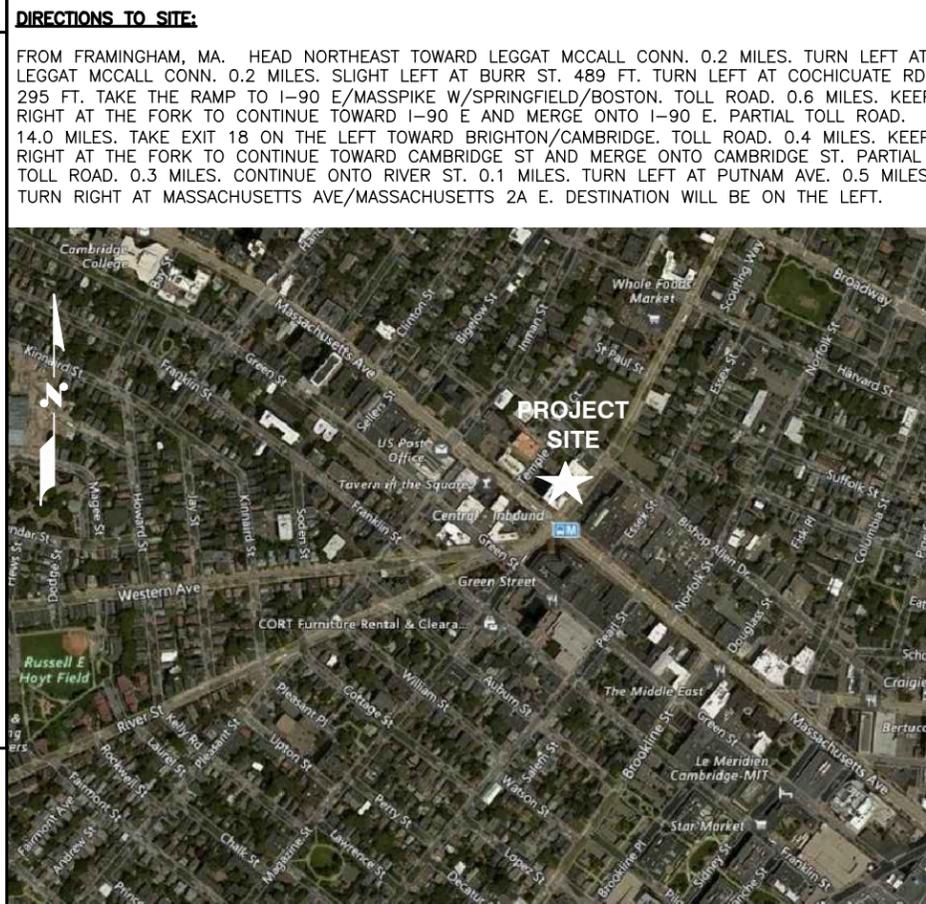
PACE ID:MRCTB032258, MRCTB032298, MRCTB032314

PROJECT: LTE 6C/7C/5G 2019 UPGRADE

DRAWING INDEX

SHEET NO.	DESCRIPTION	REV.
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A-3	ANTENNA LAYOUTS	1
A-4	DETAILS	1
SN-1	STRUCTURAL NOTES	1
S-1	STRUCTURAL DETAILS	1
S-2	STRUCTURAL DETAILS	1
RF-1	RF PLUMBING DIAGRAM	1
G-1	GROUNDING DETAILS	1

VICINITY MAP



GENERAL NOTES

1. THIS DOCUMENT IS THE CREATION, DESIGN, PROPERTY AND COPYRIGHTED WORK OF AT&T. ANY DUPLICATION OR USE WITHOUT EXPRESS WRITTEN CONSENT IS STRICTLY PROHIBITED. DUPLICATION AND USE BY GOVERNMENT AGENCIES FOR THE PURPOSES OF CONDUCTING THEIR LAWFULLY AUTHORIZED REGULATORY AND ADMINISTRATIVE FUNCTIONS IS SPECIFICALLY ALLOWED.
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 AT&T MOBILITY REPRESENTATIVE IN WRITING OF DISCREPANCIES BEFORE PROCEEDING WITH THE WORK OR BE RESPONSIBLE FOR SAME.
4. CONSTRUCTION DRAWINGS ARE VALID FOR SIX MONTHS AFTER ENGINEER OF RECORD'S STAMPED AND SIGNED SUBMITTAL DATE LISTED HEREIN.

UNDERGROUND SERVICE ALERT



**WWW.DIGSAFE.COM
72 HOURS PRIOR**



HGD HUDSON Design Group LLC
45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SAI
12 INDUSTRIAL WAY
SALEM, NH 03079

**SITE NUMBER: MA2035
SITE NAME: CAMBRIDGE
675 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02139
MIDDLESEX COUNTY**

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	01/24/19	ISSUED FOR CONSTRUCTION	AM		
0	01/11/19	ISSUED FOR REVIEW	EB	AT	DJC
A	08/06/18	ISSUED FOR REVIEW	ET	AT	DJC

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: ET

SITE NUMBER	DRAWING NUMBER	REV
MA2035	T-1	1

AT&T
TITLE SHEET
(LTE 6C/7C/5G)

GROUNDING NOTES

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

GENERAL NOTES

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

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

BUILDING CODE: IBC 2015 & MA STATE BUILDING CODE 780 CMR 9TH EDITION
 ELECTRICAL CODE: 2017 NATIONAL ELECTRICAL CODE (NFPA 70-2017)

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

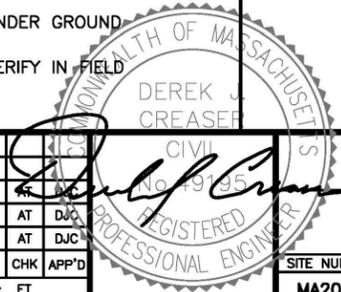
AMERICAN CONCRETE INSTITUTE (ACI) 318; BUILDING CODE REQUIREMENTS FOR STRUCTURAL CONCRETE

AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC) MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

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

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

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



HGD HUDSON Design Group LLC
 45 BEECHWOOD DRIVE NORTH ANDOVER, MA 01845
 TEL: (978) 557-5553 FAX: (978) 336-5586

SAI
 12 INDUSTRIAL WAY SALEM, NH 03079

SITE NUMBER: MA2035
SITE NAME: CAMBRIDGE
 675 MASSACHUSETTS AVENUE
 CAMBRIDGE, MA 02139
 MIDDLESEX COUNTY

at&t
 550 COCHITUATE ROAD FRAMINGHAM, MA 01701

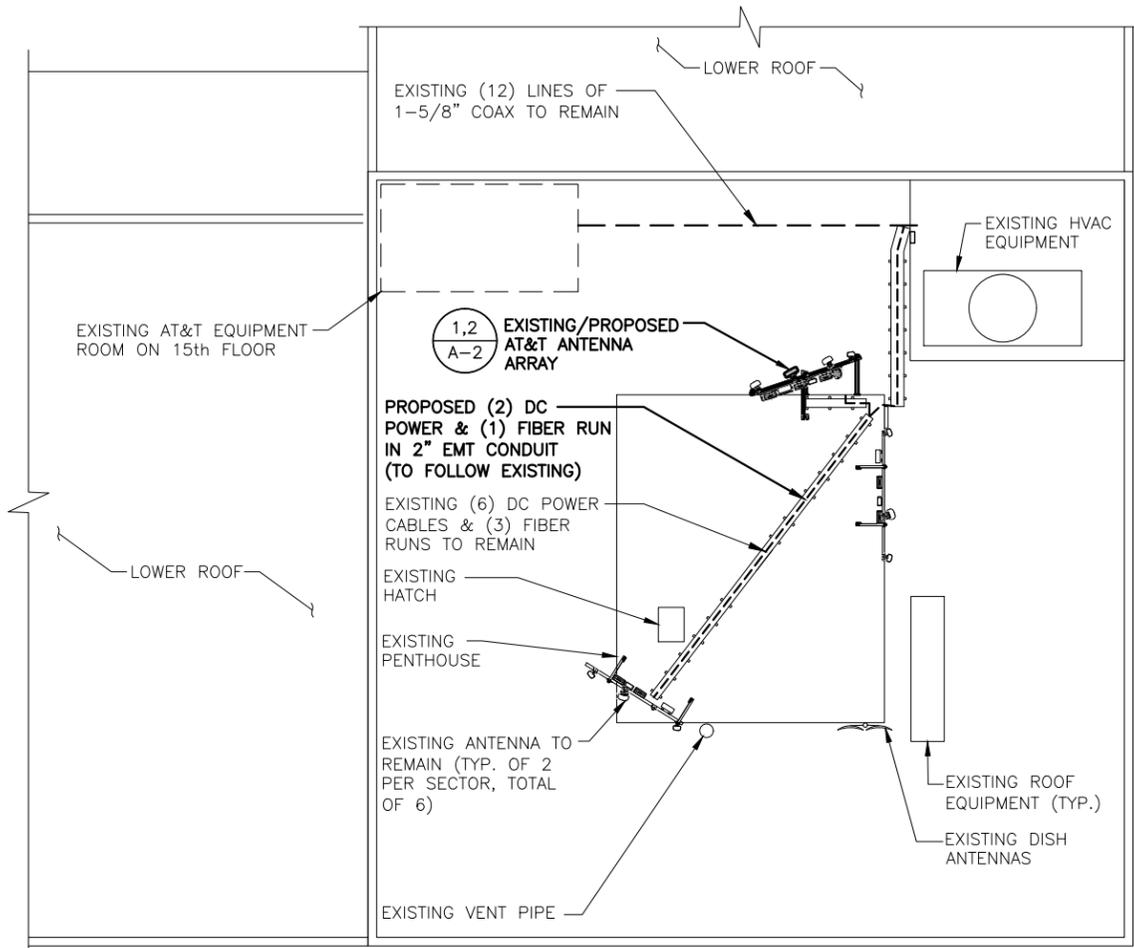
NO.	DATE	REVISIONS	BY	CHK	APP'D
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0	01/11/19	ISSUED FOR REVIEW	EB	AT	DJC
A	08/06/18	ISSUED FOR REVIEW	ET	AT	DJC

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: ET

AT&T		
GENERAL NOTES (LTE 6C/7C/5G)		
SITE NUMBER	DRAWING NUMBER	REV
MA2035	GN-1	1

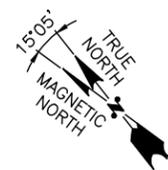
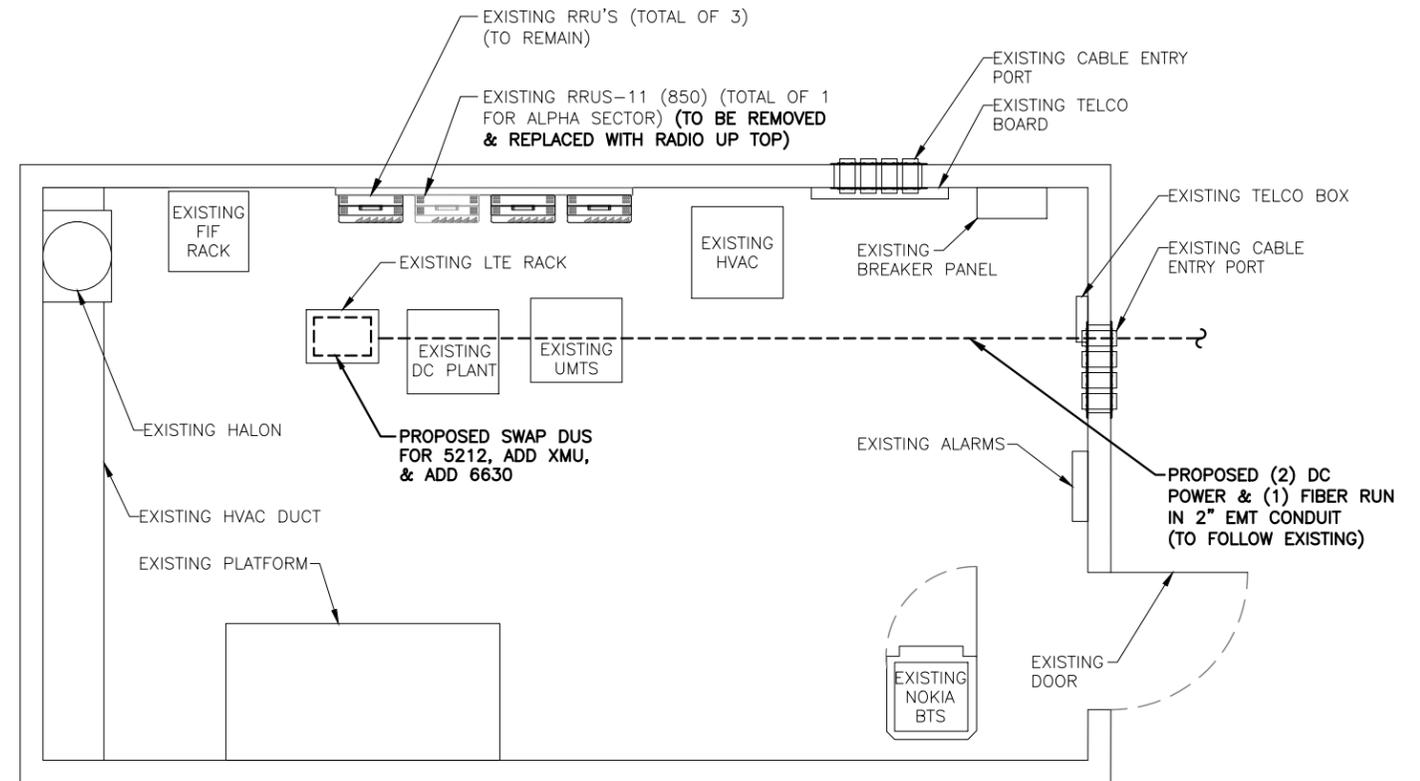
NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: DECEMBER 13, 2018, (REV 2) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



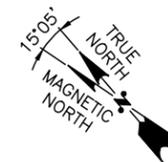
← MASSACHUSETTS AVENUE →

↑ PROSPECT STREET ↓



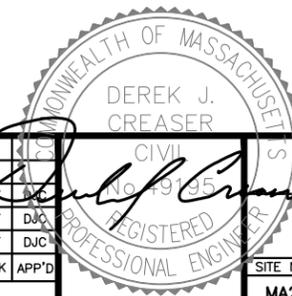
PARTIAL ROOF PLAN
22x34 SCALE: 3/32"=1'-0"
11x17 SCALE: 3/64"=1'-0"

1
A-1



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

2
A-1



45 BEECHWOOD DRIVE
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12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: MA2035
SITE NAME: CAMBRIDGE
675 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02139
MIDDLESEX COUNTY



550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

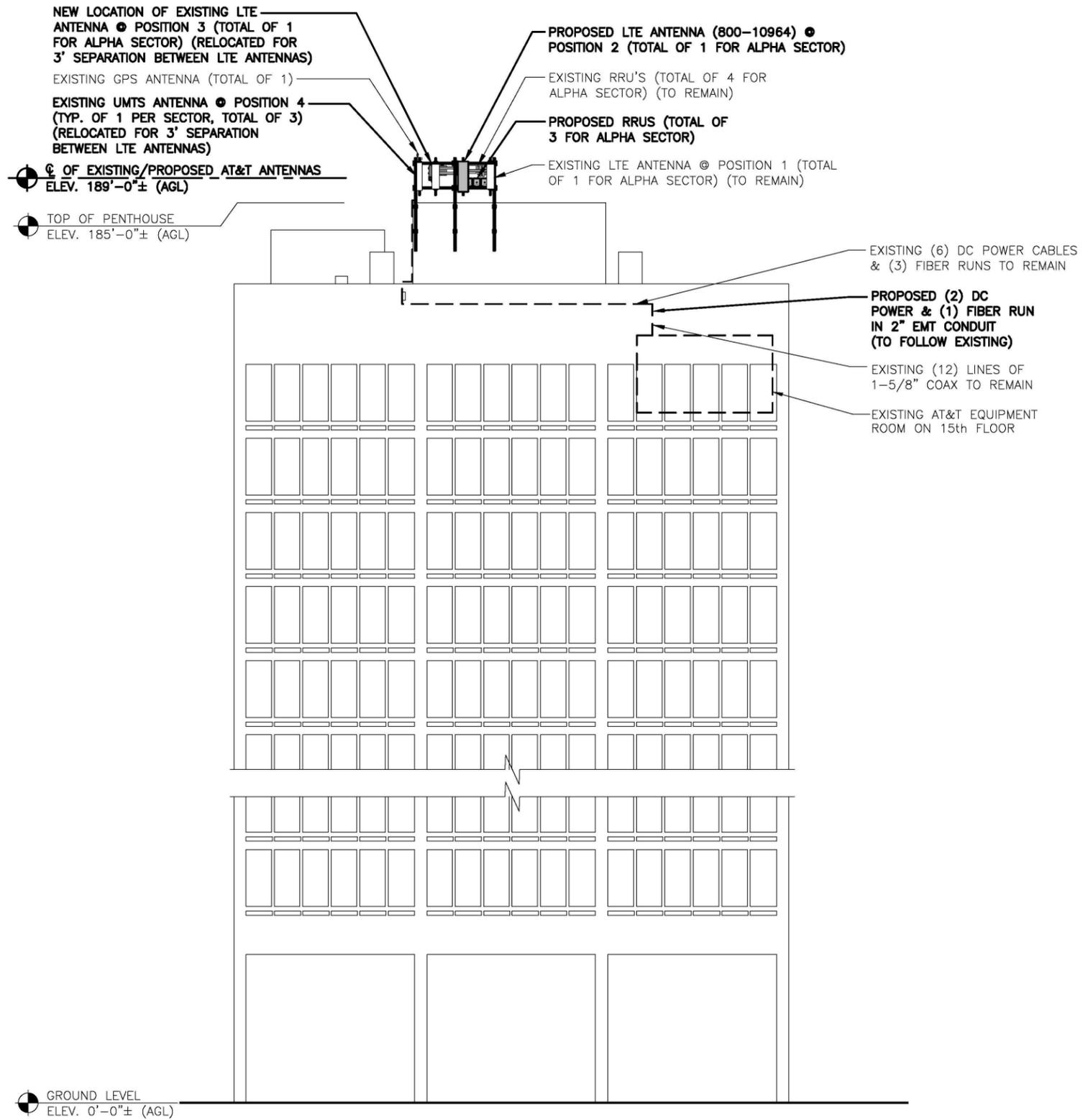
NO.	DATE	REVISIONS	BY	CHK	APP'D
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0	01/11/19	ISSUED FOR REVIEW	EB	AT	DJC
A	08/06/18	ISSUED FOR REVIEW	ET	AT	DJC

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: ET

AT&T

ROOF & EQUIPMENT PLAN
(LTE 6C/7C/5G)

SITE NUMBER	DRAWING NUMBER	REV
MA2035	A-1	1



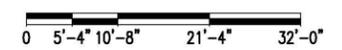
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NOTE:
MINIMUM OF 8" SEPARATION REQUIRED BETWEEN THE BACK OF ANTENNA AND THE RRH.

GROUND LEVEL
ELEV. 0'-0"± (AGL)

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



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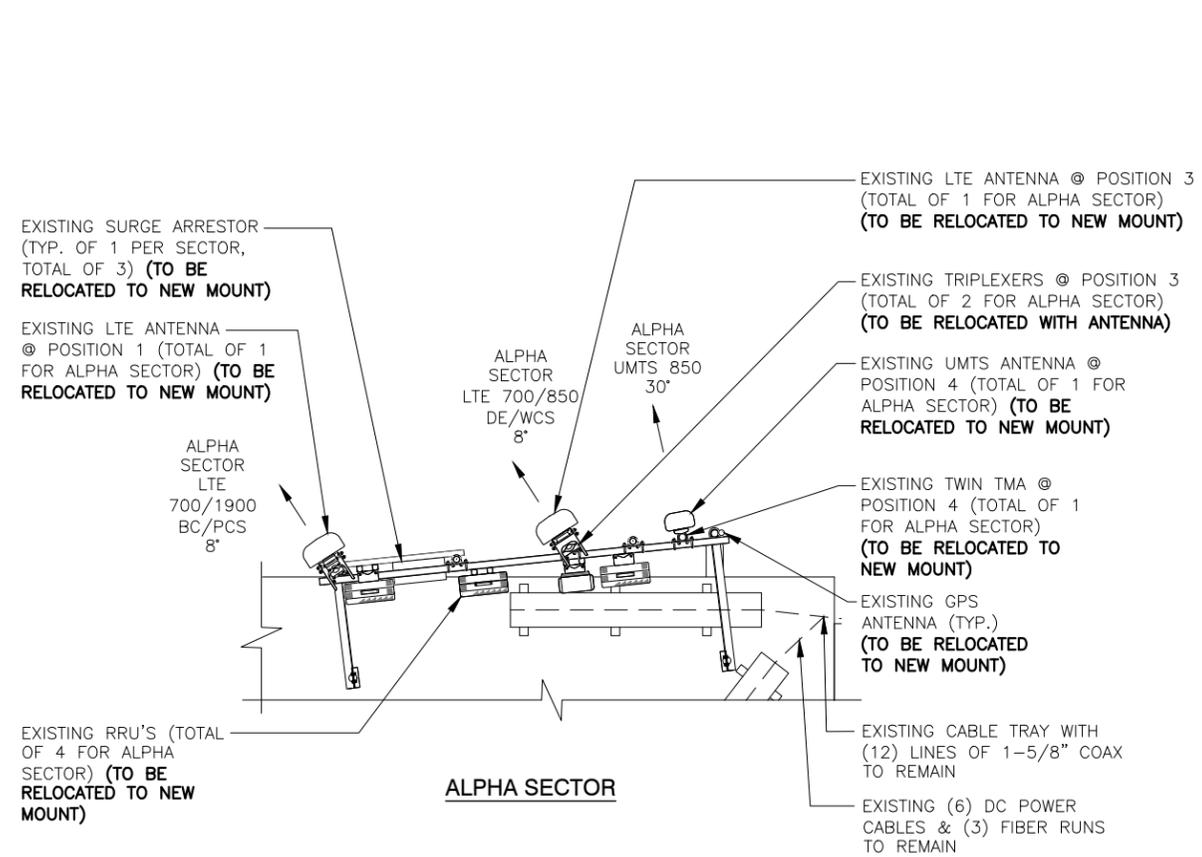
SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: ET

AT&T	
ELEVATION (LTE 6C/7C/5G)	
SITE NUMBER	DRAWING NUMBER
MA2035	A-2
REV	1

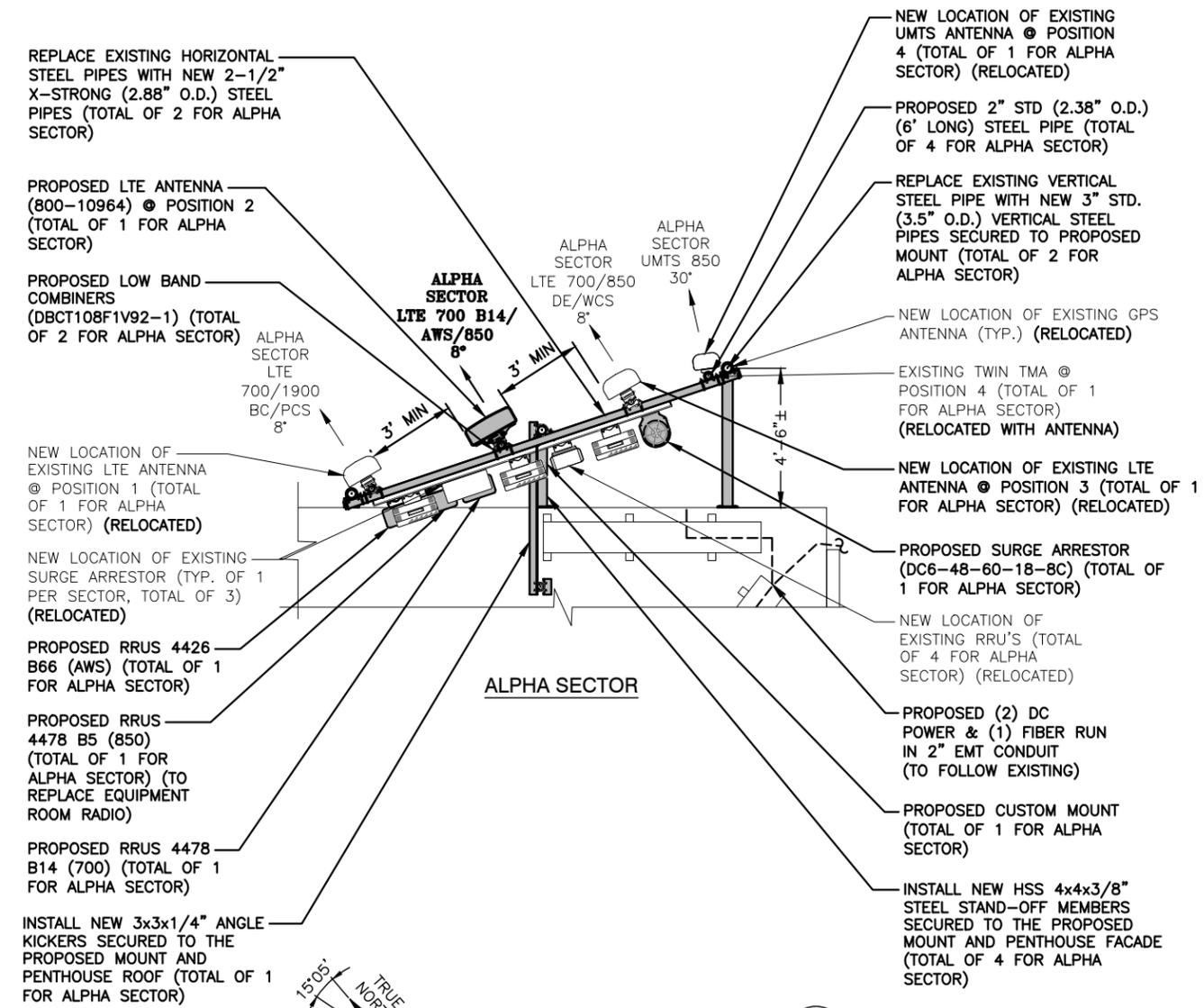
NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: DECEMBER 13, 2018, (REV 2) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

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

NOTE:
MINIMUM OF 8" SEPARATION REQUIRED BETWEEN THE BACK OF ANTENNA AND THE RRH.

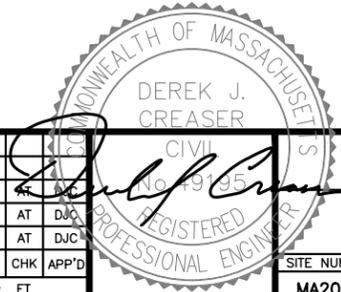


EXISTING ANTENNA LAYOUT 1
SCALE: N.T.S. A-3



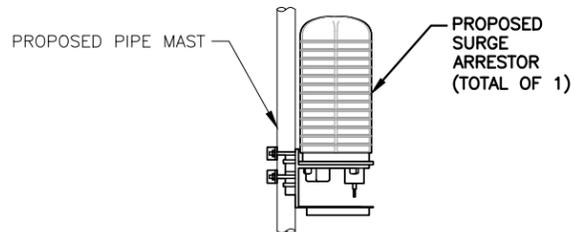
PROPOSED ANTENNA LAYOUT 2
SCALE: N.T.S. A-3

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0	01/11/19	ISSUED FOR REVIEW	EB	AT	DJC
A	08/06/18	ISSUED FOR REVIEW	ET	AT	DJC
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN		DESIGNED BY: AT	DRAWN BY: ET		

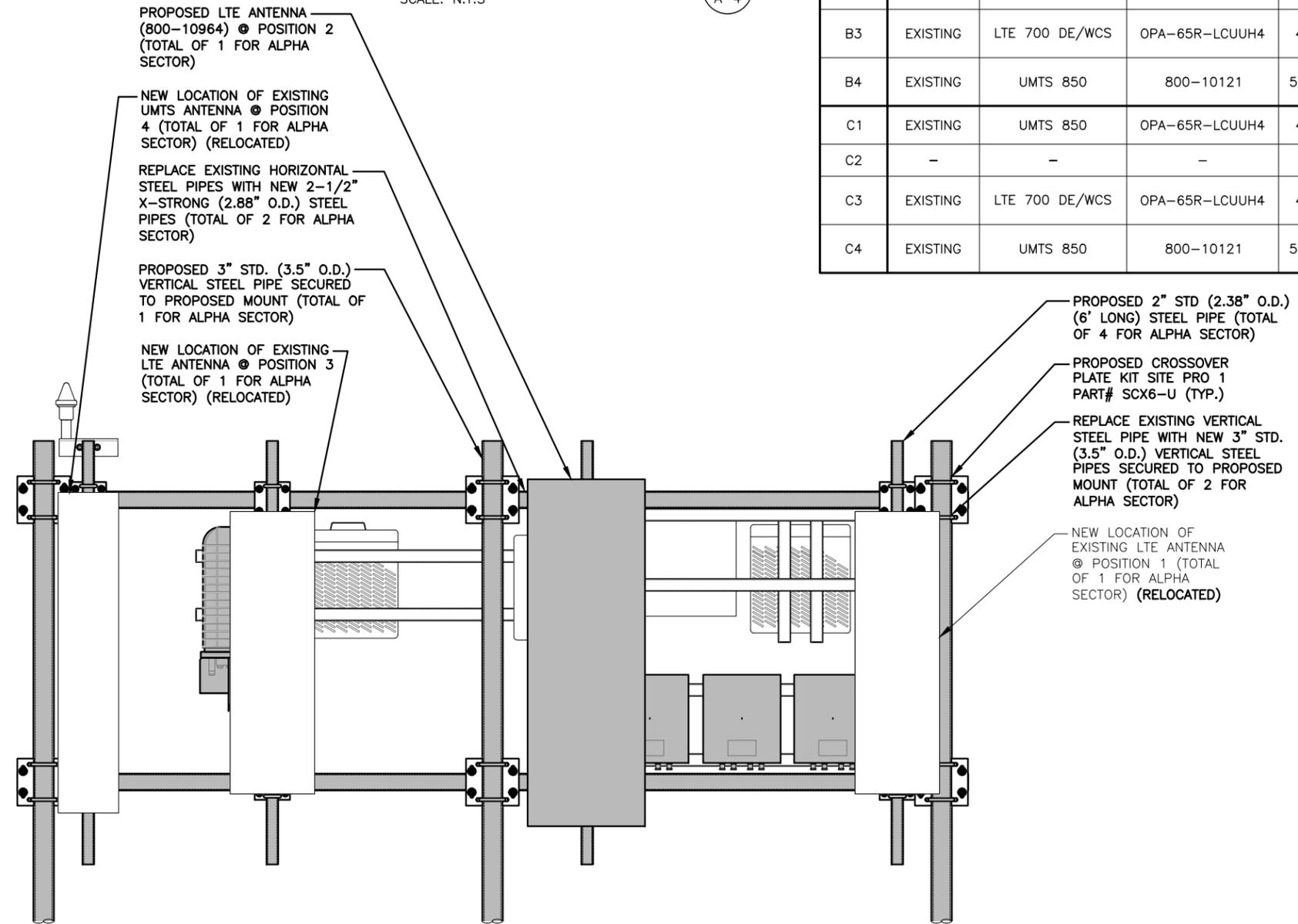


NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: DECEMBER 13, 2018, (REV 2) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



PROPOSED SURGE ARRESTOR MOUNTING DETAIL
SCALE: N.T.S.



PROPOSED ANTENNAS & RRU MOUNTING DETAIL
22x34 SCALE: 1"=1'-0"
11x17 SCALE: 1/2"=1'-0"

ANTENNA SCHEDULE											
SECTOR	EXISTING/PROPOSED	BAND	ANTENNA	SIZE (INCHES) (L x W x D)	ANTENNA HEIGHT	AZIMUTH	TMA/DIPLEXER	RRU	SIZE (INCHES) (L x W x D)	FEEDER	RAYCAP
A1	EXISTING	UMTS 850	OPA-65R-LCUUH4	48X14.4X7.3	189'±	8°	-	(E)(1) RRUS-11 (700) (E)(2) RRUS-12 (PCS)	-	-	(E)(1) HOFFMAN 9E SURGE ARRESTOR (P)(1) RAYCAP DC6-48-80-18-8C
A2	PROPOSED	LTE 700 B14/AWS	800-10964	59X20X6.9	189'±	8°	(P)(2) KAEIUS DBCT108F1V92-1	(P)(1) 4478 B14 (700) (P)(1) 4478 B5 (850) (P)(1) 4426 B66 (AWS)	15X13.2X7.4 15X13.2X7.4 15X13.2X7.4	-	
A3	EXISTING	LTE 700 DE/WCS	OPA-65R-LCUUH4	48X14.4X7.3	189'±	8°	(E)(2) CCI TPX-070821	(E)(1) RRUS-32 (WCS) (E)(G)(1) RRUS-E2 (700)	-	(2) 1-5/8 COAX	
A4	EXISTING	UMTS 850	800-10121	54.5X10.3X5.9	189'±	30°	(E)(1) POWERWAVE TT08-19DB111-001	-	-	(2) 1-5/8 COAX	
B1	EXISTING	UMTS 850	OPA-65R-LCUUH4	48X14.4X7.3	189'±	119°	-	(E)(1) RRUS-11 (700) (E)(1) RRUS-11 (PCS)	-	-	(E)(1) HOFFMAN 9E SURGE ARRESTOR
B2	-	-	-	-	-	-	-	-	-	-	
B3	EXISTING	LTE 700 DE/WCS	OPA-65R-LCUUH4	48X14.4X7.3	189'±	119°	-	(E)(1) RRUS-32 (WCS) (E)(G)(1) RRUS-11 (850)	-	(2) 1-5/8 COAX	(E)(1) HOFFMAN 9E SURGE ARRESTOR
B4	EXISTING	UMTS 850	800-10121	54.5X10.3X5.9	189'±	150°	(E)(1) POWERWAVE TT08-19DB111-001	-	-	(2) 1-5/8 COAX	(E)(1) HOFFMAN 9E SURGE ARRESTOR
C1	EXISTING	UMTS 850	OPA-65R-LCUUH4	48X14.4X7.3	189'±	235°	-	(E)(1) RRUS-11 (700) (E)(1) RRUS-11 (PCS)	-	-	(E)(1) HOFFMAN 9E SURGE ARRESTOR
C2	-	-	-	-	-	-	-	-	-	-	
C3	EXISTING	LTE 700 DE/WCS	OPA-65R-LCUUH4	48X14.4X7.3	189'±	235°	-	(E)(1) RRUS-32 (WCS) (E)(G)(1) RRUS-11 (850)	-	(2) 1-5/8 COAX	
C4	EXISTING	UMTS 850	800-10121	54.5X10.3X5.9	189'±	270°	(E)(1) POWERWAVE TT08-19DB111-001	-	-	(2) 1-5/8 COAX	

FINAL ANTENNA SCHEDULE
SCALE: N.T.S.

RRU CHART				
QUANTITY	MODEL	L	W	D
5(E)	RRUS-11	19.7"	17.0"	7.2"
2(E)(G)	RRUS-11	19.7"	17.0"	7.2"
1(E)(G)	RRUS-E2	20.4"	18.5"	7.5"
2(P)	RRUS-12	20.4"	18.5"	7.5"
3(E)	RRUS-32	26.7"	12.1"	6.7"
1(P)	B14.4478	15.0"	13.2"	7.4"
1(P)	B5.4478	15.0"	13.2"	7.4"
1(P)	B26.4426	15.0"	13.2"	7.4"

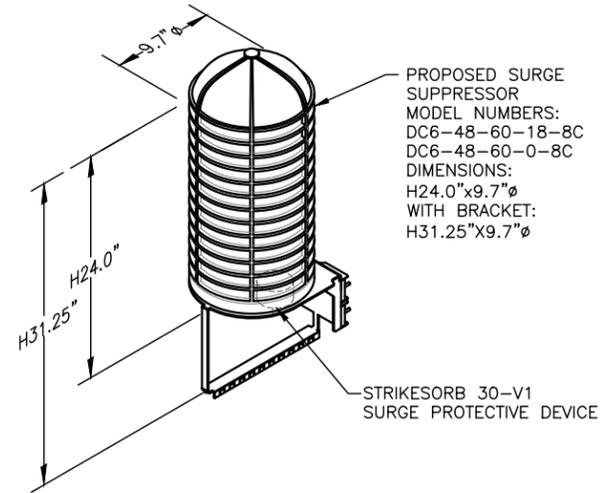
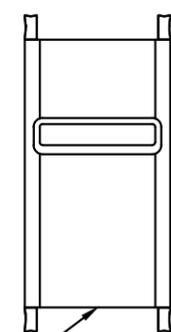
NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS

NOTE:
SEE RFDS FOR RRU FREQUENCY AND MODEL NUMBER

PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

PROPOSED RRU MOUNTING DETAIL
SCALE: N.T.S.



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL
SCALE: N.T.S.

NOTE:
MINIMUM OF 8" SEPARATION REQUIRED BETWEEN THE BACK OF ANTENNA AND THE RRU.

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 NOT VOID THE EXISTING ROOF WARRANTY. ROOF SHALL BE WATERTIGHT.
- ALL FIBERGLASS MEMBERS USED ARE AS MANUFACTURED BY STRONGWELL COMPANY OF BRISTOL, VA 24203. ALL DESIGN CRITERIA FOR THESE MEMBERS IS BASED ON INFORMATION PROVIDED IN THE DESIGN MANUAL. ALL REQUIREMENTS PUBLISHED IN SAID MANUAL MUST BE STRICTLY ADHERED TO.
- NO MATERIALS TO BE ORDERED AND NO WORK TO BE COMPLETED UNTIL SHOP DRAWINGS HAVE BEEN REVIEWED AND APPROVED IN WRITING.
- SUBCONTRACTOR SHALL FIREPROOF ALL STEEL TO PRE-EXISTING CONDITIONS.

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 ¹
N/A	MATERIAL SPECIFICATIONS REPORT ²
N/A	FABRICATOR NDE INSPECTION
N/A	PACKING SLIPS ³
ADDITIONAL TESTING AND INSPECTIONS:	
DURING CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	STEEL INSPECTIONS
N/A	HIGH STRENGTH BOLT INSPECTIONS
N/A	HIGH WIND ZONE INSPECTIONS ⁴
N/A	FOUNDATION INSPECTIONS
N/A	CONCRETE COMP. STRENGTH, SLUMP TESTS AND PLACEMENT
N/A	POST INSTALLED ANCHOR VERIFICATION ⁵
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
ADDITIONAL TESTING AND INSPECTIONS:	
AFTER CONSTRUCTION	
CONSTRUCTION/INSTALLATION INSPECTIONS AND TESTING REQUIRED (COMPLETED BY ENGINEER OF RECORD)	REPORT ITEM
REQUIRED	MODIFICATION INSPECTOR REDLINE OR RECORD DRAWINGS ⁶
N/A	POST INSTALLED ANCHOR PULL-OUT TESTING
REQUIRED	PHOTOGRAPHS
ADDITIONAL TESTING AND INSPECTIONS:	

NOTES:

- REQUIRED FOR ANY NEW SHOP FABRICATED FRP OR STEEL.
- PROVIDED BY MANUFACTURER, REQUIRED IF HIGH STRENGTH BOLTS OR STEEL.
- PROVIDED BY GENERAL CONTRACTOR; PROOF OF MATERIALS.
- HIGH WIND ZONE INSPECTION CATB 120MPH OR CAT C,D 110MPH INSPECT FRAMING OF WALLS, ANCHORING, FASTENING SCHEDULE.
- 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" 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 110 AND CHAPTER 17

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

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

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

MASSACHUSETTS AMENDMENTS TO THE IBC (REFERENCE 780 CMR):

107.6 CONSTRUCTION CONTROL.

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

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

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

- REVIEW, FOR CONFORMANCE TO 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.mass.gov/ocabr/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.

170.6.2.4 NON STRUCTURAL SYSTEM TEST AND INSPECTION. 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 APPROVED PERMIT AND SHALL INVOLVE THE FOLLOWING:

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

107.6.4 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.

45 BEECHWOOD DRIVE
NORTH ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

12 INDUSTRIAL WAY
SALEM, NH 03079

SITE NUMBER: MA2035
SITE NAME: CAMBRIDGE
675 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02139
MIDDLESEX COUNTY

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	01/24/19	ISSUED FOR CONSTRUCTION	AM		
0	01/11/19	ISSUED FOR REVIEW	EB	AT	DJC
A	08/06/18	ISSUED FOR REVIEW	ET	AT	DJC

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: ET

DEREK J. CREASER
CIVIL ENGINEER
No. 99195
REGISTERED PROFESSIONAL ENGINEER

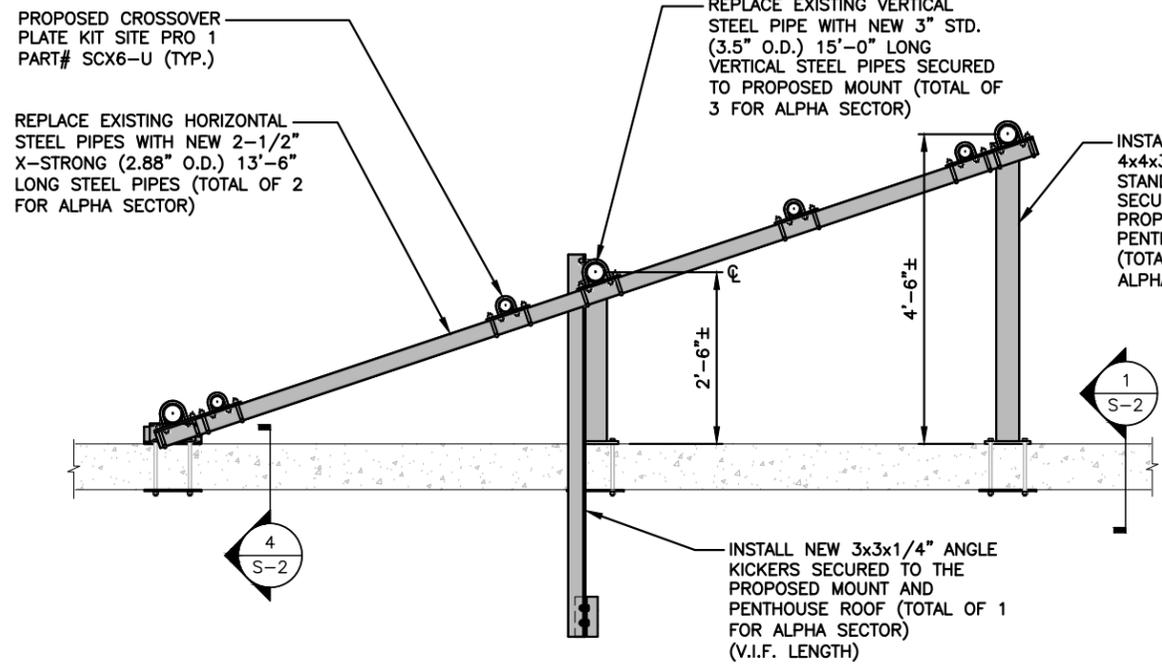
AT&T		
STRUCTURAL NOTES (LTE 6C/7C/5G)		
SITE NUMBER	DRAWING NUMBER	REV
MA2035	SN-1	1

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: DECEMBER 13, 2018, (REV 2) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

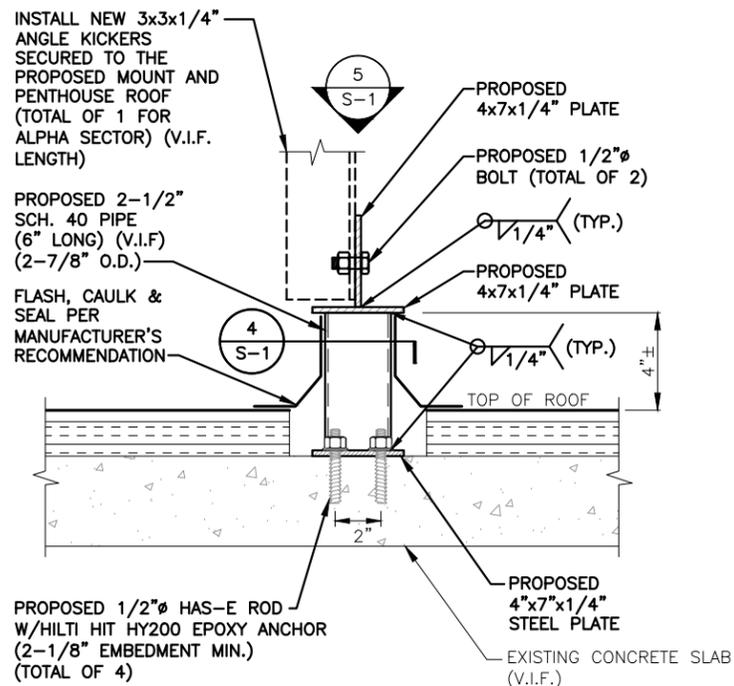
NOTE:
MINIMUM OF 8" SEPARATION REQUIRED BETWEEN THE BACK OF ANTENNA AND THE RRH.

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

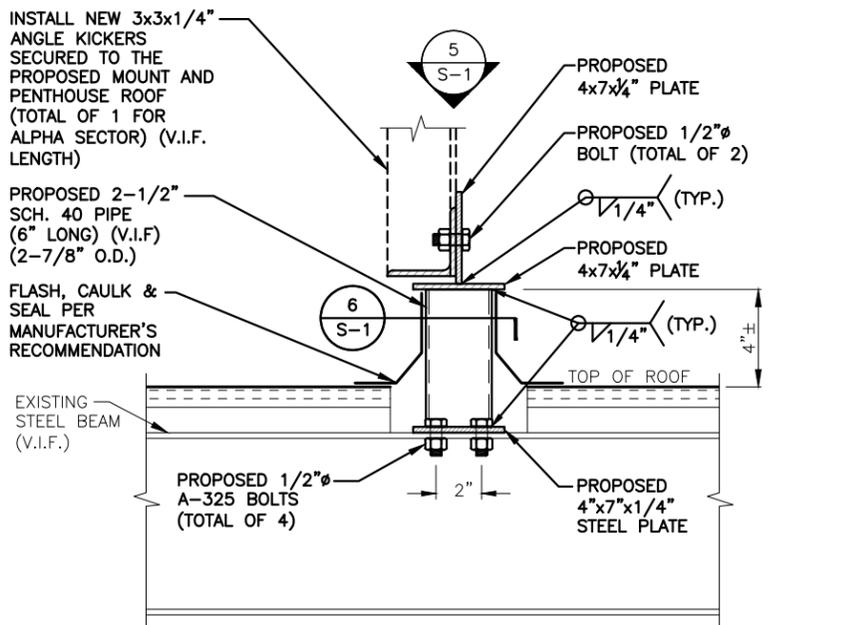
*****NOTE:**
CONTRACTOR TO CONFIRM EXISTING CONDITIONS AND DETERMINE ALT#1 OR ALT#2. E.O.R IS TO BE NOTIFIED



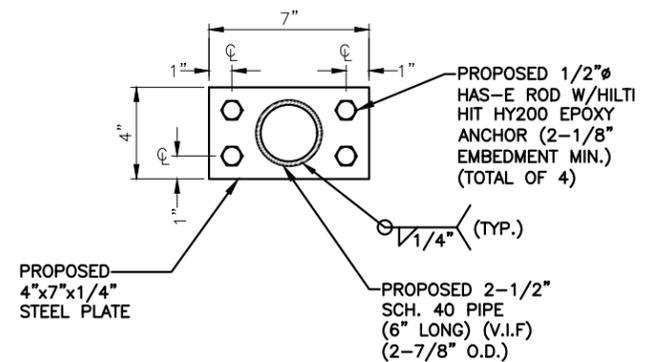
MOUNT MODIFICATION PLAN (1)
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"



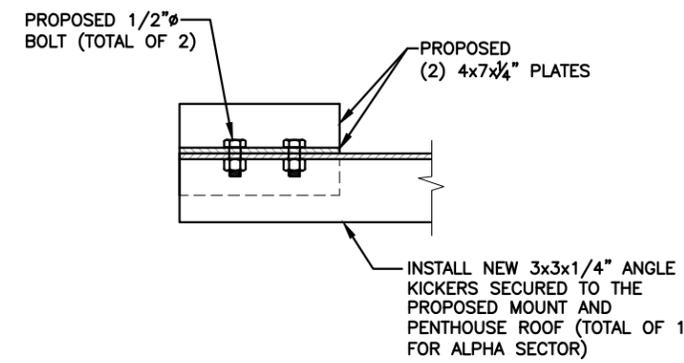
*****PROPOSED STEEL BRACE DETAIL (ALTERNATIVE #1) (2)**
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"



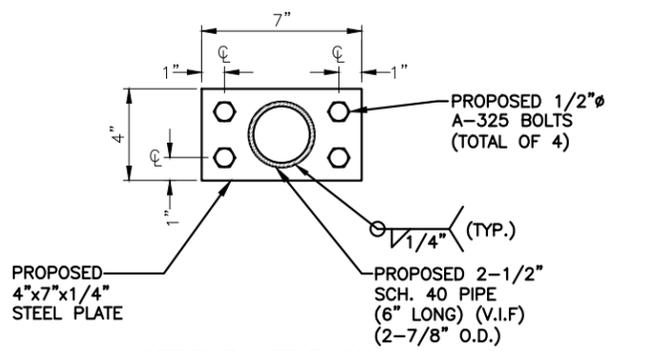
*****PROPOSED STEEL BRACE DETAIL (ALTERNATIVE #2) (3)**
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"



PROPOSED STEEL PLATE PLAN (4)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"



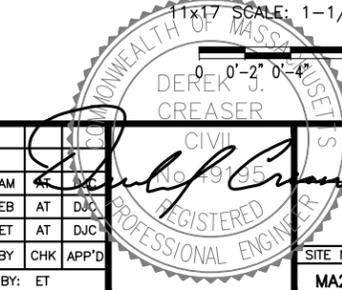
PROPOSED CONNECTION DETAIL (5)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"



STEEL PLATE PLAN (ALTERNATIVE #2) (6)
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

NO.	DATE	REVISIONS	BY	CHK	APP'D
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0	01/11/19	ISSUED FOR REVIEW	EB	AT	DJC
A	08/06/18	ISSUED FOR REVIEW	ET	AT	DJC

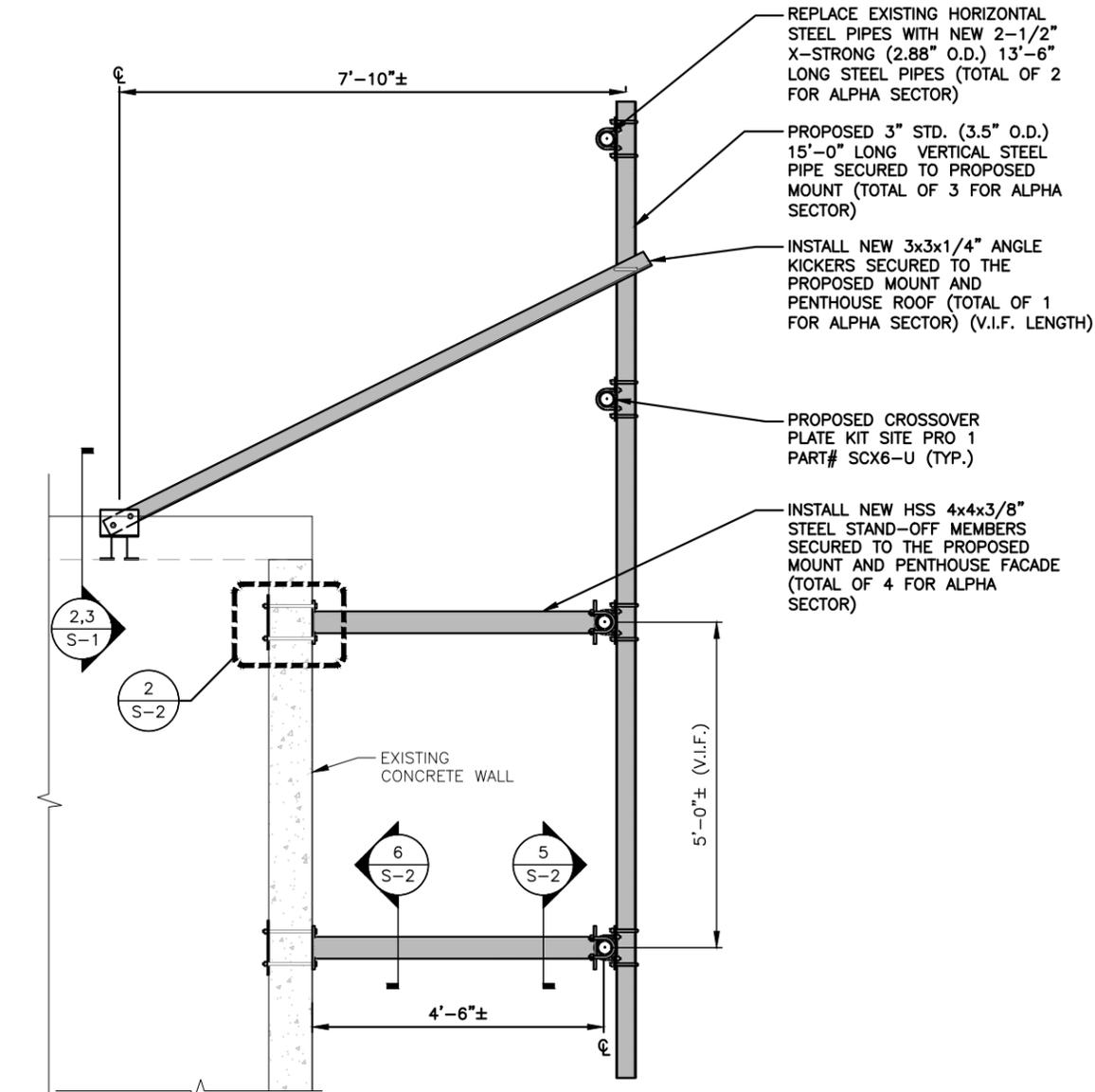
SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: ET



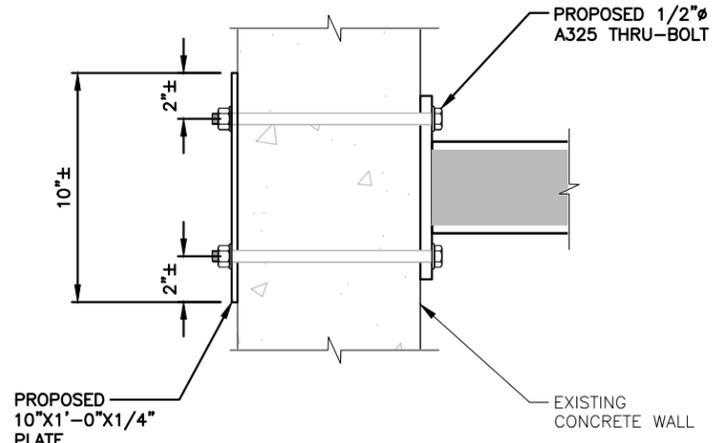
NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: DECEMBER 13, 2018, (REV 2) FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
MINIMUM OF 8" SEPARATION REQUIRED BETWEEN THE BACK OF ANTENNA AND THE RRH.

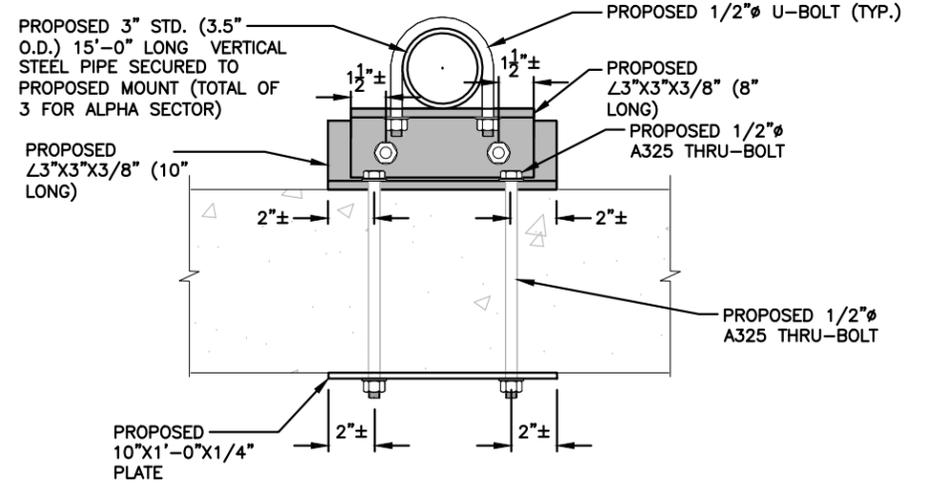
NOTE:
REFER TO THE FINAL RF DATA SHEET FOR FINAL ANTENNA SETTINGS.



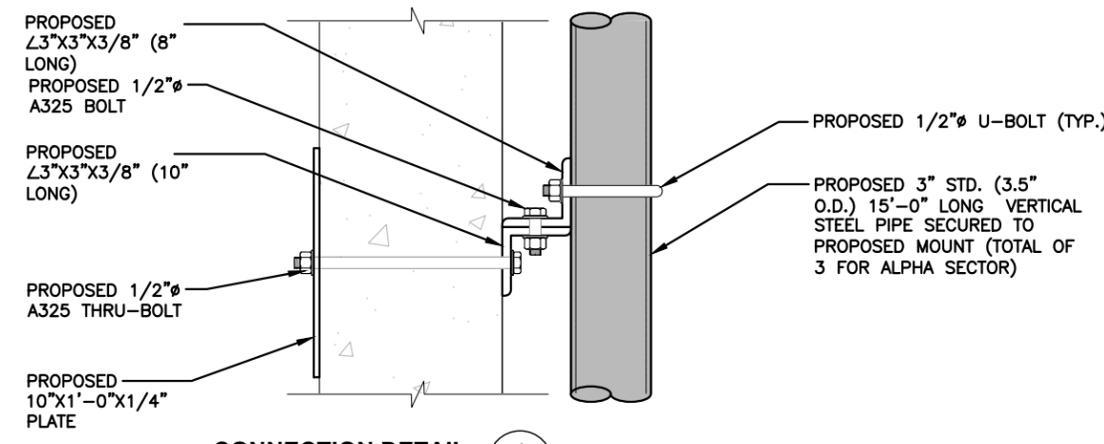
PROPOSED MOUNT ELEVATION DETAIL 1
22x34 SCALE: 3/4"=1'-0"
11x17 SCALE: 3/8"=1'-0"



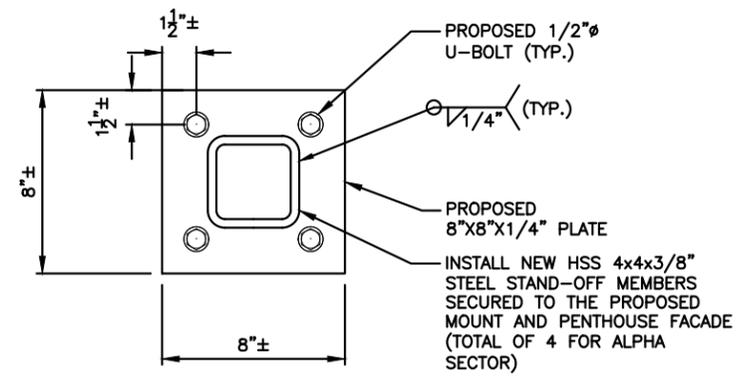
CONNECTION DETAIL 2
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"



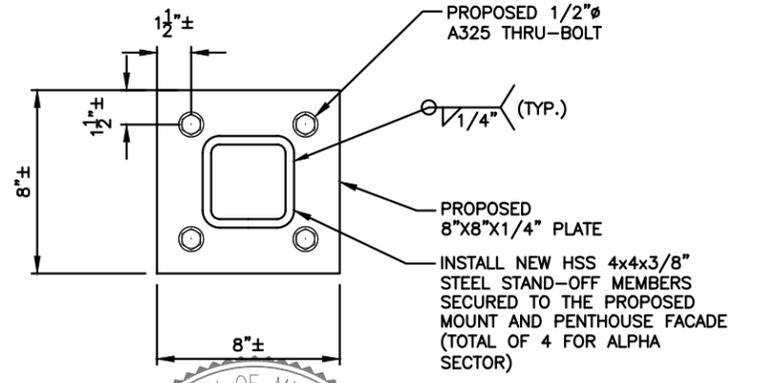
CONNECTION DETAIL 3
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"



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

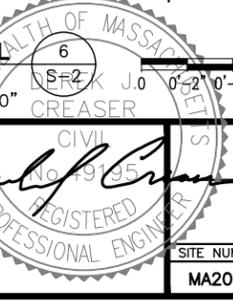


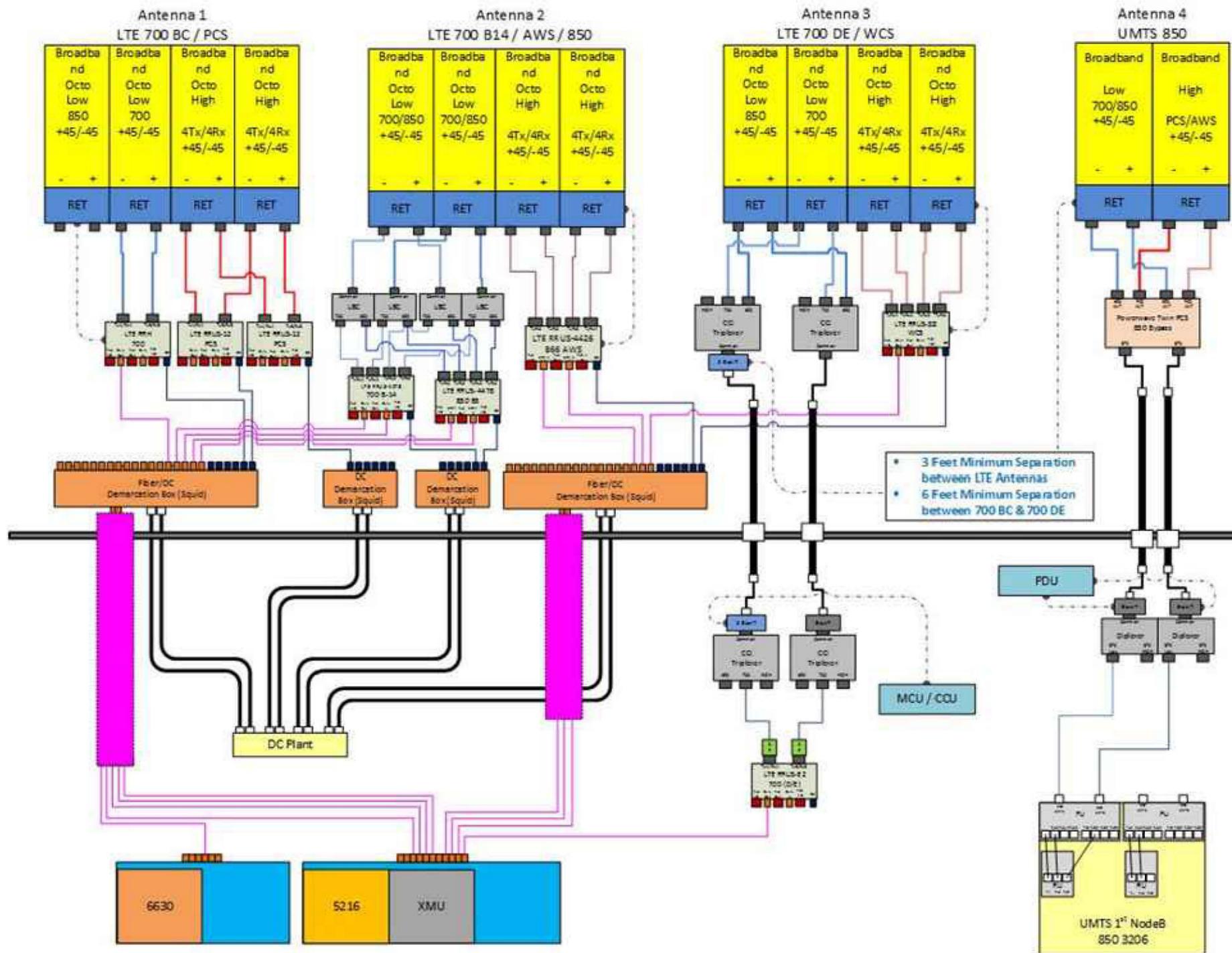
CONNECTION DETAIL 5
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"



CONNECTION DETAIL 6
22x34 SCALE: 3"=1'-0"
11x17 SCALE: 1-1/2"=1'-0"

1	01/24/19	ISSUED FOR CONSTRUCTION	AM		
0	01/11/19	ISSUED FOR REVIEW	EB	AT	DJC
A	08/06/18	ISSUED FOR REVIEW	ET	AT	DJC
NO.	DATE	REVISIONS	BY	CHK	APP'D
SCALE: AS SHOWN			DESIGNED BY: AT	DRAWN BY: ET	





• 3 Feet Minimum Separation between LTE Antennas
 • 6 Feet Minimum Separation between 700 BC & 700 DE

RF PLUMBING DIAGRAM 1
 SCALE: N.T.S RF-1

NOTE:
 1. CONTRACTOR TO CONFIRM ALL PARTS.
 2. INSTALL ALL EQUIPMENT TO MANUFACTURER'S RECOMMENDATIONS

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



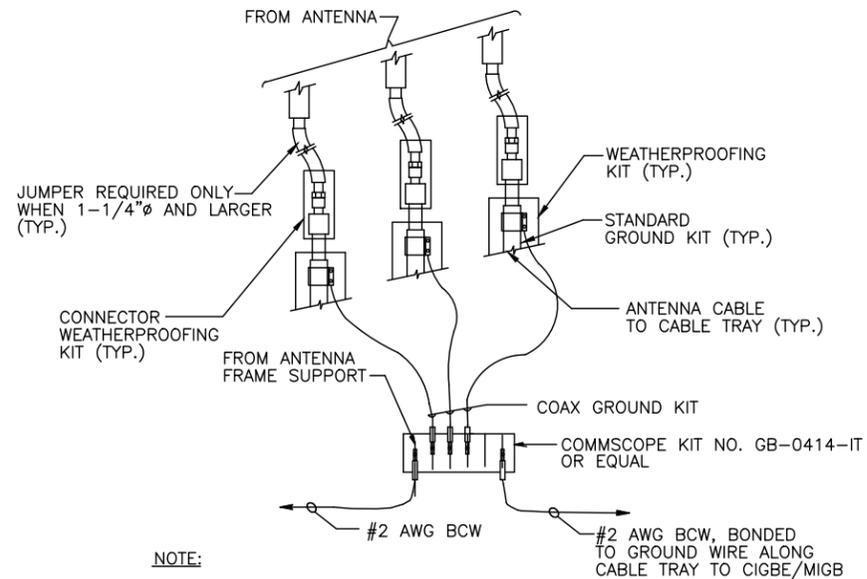
NO.	DATE	REVISIONS	BY	CHK	APP'D
1	01/24/19	ISSUED FOR CONSTRUCTION	AM	AT	
0	01/11/19	ISSUED FOR REVIEW	EB	AT	DJC
A	08/06/18	ISSUED FOR REVIEW	ET	AT	DJC

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: ET

AT&T

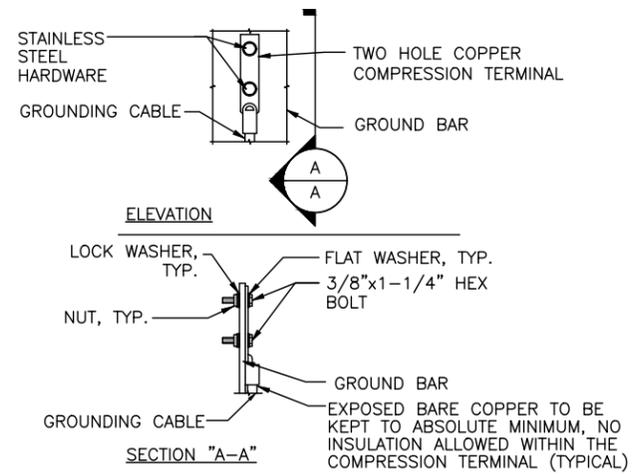
RF PLUMBING DIAGRAM
 (LTE 6C/7C/5G)

SITE NUMBER	DRAWING NUMBER	REV
MA2035	RF-1	1



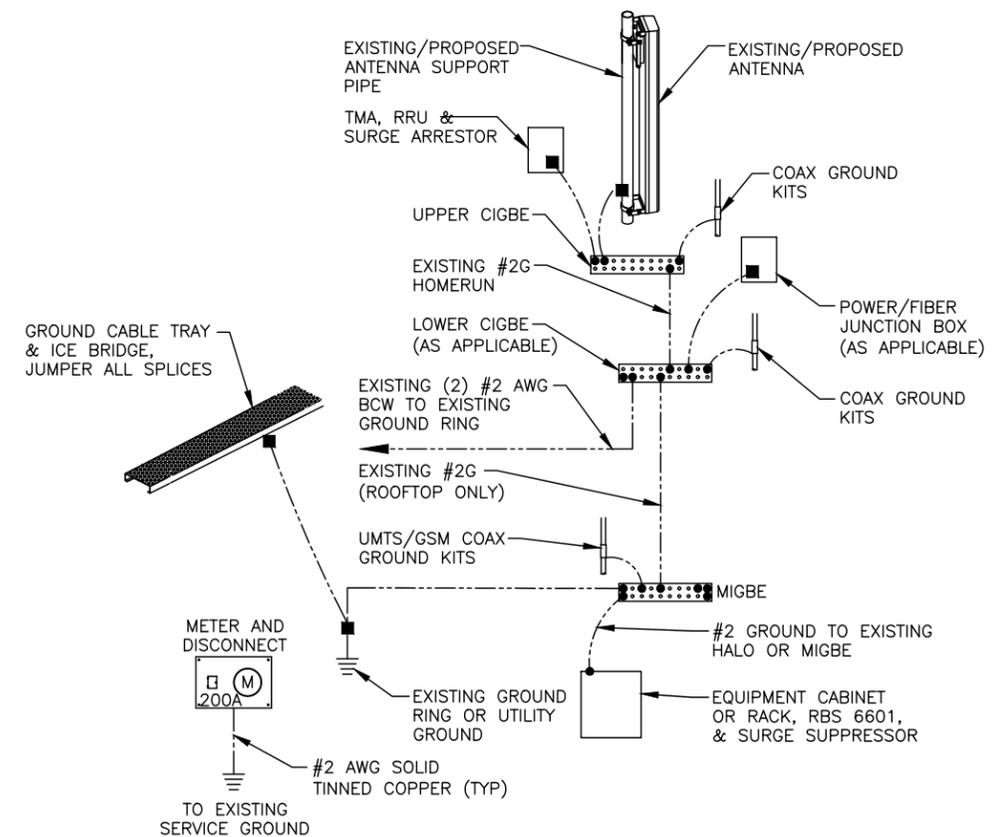
NOTE:
 1. DO NOT INSTALL CABLE GROUND KIT AT A BEND AND ALWAYS DIRECT GROUND WIRE DOWN TO CIGBE.

GROUND WIRE TO GROUND BAR CONNECTION DETAIL 1
 SCALE: N.T.S. G-1



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

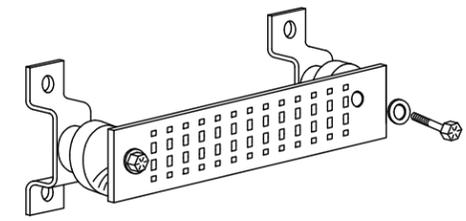
TYPICAL GROUND BAR CONNECTION DETAIL 3
 SCALE: N.T.S. G-1



GROUNDING RISER DIAGRAM 2
 SCALE: N.T.S. G-1

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)



GROUND BAR - DETAIL 4
 SCALE: N.T.S. G-1

NO.	DATE	REVISIONS	BY	CHK	APP'D
1	01/24/19	ISSUED FOR CONSTRUCTION	AM		
0	01/11/19	ISSUED FOR REVIEW	EB	AT	DJC
A	08/06/18	ISSUED FOR REVIEW	ET	AT	DJC

SCALE: AS SHOWN DESIGNED BY: AT DRAWN BY: ET



AT&T	
GROUNDING DETAILS (LTE 6C/7C/5G)	
SITE NUMBER	DRAWING NUMBER
MA2035	G-1
	REV 1

8-Port Antenna	R1	R2	Y1	Y2
Frequency Range	698-960	698-960	1695-2690	1695-2690
Dual Polarization	X	X	X	X
HPBW	65°	65°	65°	65°
Adjust. Electr. DT set by FlexRET	2°-16°	2°-16°	2.5°-12°	2.5°-12°



**8-Port Antenna 698-960/698-960/1695-2690/1695-2690 65°/65°/65°/65° 14/14/17.5/17.5dBi
2°-16°/2°-16°/2.5°-12°/2.5°-12°T**

Type No.		80010964			
Left side, lowband		R1, connector 1-2			
		698-960			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.6	14.2	14.3	14.6
Gain over all Tilts	dBi	13.6 ± 0.6	14.2 ± 0.3	14.3 ± 0.3	14.5 ± 0.4
Horizontal Pattern:					
Azimuth Beamwidth	°	64.6 ± 4.2	62.5 ± 2.4	62.0 ± 2.4	59.3 ± 3.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 21.5	> 22.5	> 25.2	> 25.3
Vertical Pattern:					
Elevation Beamwidth	°	17.8 ± 1.8	16.2 ± 1.0	15.8 ± 0.8	14.7 ± 1.1
Electrical Downtilt continuously adjustable	°	2.0 – 16.0			
Tilt Accuracy	°	< 0.7	< 0.7	< 0.8	< 0.8
First Upper Side Lobe Suppression	dB	> 17.3	> 15.8	> 15.2	> 14.6
Cross Polar Isolation	dB	> 28			
Port to Port Isolation	dB	> 27 (R1 // R2) > 30 (R1 // Y1, Y2)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			
Max. Effective Power Port 1-2	W	600 (at 50 °C ambient temperature)			



Values based on NGMN-P-BASTA (version 9.6) requirements.

936.5553.1 ngmn Subject to alteration.

Right side, lowband		R2, connector 3-4			
		698-960			
Frequency Range	MHz	698 – 806	791 – 862	824 – 894	880 – 960
Gain at mid Tilt	dBi	13.4	14.1	14.3	14.3
Gain over all Tilts	dBi	13.4 ± 0.5	14.0 ± 0.5	14.2 ± 0.3	14.3 ± 0.4
Horizontal Pattern:					
Azimuth Beamwidth	°	64.1 ± 5.6	61.8 ± 2.9	61.5 ± 2.9	59.5 ± 3.6
Front-to-Back Ratio, Total Power, ± 30°	dB	> 20.6	> 23.6	> 26.1	> 25.5
Vertical Pattern:					
Elevation Beamwidth	°	17.6 ± 1.5	16.1 ± 1.3	15.5 ± 0.7	14.6 ± 0.9
Electrical Downtilt continuously adjustable	°	2.0 – 16.0			
Tilt Accuracy	°	< 1.1	< 0.8	< 0.8	< 1.1
First Upper Side Lobe Suppression	dB	> 17.9	> 14.9	> 14.6	> 15.6
Cross Polar Isolation	dB	> 28			
Port to Port Isolation	dB	> 27 (R2 // R1) > 30 (R2 // Y1, Y2)			
Max. Effective Power per Port	W	300 (at 50 °C ambient temperature)			
Max. Effective Power Port 3-4	W	600 (at 50 °C ambient temperature)			

Values based on NGMN-P-BASTA (version 9.6) requirements.

Left side, highband		Y1, connector 5-6				
		1695-2690				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.9	17.3	17.5	17.7	17.2
Gain over all Tilts	dBi	16.9 ± 0.3	17.3 ± 0.4	17.4 ± 0.4	17.7 ± 0.8	17.1 ± 0.9
Horizontal Pattern:						
Azimuth Beamwidth	°	64.4 ± 4.0	62.7 ± 4.9	60.3 ± 4.5	53.6 ± 4.5	55.6 ± 8.3
Front-to-Back Ratio, Total Power, ± 30°	dB	> 23.8	> 25.3	> 25.2	> 27.2	> 23.2
Vertical Pattern:						
Elevation Beamwidth	°	6.8 ± 0.3	6.4 ± 0.2	6.0 ± 0.5	5.2 ± 0.3	4.7 ± 0.3
Electrical Downtilt continuously adjustable	°	2.5 – 12.0				
Tilt Accuracy	°	< 0.4	< 0.4	< 0.3	< 0.4	< 0.4
First Upper Side Lobe Suppression	dB	> 15.6	> 16.5	> 15.7	> 14.6	> 14.2
Cross Polar Isolation	dB	> 26, typically > 30 dB				
Port to Port Isolation	dB	> 30 (Y1 // R1, R2, Y2)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				
Max. Effective Power Port 5-6	W	400 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 9.6) requirements.

Right side, highband		Y2, connector 7-8				
		1695-2690				
Frequency Range	MHz	1695 – 1880	1850 – 1990	1920 – 2170	2300 – 2400	2500 – 2690
Gain at mid Tilt	dBi	16.8	17.2	17.3	17.6	17.0
Gain over all Tilts	dBi	16.8 ± 0.4	17.2 ± 0.5	17.2 ± 0.6	17.6 ± 0.9	17.0 ± 1.0
Horizontal Pattern:						
Azimuth Beamwidth	°	67.0 ± 4.7	63.7 ± 6.7	60.7 ± 6.8	54.6 ± 6.0	53.9 ± 9.8
Front-to-Back Ratio, Total Power, ± 30°	dB	> 24.2	> 25.3	> 25.1	> 26.2	> 22.0
Vertical Pattern:						
Elevation Beamwidth	°	6.8 ± 0.3	6.4 ± 0.3	6.0 ± 0.5	5.3 ± 0.3	4.7 ± 0.3
Electrical Downtilt continuously adjustable	°	2.5 – 12.0				
Tilt Accuracy	°	< 0.2	< 0.2	< 0.2	< 0.2	< 0.2
First Upper Side Lobe Suppression	dB	> 16.1	> 16.3	> 15.2	> 15.8	> 13.8
Cross Polar Isolation	dB	> 26, typically > 30 dB				
Port to Port Isolation	dB	> 30 (Y2 // R1, R2, Y1)				
Max. Effective Power per Port	W	200 (at 50 °C ambient temperature)				
Max. Effective Power Port 7-8	W	400 (at 50 °C ambient temperature)				

Values based on NGMN-P-BASTA (version 9.6) requirements.

936.5553.1 ngmn Subject to alteration.

Electrical specifications, all systems		
Impedance	Ω	50
VSWR		< 1.5
Return Loss	dB	> 14
Interband Isolation	dB	> 27
Passive Intermodulation	dBc	< -153 (2 x 43 dBm carrier)
Polarization	°	+45, -45
Max. Effective Power for the Antenna	W	1200 (at 50 °C ambient temperature)

Values based on NGMN-P-BASTA (version 9.6) requirements.

Mechanical specifications		
Input	8 x 4.3-10 female	
Connector Position	bottom	
Adjustment Mechanism	FlexRET, continuously adjustable	
Wind load (at Rated Wind Speed: 150 km/h) (93 mph)	N lbf	Frontal: 835 188 Maximal: 840 189 Lateral: 145 33
EPA (m ² ft ²)	Front: 0.767 8.26 Lateral: .132 1.42	
Max. Wind Velocity	km/h mph	241 / 145 150 / 33
Height / Width / Depth	mm inches	1499 / 508 / 175 59.0 / 20.0 / 6.9
Category of Mounting Hardware	XH (X-Heavy)	
Weight	kg lb	38.0 / 43.0 (clamps incl.) 83.8 / 94.8 (clamps incl.)
Packing Size	mm inches	1700 / 542 / 268 66.9 / 21.3 / 10.6
Scope of Supply	Panel, FlexRET and clamps for 55–115 mm 2.2–4.5 inches diameter	

Accessories (order separately if required)

Type No.	Description	Remarks mm inches	Weight approx. kg lb	Units per antenna
85010097	2 clamps	Mast diameter: 110 – 220 4.3 – 8.7	9.4 20.7	1
85010099	1 downtilt kit	Downtilt angle: 0° – 18°	10.6 23.4	1
86010154	Site Sharing Adapter	3-way (see figure below)	0.7 1.5	
86010155	Site Sharing Adapter	6-way (see figure below)	1.4 3.1	
86010162	Gender Adapter	Solely to be used in combination with the FlexRET module 86010153v01	0.045 0.099	1
86010163	Port Extender		0.16 0.35	1

Accessories (included in the scope of supply)

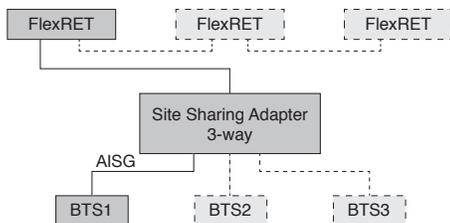
85010096	2 clamps	Mast diameter: 55 – 115 2.2 – 4.5	5.0 11.0	1
86010153v01	FlexRET			1

For downtilt mounting use the clamps for an appropriate mast diameter together with the downtilt kit. Wall mounting: No additional mounting kit needed.

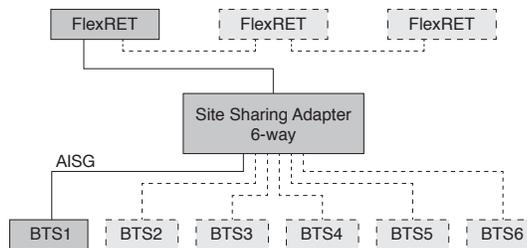
Material: **Reflector screen:** Aluminum.
Fiberglass housing: It covers totally the internal antenna components. The special design reduces the sealing areas to a minimum and guarantees the best weather protection. Fiberglass material guarantees optimum performance with regards to stability, stiffness, UV resistance and painting. The color of the radome is light grey.
All nuts and bolts: Stainless steel or hot-dip galvanized steel.

Grounding: The metal parts of the antenna including the mounting kit and the inner conductors are DC grounded.

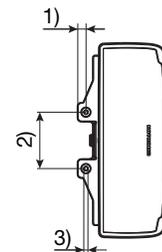
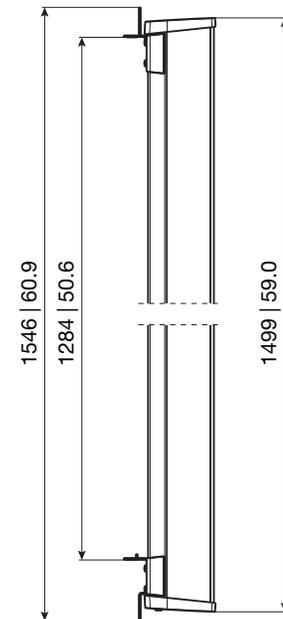
Configuration example with Site Sharing Adapter 86010154



Configuration example with Site Sharing Adapter 86010155



For more information please refer to the respective data sheets.

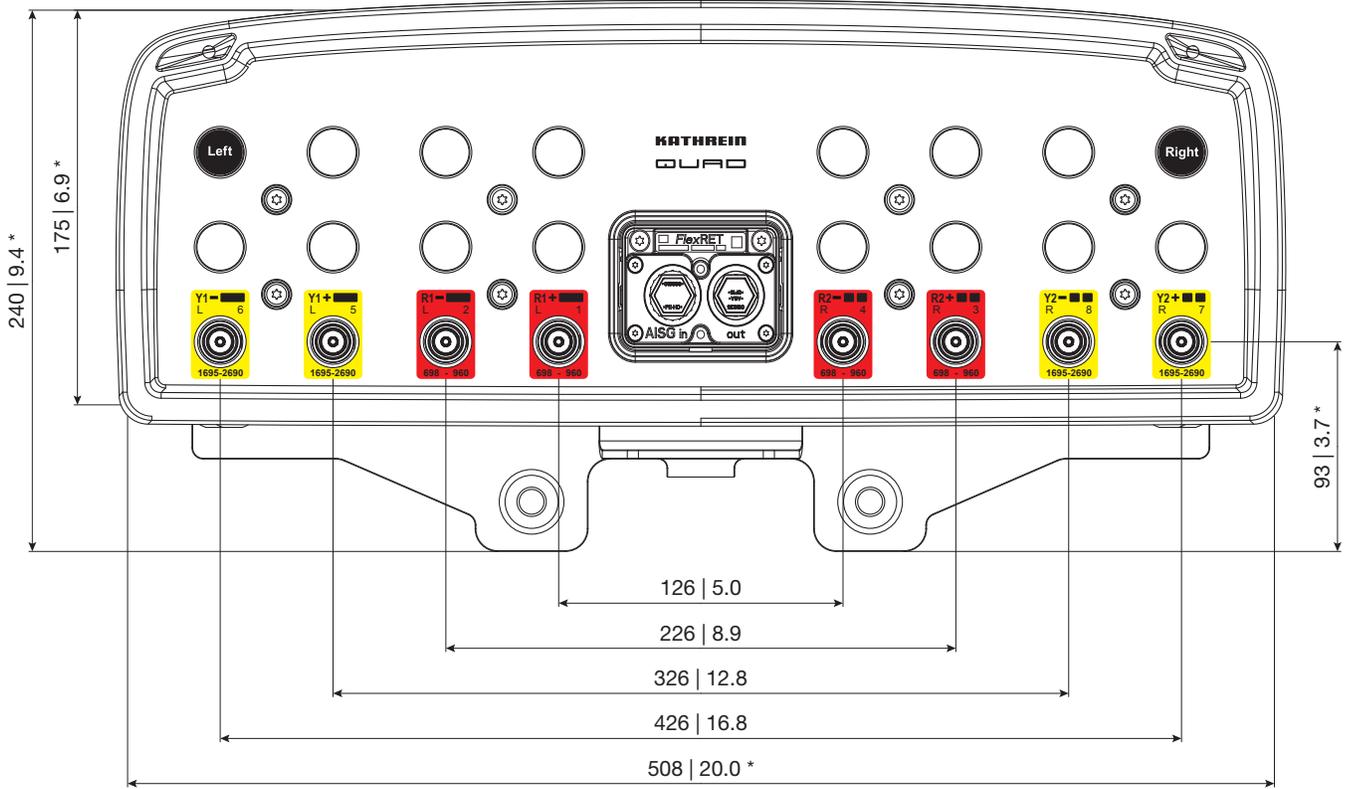


- 1) 22 | 0.9
- 2) 150 | 5.9
- 3) ∅ 11 | 0.4

All dimensions in mm | inches

936.5553.1 ngmn Subject to alteration.

Layout of interface:



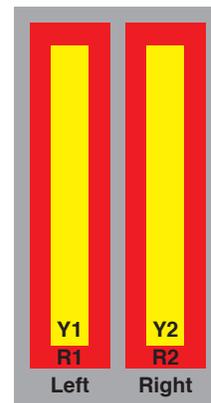
Bottom view
* Dimensions refer to radome
All dimensions in mm | inches

Correlation Table

Frequency range	Array	Connector
698–960 MHz	R1	1–2
698–960 MHz	R2	3–4
1695–2690 MHz	Y1	5–6
1695–2690 MHz	Y2	7–8

Order Information

Model	Description
80010964	8-Port antenna with mounting bracket
80010964K	8-Port antenna with mounting bracket and mechanical tilt bracket



936.5553.1 ngmm Subject to alteration.

Any previous data sheet issues have now become invalid.

All specifications are subject to change without notice.
The latest specifications are available at www.kathreinusa.com

Prepared For:

AT&T - SAI

Site Number:

MA2035

Site Name:

CAMBRIDGE

675 MASSACHUSETTS AVE
CAMBRIDGE, MA



SITE NO: MA2035

SITE NAME: CAMBRIDGE

ADDRESS: 675 MASSACHUSETTS AVE
CAMBRIDGE, MA



550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

PREPARED FOR:



12 INDUSTRIAL WAY
SALEM, NH 03079



45 BEECHWOOD DRIVE
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SITE TYPE: ROOFTOP

DATE: 08/24/2018 **REV:** 0

DRAWN BY: KB

SCALE: N.T.S.

THIS STUDY DOES NOT CLAIM IN ANY WAY TO SHOW THE ONLY AREAS OF VISIBILITY. IT IS MEANT TO SHOW A BROAD REPRESENTATION OF AREAS WHERE THE PROPOSED INSTALLATION MAY BE VISIBLE BASED UPON THE BEST INFORMATION FOR TOPOGRAPHY AND VEGETATION LOCATIONS AVAILABLE TO DATE.

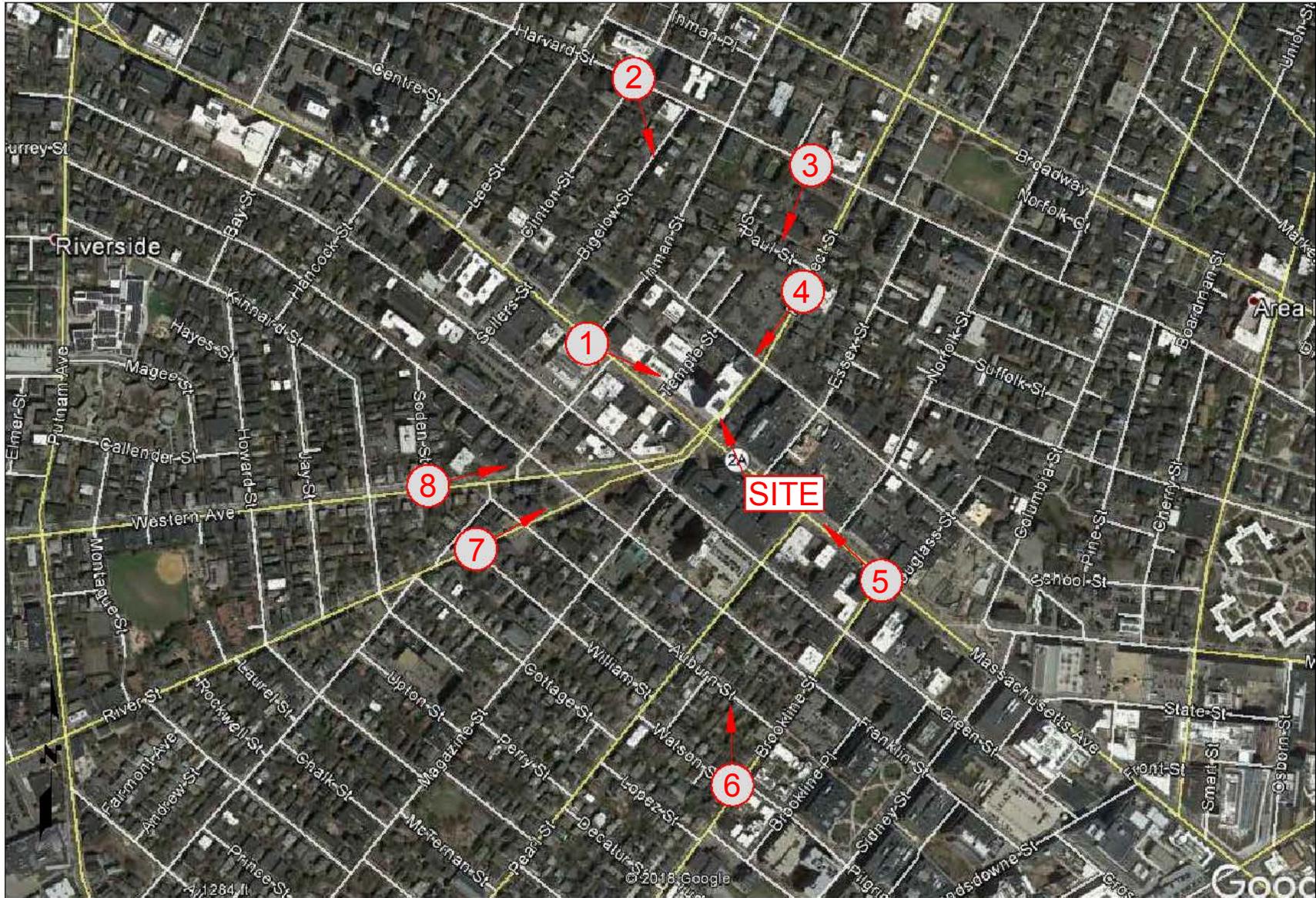


PHOTO LOCATION

SITE NO: MA2035
SITE NAME: CAMBRIDGE
ADDRESS: 675 MASSACHUSETTS AVE
 CAMBRIDGE, MA



PREPARED FOR:
 SAI
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DETAIL OF EQUIPMENT

**VIEW SOUTHEAST FROM MASSACHUSETTS AVE + INMAN ST
(PROPOSED EQUIPMENT NOT VISIBLE)**

SITE NO: MA2035
SITE NAME: CAMBRIDGE
ADDRESS: 675 MASSACHUSETTS AVE
 CAMBRIDGE, MA



PREPARED FOR:

12 INDUSTRIAL WAY
SALEM, NH 03079

HUDSON
 Design Group LLC
 45 BEECHWOOD DRIVE
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VIEW SOUTHEAST FROM HARVARD ST + CLINTON ST (NOT VISIBLE)

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ADDRESS: 675 MASSACHUSETTS AVE
 CAMBRIDGE, MA



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SAI
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 SALEM, NH 03079

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SITE TYPE: ROOFTOP
DATE: 08/24/2018 **REV:** 0
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DETAIL OF EQUIPMENT

VIEW SOUTHWEST FROM HARVARD AVE

SITE NO: MA2035
SITE NAME: CAMBRIDGE
ADDRESS: 675 MASSACHUSETTS AVE
 CAMBRIDGE, MA



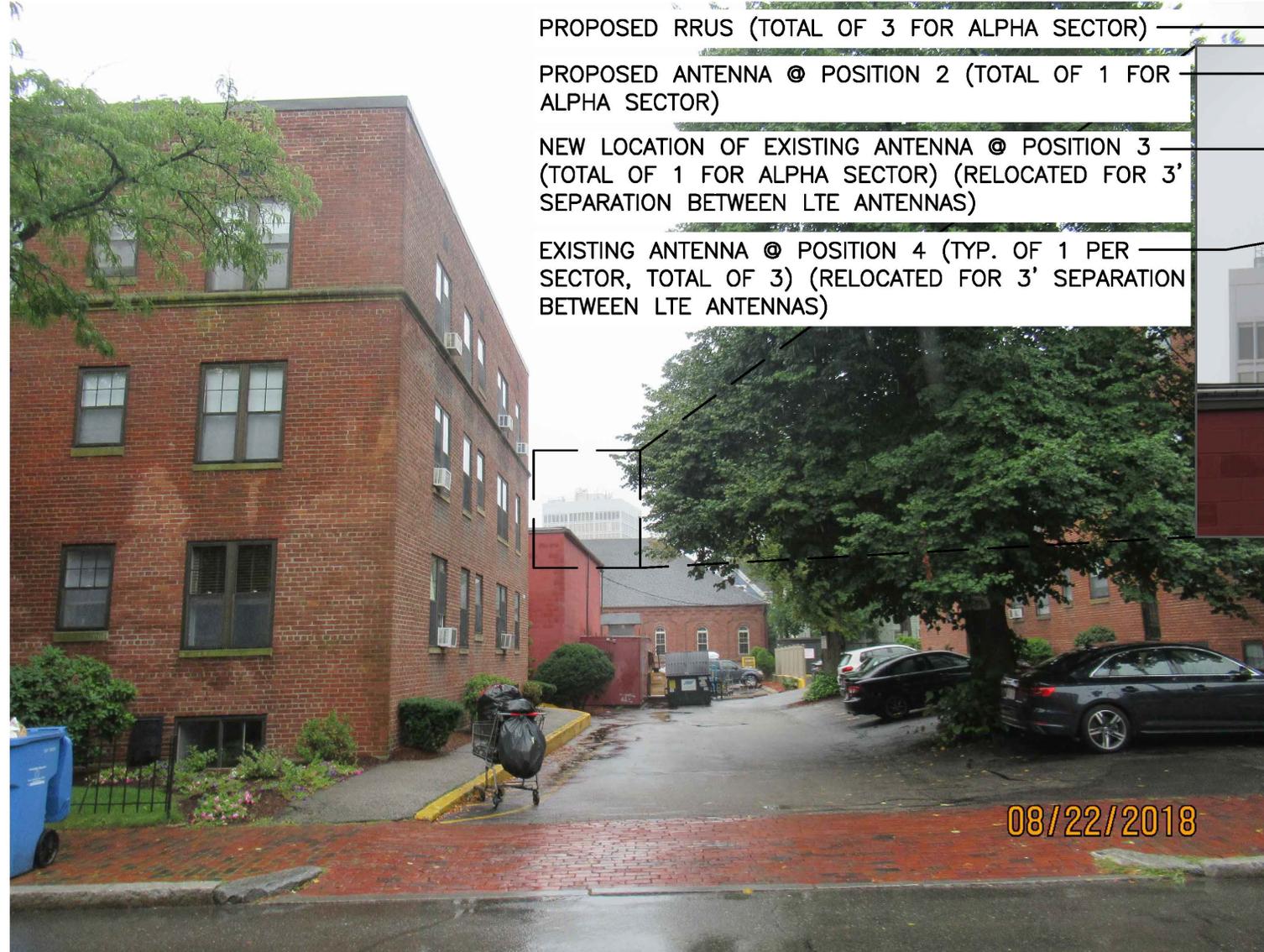
SITE TYPE: ROOFTOP
DATE: 08/24/2018 **REV:** 0
DRAWN BY: KB
SCALE: N.T.S.

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PROPOSED CONDITIONS

LOCATION # 3

DATE OF PHOTO: 08/23/2018



- PROPOSED RRUS (TOTAL OF 3 FOR ALPHA SECTOR)
- PROPOSED ANTENNA @ POSITION 2 (TOTAL OF 1 FOR ALPHA SECTOR)
- NEW LOCATION OF EXISTING ANTENNA @ POSITION 3 (TOTAL OF 1 FOR ALPHA SECTOR) (RELOCATED FOR 3' SEPARATION BETWEEN LTE ANTENNAS)
- EXISTING ANTENNA @ POSITION 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3) (RELOCATED FOR 3' SEPARATION BETWEEN LTE ANTENNAS)



DETAIL OF EQUIPMENT

VIEW SOUTHWEST FROM HARVARD AVE

SITE NO: MA2035
SITE NAME: CAMBRIDGE
ADDRESS: 675 MASSACHUSETTS AVE
 CAMBRIDGE, MA



SITE TYPE: ROOFTOP
DATE: 08/24/2018 **REV:** 0
DRAWN BY: KB
SCALE: N.T.S.

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EXISTING CONDITIONS

LOCATION # 4

DATE OF PHOTO: 08/23/2018



DETAIL OF EQUIPMENT

VIEW SOUTHWEST FROM PROSPECT ST

SITE NO: MA2035
SITE NAME: CAMBRIDGE
ADDRESS: 675 MASSACHUSETTS AVE
CAMBRIDGE, MA



PREPARED FOR:



TEL: (978) 557-5553
FAX: (978) 336-5586

SITE TYPE: ROOFTOP	
DATE: 08/24/2018	REV: 0
DRAWN BY: KB	
SCALE: N.T.S.	

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PROPOSED CONDITIONS

LOCATION # 4

DATE OF PHOTO: 08/23/2018

PROPOSED RRUS (TOTAL OF 3 FOR ALPHA SECTOR)

PROPOSED ANTENNA @ POSITION 2 (TOTAL OF 1 FOR ALPHA SECTOR)

NEW LOCATION OF EXISTING ANTENNA @ POSITION 3 (TOTAL OF 1 FOR ALPHA SECTOR) (RELOCATED FOR 3' SEPARATION BETWEEN LTE ANTENNAS)

EXISTING ANTENNA @ POSITION 4 (TYP. OF 1 PER SECTOR, TOTAL OF 3) (RELOCATED FOR 3' SEPARATION BETWEEN LTE ANTENNAS)



DETAIL OF EQUIPMENT

VIEW SOUTHWEST FROM PROSPECT ST

SITE NO: MA2035
SITE NAME: CAMBRIDGE
ADDRESS: 675 MASSACHUSETTS AVE
CAMBRIDGE, MA



SITE TYPE: ROOFTOP
DATE: 08/24/2018 **REV:** 0
DRAWN BY: KB
SCALE: N.T.S.

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DETAIL OF EQUIPMENT

08/22/2018

VIEW NORTHWEST FROM MASSACHUSETTS AVE + BROOKLINE ST

SITE NO: MA2035
SITE NAME: CAMBRIDGE
ADDRESS: 675 MASSACHUSETTS AVE
 CAMBRIDGE, MA



PREPARED FOR:
SAI
 12 INDUSTRIAL WAY
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 TEL: (978) 557-5553
 FAX: (978) 336-5586

SITE TYPE: ROOFTOP	
DATE: 08/24/2018	REV: 0
DRAWN BY: KB	
SCALE: N.T.S.	

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PROPOSED SURGE ARRESTOR (TOTAL OF 1 FOR ALPHA SECTOR)

PROPOSED RRUS (TOTAL OF 3 FOR ALPHA SECTOR)



DETAIL OF EQUIPMENT

VIEW NORTHWEST FROM MASSACHUSETTS AVE + BROOKLINE ST

SITE NO: MA2035
SITE NAME: CAMBRIDGE
ADDRESS: 675 MASSACHUSETTS AVE
 CAMBRIDGE, MA



SITE TYPE: ROOFTOP
DATE: 08/24/2018 **REV:** 0
DRAWN BY: KB
SCALE: N.T.S.

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VIEW NORTH FROM BROOKLINE ST + WILLIAM ST (NOT VISIBLE)

SITE NO: MA2035
SITE NAME: CAMBRIDGE
ADDRESS: 675 MASSACHUSETTS AVE
 CAMBRIDGE, MA



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SAI
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 TEL: (978) 557-5553
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SITE TYPE: ROOFTOP
DATE: 08/24/2018 **REV:** 0
DRAWN BY: KB
SCALE: N.T.S.

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DETAIL OF EQUIPMENT

**VIEW NORTHEAST FROM RIVER ST + WILLIAM ST
(PROPOSED EQUIPMENT NOT VISIBLE)**

SITE NO: MA2035
SITE NAME: CAMBRIDGE
ADDRESS: 675 MASSACHUSETTS AVE
 CAMBRIDGE, MA



SITE TYPE: ROOFTOP
DATE: 08/24/2018 **REV:** 0
DRAWN BY: KB
SCALE: N.T.S.

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VIEW NORTHEAST FROM WESTERN AVE + SODEN ST

SITE NO: MA2035
SITE NAME: CAMBRIDGE
ADDRESS: 675 MASSACHUSETTS AVE
 CAMBRIDGE, MA



PREPARED FOR:
SAI
 12 INDUSTRIAL WAY
 SALEM, NH 03079

HGD
HUDSON
 Design Group LLC
 45 BEECHWOOD DRIVE
 N. ANDOVER, MA 01845
 TEL: (978) 557-5553
 FAX: (978) 336-5586

SITE TYPE: ROOFTOP
DATE: 08/24/2018 **REV:** 0
DRAWN BY: KB
SCALE: N.T.S.

THIS STUDY DOES NOT CLAIM IN ANY WAY TO SHOW THE ONLY AREAS OF VISIBILITY. IT IS MEANT TO SHOW A BROAD REPRESENTATION OF AREAS WHERE THE PROPOSED INSTALLATION MAY BE VISIBLE BASED UPON THE BEST INFORMATION FOR TOPOGRAPHY AND VEGETATION LOCATIONS AVAILABLE TO DATE.



MAXIMUM PERMISSIBLE EXPOSURE STUDY

THEORETICAL REPORT



Site Number: MA2035
Site Name: Cambridge
Latitude: 42.3658239
Longitude: -71.1038889
Address: 675 Massachusetts
Avenue, Cambridge, MA

Conclusion: *AT&T's existing + proposed antenna installation is calculated to be within the FCC Standard for Uncontrolled/General Public and Controlled/Occupational Maximum Permissible Exposure (MPE).*

Prepared by: **SAI Communications**
260 Cedar Hill Street
Marlborough, MA 01752
(603) 421-0470

Date of Report: November 30, 2015

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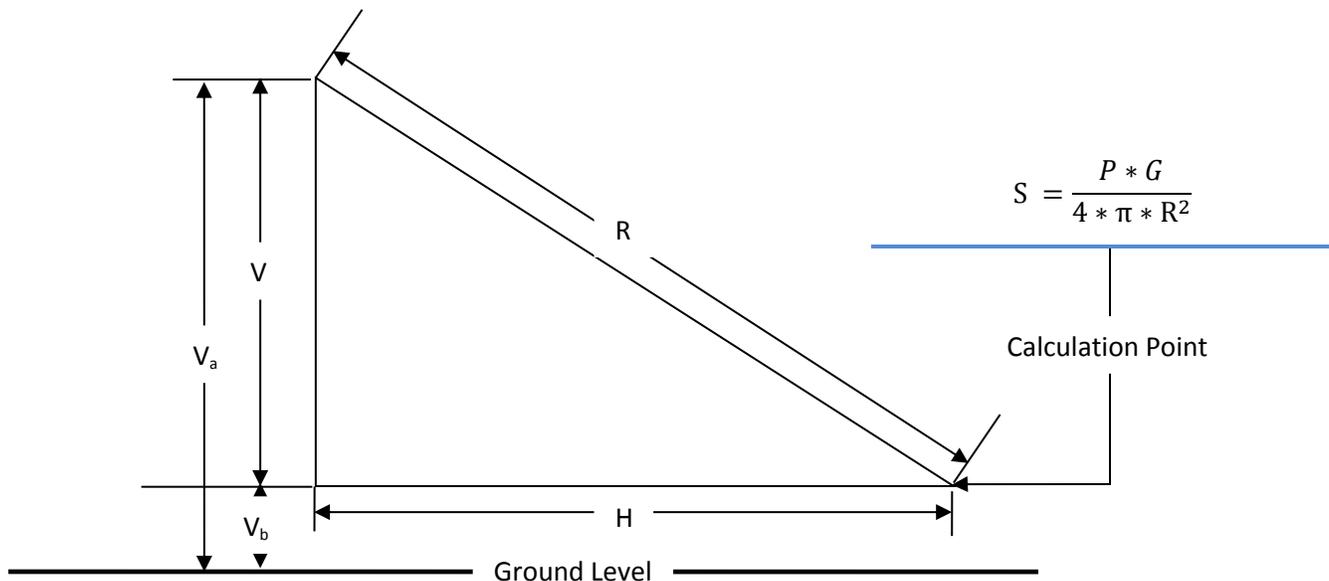
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Introduction

SAI Communications has conducted this theoretical analysis for AT&T, to ensure that the existing radio facility complies with Federal Communications Commission (FCC) regulations after carrier additions. This report will show that, through the use of FCC suggested prediction methods, the radio facility in question will be in compliance with all appropriate Federal regulations in regards to Radio Frequency (RF) Exposure.

RF Exposure Prediction Method

Power Density is calculated in accordance with FCC OET Bulletin 65 formula (3):



Where:

S = Power Density

P = Power input to the antenna

G = Gain of an antenna

R = Radial distance = $\sqrt{H^2 + V^2}$

H = Horizontal distance from antenna

V = Vertical distance from antenna = $V_a - V_b$

V_a = Antenna height above ground

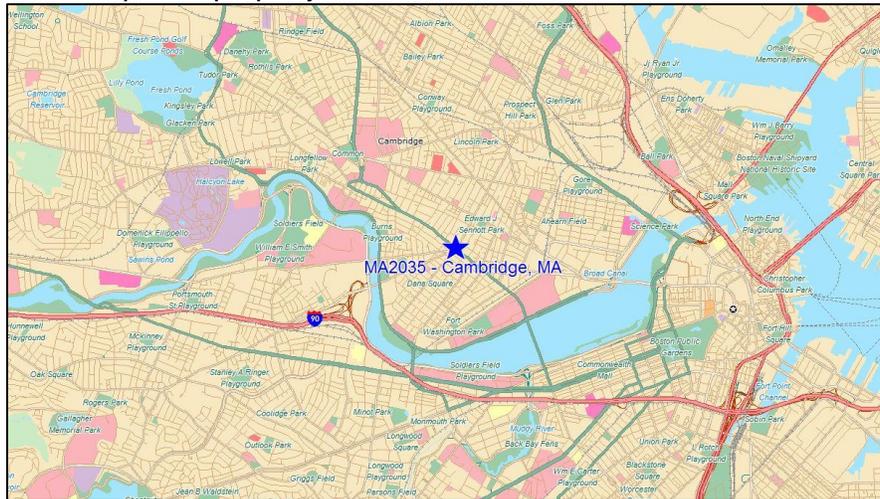
V_b = Calculation height above ground = 6ft

Case Summary

The existing radio facility has a radiation center of 189ft located at the following geographic coordinates:

Latitude: 42.3658239
Longitude: -71.1038889

See sketch below for specific property location.



RF Design Specifications

AT&T Mobility is planning to install 3 panel antennas, 1 per sector for LTE Technologies (3C+4C) with azimuths of 8-119-235 for alpha-beta-gamma sectors. Table below shows the technical data used for the calculation.

	UMTS850	UMTS1900	LTE700BC
Antenna Type:	Kathrein 800-10121		KMW AM-X-CD-14-65-00T-RET
Antenna Gain (dBd)	11.25	14.05	9.75
Rad Center, AGL (ft)	189	189	189
ERP (dBm)	56.25	59.05	54.75
No of Radios	2	2	1

	LTE850	LTE1900	LTEWCS
Antenna Type:	CCI OPA-65R-LCUU-H4	KMW AM-X-CD-14-65-00T-RET	CCI OPA-65R-LCUU-H4
Antenna Gain (dBd)	11.25	11.95	14.95
Rad Center, AGL (ft)	189	189	189
ERP (dBm)	56.25	56.95	59.95
No of Radios	1	1	1

FCC Guidelines

Table 1. MPE Limits for General Population/ Uncontrolled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time for E ² , H ² , or S (Minutes)
0.3 – 1.34	614	1.63	(100)*	30
1.34 -30	824/f	2.19/f	(180/f ²)*	30
30 – 300	27.5	0.073	0.2	30
300 – 1500	--	--	f/1500	30
1500– 100,000	--	--	1.0	30
f = frequency in MHz		* = Plane wave equivalent power density		

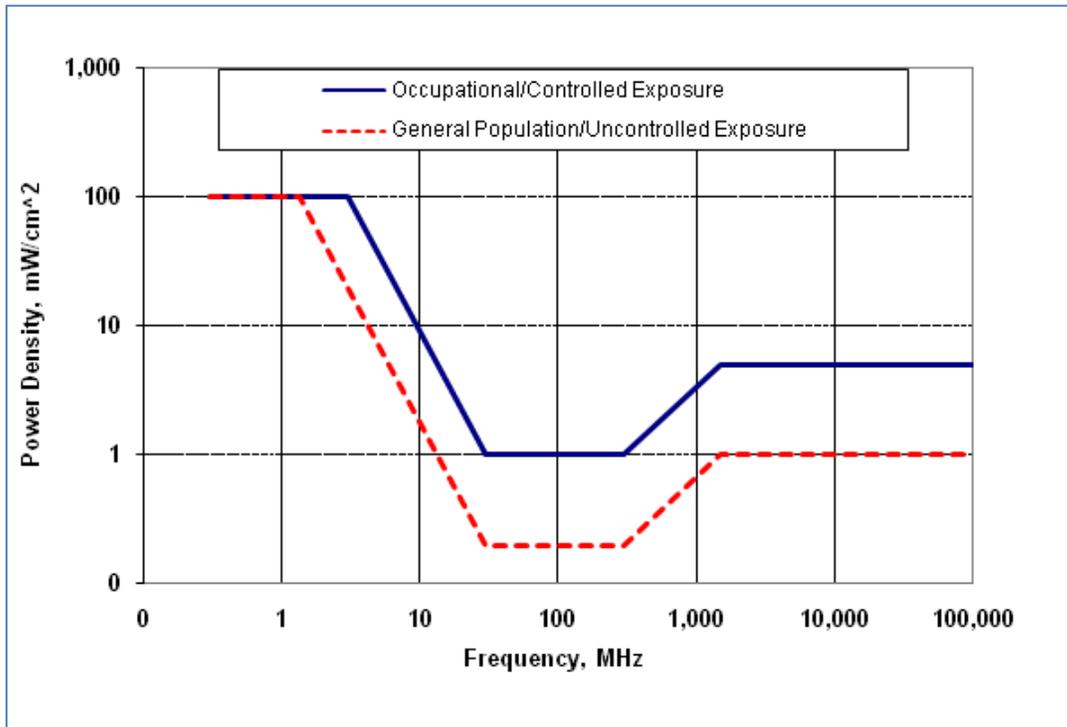
General population/uncontrolled exposures apply in situations in which the general public may be exposed, or in which persons that are exposed as a consequence of their employment may not be fully aware of the potential for exposure or can't exercise control over their exposure.

Table 2. MPE Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	Electric Field Strength (V/m)	Magnetic Field Strength (A/m)	Power Density (mW/cm ²)	Averaging Time for E ² , H ² , or S (Minutes)
0.3 – 3.0	614	1.63	(100)*	6
3.0 – 30	1842/f	4.89/f	(900/f ²)*	6
30 – 300	61.4	0.163	1.0	6
300 – 1500	--	--	f/300	6
1500– 100,000	--	--	5.0	6
f = frequency in MHz		* = Plane wave equivalent power density		

Occupational/controlled limits apply in situations in which persons are exposed as a consequence of their employment provided those persons are fully aware of the potential for exposure and can exercise control over their exposure. Limits for occupational/controlled exposure also apply in situations when an individual is transient through a location where such occupational/controlled limits apply provided he or she is made aware of the potential for exposure.

FCC RF Exposure Limits

FCC MPE LIMITS (mW/cm ²)		
EXPOSURE ENVIRONMENT	AT&T FREQUENCY BANDS	
	Cellular	PCS
General Public (Uncontrolled)	0.59	1.0
Occupational (Controlled)	2.93	5.0

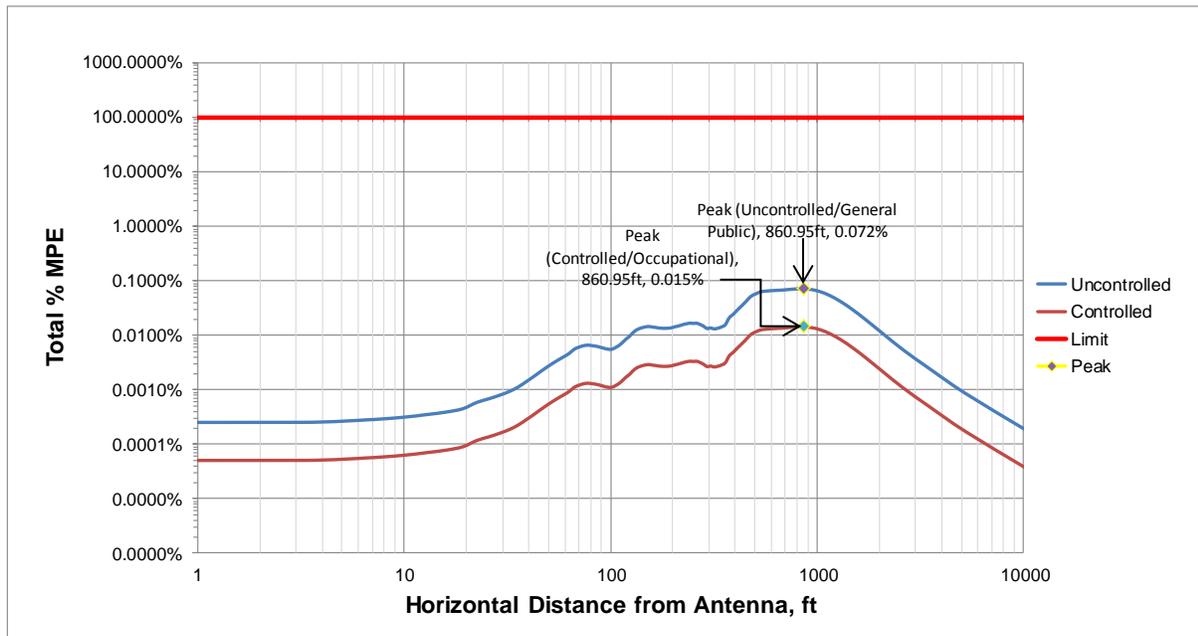
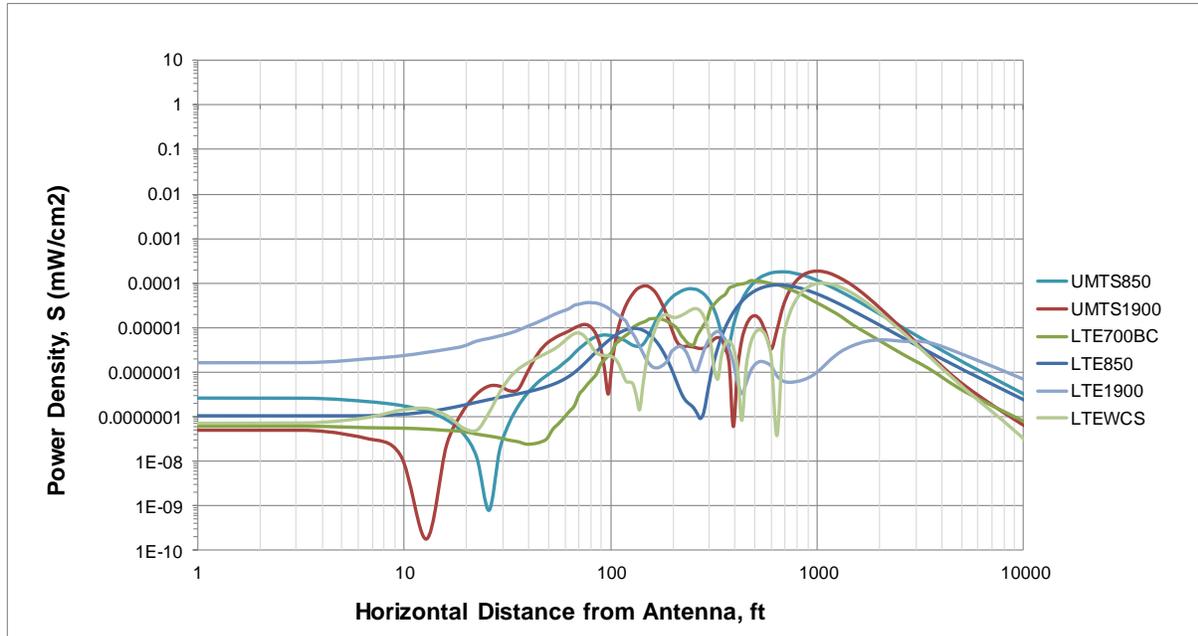


Maximum Permissible Exposures. Occupational/Controlled and General Population/Uncontrolled MPE's are functions of frequency.

Calculation Results (6ft AGL)

The following charts show the graphical representation of the calculated AT&T contribution on power density levels and % MPE at 6ft above ground, as horizontal distance from antenna increases. The calculations take into account the vertical pattern of the antennas and represent the immediate direction of each sector azimuth within the antenna horizontal beamwidth. The calculations also assume line of site to the antennas and the result will be lower if measured indoor due to in-building penetration loss.

Power Density and %MPE



Statement of Certification

I certify to the best of my knowledge that the statements contained in this report are true and accurate. The theoretical computations contained are based on FCC recommended methods, with industry standard assumptions & formulas, and complies with FCC mandated Maximum Permissible RF Exposure requirements.

A comprehensive field survey was not performed prior to the generation of this report. If questions arise regarding the calculations herein, SAI Communications recommends that a comprehensive field survey be performed to resolve any disputes.



Mike Lawton
RF Engineering Manager
SAI Communications

November 30, 2015
Date

STRUCTURAL ANALYSIS REPORT

For

MA2035 (LTE 7C)

CAMBRIDGE

675 Massachusetts Avenue
Cambridge, MA 02138

**Antennas Mounted on Steel Frames Secured to
Penthouse Façade; Equipment Room on 15th Floor**



Prepared for:



Dated: December 13, 2018 (Rev.2)

October 2, 2018 (Rev.1)

August 2, 2018

Prepared by:



45 Beechwood Drive
North Andover, MA 01845
Phone: (978) 557-5553

www.hudsondesigngroupllc.com





SCOPE OF WORK:

Hudson Design Group LLC (HDG) has been authorized by AT&T to conduct a structural evaluation of the structure supporting the proposed AT&T equipment located in the areas depicted in the latest HDG construction drawings.

This report represents this office's findings, conclusions and recommendations pertaining to the support of AT&T's proposed equipment.

This office conducted an on-site visual survey of the above areas on June 21, 2018. Attendees included Manuel Tejada (HDG – Field Technician).

CONCLUSION SUMMARY:

Building Plans were not available and could not be obtained for our use. A limited visual survey of the structure was completed in or near the areas of the proposed work. The following documents were used for our reference:

- Previous HDG Structural Analysis Report dated June 10, 2015.

Based on our evaluation, we have determined that the existing antenna mount **IS NOT CAPABLE** of supporting the proposed equipment loading. HDG recommends the following modifications:

- **Replace existing horizontal steel pipes with new 2-1/2" x-strong (2.88" O.D.) steel pipes (total of 2 per alpha sector).**
- **Replace existing vertical steel pipes with new 3" std. (3.5" O.D.) steel pipes (total of 2 per alpha sector).**
- **Install new 3" std. (3.5" O.D.) vertical steel pipe secured to the proposed mount (total of 1 per alpha sector).**
- **Install new L3x3x1/4 steel angle kicker secured to the proposed mount and penthouse roof (total of 1 per alpha sector).**
- **Install new HSS 4x4x3/8 steel stand-off members secured to the proposed mount and penthouse façade (total of 4 per alpha sector).**



APPURTENANCE/EQUIPMENT CONFIGURATION:

(6) OPA-65R-LCUU-H4 Antennas (48.0"x14.4"x7.3" – Wt. = 57 lbs. /each)

(3) 800-10121 Antennas (54.5"x10.3"x5.9" – Wt. = 47 lbs. /each)

(5) RRUS-11 RRH's (19.7"x17.0"x7.2" Wt. = 51 lbs. /each)

(6) RRUS-12 RRH's (20.4"x18.5"x7.5" – Wt. = 58 lbs. /each)

(3) RRUS-32 RRH's (27.2"x12.1"x7.0" – Wt. = 60 lbs. /each)

(3) RRUS-E2 RRH's (20.4"x18.5"x7.5" – Wt. = 53 lbs. /each)

(3) TT19-08DB111-001 TMA's (9.9"x6.7"x5.4" – Wt. = 16 lbs. /each)

(3) 9E Surge Arrestors (10.8"x10.4"x6.3" – Wt. = 16 lbs. /each)

(1) 800-10964 Antenna (59.0"x20.0"x6.9" – Wt. = 84 lbs.) (Alpha Sector Only)

(1) B14 4478 RRH (18.1"x13.4"x8.3" – Wt. = 60 lbs.) (Alpha Sector Only)

(1) 4426 B66 RRH (15.0"x13.2"x5.8" – Wt. = 49 lbs.) (Alpha Sector Only)

(1) 4478 B5 RRH (16.5"x13.4"x7.7" – Wt. = 60 lbs.) (Alpha Sector Only)

(2) DBCT108F1V92-1 Diplexer (10.7"x6.8"x7.2" – Wt. = 29 lbs. /each) (Alpha Sector Only)

(1) Squid Surge Arrestor (24.0"x9.7" Ø – Wt. = 33 lbs.) (Alpha Sector Only)

**Proposed Loading Shown in Bold.*



DESIGN CRITERIA:

1. Massachusetts State Building code 9th edition and ASCE 7-10, Minimum Design Loads for Buildings and Other Structures.

Wind Analysis:

Reference Wind Speed:	128 mph	(780 CMR 1604.11)
Category:	B	(ASCE 7-10 Section 26.7.3)

Roof:

Ground Snow, P_g :	40 psf	(780 CMR 1604.11)
Occupancy Category:	II	(ASCE 7-10 Table 1.5-1)
Importance Factor (I):	1.0	(ASCE 7-10 Table 1.5-2)
Exposure Factor (C_e):	0.9	(Fully Exposed, Table 7-2)
Thermal Factor (C_t):	1.0	(ASCE 7-10 Table 7-3)

Calculated Flat Roof Snow Load:

$P_f=0.7*C_e*C_t*I*P_g$: 30 psf (min.) (ASCE 7-10 Equation 7.3-1)

2. EIA/TIA -222- G Structural Standards for Steel Antenna Towers and Antenna Supporting Structures

City/Town:	Cambridge
County:	Middlesex
Wind Load:	105 mph
Nominal Ice Thickness:	1 inch

3. Approximate height above grade to the center of the proposed antennas:

189'-0" +/-



EXISTING PENTHOUSE ROOF CONSTRUCTION:

The existing penthouse roof construction consists of a roofing membrane over rigid insulation over concrete slabs supported by CMU walls.

ANTENNA SUPPORT RECOMMENDATIONS:

The new antenna is proposed to be mounted on a new pipe mast attached to the new steel frame which is secured to the existing penthouse façade with thru-bolts and backer plates and to the penthouse roof with epoxy anchors.

RRH / SURGE SUPPRESSOR SUPPORT RECOMMENDATIONS:

The new RRH's and Surge Suppressor are proposed to be mounted on new unistrut components secured to the new steel frame secured to the penthouse.

Limitations and assumptions:

1. Reference the latest HDG construction drawings for all the equipment locations details.
2. Mount all equipment per manufacturer's specifications.
3. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.
4. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.
5. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.
6. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.

FIELD PHOTOS:



Photo 1: Sample photo illustrating the existing Alpha sector antennas.



Photo 2: Sample photo illustrating the existing Beta/Gamma sector antennas.

FIELD PHOTOS (Cont.):



Photo 3: Sample photo illustrating the existing roof connection.



Photo 4: Sample photo illustrating the existing equipment room.

FIELD PHOTOS (Cont.):



Photo 5: Sample photo illustrating the existing penthouse roof construction.



HUDSON
Design Group LLC

Wind & Ice Calculations

Date: 12/13/2018
 Project Name: CAMBRIDGE
 Project Number: MA2035
 Designed By: BD Checked By: MSC



2.6.5.2 Velocity Pressure Coeff:

$$K_z = 2.01 (z/z_g)^{2/\alpha}$$

$z = 189$ (ft)
 $z_g = 1200$ (ft)
 $\alpha = 7.0$

$K_z = 1.185$

$K_{zmin} \leq K_z \leq 2.01$

Table 2-4

Exposure	Z_g	α	K_{zmin}	K_e
B	1200 ft	7.0	0.70	0.9
C	900 ft	9.5	0.85	1.0
D	700 ft	11.5	1.03	1.1

2.6.6.4 Topographic Factor:

Table 2-5

Topo. Category	K_t	f
2	0.43	1.25
3	0.53	2.0
4	0.72	1.5

$$K_{zt} = [1 + (K_e K_t / K_h)]^2$$

$$K_h = e^{(fz/H)}$$

$K_{zt} = \text{\#DIV/0!}$

$K_h = \text{\#DIV/0!}$

$K_e = 0$ (from Table 2-4)

$K_t = 0$ (from Table 2-5)

$f = 0$ (from Table 2-5)

$z = 189$

$H = 0$ (Ht. of the crest above surrounding terrain)

$K_{zt} = 1.00$

$K_{iz} = 1.19$ (from Sec. 2.6.8)

(If Category 1 then $K_{zt} = 1.0$)

Category = 1

2.6.8 Design Ice Thickness

Max Ice Thickness =

$t_i = 1.00$ in

$$t_{iz} = 2.0 * t_i * I * K_{iz} * (K_{zt})^{0.35}$$

$t_{iz} = 2.38$ in

Date: 12/13/2018
 Project Name: CAMBRIDGE
 Project Number: MA2035
 Designed By: BD Checked By: MSC



2.6.7 Gust Effect Factor

2.6.7.1 Self Supporting Lattice Structures

Gh = 1.0 Latticed Structures > 600 ft

Gh = 0.85 Latticed Structures 450 ft or less

Gh = 0.85 + 0.15 [h/150 - 3.0] h= ht. of structure

h= 185

Gh= 0.85

2.6.7.2 Guyed Masts

Gh= 0.85

2.6.7.3 Pole Structures

Gh= 1.1

2.6.9 Appurtenances

Gh= 1.0

2.6.7.4 Structures Supported on Other Structures

(Cantilevered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

Gh= 1.35

Gh= 1.35

2.6.9.2 Design Wind Force on Appurtenances

$F = q_z * Gh * (EPA)_A$

$q_z = 0.00256 * K_z * K_{zt} * K_d * V_{max}^2 * I$

q_z = 31.78

q_{z (ice)} = 4.61

K_z = 1.185

K_{zt} = 1.0

K_d = 0.95

V_{max} = 105

V_{max (ice)} = 40

I = 1.0

Table 2-2

Structure Type	Wind Direction Probability Factor, Kd
Latticed structures with triangular, square or rectangular cross sections	0.85
Tubular pole structures, latticed structures with other cross sections, appurtenances	0.95

Determine Ca:

Table 2-8

Force Coefficients (Ca) for Appurtenances				
Member Type		Aspect Ratio ≤ 2.5	Aspect Ratio = 7	Aspect Ratio ≥ 25
		Ca	Ca	Ca
Flat		1.2	1.4	2.0
Round	C < 32 (Subcritical)	0.7	0.8	1.2
	32 ≤ C ≤ 64 (Transitional)	$3.76/(C^{0.485})$	$3.37/(C^{0.415})$	$38.4/(C^{1.0})$
	C > 64 (Supercritical)	0.5	0.6	0.6

Aspect Ratio is the overall length/width ratio in the plane normal to the wind direction.
 (Aspect ratio is independent of the spacing between support points of a linear appurtenance, and the section length considered to have uniform wind load).

Note: Linear interpolation may be used for aspect ratios other than those shown.

Ice Thickness = **2.38 in**

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)	Force (lbs) (Ice)
800-10964 Antenna	59.0	20.0	6.9	8.19	2.95	1.22	429	83
800-10964 Antenna (Side)	59.0	6.9	20.0	2.83	8.55	1.45	176	47
OPA-65R-LCUU-H4 Antenna	48.0	14.4	7.3	4.80	3.33	1.24	255	54
OPA-65R-LCUU-H4 Antenna (Side)	48.0	7.3	14.4	2.43	6.58	1.38	144	38
800-10121 Antenna	54.5	10.3	5.9	3.90	5.29	1.32	221	51
800-10121 Antenna (Side)	54.5	5.9	10.3	2.23	9.24	1.47	141	40
RRUS-11 RRH	19.7	17.0	7.2	2.33	1.16	1.20	120	28
RRUS-11 RRH (Side)	19.7	7.2	17.0	0.99	2.74	1.21	51	15
RRUS-12 RRH	20.4	18.5	7.5	2.62	1.10	1.20	135	30
RRUS-12 RRH (Side)	20.4	7.5	18.5	1.06	2.72	1.21	55	16
RRUS-32 RRH	27.2	12.1	7.0	2.29	2.25	1.20	118	28
RRUS-32 RRH (Side)	27.2	7.0	12.1	1.32	3.89	1.26	72	21
RRUS-E2 RRH	20.4	18.5	7.5	2.62	1.10	1.20	135	30
RRUS-E2 RRH (Side)	20.4	7.5	18.5	1.06	2.72	1.21	55	16
B14 4478 RRH	18.1	13.4	8.3	1.68	1.35	1.20	87	22
B14 4478 RRH (Side)	18.1	8.3	13.4	1.04	2.18	1.20	54	15
4426 B66 RRH	15.0	13.2	5.8	1.38	1.14	1.20	71	18
4426 B66 RRH (Side)	15.0	5.8	13.2	0.60	2.59	1.20	31	11
4478 B5 RRH	16.5	13.4	7.7	1.54	1.23	1.20	79	20
4478 B5 RRH (Side)	16.5	7.7	13.4	0.88	2.14	1.20	45	14
DBCT108F1V92-1 Diplexer	10.7	6.8	7.2	0.51	1.57	1.20	26	9
DBCT108F1V92-1 Diplexer (Side)	10.7	7.2	6.8	0.54	1.49	1.20	28	10
TT19-08BP111-001 TMA	9.9	6.7	5.4	0.46	1.48	1.20	24	9
TT19-08BP111-001 TMA (Side)	9.9	5.4	6.7	0.37	1.83	1.20	19	8
9E Surge Arrestor	10.8	10.4	6.3	0.78	1.04	1.20	40	12
9E Surge Arrestor (Side)	10.8	6.3	10.4	0.47	1.71	1.20	24	9
Squid Surge Arrestor	24.0	9.7	9.7	1.62	2.47	0.70	49	13

Date: 12/13/2018
 Project Name: CAMBRIDGE
 Project Number: MA2035
 Designed By: BD Checked By: MSC



ICE WEIGHT CALCULATIONS

Thickness of ice: 1 in.
 Density of ice: 56 pcf

800-10964 Antenna

Weight of ice based on total radial SF area:
 Height (in): 59.0
 Width (in): 20.0
 Depth (in): 6.9
 Total weight of ice on object: 123 lbs
 Weight of object: 84 lbs
Combined weight of ice and object: 207 lbs

OPA-65R-LCUU-H4 Antenna

Weight of ice based on total radial SF area:
 Height (in): 48.0
 Width (in): 14.4
 Depth (in): 7.3
 Total weight of ice on object: 84 lbs
 Weight of object: 57 lbs
Combined weight of ice and object: 141 lbs

800-10121 Antenna

Weight of ice based on total radial SF area:
 Height (in): 54.5
 Width (in): 10.3
 Depth (in): 5.9
 Total weight of ice on object: 71 lbs
 Weight of object: 47 lbs
Combined weight of ice and object: 118 lbs

RRUS-11 RRH

Weight of ice based on total radial SF area:
 Height (in): 19.7
 Width (in): 17.0
 Depth (in): 7.2
 Total weight of ice on object: 45 lbs
 Weight of object: 51 lbs
Combined weight of ice and object: 96 lbs

RRUS-12 RRH

Weight of ice based on total radial SF area:
 Height (in): 20.4
 Width (in): 18.5
 Depth (in): 7.5
 Total weight of ice on object: 50 lbs
 Weight of object: 58 lbs
Combined weight of ice and object: 108 lbs

RRUS-32 RRH

Weight of ice based on total radial SF area:
 Height (in): 27.2
 Width (in): 12.1
 Depth (in): 7.0
 Total weight of ice on object: 45 lbs
 Weight of object: 60 lbs
Combined weight of ice and object: 105 lbs

RRUS-E2 RRH

Weight of ice based on total radial SF area:
 Height (in): 20.4
 Width (in): 18.5
 Depth (in): 7.5
 Total weight of ice on object: 50 lbs
 Weight of object: 53 lbs
Combined weight of ice and object: 103 lbs

B14 4478 RRH

Weight of ice based on total radial SF area:
 Height (in): 18.1
 Width (in): 13.4
 Depth (in): 8.3
 Total weight of ice on object: 38 lbs
 Weight of object: 60 lbs
Combined weight of ice and object: 98 lbs

4426 B66 RRH

Weight of ice based on total radial SF area:
 Height (in): 15.0
 Width (in): 13.2
 Depth (in): 5.8
 Total weight of ice on object: 28 lbs
 Weight of object: 49 lbs
Combined weight of ice and object: 77 lbs

4478 B5 RRH

Weight of ice based on total radial SF area:
 Height (in): 16.5
 Width (in): 13.4
 Depth (in): 7.7
 Total weight of ice on object: 34 lbs
 Weight of object: 60 lbs
Combined weight of ice and object: 94 lbs

DBCT108F1V92-1 Diplexer

Weight of ice based on total radial SF area:
 Height (in): 10.7
 Width (in): 6.8
 Depth (in): 7.2
 Total weight of ice on object: 16 lbs
 Weight of object: 29 lbs
Combined weight of ice and object: 45 lbs

TT19-08BP111-001 TMA

Weight of ice based on total radial SF area:
 Height (in): 9.9
 Width (in): 6.7
 Depth (in): 5.4
 Total weight of ice on object: 13 lbs
 Weight of object: 16 lbs
Combined weight of ice and object: 29 lbs

9E Surge Arrestor

Weight of ice based on total radial SF area:
 Height (in): 10.8
 Width (in): 10.4
 Depth (in): 6.3
 Total weight of ice on object: 20 lbs
 Weight of object: 16 lbs
Combined weight of ice and object: 36 lbs

Squid Surge Arrestor

Weight of ice based on total radial SF area:
 Depth (in): 24.0
 Diameter(in): 9.7
 Total weight of ice on object: 35 lbs
 Weight of object: 33 lbs
Combined weight of ice and object: 68 lbs

2" pipe

Per foot weight of ice:
 diameter (in): 2.38
Per foot weight of ice on object: 4 plf

2-1/2" pipe

Per foot weight of ice:
 diameter (in): 2.88
Per foot weight of ice on object: 5 plf

3" pipe

Per foot weight of ice:
 diameter (in): 3.5
Per foot weight of ice on object: 5 plf

L 3x3x1/4 Angles

Weight of ice based on total radial SF area:
 Height (in): 3
 Width (in): 3
Per foot weight of ice on object: 6 plf

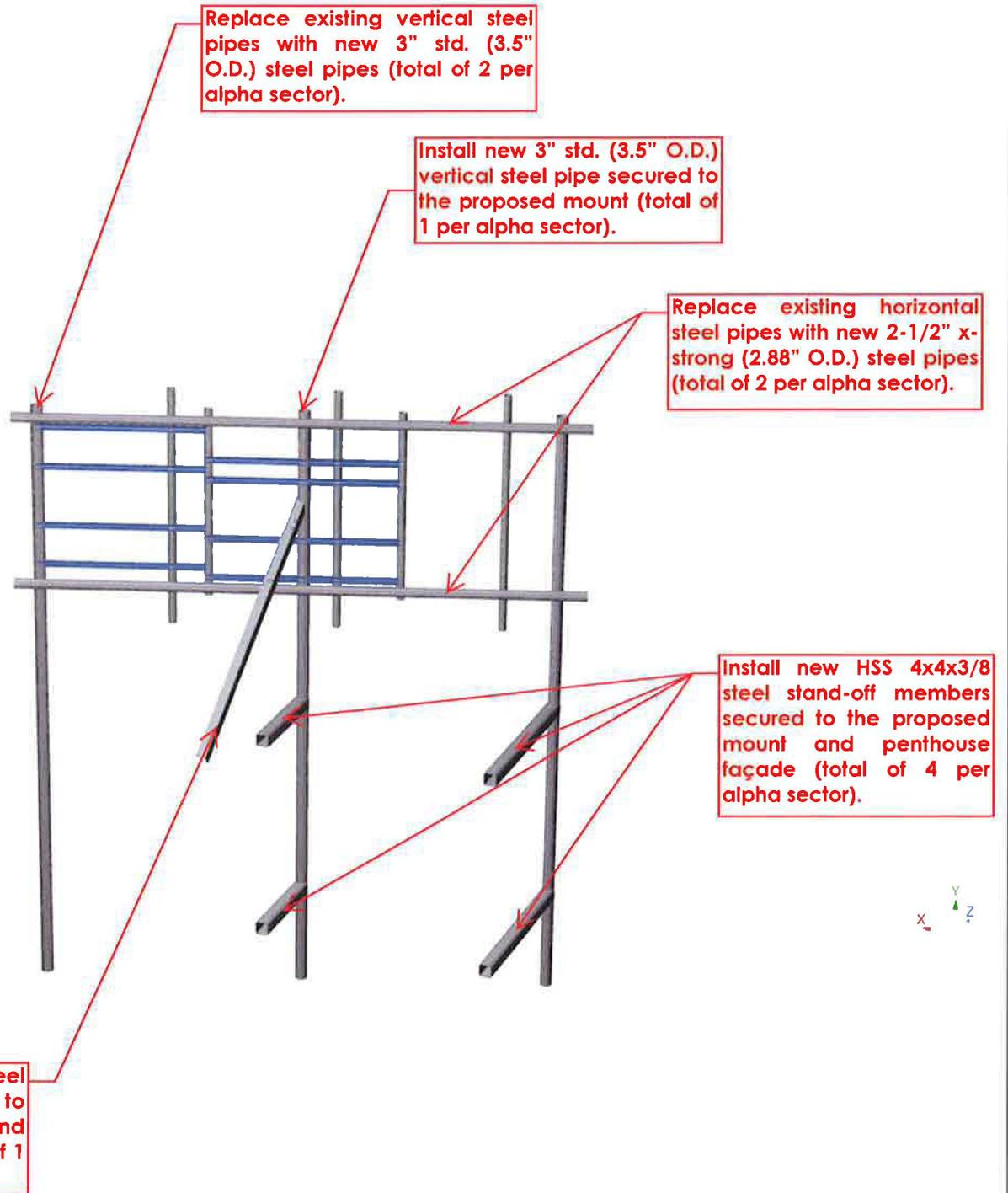
HSS 4x4x3/8

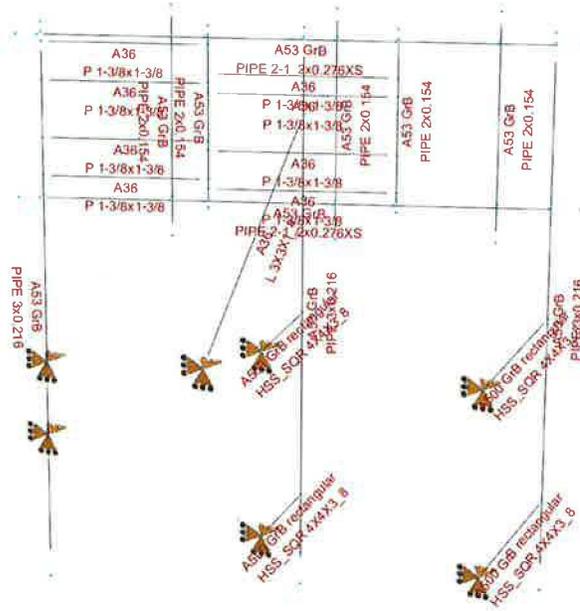
Weight of ice based on total radial SF area:
 Height (in): 4
 Width (in): 4
Per foot weight of ice on object: 8 plf



HUDSON
Design Group LLC

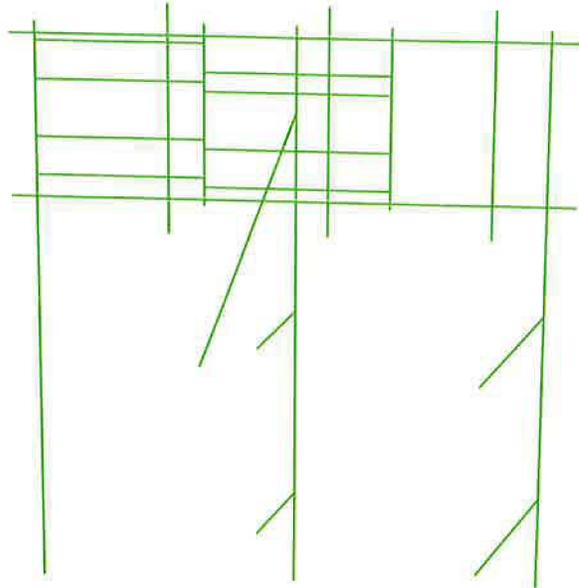
**Proposed Alpha Sector
Antenna Mount Calculations**

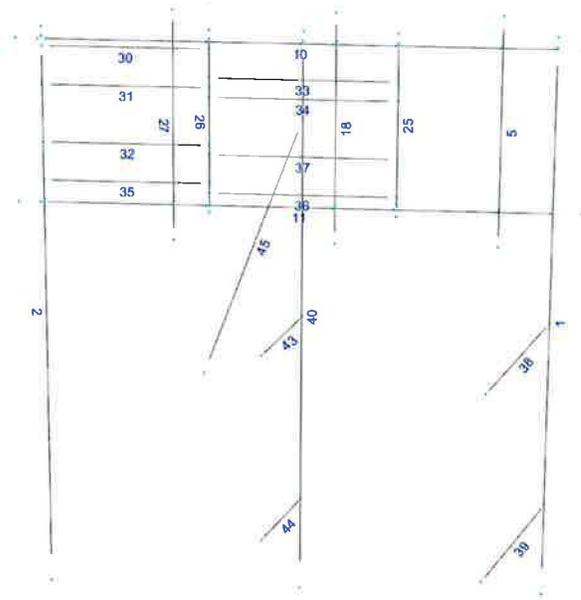




Design status

-  Not designed
-  Error on design
-  Design O.K.
-  With warnings





Current Date: 12/13/2018 11:07 AM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\IMA\MA2035\LTE 7C\Rev.2\MA2035 (LTE 7 (Alpha Sector) (Rev.2).etx)

Load data

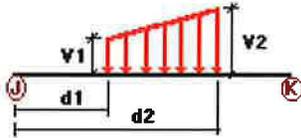
GLOSSARY

Comb : Indicates if load condition is a load combination

Load Conditions

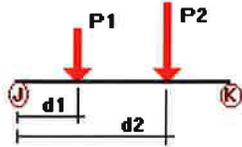
Condition	Description	Comb.	Category
DL	Dead Load	No	DL
Wof	Wind Load (NO ICE) (FRONT)	No	WIND
Wos	Wind Load (NO ICE) (SIDE)	No	WIND
Wif	Wind Load (WITH ICE) (FRONT)	No	WIND
Wis	Wind Load (WITH ICE) (SIDE)	No	WIND
Di	Ice Load	No	LL

Distributed force on members



Condition	Member	Dir1	Val1 [Kip/ft]	Val2 [Kip/ft]	Dist1 [ft]	%	Dist2 [ft]	%
Di	1	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
	2	Y	-0.005	-0.005	0.00	Yes	100.00	Yes
	5	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
	10	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
	11	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
	18	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
	25	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
	26	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
	27	Y	-0.004	-0.004	0.00	Yes	100.00	Yes
	30	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
	31	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
	32	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
	33	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
	34	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
	35	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
	36	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
	37	Y	-0.002	-0.002	0.00	Yes	100.00	Yes
	38	Y	-0.008	-0.008	0.00	Yes	100.00	Yes
39	Y	-0.008	-0.008	0.00	Yes	100.00	Yes	
40	Y	-0.005	-0.005	0.00	Yes	100.00	Yes	
43	Y	-0.008	-0.008	0.00	Yes	100.00	Yes	
44	Y	-0.008	-0.008	0.00	Yes	100.00	Yes	

Concentrated forces on members



Condition	Member	Dir1	Value1 [Kip]	Dist1 [ft]	%
DL	2	y	-0.029	1.50	No
		y	-0.029	5.50	No
		y	-0.033	0.50	No
	5	y	-0.024	1.00	No
		y	-0.024	5.54	No
		y	-0.016	3.00	No
	18	y	-0.029	0.75	No
		y	-0.029	4.75	No
		y	-0.06	2.00	No
	27	y	-0.042	0.54	No
		y	-0.042	5.46	No
		y	-0.058	3.00	No
	30	y	-0.029	1.00	No
		y	-0.008	2.25	No
		y	-0.029	1.00	No
	31	y	-0.008	2.25	No
		y	-0.027	1.00	No
		y	-0.03	2.25	No
	33	y	-0.026	1.00	No
		y	-0.029	4.00	No
		y	-0.026	1.00	No
	34	y	-0.029	4.00	No
		y	-0.027	1.00	No
		y	-0.03	2.25	No
	35	y	-0.027	1.00	No
		y	-0.03	2.25	No
		y	-0.03	1.00	No
	36	y	-0.025	2.25	No
		y	-0.03	1.00	No
		y	-0.025	2.25	No
	37	y	-0.03	1.00	No
		y	-0.025	2.25	No
		y	-0.025	2.25	No
Wof	2	z	-0.128	1.50	No
		z	-0.128	5.50	No
		z	-0.049	0.50	No
	5	z	-0.111	1.00	No
		z	-0.111	5.54	No
		z	-0.128	0.75	No
	18	z	-0.128	4.75	No
		z	-0.128	0.54	No
		z	-0.215	5.46	No
	27	z	-0.215	1.00	No
		z	-0.02	2.25	No
		z	-0.068	1.00	No
	30	z	-0.068	1.00	No
		z	-0.02	2.25	No
		z	-0.02	2.25	No
31	z	-0.068	1.00	No	
	z	-0.068	1.00	No	
	z	-0.044	2.25	No	
32	z	-0.068	1.00	No	
	z	-0.044	2.25	No	
	z	-0.06	1.00	No	

		z	-0.068	4.00	No
	34	z	-0.06	1.00	No
		z	-0.068	4.00	No
	35	z	-0.068	1.00	No
		z	-0.044	2.25	No
	36	z	-0.04	1.00	No
		z	-0.036	2.25	No
	37	z	-0.04	1.00	No
		z	-0.036	2.25	No
Wos	2	x	-0.072	1.50	No
		x	-0.072	5.50	No
		x	-0.049	0.50	No
	5	x	-0.071	1.00	No
		x	-0.071	5.54	No
		x	-0.019	3.00	No
	18	x	-0.072	0.75	No
		x	-0.072	4.75	No
		x	-0.072	2.00	No
	27	x	-0.088	0.54	No
		x	-0.088	5.46	No
		x	-0.026	3.00	No
	30	x	-0.028	1.00	No
		x	-0.012	2.25	No
	31	x	-0.028	1.00	No
		x	-0.012	2.25	No
	32	x	-0.028	1.00	No
		x	-0.027	2.25	No
	33	x	-0.026	1.00	No
		x	-0.028	4.00	No
	34	x	-0.026	1.00	No
		x	-0.028	4.00	No
	35	x	-0.028	1.00	No
		x	-0.027	2.25	No
	36	x	-0.023	1.00	No
		x	-0.016	2.25	No
	37	x	-0.023	1.00	No
		x	-0.016	2.25	No
Wif	2	z	-0.027	1.50	No
		z	-0.027	5.50	No
		z	-0.013	0.50	No
	5	z	-0.026	1.00	No
		z	-0.026	5.54	No
	18	z	-0.027	0.75	No
		z	-0.027	4.75	No
	27	z	-0.042	0.54	No
		z	-0.042	5.46	No
	30	z	-0.015	1.00	No
		z	-0.006	2.25	No
	31	z	-0.015	1.00	No
		z	-0.006	2.25	No
	32	z	-0.015	1.00	No
		z	-0.011	2.25	No
	33	z	-0.014	1.00	No
		z	-0.015	4.00	No
	34	z	-0.014	1.00	No
		z	-0.015	4.00	No
	35	z	-0.015	1.00	No
		z	-0.011	2.25	No
	36	z	-0.01	1.00	No
		z	-0.009	2.25	No

	37	z	-0.01	1.00	No
		z	-0.009	2.25	No
Wis	2	x	-0.019	1.50	No
		x	-0.019	5.50	No
		x	-0.013	0.50	No
	5	x	-0.02	1.00	No
		x	-0.02	5.54	No
		x	-0.008	3.00	No
	18	x	-0.019	0.75	No
		x	-0.019	4.75	No
		x	-0.021	2.00	No
	27	x	-0.024	0.54	No
		x	-0.024	5.46	No
		x	-0.009	3.00	No
	30	x	-0.008	1.00	No
		x	-0.005	2.25	No
	31	x	-0.008	1.00	No
		x	-0.005	2.25	No
	32	x	-0.008	1.00	No
		x	-0.008	2.25	No
	33	x	-0.008	1.00	No
		x	-0.008	4.00	No
	34	x	-0.008	1.00	No
		x	-0.008	4.00	No
	35	x	-0.008	1.00	No
		x	-0.008	2.25	No
	36	x	-0.007	1.00	No
		x	-0.006	2.25	No
	37	x	-0.007	1.00	No
		x	-0.006	2.25	No
Di	2	y	-0.042	1.50	No
		y	-0.042	5.50	No
		y	-0.035	0.50	No
	5	y	-0.036	1.00	No
		y	-0.036	5.54	No
		y	-0.013	3.00	No
	18	y	-0.042	0.75	No
		y	-0.042	4.75	No
		y	-0.045	2.00	No
	27	y	-0.062	0.54	No
		y	-0.062	5.46	No
		y	-0.032	3.00	No
	30	y	-0.025	1.00	No
		y	-0.01	2.25	No
	31	y	-0.025	1.00	No
		y	-0.01	2.25	No
	32	y	-0.025	1.00	No
		y	-0.019	2.25	No
	33	y	-0.023	1.00	No
		y	-0.025	4.00	No
	34	y	-0.023	1.00	No
		y	-0.025	4.00	No
	35	y	-0.025	1.00	No
		y	-0.019	2.25	No
	36	y	-0.017	1.00	No
		y	-0.014	2.25	No
	37	y	-0.017	1.00	No
		y	-0.014	2.25	No

Self weight multipliers for load conditions

Condition	Description	Self weight multiplier			
		Comb.	MultX	MultY	MultZ
DL	Dead Load	No	0.00	-1.00	0.00
Wof	Wind Load (NO ICE) (FRONT)	No	0.00	0.00	0.00
Wos	Wind Load (NO ICE) (SIDE)	No	0.00	0.00	0.00
Wif	Wind Load (WITH ICE) (FRONT)	No	0.00	0.00	0.00
Wis	Wind Load (WITH ICE) (SIDE)	No	0.00	0.00	0.00
Di	Ice Load	No	0.00	0.00	0.00

Earthquake (Dynamic analysis only)

Condition	a/g	Ang. [Deg]	Damp. [%]
DL	0.00	0.00	0.00
Wof	0.00	0.00	0.00
Wos	0.00	0.00	0.00
Wif	0.00	0.00	0.00
Wis	0.00	0.00	0.00
Di	0.00	0.00	0.00

Current Date: 12/13/2018 11:08 AM

Units system: English

File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\IMA\MA2035\LTE 7C\Rev.2\MA2035 (LTE 7 (Alpha Sector) (Rev.2).etx)

Steel Code Check

Report: Summary - Group by member

Load conditions to be included in design :

- LC1=1.2DL+1.6Wof
- LC2=1.2DL+1.6Wos
- LC3=0.9DL+1.6Wof
- LC4=0.9DL+1.6Wos
- LC5=1.2DL+Wif+Di
- LC6=1.2DL+Wis+Di
- LC7=1.2DL
- LC8=0.9DL

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	HSS_SQR 4X4X3_8	38	LC2 at 0.00%	0.19	OK	Eq. H1-1b
		39	LC6 at 0.00%	0.11	OK	Eq. H1-1b
		43	LC2 at 0.00%	0.20	OK	Eq. H1-1b
		44	LC6 at 0.00%	0.13	OK	Eq. H1-1b
	L 3X3X1_4	45	LC1 at 100.00%	0.64	OK	Eq. H2-1
	P 1-3/8x1-3/8	30	LC3 at 25.00%	0.25	OK	Sec. C5.2
		31	LC4 at 100.00%	0.26	OK	Sec. C5.2
		32	LC2 at 100.00%	0.56	OK	Sec. C5.2
		33	LC1 at 47.92%	0.89	OK	Sec. C5.2
		34	LC1 at 47.92%	0.97	OK	Sec. C5.2
		35	LC2 at 100.00%	0.56	OK	Sec. C5.2
		36	LC4 at 50.00%	0.58	OK	Sec. C5.2
		37	LC1 at 47.92%	0.76	OK	Sec. C5.2
	PIPE 2-1_2x0.276XS	10	LC1 at 50.00%	0.61	OK	Eq. H1-1b
		11	LC1 at 50.00%	0.48	OK	Eq. H1-1b
	PIPE 2x0.154	5	LC2 at 81.25%	0.15	OK	Eq. H1-1b
		18	LC1 at 37.50%	0.23	OK	Eq. H1-1b
		25	LC1 at 5.36%	0.27	OK	Eq. H1-1b
		26	LC2 at 36.36%	0.22	OK	Eq. H1-1b
		27	LC4 at 83.04%	0.31	OK	Eq. H1-1b
	PIPE 3x0.216	1	LC6 at 50.00%	0.41	OK	Eq. H1-1b
		2	LC2 at 59.72%	0.90	OK	Eq. H1-1b
		40	LC3 at 15.00%	0.60	OK	Eq. H1-1b

Geometry data

GLOSSARY

Cb22, Cb33	: Moment gradient coefficients
Cm22, Cm33	: Coefficients applied to bending term in interaction formula
d0	: Tapered member section depth at J end of member
DJX	: Rigid end offset distance measured from J node in axis X
DJY	: Rigid end offset distance measured from J node in axis Y
DJZ	: Rigid end offset distance measured from J node in axis Z
DKX	: Rigid end offset distance measured from K node in axis X
DKY	: Rigid end offset distance measured from K node in axis Y
DKZ	: Rigid end offset distance measured from K node in axis Z
dL	: Tapered member section depth at K end of member
Ig factor	: Inertia reduction factor (Effective Inertia/Gross Inertia) for reinforced concrete members
K22	: Effective length factor about axis 2
K33	: Effective length factor about axis 3
L22	: Member length for calculation of axial capacity
L33	: Member length for calculation of axial capacity
LB pos	: Lateral unbraced length of the compression flange in the positive side of local axis 2
LB neg	: Lateral unbraced length of the compression flange in the negative side of local axis 2
RX	: Rotation about X
RY	: Rotation about Y
RZ	: Rotation about Z
TO	: 1 = Tension only member 0 = Normal member
TX	: Translation in X
TY	: Translation in Y
TZ	: Translation in Z

Nodes

Node	X [ft]	Y [ft]	Z [ft]	Rigid Floor
1	0.25	0.00	4.5158	0
4	0.25	15.00	4.5158	0
5	-0.50	14.75	4.58	0
6	-0.50	10.50	4.58	0
7	12.00	0.00	0.3762	0
8	12.00	4.00	0.3762	0
9	12.00	6.00	0.3762	0
10	12.00	15.00	0.3762	0
11	12.50	14.75	0.00	0
12	12.50	10.50	0.00	0
13	1.50	15.50	4.0754	0
16	1.50	9.50	4.0754	0
27	1.50	14.75	4.0754	0
28	1.50	10.50	4.0754	0
29	1.50	14.75	3.8754	0
30	1.50	10.50	3.8754	0
31	0.25	14.75	4.3158	0
32	12.00	14.75	0.1762	0
33	0.25	10.50	4.3158	0
34	12.00	10.50	0.1762	0
35	0.25	14.75	4.5158	0

36	12.00	14.75	0.3762	0
37	0.25	10.50	4.5158	0
38	12.00	10.50	0.3762	0
39	5.25	15.50	2.7542	0
40	5.25	9.50	2.7542	0
41	5.25	14.75	2.7542	0
42	5.25	10.50	2.7542	0
43	5.25	14.75	2.5542	0
44	5.25	10.50	2.5542	0
45	3.8333	14.75	3.0533	0
46	8.1667	14.75	1.5267	0
47	3.8333	10.50	3.0533	0
48	8.1667	10.50	1.5267	0
49	3.8333	14.75	3.2533	0
50	8.1667	14.75	1.7267	0
51	3.8333	10.50	3.2533	0
52	8.1667	10.50	1.7267	0
53	8.1667	15.00	1.7267	0
54	3.8333	15.00	3.2533	0
55	8.1667	10.25	1.7267	0
56	3.8333	10.25	3.2533	0
57	9.00	15.50	1.4331	0
58	9.00	9.50	1.4331	0
59	9.00	14.75	1.4331	0
60	9.00	10.50	1.4331	0
61	9.00	14.75	1.2331	0
62	9.00	10.50	1.2331	0
63	12.00	14.50	0.3762	0
64	8.1667	14.50	1.7267	0
65	12.00	13.50	0.3762	0
66	8.1667	13.50	1.7267	0
67	12.00	12.00	0.3762	0
68	8.1667	12.00	1.7267	0
69	8.1667	13.75	1.7267	0
70	8.1667	13.25	1.7267	0
71	3.8333	13.75	3.2533	0
72	3.8333	13.25	3.2533	0
73	0.25	7.50	4.5158	0
74	12.00	11.00	0.3762	0
75	8.1667	11.00	1.7267	0
76	8.1667	10.75	1.7267	0
77	3.8333	10.75	3.2533	0
78	8.1667	11.75	1.7267	0
79	3.8333	11.75	3.2533	0
81	0.25	7.50	0.00	0
82	0.25	2.50	4.5158	0
83	0.25	2.50	0.00	0
85	6.00	0.00	2.49	0
88	6.00	15.00	2.49	0
89	6.00	14.75	2.29	0
90	6.00	10.50	2.29	0
91	6.00	14.75	2.49	0
92	6.00	10.50	2.49	0
93	6.00	7.50	2.49	0
94	6.00	7.50	0.00	0
95	6.00	2.50	2.49	0
96	6.00	2.50	0.00	0
97	6.00	12.75	2.49	0
98	6.00	8.50	-3.50	0

Restraints

Node	TX	TY	TZ	RX	RY	RZ
8	1	1	1	0	0	0
9	1	1	1	0	0	0
81	1	1	1	0	0	0
83	1	1	1	0	0	0
94	1	1	1	0	0	0
96	1	1	1	0	0	0
98	1	1	1	0	0	0

Members

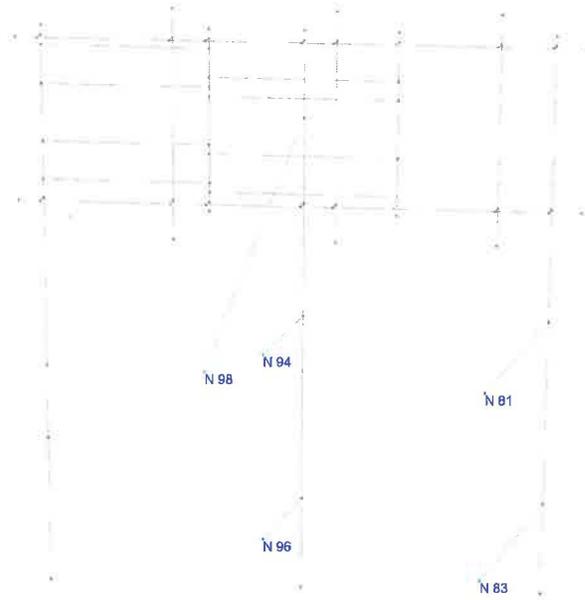
Member	NJ	NK	Description	Section	Material	d0 [in]	dL [in]	Ig factor
1	4	1		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
2	10	7		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
5	13	16		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
10	5	11		PIPE 2-1_2x0.276XS	A53 GrB	0.00	0.00	0.00
11	6	12		PIPE 2-1_2x0.276XS	A53 GrB	0.00	0.00	0.00
18	39	40		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
25	56	54		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
26	55	53		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
27	57	58		PIPE 2x0.154	A53 GrB	0.00	0.00	0.00
30	63	64		P 1-3/8x1-3/8	A36	0.00	0.00	0.00
31	65	66		P 1-3/8x1-3/8	A36	0.00	0.00	0.00
32	67	68		P 1-3/8x1-3/8	A36	0.00	0.00	0.00
33	69	71		P 1-3/8x1-3/8	A36	0.00	0.00	0.00
34	70	72		P 1-3/8x1-3/8	A36	0.00	0.00	0.00
35	74	75		P 1-3/8x1-3/8	A36	0.00	0.00	0.00
36	76	77		P 1-3/8x1-3/8	A36	0.00	0.00	0.00
37	78	79		P 1-3/8x1-3/8	A36	0.00	0.00	0.00
38	73	81		HSS_SQR 4X4X3_8	A500 GrB rectangular	0.00	0.00	0.00
39	82	83		HSS_SQR 4X4X3_8	A500 GrB rectangular	0.00	0.00	0.00
40	88	85		PIPE 3x0.216	A53 GrB	0.00	0.00	0.00
43	93	94		HSS_SQR 4X4X3_8	A500 GrB rectangular	0.00	0.00	0.00
44	95	96		HSS_SQR 4X4X3_8	A500 GrB rectangular	0.00	0.00	0.00
45	98	97		L 3X3X1_4	A36	0.00	0.00	0.00

Orientation of local axes

Member	Rotation [Deg]	Axes23	NX	NY	NZ
45	180.00	0	0.00	0.00	0.00

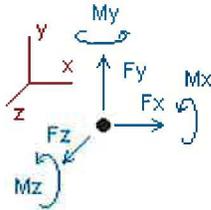
Rigid end offsets

Member	DJX [in]	DJY [in]	DJZ [in]	DKX [in]	DKY [in]	DKZ [in]
30	0.00	0.00	-1.50	0.00	0.00	-1.50
31	0.00	0.00	-1.50	0.00	0.00	-1.50
32	0.00	0.00	-1.50	0.00	0.00	-1.50
33	0.00	0.00	-1.50	0.00	0.00	-1.50
34	0.00	0.00	-1.50	0.00	0.00	-1.50
35	0.00	0.00	-1.50	0.00	0.00	-1.50
36	0.00	0.00	-1.50	0.00	0.00	-1.50
37	0.00	0.00	-1.50	0.00	0.00	-1.50



Analysis result

Reactions



Direction of positive forces and moments

Node	Forces [Kip]			Moments [Kip*ft]		
	FX	FY	FZ	MX	MY	MZ
Condition LC1=1.2DL+1.6Wof						
94	0.08894	-0.27174	-0.03977	0.00000	0.00000	0.00000
98	0.06608	2.05721	2.77536	0.00000	0.00000	0.00000
96	-0.01194	-0.14603	-0.16392	0.00000	0.00000	0.00000
81	-0.05216	0.03129	-0.29041	0.00000	0.00000	0.00000
83	0.00476	0.10901	0.12959	0.00000	0.00000	0.00000
SUM	0.09569	1.77974	2.41085	0.00000	0.00000	0.00000
Condition LC2=1.2DL+1.6Wos						
94	0.53474	0.64557	-0.83431	0.00000	0.00000	0.00000
98	0.04778	0.29469	0.32001	0.00000	0.00000	0.00000
96	-0.10189	0.63645	0.61025	0.00000	0.00000	0.00000
81	0.15826	0.50314	-0.29500	0.00000	0.00000	0.00000
83	-0.03224	0.34408	0.51841	0.00000	0.00000	0.00000
SUM	0.60665	2.42392	0.31937	0.00000	0.00000	0.00000
Condition LC3=0.9DL+1.6Wof						
94	0.08605	-0.41319	0.05246	0.00000	0.00000	0.00000
98	0.06471	2.06007	2.78838	0.00000	0.00000	0.00000
96	-0.00951	-0.26074	-0.27104	0.00000	0.00000	0.00000
81	-0.05340	-0.03165	-0.20285	0.00000	0.00000	0.00000
83	0.00566	0.04957	0.04251	0.00000	0.00000	0.00000
SUM	0.09350	1.40406	2.40946	0.00000	0.00000	0.00000
Condition LC4=0.9DL+1.6Wos						
94	0.53184	0.50412	-0.74208	0.00000	0.00000	0.00000
98	0.04641	0.29754	0.33304	0.00000	0.00000	0.00000
96	-0.09946	0.52174	0.50313	0.00000	0.00000	0.00000
81	0.15702	0.44020	-0.20745	0.00000	0.00000	0.00000
83	-0.03135	0.28464	0.43133	0.00000	0.00000	0.00000
SUM	0.60446	2.04824	0.31798	0.00000	0.00000	0.00000

Condition **LC5=1.2DL+Wif+Di**

94	0.02982	0.82881	-0.57536	0.00000	0.00000	0.00000
98	0.01751	0.27261	0.30378	0.00000	0.00000	0.00000
96	-0.01632	0.68139	0.63857	0.00000	0.00000	0.00000
81	0.00028	0.37645	-0.56961	0.00000	0.00000	0.00000
83	-0.00455	0.36514	0.54624	0.00000	0.00000	0.00000
SUM	0.02674	2.52440	0.34361	0.00000	0.00000	0.00000

Condition **LC6=1.2DL+Wis+Di**

94	0.11358	0.95928	-0.70440	0.00000	0.00000	0.00000
98	0.01683	0.04188	-0.02003	0.00000	0.00000	0.00000
96	-0.03267	0.79715	0.75334	0.00000	0.00000	0.00000
81	0.03578	0.45181	-0.56995	0.00000	0.00000	0.00000
83	-0.01084	0.40236	0.60772	0.00000	0.00000	0.00000
SUM	0.12269	2.65248	0.06668	0.00000	0.00000	0.00000

Condition **LC7=1.2DL**

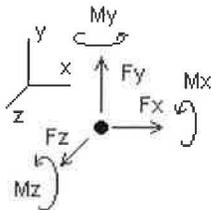
94	0.01159	0.56580	-0.36892	0.00000	0.00000	0.00000
98	0.00549	-0.01143	-0.05210	0.00000	0.00000	0.00000
96	-0.00970	0.45885	0.42847	0.00000	0.00000	0.00000
81	0.00497	0.25176	-0.35021	0.00000	0.00000	0.00000
83	-0.00359	0.23776	0.34832	0.00000	0.00000	0.00000
SUM	0.00875	1.50273	0.00556	0.00000	0.00000	0.00000

Condition **LC8=0.9DL**

94	0.00869	0.42435	-0.27669	0.00000	0.00000	0.00000
98	0.00411	-0.00857	-0.03908	0.00000	0.00000	0.00000
96	-0.00728	0.34413	0.32135	0.00000	0.00000	0.00000
81	0.00372	0.18882	-0.26265	0.00000	0.00000	0.00000
83	-0.00269	0.17832	0.26124	0.00000	0.00000	0.00000
SUM	0.00657	1.12705	0.00417	0.00000	0.00000	0.00000

Envelope for nodal reactions

Note.- **lc** is the controlling load condition



Direction of positive forces and moments

Envelope of nodal reactions for :

LC1=1.2DL+1.6Wof

LC2=1.2DL+1.6Wos

LC3=0.9DL+1.6Wof

LC4=0.9DL+1.6Wos

LC5=1.2DL+Wif+Di

LC6=1.2DL+Wis+Di

LC7=1.2DL

LC8=0.9DL

Node		Forces						Moments					
		Fx [Kip]	lc	Fy [Kip]	lc	Fz [Kip]	lc	Mx [Kip*ft]	lc	My [Kip*ft]	lc	Mz [Kip*ft]	lc
94	Max	0.535	LC2	0.959	LC6	0.052	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	0.009	LC8	-0.413	LC3	-0.834	LC2	0.00000	LC1	0.00000	LC1	0.00000	LC1
98	Max	0.066	LC1	2.060	LC3	2.788	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	0.004	LC8	-0.011	LC7	-0.052	LC7	0.00000	LC1	0.00000	LC1	0.00000	LC1
96	Max	-0.007	LC8	0.797	LC6	0.753	LC6	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.102	LC2	-0.261	LC3	-0.271	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1
81	Max	0.158	LC2	0.503	LC2	-0.203	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.053	LC3	-0.032	LC3	-0.570	LC6	0.00000	LC1	0.00000	LC1	0.00000	LC1
83	Max	0.006	LC3	0.402	LC6	0.608	LC6	0.00000	LC1	0.00000	LC1	0.00000	LC1
	Min	-0.032	LC2	0.050	LC3	0.043	LC3	0.00000	LC1	0.00000	LC1	0.00000	LC1

Date: 12/13/2018
Site Name: CAMBRIDGE
Site No.: MA2035
Done by: BD

Checked by: MSC



HUDSON
Design Group LLC

CHECK EPOXY ANCHOR CONNECTION CAPACITY → EXISTING ANCHORS

Reference: Hilti Volume 2: Anchor Fastening Technical Guide

Epoxy Type = HIT-HY 150
Anchor Diameter = 1/2 in.
Assumed Embedment Depth = 2 1/8 in.
f'c of Concrete = 2000 psi

Allowable Tensile Load =

$F_{Tall} = 1220$ lbs.

Allowable Shear Load =

$F_{Vall} = 1980$ lbs.

WIND FORCES

Reaction (Worst Case) $F = 2788$ lbs.

GRAVITY LOADS

Ice and Equipment 2060 lbs.

No. of Supports = 1
No. of Anchors / Support = 4

Tension Design Load / Anchor =

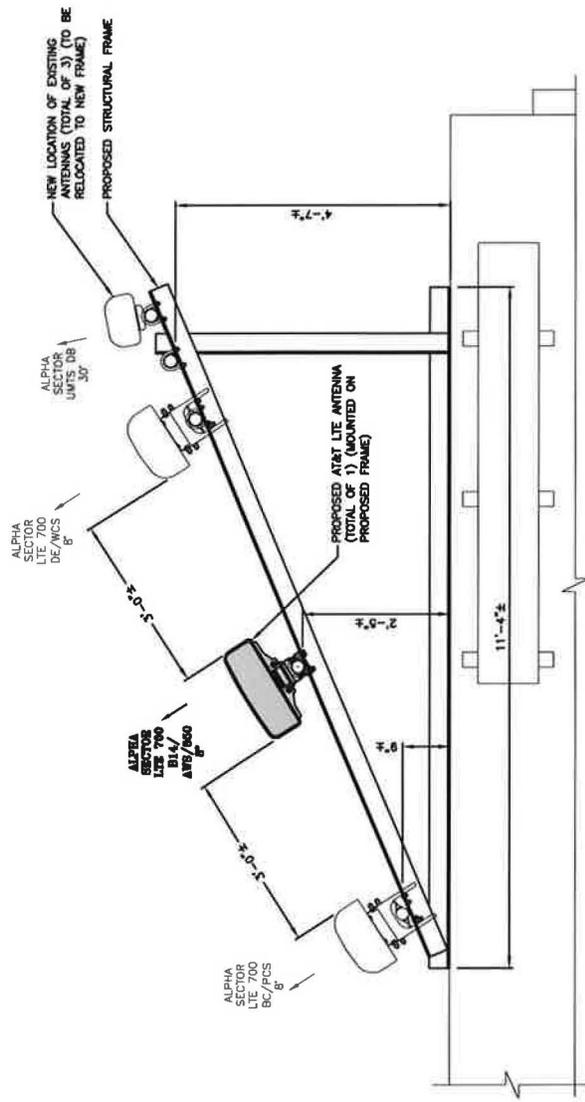
$f_t = 697.00$ lbs. < 1220 lbs. Therefore, OK !

Shear Design Load / Anchor =

$f_v = 515.00$ lbs. < 1980 lbs. Therefore, OK !

CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0
0.571	+	0.260	=	0.831 < 1.0 Therefore, OK !



PROPOSED ALPHA SECTOR 2
 SCALE: N.T.S. (3X-1)



February 5, 2019

US REIF Central Plaza Massachusetts LLC
c/o Intercontinental Real Estate Corp
1270 Soldiers Field Road
Boston, MA 02135
ATTN: Scott Kelly

**RE: AT&T Wireless Equipment at: 675 Massachusetts Ave.
Site #: MA2035
Site Name: Cambridge**

Dear Mr. Kelly:

SAI Communications is a contractor for New Cingular Wireless PCS, LLC ("AT&T"). In order to maintain AT&T's commitment to the highest standards of service and technology, AT&T will need to make modifications to the equipment at the above referenced wireless communications facility.

Pursuant to the Structure Lease Agreement between New Cingular Wireless PCS, LLC and US REIF Central Plaza Massachusetts LLC. as assigned and amended, your consent is required for this modification. These modifications are described in the enclosed plans by Hudson Design Group., Revision 1, Dated January 24, 2019 and structural analysis dated December 13, 2018. By this letter, the US REIF Central Plaza Massachusetts LLC grants AT&T and it's contractors and authorized agents permission to file and sign any governmental approvals (i.e building permit application) required to complete construction of these upgrades.

If you have any questions please don't hesitate to contact me at (617) 877-2950. Please indicate your consent by signing below and returning the letter and sketch to the following address:

SAI Communications
Attn: Timothy Greene
157 Riverside Drive
Norwell, MA 02061

Thank you for your attention to this matter.

Sincerely,

Timothy W. Greene

Consent

Name:	Scott Kelly
Signature:	<i>[Handwritten Signature]</i>
Phone:	617-779-0431
Date:	2/11/19

Enclosure

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 U.S. REIF Central Plaza Massachusetts LLC
(OWNER)

Address: c/o Intercontinental Real Estate Corp. 1270 Soldiers Field Road
Boston, MA 02135

State that I/We own the property located at 675 Massachusetts Ave., which is the subject of this zoning application.

The record title of this property is in the name of U.S. REIF
Central Plaza Massachusetts LLC.

*Pursuant to a deed of duly recorded in the date 10/31/2008 Middlesex South County Registry of Deeds at Book 51851, Page 264; or Middlesex Registry District of Land Court, Certificate No. _____
Book _____ Page _____.



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

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

Commonwealth of Massachusetts, County of _____

The above-name _____ personally appeared before me, this _____ of _____, 20____, and made oath that the above statement is true.

Notary

My commission expires _____ (Notary Seal).

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

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 U.S. REIF Central Plaza Massachusetts LLC
(OWNER)

Address: c/o Intercontinental Real Estate Corp. 1270 Soldiers Field Road
Boston, MA 02135

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The record title of this property is in the name of U.S. REIF Central Plaza Massachusetts LLC.

*Pursuant to a deed of duly recorded in the date 10/31/2008 Middlesex South County Registry of Deeds at Book 51851, Page 264; or Middlesex Registry District of Land Court, Certificate No. _____ Book _____ Page _____.

[Signature]
SIGNATURE BY HAND OWNER OR AUTHORIZED TRUSTEE, OFFICER OR AGENT*

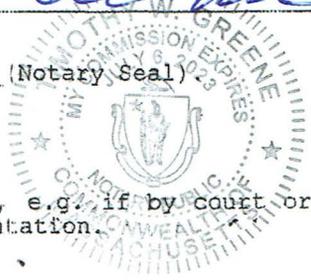
*Written evidence of Agent's standing to represent petitioner may be requested.

Commonwealth of Massachusetts, County of Middlesex

The above name Scott Kelly personally appeared before me, this 12th of February, 2019, and made oath that the above statement is true.

[Signature] Notary

My commission expires 7/6/23



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



2008 00176707

Bk: 51851 Pg: 264 Doc: DEED
Page: 1 of 7 10/31/2008 12:22 PM**QUITCLAIM DEED**

Central Plaza/Wells Avenue, LLC, a Massachusetts limited liability company with an address of 110 Munroe Street, Lynn, Massachusetts 01901 ("**Grantor**"), for consideration paid of Thirty-One Million Six Hundred Thirty-Five Thousand Dollars (\$31,635,000), grants to **U.S. REIF Central Plaza Massachusetts, LLC**, a Delaware limited liability company with an address in c/o Intercontinental Real Estate Corp., 1270 Soldiers Field Road, Boston, MA 02135-1003 ("**Grantee**"), with **Quitclaim Covenants**, the land, together with the improvements thereon, in Cambridge, Middlesex County, Massachusetts, described on Exhibit A attached hereto and incorporated herein by reference.

Included as part of the consideration is Grantee's assumption of the Mortgage and Absolute Assignment of Rents and Leases and Security Agreement (and Fixture Filing) from Grantor to Wells Fargo Bank, National Association dated February 2, 2004 recorded with the Middlesex South Registry of Deeds in Book 41934 at Page 87 and filed with the Middlesex South Registry District of the Land Court as Document No. 1307910, as assigned to LaSalle Bank National Association, as Trustee for Bears Stearns Commercial Mortgage Securities Inc., Commercial Mortgage Pass-Through Certificates, Series 2004-PWR4, by Assignment dated effective as of June 30, 2004 and recorded with said Registry in Book 51839 at Page 512 and filed with the Middlesex South Registry District of the Land Court as Document No. 1485435, having a current principal balance of \$19,366,677.15. (the "Mortgage").

The deed stamps are to be calculated on the purchase price balance of \$12,268,322.85.

Subject to and with the benefit of all easements, agreements, restrictions, covenants and other matters of record, in so far as the same are in force and applicable, including, without limitation, the Mortgage.

Subject to all real estate taxes for the current fiscal year and for all future fiscal years which are not yet due and payable, all of which the Grantee, by its acceptance hereof, agrees to pay.

For Grantor's title, see Quitclaim Deed dated October 29, 1998 and recorded with the Middlesex South Registry of Deeds in Book 29330 at Page 362 and filed with the Middlesex South Registry District of the Land Court as Document No. 1085111 (Certificate of Title No. 213214), and Quitclaim Deed dated January 26, 2004 and recorded with the Middlesex South Registry of Deeds in Book 41934 at Page 82 and filed with the Middlesex South Registry District of the Land Court as Document No. 1307908 (Certificate of Title No. 230028).

Property address: 675 Massachusetts Avenue, 130 Bishop Richard Allen Drive, 19 Essex Street, 61 Prospect Street, 54-60 Prospect Street and 59-85 Prospect Street, Cambridge, Massachusetts 02139.

[Signature page follows.]

PLEASE RETURN TO: JOANN ALLAN
FIRST AMERICAN TITLE INSURANCE COMPANY
101 HUNTINGTON AVENUE, 13TH FLOOR
BOSTON, MA 02199

* DWP LD CT

In witness whereof, the undersigned has caused this Deed to be executed under seal as of the 30th day of October, 2008.

CENTRAL PLAZA/WELLS AVENUE, LLC,
a Massachusetts limited liability company

By: Jodie S. Smith
Name: Jodie S. Smith
Title: Authorized Signatory

COMMONWEALTH OF MASSACHUSETTS

COUNTY OF Franklin

On this ___ day of October, 2008, before me, the undersigned notary public, personally appeared Jodie S. Smith, proved to me through satisfactory evidence of identification, which was Personal Knowledge, to be the person whose name is signed on the preceding or attached document and acknowledged to me that she signed it voluntarily for its stated purpose as an Authorized Signatory of Central Plaza/Wells Avenue, LLC.

Theodore J. Conroy, Jr.
Notary Public
My Commission Expires:

Theodore J. Conroy, Jr.
NOTARY PUBLIC
My commission expires Oct. 15, 2010



EXHIBIT ALegal Description of the Property

All these certain parcels of registered and unregistered land with the buildings and improvements thereon situated at 675 Massachusetts Avenue, 130 Bishop Richard Allen Drive, 19 Essex Street, 61 Prospect Street, 54-60 Prospect Street and 59-85 Prospect Street, Cambridge, Middlesex County, Massachusetts, more particularly described below:

TRACT I

A certain parcel of land with the buildings and other improvements thereon situated on Massachusetts Avenue, Temple Street, Bishop Richard Allen Drive and Prospect Street in Cambridge, Middlesex County, Massachusetts, shown as a parcel of 44,436 square feet on a plan entitled "Plan of Land in Cambridge, Mass., Middlesex County" dated October 25, 1983 by Survey Engineers of Boston, which plan is recorded with Middlesex South District Deeds in Book 15782, Page 1, and which parcel is described according to the plan as follows:

Beginning at a point at the intersection of the northeast sideline of Massachusetts Avenue with the northwest sideline of Prospect Street; thence running

NORTH 45° 04' 59" WEST by Massachusetts Avenue, 90.42 feet to the most southerly corner of a parcel belonging to Cambridgeport Savings Bank; thence

NORTH 45° 04' 33" EAST by the Cambridgeport Savings Bank property, 101.04 feet; thence

NORTH 45° 04' 59" WEST by the Cambridgeport Savings Bank property, 100.04 feet to Temple Street; thence

NORTH 45° 03' 11" EAST by Temple Street, 184.98 feet to Bishop Richard Allen Drive; thence

SOUTH 44° 56' 49" EAST by Bishop Richard Allen Drive, 191.26 feet to Prospect Street; and thence

SOUTH 45° 13' 16" WEST by Prospect Street, 285.58 feet to Massachusetts Avenue and the point of beginning.

Included within this First Parcel are two parcels of REGISTERED LAND, described as follows:

First Registered Parcel

That certain parcel of land situate in Cambridge, bounded and described as follows:

NORTHWESTERLY by Temple Street, 38.02 feet;
NORTHEASTERLY by Lot 2 as shown on plan hereinafter mentioned, 191.11 feet;
SOUTHEASTERLY by Prospect Street, 37.83 feet; and
SOUTHWESTERLY by lands now or formerly of Annie E. Southwick and of William J. Sinnott, 190.93 feet.

Said parcel is shown as Lot 1 on said plan.

All of said boundaries are determined by the Court to be located as shown on a subdivision plan, as approved by the Court, filed in the Land Registration Office, a copy of which is filed in the Registry of Deeds for the South Registry District of Middlesex County in Registration Book 636, Page 17, with Certificate 101167.

Second Registered Parcel

That certain parcel of land situate in Cambridge, bounded and described as follows:

NORTHWESTERLY by Temple Street, 63 feet;
NORTHEASTERLY by Austin Street (said Austin Street being now named Bishop Richard Allen Drive) 191.41 feet;
SOUTHEASTERLY by Prospect Street, 63 feet; and
SOUTHWESTERLY by Lot 1 as shown on plan hereinafter mentioned, 191.11 feet.

Said parcel is shown as Lot 2 on said plan (Plan Nos. 8489B and 8809B).

All of said boundaries are determined by the Court to be located as shown on a subdivision plan, as approved by the Court, filed in the Land Registration Office, a copy of which is filed in the Registry of Deeds for the South Registry District of Middlesex County in Registration Book 636, Page 17, with Certificate 101167.

TRACT II
(Parcel A)

A certain parcel of land with the buildings and other improvements thereon situated on the northwesterly side of Prospect Street and the northeasterly side of Bishop Richard Allen Drive in Cambridge, Middlesex County, Massachusetts, shown as a parcel of 52,987 square feet on a plan entitled "Plan of Land in Cambridge, Mass., Middlesex County" dated October 25, 1983 by Survey Engineers of Boston, which plan is recorded with Middlesex South District Deeds in Book 15782, page 1, and which parcel is described according to the plan as follows:

Beginning at a point at the intersection of the northwest sideline of Prospect Street and the northeast sideline of Bishop Richard Allen Drive; thence running

NORTH 44° 56' 49" WEST by Bishop Richard Allen Drive 211.58 feet to the most southerly corner of property of The Six S Realty Trust; thence

NORTH 45° 44' 02" EAST by the Six S land, 137 feet to a point; thence

NORTH 45° 11' 43" EAST by the Six S land, 163.23 feet to land of Sun Hong Lee and Lettie K. L. Lee; thence

SOUTH 55° 48' 10" EAST by said Lee land and by lands of Shih Hing Lee and Julie Tuey Lin Lee and of John J. and Anne M. Considine, 147.90 feet to Prospect Street; thence

SOUTH 33° 57' 57" WEST by Prospect Street, 220.28 feet to the most easterly corner of the third parcel hereinafter described; thence

NORTH 56° 13' 23" WEST 91.35 feet; thence

SOUTH 44° 59' 27" WEST 27.16 feet; thence

SOUTH 45° 01' 33" EAST 59.85 feet; thence

SOUTH 47° 45' 48" EAST 38.19 feet to Prospect Street, these last four bounds being by the third parcel; thence

SOUTH 33° 57' 57" WEST by Prospect Street, 70.15 feet to Bishop Richard Allen Drive and the point of beginning.

TRACT II
(Parcel B)

That certain parcel of land with the buildings thereon situate in Cambridge, bounded and described as follows:

SOUTHEASTERLY	by the northwesterly line of Prospect Street, 43.88 feet;
SOUTHWESTERLY	by lands now or formerly of Samuel L. Klashman and of Cecilia Gregg, 98.04 feet;
NORTHWESTERLY	by land now or formerly of John A. Blevins, 27.16 feet; and
NORTHEASTERLY	by land now or formerly of Alzira R. Ebann, 91.35 feet.

All of said boundaries are determined by the Court to be located as shown on a plan, as modified and approved by the Court, filed in the Land Registration Office, a copy of a portion of which is filed in the Registry of Deeds for the South Registry District of Middlesex County in Registration Book 262, Page 137, with Certificate 39787.

TRACT III

A certain parcel of land with the buildings and other improvements thereon situated on the northwest side of Essex Street, the northeast side of Bishop Richard Allen Drive and the southeast side of Prospect Street in Cambridge, Middlesex County, Massachusetts, shown as a parcel of 27,154 square feet on a plan entitled "Plan of Land in Cambridge, Mass., Middlesex County" dated November 10, 1983 by Survey Engineers of Boston, which plan is recorded with Middlesex South District Deeds in Book 15782, Page 1, and which parcel is described according to the plan as follows:

Beginning at a point at the intersection of the northwest sideline of Essex Street and the northeast sideline of Bishop Richard Allen Drive; thence running

NORTH 45° 05' 46" WEST	by Bishop Richard Allen Drive, 228.04 feet to the southerly corner of a triangular parcel of land taken by the City by order dated May 3, 1976 and recorded with said Deeds in Book 12992, Page 315; thence
NORTH 05° 33' 55" WEST	by the taken parcel, 23.14 feet to Prospect Street; thence
NORTH 33° 57' 57" EAST	by Prospect Street, 86.80 feet to the most westerly corner of land of Adolph F. and Alica M. Ponte; thence
SOUTH 56° 02' 03" EAST	by the Ponte land, 128.29 feet to land of George and Chris Phillos; thence

SOUTH 33° 57' 57" WEST by the Phillos land, 22.33 feet to a point at the most westerly corner of the Phillos land; thence

SOUTH 55° 07' 33" EAST by the Phillos land, 110.83 feet to Essex Street; and thence

SOUTH 34° 11' 20" WEST by Essex Street, 123.83 feet to Bishop Richard Allen Drive and the point of beginning.

4532.22/448070.1



CAMBRIDGE HISTORICAL COMMISSION

831 Massachusetts Avenue, 2nd Floor, Cambridge, Massachusetts 02139
Telephone: 617 349 4683 TTY: 617 349 6112
E-mail: histcomm@cambridgema.gov URL: http://www.cambridgema.gov/Historic

Bruce A. Irving, *Chair*; Susannah Barton Tobin, *Vice Chair*; Charles M. Sullivan, *Executive Director*
William G. Barry, Jr., Robert G. Crocker, Joseph V. Ferrara, Chandra Harrington, Jo M. Solet, *Members*
Gavin W. Kleespies, Paula A. Paris, Kyle Sheffield, *Alternates*

Jurisdiction Advice

To the Owner of Property at 675 Massachusetts Avenue

The above-referenced property is subject to the jurisdiction of the Cambridge Historical Commission (CHC) by reason of the status referenced below:

- Old Cambridge Historic District
- Fort Washington Historic District
(M.G.L. Ch. 40C, City Code §2.78.050)
- Avon Hill Neighborhood Conservation District
- Half Crown – Marsh Neighborhood Conservation District
- Harvard Square Conservation District
- Mid Cambridge Neighborhood Conservation District
- Designated Landmark
- Property is being studied for designation: _____
(City Code, Ch. 2.78., Article III, and various City Council Orders)
- Preservation Restriction or Easement (as recorded)
- Structure is fifty years or more old and therefore subject to CHC review of any application for a demolition permit, if one is required by ISD. (City Code, Ch. 2.78, Article II). See the back of this page for definition of demolition.
No demolition permit application anticipated.
- No jurisdiction: not a designated historic property and the structure is less than fifty years old.
- No local jurisdiction, but the property is listed on the National Register of Historic Places; CHC staff is available for consultation, upon request.
Staff comments: _____

The Board of Zoning Appeal advises applicants to complete Historical Commission or Neighborhood Conservation District Commission reviews before appearing before the Board.

If a line indicating possible jurisdiction is checked, the owner needs to consult with the staff of the Historical Commission to determine whether a hearing will be required.

CHC staff initials SLB

Date March 13, 2019

Received by Uploaded to Energov

Date March 13, 2019

Relationship to project BZA 017083-2019

cc: Applicant
Inspectional Services Commissioner

Demolition Delay Ordinance and Application Information

The Demolition Delay Ordinance (Chapter 2.78, Article II of the Cambridge Municipal Code) was adopted by the City Council in 1979 to afford public review of demolition permit applications for potentially significant buildings. When the Historical Commission determines that a building is significant and should be preserved, demolition will be delayed for up to six months so that solutions can be sought to preserve the building indefinitely. The Ordinance covers all buildings over 50 years old, city-wide. The Historical Commission archives provide dates of construction for all properties in the City.

Demolition is defined in the ordinance as "the act of pulling down, destroying, removing or razing a building or commencing the work of total or substantial destruction with the intent of completing the same." The Inspectional Services Commissioner has provided further guidelines to outline what actions require a demolition permit. **In addition to complete demolition of a building, the following actions may require a demolition permit,**

- **removal of a roof,**
- **removal of one side of a building,**
- **gutting of a building's interior to the point where exterior features (windows, etc.) are impacted, and**
- **removal of more than 25% of a structure.**

Please contact the building inspector or a staff member of the Historical Commission if you have questions about whether a demolition permit is required for a particular project.

Demolition permit applications can be obtained from the Inspectional Services Department. The completed application should be submitted to the Historical Commission, where the staff will review the application. If the Executive Director of the Historical Commission makes an initial determination that the building is significant, a public hearing will be scheduled with Historical Commission. If the staff makes an initial determination that the building is not significant, the application is released for further review by the Building Commissioner.

More information about the demolition permit application procedures is available on the Historical Commission's web site or by calling or dropping by the Historical Commission office.

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