

**BZA APPLICATION FORM**

**GENERAL INFORMATION**

2023 MAY 18 PM 2:45  
OFFICE OF THE CITY CLERK  
CAMBRIDGE, MASSACHUSETTS

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

Special Permit:  Variance: \_\_\_\_\_ Appeal: \_\_\_\_\_

PETITIONER: New Cingular Wireless PCs, LLC d/b/a AT&T Mobility c/o Carolyn Seeley

PETITIONER'S ADDRESS: 85 Rangeway Rd Building 3 Suite 102, North Billerica, MA 01862

LOCATION OF PROPERTY: 102 Sherman Street

TYPE OF OCCUPANCY: Affordable Housing ZONING DISTRICT: C-2

**REASON FOR PETITION:**

- |  |  |
|--|--|
| <input type="checkbox"/> Additions   | <input type="checkbox"/> New Structure |
| <input type="checkbox"/> Change in Use/Occupancy   | <input type="checkbox"/> Parking       |
| <input type="checkbox"/> Conversion to Addi'l Dwelling Unit's                              | <input type="checkbox"/> Sign          |
| <input checked="" type="checkbox"/> Dormer   | <input type="checkbox"/> Subdivision   |
| <input checked="" type="checkbox"/> Other: <u>Wireless Communications Facility upgrade</u> |  |

**DESCRIPTION OF PETITIONER'S PROPOSAL:**

AT&T proposes to make minor modification to its existing cell site at this location as part of nationwide upgrades. The proposed scope of work is to replace (9) panel antennas with (9) new panel antennas.

**SECTIONS OF ZONING ORDINANCE CITED:**

Article 4.000 Section 4.32.G.1 (Telecommunications Facility)

Article 4.000 Section 4.40 (Footnote 49) (Telecommunications Facility)

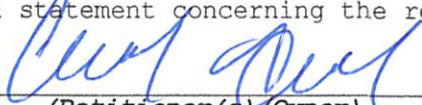
Article 10.000 Section 10.40 (Special Permit)  
6409 Middle Class Tax Relief and Job Creation Act

Applicants for a **Variance** must complete Pages 1-5

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

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

Original Signature(s):

  
\_\_\_\_\_  
(Petitioner(s)/Owner)

Carolyn Seeley / Smartlink / AT&T

(Print Name)

Address:

85 Rangeway Rd, Bldg 3 Suite 102

North Billerica, MA 01862

Tel. No.:

978-760-5577

E-Mail Address: Carolyn.Seeley@smartlinkgroup.com

5/16/2023

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

**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 WSQ Limited Partnership  
(OWNER)

Address: 102 Sherman Street Cambridge, MA 02140

State that I/We own the property located at 102 SHERMAN ST CAMBRIDGE, MA  
02140,

which is the subject of this zoning application.

The record title of this property is in the name of WSQ Limited Partnership

\*Pursuant to a deed of duly recorded in the date 9/29/2000, Middlesex South County Registry of Deeds at Book 31876, Page 596; or Middlesex Registry District of Land Court, Certificate No. \_\_\_\_\_ Book \_\_\_\_\_ Page \_\_\_\_\_.

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

WSQ Limited Partnership  
By: WSQ Investment LLC, its General Partner  
By: Winn LLC Manager, Inc., its Manager  
By: Gilbert J. Winn, its President

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

Commonwealth of Massachusetts, County of Suffolk

The above-name Gilbert J Winn personally appeared before me, this 18 of April, 2023, and made oath that the above statement is true.

[Signature] Notary

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



**KELLY NOE**  
**Notary Public**  
**Commonwealth of Massachusetts**  
**My Commission Expires**  
**December 12, 2025**

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

CONFIDENTIAL - SECURITY INFORMATION

ALL INFORMATION CONTAINED HEREIN IS UNCLASSIFIED

DATE 08/15/2001 BY SP-6 [redacted]

EXCEPT WHERE SHOWN OTHERWISE, THIS DOCUMENT IS UNCLASSIFIED

DATE 08/15/2001 BY SP-6 [redacted]

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April 28, 2023

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: 102 Sherman Avenue  
 Assessor’s Map 203B, Lot 66 (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 102 Sherman Avenue (the “Special Permit Application”).<sup>2</sup>

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

<sup>2</sup> 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.

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 PUD-2 & Residence C-3A 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 Ramaker consisting of 10 pages dated 03/14/2022.

SHEET	TITLE	REV DATE
T1	Title Sheet	03/14/2022
GN-1	Notes and Specifications	03/14/2022
C1	Compound Plan	03/14/2022
C2	Elevation View	03/14/2022
C3	Antenna Layouts	03/14/2022
C4	Antenna Schedule	03/14/2022
A1	Construction Details	03/14/2022
A2	Plumbing Diagram	03/14/2022
G1-G2	Grounding Details	03/14/2022

4. Manufacturer’s specification sheets for AT&T’s proposed antennas and other featured equipment;

5. Photographs of the existing building and photo simulations of the proposed modifications Facility by Ramaker dated 03/14/2022.
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 Ramaker dated 02/08/2022.
8. Maximum Permissible Exposure Study, Theoretical Report, by Site Safe, dated 04/08/2022.
9. Letter of Authorization from Owner of Subject Property.
10. Deed to subject property; and
11. Attorney General's letters to the Towns of Mount Washington, Lynnfield, and Montague.

## **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 twelve (9) panel antennas (Alpha Sector: 3 antennas, Beta Sector: 3 antennas, and Gamma Sector: 3 antennas) that are mounted in three (3) locations. The proposed modifications include the replacement of nine (9) antenna, (3) per sector, which will be mounted to the building façade, and will have no visible change to the current Facility's design. Consistent with the concealment elements of the existing Facility's design, the new antenna will be located along with the existing equipment.

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 and photo simulations (Exhibit 5) show the existing Facility from various locations in the neighborhood around the Property and as simulated with proposed modifications. 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. 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,<sup>3</sup> as further implemented by the FCC Order.<sup>4</sup>

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 “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.

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<sup>3</sup> 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).

<sup>4</sup> 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.



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.<sup>5</sup> 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 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).”

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<sup>5</sup> *See* 47 CFR §§1.40001(c)(1) - (c)(4).

*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 either be mounted and located below the screen wall or utilize the existing equipment mounting frame that 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 located behind the existing

screen wall or utilize the existing mounting frame and will continue to integrate the Facility into the existing architecture of the building. . 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.<sup>6</sup>

**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:<sup>7</sup>

**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 PUD-2 & Residence C-3A 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).

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<sup>6</sup> 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).

<sup>7</sup> 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.

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.”**

**AT&T’s Response:** The design of the overall Facility, including the choice and placement of replacement antennas and associated equipment, behind the existing screen wall or utilizing the existing mounting frame, minimizes the visual impact of the proposed Facility. This is because the any visible antennas and equipment will be minimally visible and consistent with the elements of the existing Facility. The minimal visual impact of the Facility is shown in the photographs of the existing Facility and the photosimulations that superimpose the proposed modifications to 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.<sup>8</sup> 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 Brookline 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. Further, by modifying its existing Facility, and obviating the need to construct an entirely new facility within this area of Cambridge in order to meet its wireless network coverage needs, of the residents, businesses, and general public.

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<sup>8</sup> 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.

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.**

**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 and photosimulations (*see* Exhibit 5) the proposed modifications to the existing Facility will result in a *de minimis* change in the appearance of the building. 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 PUD-2 & Residence C-3A 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 screen wall and within the building, or otherwise obstructed from view, and the remaining equipment utilizes the existing antenna mounting frame and blends with the structures and colors of the building to the extent feasible. The proposed modifications to the existing Facility are consistent with the previously approved 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 include<sup>9</sup>

**(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 photosimulations (*see* Exhibit 5), the existing Facility, as proposed to be modified herein, will continue to be visually consistent with the color and

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



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.

**(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 be mounted behind the existing screen wall or on an existing antenna mounting frame already located on 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,

Carolyn Seeley  
Authorized Agent to New Cingular Wireless PCS, LLC ("AT&T")

cc: Jonathan T. Elder, Esq.

**BZA APPLICATION FORM**

**DIMENSIONAL INFORMATION**

**APPLICANT:** New Cingular Wireless PCS, LLC d/b/a AT&T Mobility c/o Carolyn Seeley, Smartlink **PRESENT USE/OCCUPANCY:** Affordable Apt  
**LOCATION:** 102 Sherman Street **ZONE:** C-2  
**PHONE:** 978-760-5577 **REQUESTED USE/OCCUPANCY:** N/A

	<u>EXISTING</u> <u>CONDITIONS</u>	<u>REQUESTED</u> <u>CONDITIONS</u>	<u>ORDINANCE</u> <u>REQUIREMENTS</u> <sup>1</sup>
<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> (min.)
<u>RATIO OF GROSS FLOOR AREA</u> <u>TO LOT AREA:</u> <sup>2</sup>	<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> (min.)
DEPTH			
<u>Setbacks in</u>			
<u>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			
WIDTH			
<u>RATIO OF USABLE OPEN SPACE</u> <u>TO LOT AREA:</u> <sup>3</sup>	<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.

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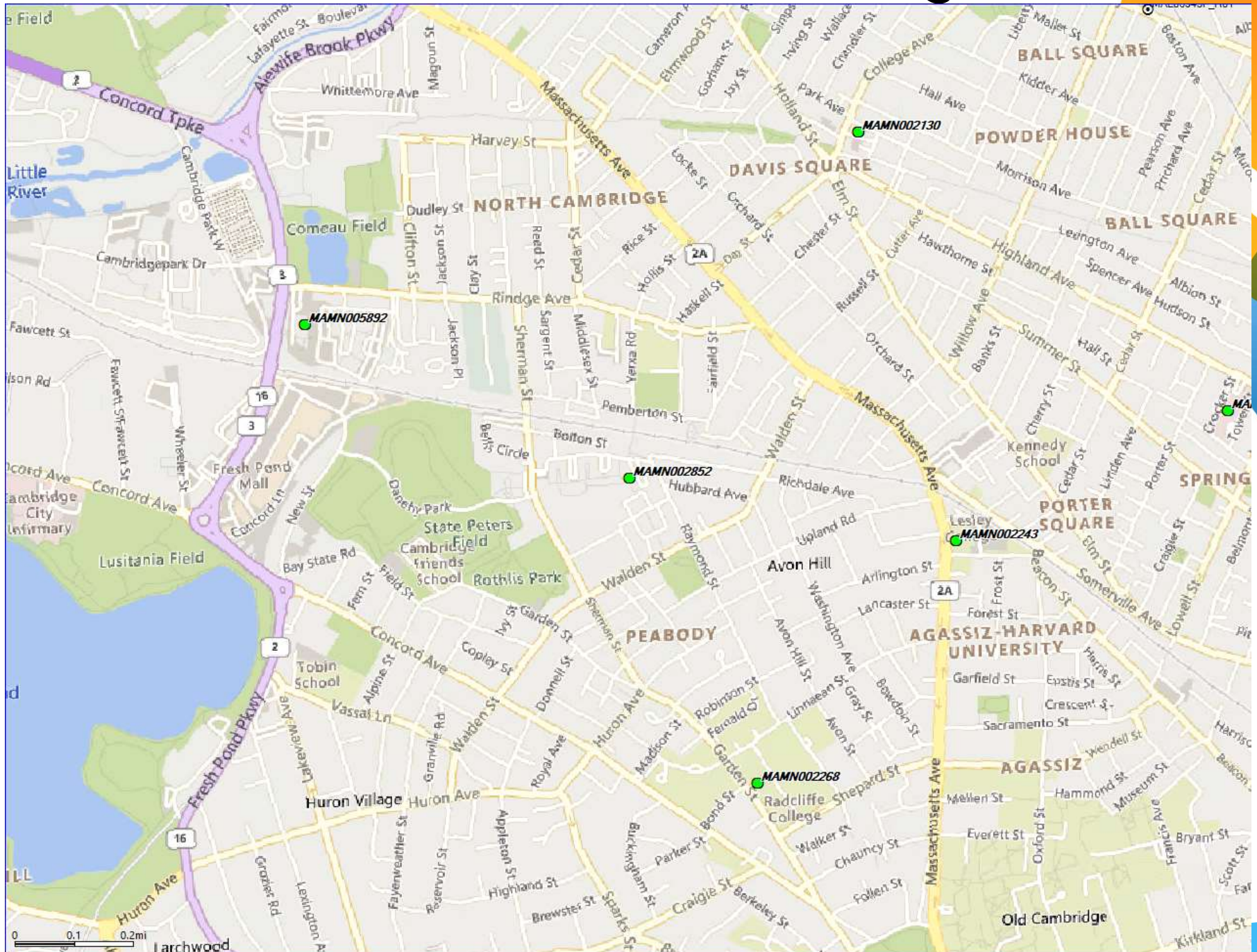
1. SEE CAMBRIDGE ZONING ORDINANCE ARTICLE 5.000, SECTION 5.30 (DISTRICT OF DIMENSIONAL REGULATIONS).
2. TOTAL GROSS FLOOR AREA (INCLUDING BASEMENT 7'-0" IN HEIGHT AND ATTIC AREAS GREATER THAN 5') DIVIDED BY LOT AREA.
3. OPEN SPACE SHALL NOT INCLUDE PARKING AREAS, WALKWAYS OR DRIVEWAYS AND SHALL HAVE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

# MAL02852 5G NR Coverage Planning

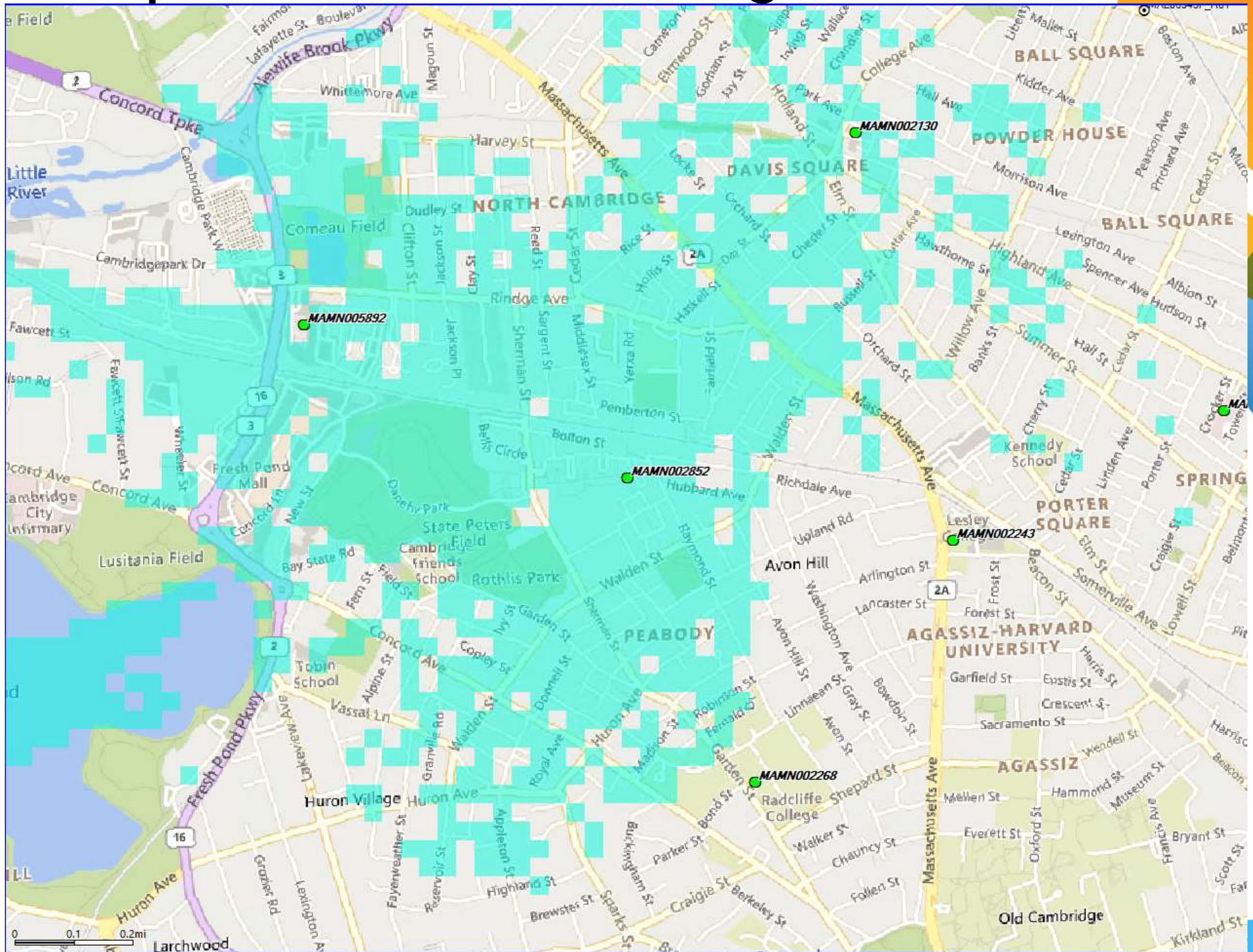
- Zoning Proposed 5G NR C Band Project Plots
- RF plots prepared by Deepak Rathore – AT&T RF Design

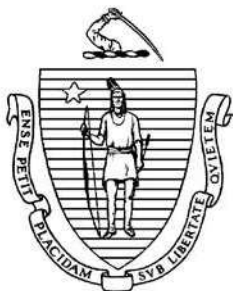


# Current 5G C-Band Coverage



# Proposed 5G C-Band Coverage - MAMN002852





MARTHA COAKLEY  
ATTORNEY GENERAL

# THE COMMONWEALTH OF MASSACHUSETTS OFFICE OF THE ATTORNEY GENERAL

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June 12, 2013

Gail Garrett, Town Clerk  
Town of Mount Washington  
118 East Street  
Mount Washington, MA 01258

**RE: Mount Washington Special Town Meeting of April 1, 2013 - Case # 6642  
Warrant Articles # 1, 2, and 3 (Zoning)**

Dear Ms. Garrett:

**Articles 1, 2, and 3** - We approve the amendments to the Town by-laws adopted under Articles 1, 2, and 3 on the warrant for the Mount Washington Special Town Meeting that convened on April 1, 2013, and the map pertaining to Article 3. Our comments on Articles 1 and 2 are provided below.

**Article 1** - The amendments adopted under Article 1 add a new Section 215-27 to the zoning by-laws entitled "Wireless Telecommunication Facility Zoning Bylaw." We approve the new Section 215-27, but offer the following comments.

I. Applicable Law

The federal Telecommunications Act of 1996, 47 U.S.C. § 332 (7) preserves state and municipal zoning authority to regulate personal wireless service facilities, subject to the following limitations:

1. Zoning regulations "shall not unreasonably discriminate among providers of functionally equivalent services." 47 U.S.C. §332(7) (B) (i) (I)
2. Zoning regulations "shall not prohibit or have the effect of prohibiting the provisions of personal wireless services." 47 U.S.C. § 332 (7) (B) (i) (II).
3. The Zoning Authority "shall act on any request for authorization to place, construct, or modify personal wireless service facilities within a reasonable period of time." 47 U.S.C.



§ 332 (7) (B) (ii).

4. Any decision “to deny a request to place, construct, or modify personal wireless service facilities shall be in writing and supported by substantial evidence contained in a written record.” 47 U.S.C. § 332 (7) (B) (iii).
5. “No state or local government or instrumentality thereof may regulate the placement, construction and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the [Federal Communications] Commission’s regulations concerning emissions.” 47 U.S.C. § 332(7) (B) (iv).

Federal courts have construed the limitations listed under 47 U.S.C. § 332(7) as follows. First, even a facially neutral by-law may have the effect of prohibiting the provision of wireless coverage if its application suggests that no service provider is likely to obtain approval. “If the criteria or their administration effectively preclude towers no matter what the carrier does, they may amount to a ban ‘in effect’...” Town of Amherst, N.H. v. Omnipoint Communications Enters, Inc., 173 F.3d 9, 14 (1st Cir. 1999).

Second, local zoning decisions and by-laws that prevent the closing of significant gaps in wireless coverage have been found to effectively prohibit the provision of personal wireless services in violation of 47 U.S.C. § 332(7). See, e.g., Nat’l Tower, LLC v. Plainville Zoning Bd. of Appeals, 297 F.3d 14, 20 (1st Cir. 2002) (“local zoning decisions and ordinances that prevent the closing of significant gaps in the availability of wireless services violate the statute”); Omnipoint Communications MB Operations, LLC v. Town of Lincoln, 107 F. Supp. 2d 108, 117 (D. Mass. 2000) (by-law resulting in significant gaps in coverage within town had effect of prohibiting wireless services).

Third, whether the denial of a permit has the effect of prohibiting the provision of personal wireless services depends in part upon the availability of reasonable alternatives. See 360 Degrees Communications Co. v. Bd. of Supervisors, 211 F.3d 79, 85 (4th Cir. 2000). Zoning regulations must allow cellular towers to exist somewhere. Towns may not effectively ban towers throughout the municipality, even under the application of objective criteria. See Virginia Metronet, Inc. v. Bd. of Supervisors, 984 F. Supp. 966, 971 (E.D. Va. 1998).

State law also establishes certain limitations on a municipality’s authority to regulate wireless communications facilities and service providers. Under General Laws Chapter 40A, Section 3, wireless service providers may apply to the Department of Telecommunications and Cable for an exemption from local zoning requirements. If a telecommunication provider does not apply for or is not granted an exemption under c. 40A, § 3, it remains subject to local zoning requirements pertaining to cellular towers. See Building Comm’r of Franklin v. Dispatch Communications of New England, Inc., 48 Mass. App. Ct. 709, 722 (2000). Also, G.L. c. 40J, § 6B, charges the Massachusetts Broadband Institute with the task of promoting broadband access throughout the state. Municipal regulation of broadband service providers must not frustrate the achievement of this statewide policy.

In addition, Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012

requires that “[A] state or local government *may not deny, and shall approve*, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.” (emphasis added). The Act defines “eligible facilities request” as any request for modification of an existing wireless tower or base station that involves: 1) collocation of new transmission equipment; 2) removal of transmission equipment; or 3) replacement of transmission equipment. The Act applies “[n]otwithstanding section 704 of the Telecommunications Act of 1996.” The 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 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.

We approve the new Section 215-27. However, the Town must apply the by-law in a manner consistent with the applicable law outlined above. In particular, Section IV of the new by-law requires that Wireless Telecommunication Facilities are only allowed by special permit in the Wireless Telecommunication Overlay District. This requirement cannot be applied to eligible facilities requests for modification to existing facilities which qualify for required approval under Section 6409 of the Act, as described above. We urge the Town to consult closely with Town Counsel regarding the appropriate response to applications for collocation in light of these recent amendments.

## II. Analysis of Mount Washington’s Wireless Telecommunication Facility By-Law

### A. Section VIII “Criteria For Approval and Conditions”.

This section provides as follows:

5. The applicant will remove the Facility, should the Facility be abandoned or cease to operate. The Planning Board may require the applicant to provide a bond, or other form of financial guarantee acceptable to the Planning Board to cover the cost of removal of the Facility, should the Facility be abandoned or cease to operate, and ensure other compliance hereunder.

The Town must apply any bond or other financial guarantee proceeds in a manner consistent with state law. Bond proceeds do not become Town funds unless and until the applicant defaults on the obligation under the proposed by-law. Moreover, if the Town must use the bond to pay for removal of a wireless communication facility or the repair and/or restoration of the premises, an appropriation is required before expenditure is made to do the work. General Laws Chapter 44, Section 53, provides that “[a]ll moneys received by a city, town or district officer or department, except as otherwise provided by special acts and except fees provided for by statute, shall be paid by such officers or department upon their receipt into the city, town or district treasury.” Under Section 53 all moneys received by the Town become a part of the general fund, unless the Legislature has expressly made other provisions that are applicable to such receipt. In the absence of any general or special law to the contrary, performance security funds of the sort contemplated here must be deposited with the Town Treasurer and made part of the Town’s general fund, pursuant to G.L. c. 44, § 53. The Town must then appropriate the money for the specific purpose of completing the work required for removal and/or restoration.

B. Section X “Permit Revocation For Non-Performance”.

Section X authorizes the Planning Board to revoke a special permit for failure to comply with certain conditions. We approve Section X. However, before the Planning Board revokes a permit for failure to comply with certain conditions provided in Section X, the Planning Board should discuss with Town Counsel what due process, including notice and hearing requirements, are required. We suggest that the Town discuss this issue in more detail with Town Counsel.

Finally, the word “ordinance” is used in the by-law. Towns enact “by-laws” and cities enact “ordinances.” The Town may wish delete the word “ordinance” from the new Section 215-27 and insert the word “by-law” at a future Town Meeting.

**Article 2** - The amendments adopted under Article 2 add a new Section 215-28, “Solar Photovoltaic Installation Moratorium Bylaw,” to the Town’s zoning by-laws. The temporary moratorium (through one year from the date of enactment of Section 215-28) on solar photovoltaic installation other than those mounted on an existing structure provides as follows:

Whereas, the Town of Mount Washington is undertaking a comprehensive study with respect to regulating the use of land for Solar Photovoltaic Installations, and

Whereas, there have been significant changes in law regarding Solar Photovoltaic Installations; and,

Whereas, the Town wishes to act carefully in a field with evolving law and technology, to investigate ways to preserve the character of the community while serving the needs of its people, and to devise an orderly process for granting permits by drafting an amendment to the Bylaw which is comprehensive, practical, equitable, and addresses the concerns of the Town on number, size, appearance, site standards, and location of Solar Photovoltaic Installations; and,

Whereas, it is desired to protect the Town from ill-advised and inappropriate development of Solar Photovoltaic Installations pending a thorough review and the formulation of such a zoning amendment; and,

Whereas, the Planning Board has determined that one year is necessary for such a comprehensive review and development of a Bylaw Subsection on Solar Photovoltaic Installations.

Now, therefore, no Solar Photovoltaic Installations other than those mounted on an existing structure, in the usual manner, shall be permitted for one year from the date of enactment of this Bylaw.

We approve the temporary moratorium adopted under Article 2 because the Town has the authority to “impose reasonable time limitations on development, at least where those restrictions are temporary and adopted to provide controlled development while the municipality engages in comprehensive planning studies.” Sturges v. Chilmark, 380 Mass. 246, 252-253 (1980). Such a temporary moratorium is within the Town’s zoning power where there is a stated need for “study, reflection and decision on a subject matter of [some] complexity...” W.R.

Grace v. Cambridge City Council, 56 Mass. App. Ct. 559, 569 (2002) (City’s temporary moratorium on building permits in two districts was within city’s authority to zone for public purposes.) The time limit Mount Washington has selected for its temporary moratorium (one year from the date of enactment of the by-law) appears to be reasonable in the circumstances. The moratorium is limited in time period and scope (to the use of land and structures for solar photovoltaic installations), and thus does not present the problem of a rate-of-development bylaw of unlimited duration which the Zuckerman court determined was unconstitutional. Zuckerman v. Hadley, 442 Mass. 511, 512 (2004) (“[A]bsent exceptional circumstances not present here, restrictions of unlimited duration on a municipality’s rate of development are in derogation of the general welfare and thus are unconstitutional.”)

While we approve the temporary one year moratorium on solar photovoltaic installations, we note that G.L. c. 40A, § 3, protects solar energy systems and the building of structures that facilitate the collection of solar energy from certain local zoning requirements. General Laws Chapter 40A, Section 3, provides in pertinent part as follows:

No zoning ordinance or by-law shall prohibit or unreasonably regulate the installation of solar energy systems or the building of structures that facilitate the collection of solar energy, except where necessary to protect the public health, safety or welfare.

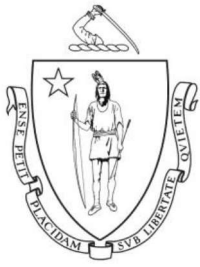
General Laws Chapter 40A, Section 3, prohibits towns from adopting zoning by-laws that prohibit or *unreasonably regulate* the installation of solar energy systems or the building of structures that facilitate the collection of solar energy, except where necessary to protect the public health, safety or welfare. A temporary moratorium longer than one year may be vulnerable to a challenge in court that it is an unreasonable regulation of solar energy systems under G.L. c. 40A, § 3. We suggest the Town consult closely with Town Counsel on this issue.

**Note: Pursuant to G.L. c. 40, § 32, neither general nor zoning by-laws take effect unless the Town has first satisfied the posting/publishing requirements of that statute. Once this statutory duty is fulfilled, (1) general by-laws and amendments take effect on the date these posting and publishing requirements are satisfied unless a later effective date is prescribed in the by-law, and (2) zoning by-laws and amendments are deemed to have taken effect from the date they were approved by the Town Meeting, unless a later effective date is prescribed in the by-law.**

Very truly yours,  
MARTHA COAKLEY  
ATTORNEY GENERAL  
*Kelli E. Gunagan*  
By: Kelli E. Gunagan  
Assistant Attorney General  
Municipal Law Unit  
10 Mechanic Street, Suite 301  
Worcester, MA 01608  
(508) 792-7600

cc: Town Counsel Joel Bard (via electronic mail)





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February 23, 2015

Debra A. Bourbeau, Town Clerk  
Town of Montague  
1 Avenue A  
Montague, MA 01376

**RE: Montague Special Town Meeting of October 29, 2014 - Case # 7451  
Warrant Article # 17 (Zoning)**

Dear Ms. Bourbeau:

**Article 17** - We approve Article 17 from the October 29, 2014 Montague Special Town Meeting. Article 17 amends several portions of the Town's zoning by-laws pertaining to site plan review.

1. Section 5.2 (d), Permitted Uses and Special Permits - Procedures

Section 5.2 (d) was deleted in its entirety and replaced with new text that provides as follows (with emphasis added):

All applications for Special Permits and Site Plan Review from the Board of Appeals or the Planning Board shall be subject to the procedural requirements established by the respective Board. The Board of Appeals or Planning Board may determine that the assistance of outside professional expertise is required due to the size, scale, or complexity of a given project or its potential impact on the health, safety, and welfare of the Town. When outside review is determined to be necessary, the Board may require the applicant pay all reasonable expenses for this purpose, in accordance with the Board's regulations and M.G.L. Chapter 44 Section 53G.

General Laws Chapter 44, Section 53G, authorizes zoning boards, planning boards, boards of health, and conservation commissions, acting under authority conferred by G.L. c. 40A, § 9 and 12, c. 41, § 81Q, c. 40B, § 21, c. 111; and c. 40, § 8C, to impose consultant review fees, to disburse the funds collected, and to return unused portions to the applicant. However, the Legislature did not include Boards acting under the authority conferred solely by a local law within the small class of local boards that enjoy the benefits of G.L. c. 44, § 53G. When the Board is reviewing a site plan application based solely on the authority granted under local law, it cannot avail itself of the provisions of G.L. c. 44, § 53G. We suggest that the Town discuss this issue in more detail with Town Counsel.

2. Section 7.5.2, Telecommunication Facilities - General Provisions

Section 7.5.2, was deleted in its entirety and replaced with new text that provides as follows:

Telecommunication Facilities may be allowed by Special Permit from the Board of Appeals pursuant to Sections 5.2 and Section 7.5. Conditions shall maximize the shared use of any new or existing structures to minimize the required number of such facilities; and shall minimize[e] adverse visual impacts through careful design, siting, and screening. No facility shall be located in a (RS) Residential District. (see: Section 2, Definitions).

Section 7.5.2 must be applied in a manner consistent with Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012, which requires that “[A] state or local government *may not deny, and shall approve*, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.” (emphasis added). The Act defines “eligible facilities request” as any request for modification of an existing wireless tower or base station that involves: 1) collocation of new transmission equipment; 2) removal of transmission equipment; or 3) replacement of transmission equipment. The Act applies “[n]otwithstanding section 704 of the Telecommunications Act of 1996.” The 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 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.

The Town must apply Section 7.5.2 in a manner consistent with the applicable law outlined above. We also urge the Town to consult closely with Town Counsel regarding the appropriate response to applications for collocation in light of these recent amendments.

**Note:** Pursuant to G.L. c. 40, § 32, neither general nor zoning by-laws take effect unless the Town has first satisfied the posting/publishing requirements of that statute. Once this statutory duty is fulfilled, (1) general by-laws and amendments take effect on the date these posting and publishing requirements are satisfied unless a later effective date is prescribed in the by-law, and (2) zoning by-laws and amendments are deemed to have taken effect from the

**date they were approved by the Town Meeting, unless a later effective date is prescribed in the by-law.**

Very truly yours,

MAURA HEALEY  
ATTORNEY GENERAL

*Nicole B. Caprioli*

By: Nicole B. Caprioli  
Assistant Attorney General  
Municipal Law Unit  
10 Mechanic Street, Suite 301  
Worcester, MA 01608  
(508) 792-7600 ext. 4418  
nicole.caprioli@state.ma.us

cc: Town Counsel Gregg J. Corbo





THE COMMONWEALTH OF MASSACHUSETTS  
OFFICE OF THE ATTORNEY GENERAL

CENTRAL MASSACHUSETTS DIVISION  
10 MECHANIC STREET, SUITE 301  
WORCESTER, MA 01608

MAURA HEALEY  
ATTORNEY GENERAL

(508) 792-7600  
(508) 795-1991 fax  
www.mass.gov/ago

February 10, 2015

Trudy L. Reid, Town Clerk  
Town of Lynnfield  
55 Summer Street  
Lynnfield, MA 01940

**RE: Lynnfield Fall Annual Town Meeting of October 20, 2014 - Case # 7408  
Warrant Articles # 12, 13 and 14 (Zoning)  
Warrant Articles # 16 and 17 (General)**

Dear Ms. Reid:

**Articles 12, 13, 14, 16 and 17** - We approve Articles 12, 13, 14, 16 and 17 from the October 20, 2014 Lynnfield Fall Annual Town Meeting. Our comments regarding Article 14 are provided below.

**Article 14** - Article 14 makes a number of changes to the Town's zoning by-laws pertaining to Radio Telecommunication Facilities (RTF) and Personal Wireless Service Facilities (PWSF) including adding new definitions to Section 2, amending Section 7.4, "Site Plan" to add a new sub-section 7.4A "Additional Requirements for Personal Wireless Service Facilities"; and amending Section 8, "Special Permits" to add a new sub-section 8.7, "Siting of Radio Telecommunications Facilities."

**I. Applicable Law**

The federal Telecommunications Act of 1996, 47 U.S.C. § 332 (7) preserves state and municipal zoning authority to regulate personal wireless service facilities, subject to the following limitations:

1. Zoning regulations "shall not unreasonably discriminate among providers of functionally equivalent services." 47 U.S.C. §332(7) (B) (i) (I)
2. Zoning regulations "shall not prohibit or have the effect of prohibiting the provisions of personal wireless services." 47 U.S.C. § 332 (7) (B) (i) (II).
3. The Zoning Authority "shall act on any request for authorization to place, construct, or modify personal wireless service facilities within a reasonable period of time." 47 U.S.C. § 332 (7) (B) (ii).

4. Any decision “to deny a request to place, construct, or modify personal wireless service facilities shall be in writing and supported by substantial evidence contained in a written record.” 47 U.S.C. § 332 (7) (B) (iii).
5. “No state or local government or instrumentality thereof may regulate the placement, construction and modification of personal wireless service facilities on the basis of the environmental effects of radio frequency emissions to the extent that such facilities comply with the [Federal Communications] Commission’s regulations concerning emissions.” 47 U.S.C. § 332(7) (B) (iv).

Federal courts have construed the limitations listed under 47 U.S.C. § 332(7) as follows. First, even a facially neutral by-law may have the effect of prohibiting the provision of wireless coverage if its application suggests that no service provider is likely to obtain approval. “If the criteria or their administration effectively preclude towers no matter what the carrier does, they may amount to a ban ‘in effect’....” Town of Amherst, N.H. v. Omnipoint Communications Enters, Inc., 173 F.3d 9, 14 (1st Cir. 1999).

Second, local zoning decisions and by-laws that prevent the closing of significant gaps in wireless coverage have been found to effectively prohibit the provision of personal wireless services in violation of 47 U.S.C. § 332(7). See, e.g., Nat’l Tower, LLC v. Plainville Zoning Bd. of Appeals, 297 F.3d 14, 20 (1st Cir. 2002) (“local zoning decisions and ordinances that prevent the closing of significant gaps in the availability of wireless services violate the statute”); Omnipoint Communications MB Operations, LLC v. Town of Lincoln, 107 F. Supp. 2d 108, 117 (D. Mass. 2000) (by-law resulting in significant gaps in coverage within town had effect of prohibiting wireless services).

Third, whether the denial of a permit has the effect of prohibiting the provision of personal wireless services depends in part upon the availability of reasonable alternatives. See 360 Degrees Communications Co. v. Bd. of Supervisors, 211 F.3d 79, 85 (4th Cir. 2000). Zoning regulations must allow cellular towers to exist somewhere. Towns may not effectively ban towers throughout the municipality, even under the application of objective criteria. See Virginia Metronet, Inc. v. Bd. of Supervisors, 984 F. Supp. 966, 971 (E.D. Va. 1998).

State law also establishes certain limitations on a municipality’s authority to regulate wireless communications facilities and service providers. Under General Laws Chapter 40A, Section 3, wireless service providers may apply to the Department of Telecommunications and Cable for an exemption from local zoning requirements. If a telecommunication provider does not apply for or is not granted an exemption under c. 40A, § 3, it remains subject to local zoning requirements pertaining to cellular towers. See Building Comm’r of Franklin v. Dispatch Communications of New England, Inc., 48 Mass. App. Ct. 709, 722 (2000). Also, G.L. c. 40J, § 6B, charges the Massachusetts Broadband Institute with the task of promoting broadband access throughout the state. Municipal regulation of broadband service providers must not frustrate the achievement of this statewide policy.

In addition, Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012 requires that “[A] state or local government *may not deny, and shall approve*, any eligible

facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station.” (emphasis added). The Act defines “eligible facilities request” as any request for modification of an existing wireless tower or base station that involves: 1) collocation of new transmission equipment; 2) removal of transmission equipment; or 3) replacement of transmission equipment. The Act applies “[n]otwithstanding section 704 of the Telecommunications Act of 1996.” The 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 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.

The Town must apply Article 14 in a manner consistent with the applicable law outlined above. In particular, 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. We also urge the Town to consult closely with Town Counsel regarding the appropriate response to applications for collocation in light of these recent amendments.

## **II. Section 8.7, Siting of Radio Telecommunications Facilities**

### **A. Section 8.7.2, Purpose**

Section 8.7.2 provides that the purpose of the by-law is to establish general guidelines for the siting of RTFs. Section 8.7.2 (4) establishes one of the by-law’s goals as “[t]o make all RTF locations available for municipal agencies use where feasible.”

It is unclear whether Section 8.7.2 (4) would require the Town’s use of the RTF, and whether such use would be compensated or uncompensated. When applying the by-law, the Town cannot require an applicant to transfer property to the public without fair compensation. “The Fifth Amendment to the United States Constitution, made applicable to the States through the Fourteenth Amendment, provides that private property shall not ‘be taken for public use, without just compensation.’” This protection is “designed to bar Government from forcing some people alone to bear public burdens which, in all fairness and justice, should be borne by the public as a whole.” Giovanella v. Conservation Commission of Ashland, 447 Mass. 720, 724 (2006) (*quoting* Armstrong v. United States, 364 U.S. 40, 49 (1960)). More recently, the court in Collins v. Stow, 79 Mass. App. Ct. 447 (2011) ruled that a town cannot condition subdivision approval on the dedication of open space for public use and actual conveyance of the land to the Town in exchange for waivers. “Although a planning board’s authority under the subdivision control law certainly encompasses, in appropriate circumstances, requiring open space, it does not extend to requiring the transfer of that open space to the public for reasons unrelated to adequate access and safety of the subdivision without providing just compensation.” *Id.* at 453. We suggest that the Town consult with Town Counsel regarding the proper application of Section 8.7.2 (4).

B. Section 8.7.5.4, General

Section 8.7.5.4.1 provides in relevant part that:

An undertaking shall be required, secured by a BOND appropriate in form and amount for removal of the PWSF within 6 months of cessation of operation of said facility or such other activity which may be appropriate to prevent the structures from becoming a nuisance or aesthetic blights.

The Town must apply any bond proceeds in a manner consistent with state law. Bond proceeds do not become Town funds unless and until the applicant defaults on the obligation under the by-law. Moreover, if the Town must use the bond to pay for removal of a PWSF or for other activity to prevent nuisance or blight, an appropriation is required before expenditure is made to do the work. General Laws Chapter 44, Section 53, provides that “[a]ll moneys received by a city, town or district officer or department, except as otherwise provided by special acts and except fees provided for by statute, shall be paid by such officers or department upon their receipt into the city, town or district treasury.” Under Section 53 all moneys received by the Town become a part of the general fund, unless the Legislature has expressly made other provisions that are applicable to such receipt. In the absence of any general or special law to the contrary, performance security funds of the sort contemplated here must be deposited with the Town Treasurer and made part of the Town’s general fund, pursuant to G.L. c. 44, § 53. The Town must then appropriate the money for the specific purpose of completing the work required for removal and/or other activities. The Town should consult with Town Counsel regarding the proper application of Section 8.7.5.4.

C. Section 8.7.5.5, Application Procedures

Section 8.7.5.5 pertaining to the Special Permit application provides in relevant part, that:

The Application Phase of the process begins with the receipt by the SPGA of a complete application including all materials required by the Zoning Bylaw and any applicable regulations.

\*\*\*\*\*

Within 30 days of receipt, the SPGA or its designee shall review the application for consistency and completeness with respect to the Application Requirements in the bylaw and any applicable regulations and shall notify the Applicant in writing of any deficiency in the completeness of the application.

\*\*\*\*\*

The SPGA shall take regulatory notice of the Federal Communications Commission (FCC) presumption that the final action of the SPGA on a new Antenna Tower should take no more than 150 days from the date of receipt of the completed application, and that final action on a Collocation or Site Sharing application should take no more than 90 days from the date of receipt of the completed application except upon written

extension of these timelines by mutual agreement between the SPGA and the Applicant.

Section 8.7.5.5 must be applied in a manner consistent with the time limits established in G.L. c. 40A, § 9. General Laws Chapter 40A, Section 9, requires that the special permit granting authority “shall hold a public hearing for which notice has been given as provided in section eleven, on any application for a special permit within sixty-five days from the date of filing of such application. . . . The decision of the special permit granting authority shall be made within ninety days following the date of such public hearing. . . . Failure by the special permit granting authority to take final action within . . . ninety days . . . shall be deemed to be a grant of the special permit.” (emphasis added).

Pursuant to G.L. c. 40A, § 9, the filing of a special permit application “starts the clock” on the time period within which the special permitting authority must act. Section 8.7.5.5 cannot be applied in a manner that “starts the clock” only when a *completed* application is filed. The Town must apply Section 8.7.5.5 consistent with G.L. c. 40A, § 9. See Massachusetts Broken Stone Co. v. Town of Weston, 430 Mass. 637, 642 (2000). The Town should consult with Town Counsel regarding the proper application of Section 8.7.5.5.

**Note:** Pursuant to G.L. c. 40, § 32, neither general nor zoning by-laws take effect unless the Town has first satisfied the posting/publishing requirements of that statute. Once this statutory duty is fulfilled, (1) general by-laws and amendments take effect on the date these posting and publishing requirements are satisfied unless a later effective date is prescribed in the by-law, and (2) zoning by-laws and amendments are deemed to have taken effect from the date they were approved by the Town Meeting, unless a later effective date is prescribed in the by-law.

Very truly yours,

MAURA HEALEY  
ATTORNEY GENERAL

*Nicole B. Caprioli*

By: Nicole B. Caprioli  
Assistant Attorney General  
Municipal Law Unit  
10 Mechanic Street, Suite 301  
Worcester, MA 01608  
(508) 792-7600 ext. 4418  
nicole.caprioli@state.ma.us

cc: Town Counsel Thomas Mullen

CITY OF CAMBRIDGE, MASSACHUSETTS  
P L A N N I N G B O A R D  
CITY HALL ANNEX, 344 BROADWAY, CAMBRIDGE

January 27, 2016

To: The Board of Zoning Appeal

From: The Planning Board

RE: BZA #9059- 2016, 1815 Massachusetts Avenue

The Planning Board reviewed the Special Permit application for the communication antenna at Lesley University and finds that the proposals are no worse than the current installations. The Planning Board does suggest that the antennas be located in such a way as to not break the roof line when viewed from the street, and that they be painted to match the facades. For example to match either the red brick or the gray stone band around the top of the tower.

---



# City of Cambridge

2850

MASSACHUSETTS

BOARD OF ZONING APPEAL

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



2013 00231979

Bk: 62872 Pg: 5 Doc: DECIS  
Page: 1 of 6 11/01/2013 09:24 AM

## NOTICE OF DECISION

DECISION FILED WITH THE OFFICE OF THE CITY CLERK ON OCT 11 2013

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

PREMISES: 330 (a/k/a 300) Mount Auburn Street <sup>Owner:</sup> Mount Auburn Hospital  
Cambridge, MA

PETITIONER: New Cingular Wireless PCS, LLC ("AT&T")  
C/o David Ford, Centerline Communications

PETITION: Special Permit: To install twelve (12) antennas which will be façade mounted to the existing hospital building painted to match the building color. Fifteen (15) remote radio-heads units (RRU's) will be mounted inside of the existing penthouse on the rooftop. An equipment shelter will be installed on the rooftop of house ancillary equipment associated with the antenna facility. Cabling and associated trays and conduits also will be placed on the rooftop, along with GPS antennas which will be mounted on the shelter.

DECISION: **GRANTED**

48678-259

CASE NO: 10480

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



# City of Cambridge

MASSACHUSETTS

## BOARD OF ZONING APPEAL

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

OCT 11 2013

Centerline Communications, LLC  
C/o David Ford  
95 Ryan Drive, Suite 1  
Raynham, MA 02767

Case No. 10480

Dear: Mr. Ford,

We enclose the decision of the Board of Zoning Appeal as it pertains to the premises located at 330 (a/k/a 300) Mt. Auburn Street, Cambridge, Mass.

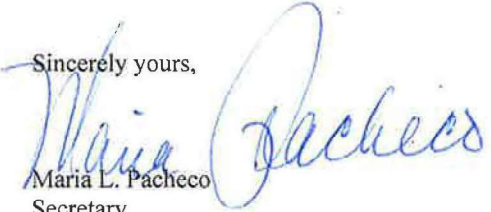
A copy of this decision has been filed with office of the City Clerk, this date. When twenty days have passed you **MUST**:

1. HAVE THIS DECISION COMPLETED AND SIGNED BY THE CITY CLERK, CITY HALL – 795 Mass Avenue, Cambridge, Ma. (In the space provided on the decision)
  2. FILE THE DECISION WITH THE REGISTRY OF DEEDS  
Middlesex County Courthouse, 208 Cambridge Street, Cambridge, MA. (There is usually a fee, payable to the Registry of Deeds and the book and page number is required by the Registry).
  3. SUPPLY THE BOARD OF ZONING APPEAL WITH DOCUMENTATION OF SUCH FILING – (with the Registry of Deeds).
- THE DIVISION OF INSPECTIONAL SERVICES WILL NOT ISSUE BUILDING PERMITS
  - UNLESS THE ABOVE ITEMS HAVE BEEN COMPLETED.

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

If you have any questions, please phone me at 349-6100.

Sincerely yours,

  
Maria L. Pacheco  
Secretary

Section 10.35 of the Zoning Ordinances:

If the rights authorized by a variance are not exercised within one year of the date of granting of such variance (two years for a special permit), they shall lapse and may be reestablished only after notice and new hearing pursuant to this Section 10.30.





# City of Cambridge

MASSACHUSETTS

## BOARD OF ZONING APPEAL

831 Mass Avenue, Cambridge, MA.

(617) 349-6100

2013 OCT 11 AM 10 50

OFFICE OF THE CITY CLERK  
CAMBRIDGE, MASSACHUSETTS

CASE NO: 10480

LOCATION: 330 (a/k/a 300) Mt. Auburn St. Residence C-1/C-3 Zone  
Cambridge, MA

PETITIONER: NEW CINGULAR WIRELESS PCS, LLC ("AT&T")  
C/o DAVID FORD, CENTERLINE COMMUNICATIONS

PETITION: Special Permit: To install twelve (12) antennas which will be façade mounted to the existing hospital building painted to match the building color. Fifteen (15) remote radio-head unit (RRU's) will be mounted inside of the existing penthouse on the rooftop. An equipment shelter will be installed on the rooftop of house ancillary equipment associated with the antenna facility. Cabling and associated trays and conduits also will be placed on the rooftop, along GPS antennas which will be mounted on the shelter.

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

DATE OF PUBLIC NOTICE: August 1 & 8, 2013

DATE OF PUBLIC HEARING: August 15, 2013

MEMBERS OF THE BOARD:

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

ASSOCIATE MEMBERS:

DOUGLAS MYERS  
SLATER W. ANDERSON  
LINDSEY T. THORNE-BINGHAM  
ANDREA A. HICKEY

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

Case No. 10480  
Location: 330 (300) Mt. Auburn Street  
Petitioner: New Singular Wireless PCS (AT&T) c/o David Ford

On September 12, 2013, Petitioner David Ford appeared before the Board of Zoning Appeal with his attorney Susan Roberts requesting a special permit in order to install twelve antennas façade mounted to the existing hospital building and painted to match, to install fifteen remote radio-head units mounted inside the existing penthouse, to install an equipment shelter on the roof, to install cabling, associated trays and conduits on the rooftop, and to install GPS antennas on the shelter. The Petitioner requested relief from Article 4, Section 4.32.G.1 of the Cambridge Zoning Ordinance (“Ordinance”). The Petitioner submitted application materials including information about the project, plans, and photographs.

Ms. Roberts stated that the design had been modified in order to reduce visual impacts. She stated that the equipment shelter had been moved out of view and that the antennas had been mounted parallel to each other on low profile mounts and painted to match the building. She stated that the property was in a residential zone, but that residential uses did not predominate in the area, which was largely hospital grounds and the highway. She stated that the Petitioner was FCC licensed and that the installation was needed to fill gaps in coverage.

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

After discussion, the Chair moved that the Board grant the special permit for relief in order to install twelve antennas façade mounted to the existing hospital building and painted to match, to install fifteen remote radio-head units mounted inside the existing penthouse, to install an equipment shelter on the roof, to install cabling, associated trays and conduits on the rooftop, and to install GPS antennas on the shelter based on the finding that the Petitioner was a duly licensed federal telecommunications carrier in good standing. The Chair moved that the Board find that the Petitioner had taken steps to minimize the visual impact of the various elements of the proposed facility. The Chair moved that the Board find that the plans had been revised and went a long way toward minimizing visual impacts. The Chair moved that the Board find that there was a public need for the facility at the proposed location due to lapses in coverage, which would be corrected with the proposed antennas. The Chair moved that the Board find that there were no alternative functionally suitable sites in nonresidential locations. The Chair moved that the Board find that the property was not in an area where there were many large buildings that could support the installation of the equipment. The Chair moved that the Board find that nonresidential uses predominated in the vicinity of the proposed location and that the telecommunication facility was not inconsistent with the character that did prevail in the surrounding neighborhood. The Chair moved that the Board find that the proposed use would not cause congestion, hazard, or substantial change in established neighborhood

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



\_\_\_\_\_  
Constantine Alexander, Chair

Attest: A true and correct copy of decision filed with the offices of the City Clerk and Planning Board on 10/11/13 by Marie Jackson, Clerk.

Twenty days have elapsed since the filing of this decision.

No appeal has been filed ✓.

Appeal has been filed and dismissed or denied.

Date: Nov. 1, 2013 \_\_\_\_\_ Donna P. Lopez City Clerk.



SHEET TITLE:

PHOTO RENDERING/SIMULATION LOCATION MAP

PROJECT TITLE:

CAMBRIDGE SHERMAN STREET

PROJECT NUMBER:

51643

PROJECT LOCATION:

21 WALDEN SQUARE ROAD CAMBRIDGE, MA 02140



85 RANGWAY ROAD - BLDG 3, SUITE 102  
NORTH BILLERICA, MA 01862  
SMARTLINKLLC.COM



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EXISTING ALPHA SECTOR ANTENNA  
& EQUIPMENT LOCATION



SHEET TITLE:  
**BEFORE PHOTO RENDERING/SIMULATION - LOOKING WEST**

PROJECT TITLE:  
**CAMBRIDGE SHERMAN STREET**

PROJECT NUMBER:  
**51643**

PROJECT LOCATION:  
**21 WALDEN SQUARE ROAD CAMBRIDGE, MA 02140**



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PROPOSED ALPHA SECTOR  
ANTENNA & EQUIPMENT LOCATION



SHEET TITLE:

AFTER PHOTO RENDERING/SIMULATION - LOOKING WEST

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SHEET TITLE:  
**AFTER PHOTO RENDERING/SIMULATION - LOOKING WEST**

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EXISTING BETA & GAMMA SECTOR  
ANTENNA & EQUIPMENT BEYOND

EXISTING ALPHA SECTOR  
ANTENNA & EQUIPMENT BEYOND



SHEET TITLE:  
**BEFORE PHOTO RENDERING/SIMULATION - LOOKING NORTH**

PROJECT TITLE:  
**CAMBRIDGE SHERMAN STREET**

PROJECT NUMBER:  
**51643**

PROJECT LOCATION:  
**21 WALDEN SQUARE ROAD CAMBRIDGE, MA 02140**



85 RANGWAY ROAD - BLDG 3, SUITE 102  
NORTH BILLERICA, MA 01862  
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PROPOSED BETA & GAMMA SECTOR ANTENNA & EQUIPMENT BEYOND

PROPOSED ALPHA SECTOR ANTENNA & EQUIPMENT BEYOND



SHEET TITLE:  
AFTER PHOTO RENDERING/SIMULATION - LOOKING NORTH

PROJECT TITLE:  
CAMBRIDGE SHERMAN STREET

PROJECT NUMBER:  
51643

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21 WALDEN SQUARE ROAD CAMBRIDGE, MA 02140



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EXISTING BETA SECTOR ANTENNA & EQUIPMENT LOCATION



SHEET TITLE:  
**BEFORE PHOTO RENDERING/SIMULATION - LOOKING NORTHEAST**

PROJECT TITLE:  
**CAMBRIDGE SHERMAN STREET**

PROJECT NUMBER:  
**51643**

PROJECT LOCATION:  
**21 WALDEN SQUARE ROAD CAMBRIDGE, MA 02140**



85 RANGWAY ROAD - BLDG 3, SUITE 102  
NORTH BILLERICA, MA 01862  
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PROPOSED BETA SECTOR  
ANTENNA & EQUIPMENT LOCATION



SHEET TITLE:  
AFTER PHOTO RENDERING/SIMULATION - LOOKING NORTHEAST

PROJECT TITLE:  
CAMBRIDGE SHERMAN STREET

PROJECT NUMBER:  
51643

PROJECT LOCATION:  
21 WALDEN SQUARE ROAD CAMBRIDGE, MA 02140

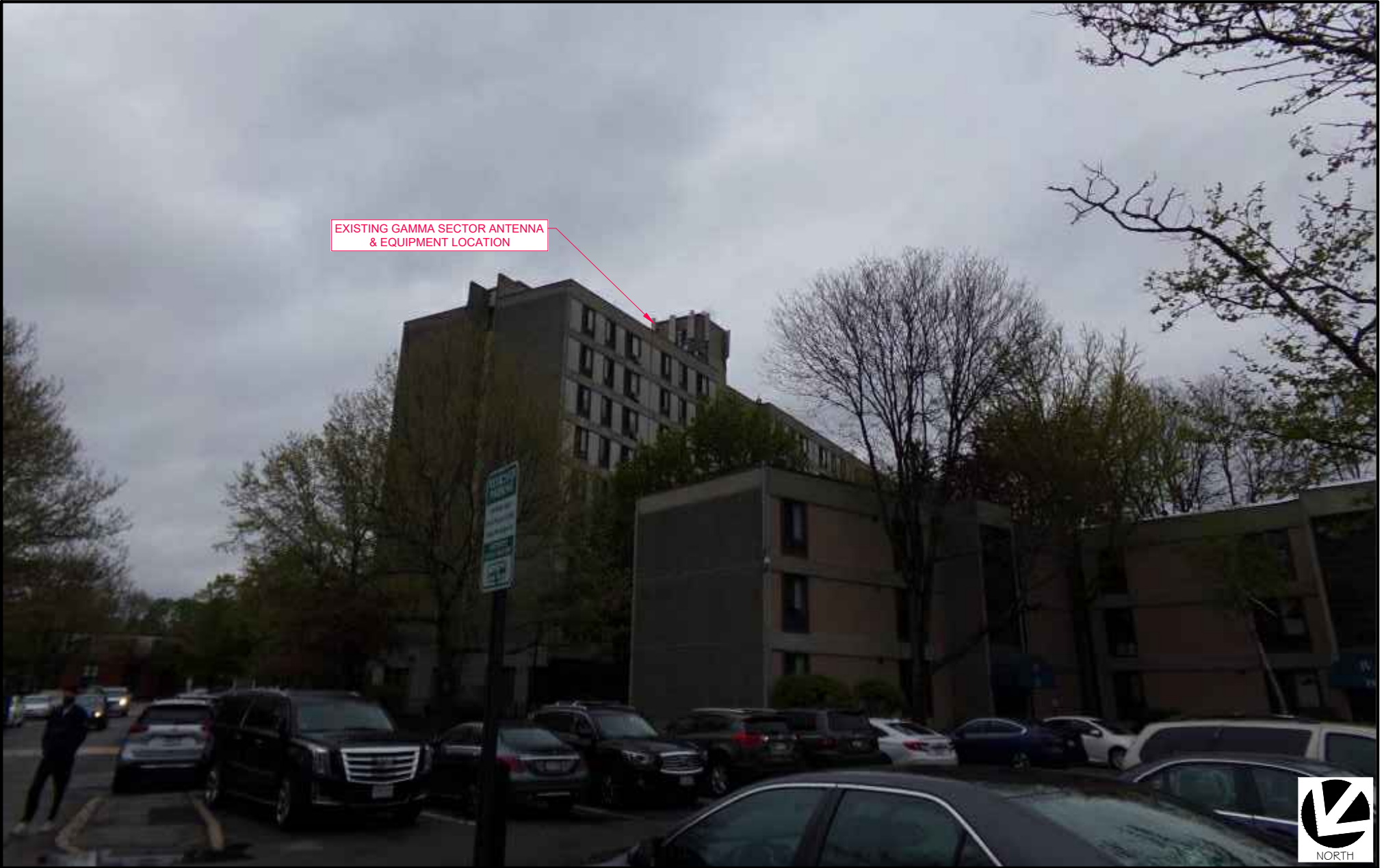


85 RANGWAY ROAD - BLDG 3, SUITE 102  
NORTH BILLERICA, MA 01862  
SMARTLINKLLC.COM



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EXISTING GAMMA SECTOR ANTENNA & EQUIPMENT LOCATION



SHEET TITLE:  
**BEFORE PHOTO RENDERING/SIMULATION - LOOKING SOUTHEAST**

PROJECT TITLE:  
**CAMBRIDGE SHERMAN STREET**

PROJECT NUMBER:  
**51643**

PROJECT LOCATION:  
**21 WALDEN SQUARE ROAD CAMBRIDGE, MA 02140**



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February 8, 2022

Kristina Cottone  
Smartlink  
85 Rangeway Road, Bldg. # 3, Suite 102  
North Billerica, MA 01862

Ramaker & Associates, Inc.  
855 Community Drive  
Sauk City, WI 53583

**SUBJECT: STRUCTURAL ASSESSMENT**

**CARRIER: AT&T**

**SITE: CAMBRIDGE SHERMAN STREET (MAL02852)**  
**ADDRESS: 21 WALDEN SQUARE ROAD**  
**CAMBRIDGE, MIDDLESEX COUNTY, MASSACHUSETTS 02140**

**LATITUDE: 42.3890300**  
**LONGITUDE: -71.1293920**  
**FA LOCATION CODE: 11585657**  
**SCOPE: 5G NR/ BBU/ 5G NR**  
**PACE NUMBER: MRCTB052180/ MRCTB051611/ MRCTB051691**  
**PTN NUMBER: 2101A1025V/ 2101A0Z8SA/ 2101A0Z8DD**

**RAMAKER & ASSOCIATES PROJECT NUMBER: 51643**

**RESULTS: MOUNT: PASS 74.6%**  
**SUPPORTING STRUCTURE: PASS**

Dear Kristina Cottone:

Ramaker & Associates, Inc. (RAMAKER) respectfully submits this structural assessment for the above-mentioned site. The purpose of this report is to determine the structural integrity of the structure(s) with the proposed loading configurations. Engineering recommendations regarding the analysis results are provided in the following pages.

RAMAKER analyzed the structure(s) using accepted engineering practices. All information contained herein is valid only for the described structure configuration and loading conditions. RAMAKER reserves the right to modify our recommendations should alterations to the structure(s) loading occur.


If you have any questions or comments, please do not hesitate to contact our office.

Sincerely,

RAMAKER & ASSOCIATES, INC.



Gerardo Nunez Jr.  
Structural Designer



Jeffrey H. Zander, P.E.  
Supervising Engineer



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**ANALYSIS CRITERIA**

State Building Code	Massachusetts 9th Edition Amendments
Adopted Building Code	2015 IBC
Referenced Standard	TIA-222-G
Risk Category	II
Ultimate Design Wind Speed, $V_{ult}$	128 mph (3 sec. gust)
Nominal Design Wind Speed, $V_{asd}$	99 mph (3 sec. gust)
Design Wind Speed w/ Ice	50 mph (3 sec. gust)
Ice Thickness	1 inch
Exposure Category	C
Topographic Feature	None

**SUPPORTING DOCUMENTATION**

- Previous mount analysis by Infinigy, job number 1106-A0001-B, dated 05/06/2020
- Final RFDS version 3.00 by AT&T. RFDS ID: 4392756, dated January 14, 2022
- Site visit(s) conducted by RAMAKER
- Other pertinent data procured or assumed by RAMAKER during site due diligence activities

**MOUNT LOADING**

RAMAKER understands that the loading to be used for this analysis will consist of the antennas and equipment configurations as shown in the following chart(s):

Equipment Loading Summary			
Elevation	Appurtenance	Mount Type	Status
94 98.5	(6) CCI HPA-65R-BUU-H8	(9) Wall Mounts	Remove
	(3) Kathrein 800-10966		
	(3) Ericsson RRUS-11 B12		
	(3) CCI DMP65R-BU8DA		Existing
	(3) Ericsson RRUS-E2 B29		
	(3) Ericsson 4449 B5/B12		
	(3) Ericsson RRUS-32 B30		
	(3) Ericsson RRUS-32 B2		
	(3) Ericsson RRUS-32 B66A		
	(3) Ericsson 4478 B14		
	(6) Raycap DC6-48-60-18-8F		
	(3) Raycap DC6-48-60-0-8C-EV		
	(3) Quintel QD8616-7		
	(3) Ericsson AIR6419 B77G (TOP) (3) Ericsson AIR6449 B77D (BOTTOM)		Proposed

**RESULTS**

The maximum mount member stress capacities under the loading conditions previously described are as follows:

Component Type	Percent Capacity	Pass/Fail
Mount Pipe	74.6	Pass
Standoff Arm/Side Arm	12.6	Pass
<b>RATING</b>	<b>74.6</b>	<b>PASS</b>

By engineering calculation and inspection, the antenna and equipment mounting structure(s) are capable of supporting the proposed loading configurations without causing an overstress condition in the antenna and equipment mounting structure(s).

As a result of the proposed loading configurations, the penthouse wall structure will experience a negligible increase in dead and wind loads from what are currently present. Therefore, it is RAMAKER's assessment that the associated penthouse wall structure in each sector will provide adequate support for the proposed loading configurations.

## **ASSUMPTIONS**

This analysis is based on the theoretical design capacity of the members and is not a condition assessment of the structure. This analysis is based on the information supplied and the results are only as accurate as the data obtained from this information. The Scope of Work for RAMAKER did not require verification of the provided information. The following assumptions were made for this structural analysis.

- 1) The mounts were built and maintained in accordance with the manufacturer's drawings and specifications and including the TIA Standards.
- 2) All structural members are in good condition and can achieve their full design capacity. All welds and connections can develop the full member capacity unless determined otherwise and explicitly stated in this report.
- 3) No physical deterioration has occurred in any of the structural components. No allowance was made for any damaged, missing, or rusted members, nor loose bolts or cracked welds.
- 4) All prior structural modifications, if any, are assumed to be properly installed and fully effective.
- 5) Information provided by the client regarding the structure, appurtenances, transmission cables, and other relevant information is assumed to be current and correct. Appurtenance sizes and weights as specified in the loading tables are best estimates and based on available information, if explicit documentation is not provided to RAMAKER. If the loading configuration is different than stated, then this analysis is invalid.
- 6) Mount steel grades meet the values as stated, unless noted otherwise:
  - Channel, Solid Round, Angle, Plate      ASTM A36 (GR 36)
  - Wide Flange      ASTM A992 (GR 50)
  - HSS (Rectangular)      ASTM A36 (GR 36)
  - Pipe      ASTM A53 (GR 35)
  - Unistrut      ASTM A653 SS (GR 33)
  - Threaded Rod      ASTM F1554 (GR 36)
  - Connection Bolt      ASTM A325

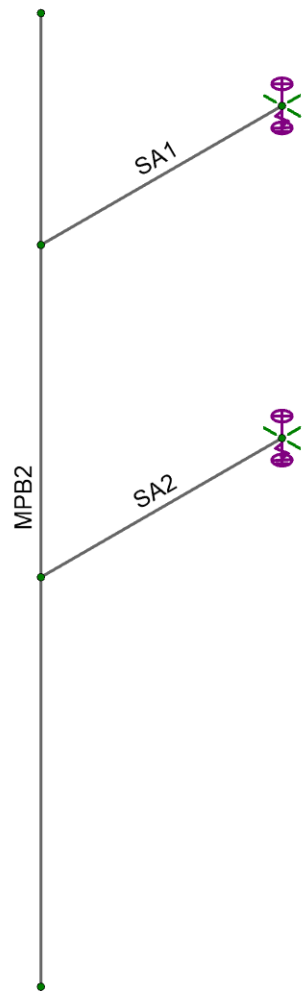
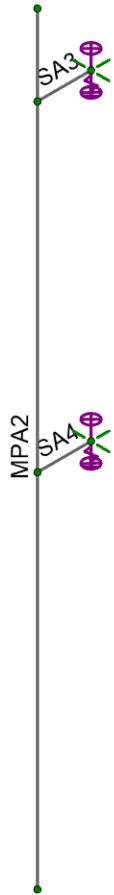
This analysis may be affected if any assumptions are not valid or have been made in error. RAMAKER should be notified to determine the effect on the structural integrity of the mount.

## **SCOPE AND LIMITATIONS**

The engineering services performed by RAMAKER regarding this report are limited to an analysis of the mount and the capacity of its members. RAMAKER will accept no liability which may arise due to any existing deficiency in design, material, fabrication, erection, construction, or lack of maintenance. RAMAKER makes no warranties, expressed or implied in connection with this report and disclaims any liability arising from original design, material, fabrication and erection deficiencies or the "as-built" condition of this structure.

**ATTACHMENTS**

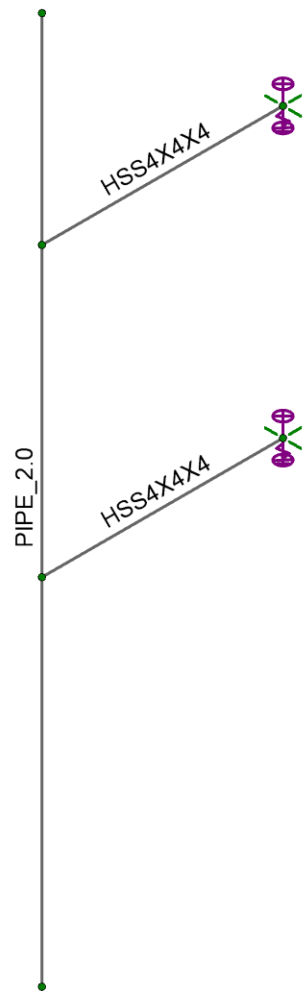
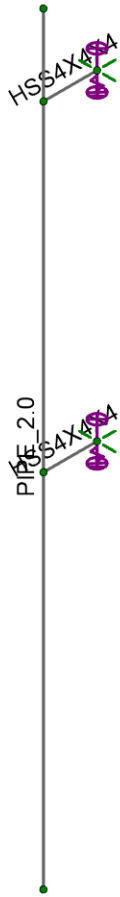
- Analysis Figures
- Analysis Calculations



RAMAKER  
GN  
51643

CAMBRIDGE SHERMAN STREET

SK-1  
Feb 08, 2022  
51643 Mounts.r3d



RAMAKER  
GN  
51643

CAMBRIDGE SHERMAN STREET

SK-2  
Feb 08, 2022  
51643 Mounts.r3d



Company : RAMAKER  
 Designer : GN  
 Job Number : 51643  
 Model Name : CAMBRIDGE SHERMAN STREET

2/8/2022  
 1:18:14 PM  
 Checked By : \_\_\_\_\_

**Hot Rolled Steel Properties**

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e <sup>5</sup> F <sup>-1</sup> ]	Density [k/ft <sup>3</sup> ]	Yield [ksi]	Ry	Fu [ksi]	Rt
1	A992	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
2	A36 Gr.36	29000	11154	0.3	0.65	0.49	36	1.5	58	1.2
3	A572 Gr.50	29000	11154	0.3	0.65	0.49	50	1.1	65	1.1
4	A500 Gr.B RND	29000	11154	0.3	0.65	0.527	42	1.4	58	1.3
5	A500 Gr.B Rect	29000	11154	0.3	0.65	0.527	46	1.4	58	1.3
6	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
7	A1085	29000	11154	0.3	0.65	0.49	50	1.25	65	1.15
8	A913 Gr.65	29000	11154	0.3	0.65	0.49	65	1.1	80	1.1

**Hot Rolled Steel Section Sets**

	Label	Shape	Type	Design List	Material	Design Rule	Area [in <sup>2</sup> ]	Iyy [in <sup>4</sup> ]	Izz [in <sup>4</sup> ]	J [in <sup>4</sup> ]
1	Pipe 2.0	PIPE_2.0	Beam	HSS Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
2	HSS 4x4x1/4	HSS4X4X4	Beam	Tube	A36 Gr.36	Typical	3.37	7.8	7.8	12.8
3	1/2" SR	1/2" SR - Net	Beam	BAR	A36 Gr.36	Typical	0.142	0.002	0.002	0.003

**Member Primary Data**

	Label	I Node	J Node	Section/Shape	Type	Design List	Material	Design Rule
1	MPA2	N1	N2	Pipe 2.0	Beam	HSS Pipe	A53 Gr.B	Typical
2	SA3	N3	N5	HSS 4x4x1/4	Beam	Tube	A36 Gr.36	Typical
3	SA4	N4	N6	HSS 4x4x1/4	Beam	Tube	A36 Gr.36	Typical
4	MPA3	N7	N8	Pipe 2.0	Beam	HSS Pipe	A53 Gr.B	Typical
5	MPB2	N28	N29	Pipe 2.0	Beam	HSS Pipe	A53 Gr.B	Typical
6	SA1	N30	N33	HSS 4x4x1/4	Beam	Tube	A36 Gr.36	Typical
7	SA2	N31	N32	HSS 4x4x1/4	Beam	Tube	A36 Gr.36	Typical
8	M8	N9	N12	RIGID	None	None	RIGID	Typical
9	M9	N10	N11	RIGID	None	None	RIGID	Typical

**Basic Load Cases**

	BLC Description	Category	Y Gravity	Point	Distributed
1	Antenna Dead	None		6	
2	Antenna Wind 0	None		12	
3	Antenna Wind 30	None		12	
4	Antenna Wind 45	None		12	
5	Antenna Wind 60	None		12	
6	Antenna Wind 90	None		12	
7	Antenna Wind 120	None		12	
8	Antenna Wind 135	None		12	
9	Antenna Wind 150	None		12	
10	Antenna Wind 180	None		12	
11	Antenna Wind 210	None		12	
12	Antenna Wind 225	None		12	
13	Antenna Wind 240	None		12	
14	Antenna Wind 270	None		12	
15	Antenna Wind 300	None		12	
16	Antenna Wind 315	None		12	
17	Antenna Wind 330	None		12	
18	Antenna Ice Dead	None		6	
19	Antenna Wind w/Ice 0	None		12	
20	Antenna Wind w/Ice 30	None		12	
21	Antenna Wind w/Ice 45	None		12	
22	Antenna Wind w/Ice 60	None		12	



**Basic Load Cases (Continued)**

	BLC Description	Category	Y Gravity	Point	Distributed
23	Antenna Wind w/Ice 90	None		12	
24	Antenna Wind w/Ice 120	None		12	
25	Antenna Wind w/Ice 135	None		12	
26	Antenna Wind w/Ice 150	None		12	
27	Antenna Wind w/Ice 180	None		12	
28	Antenna Wind w/Ice 210	None		12	
29	Antenna Wind w/Ice 225	None		12	
30	Antenna Wind w/Ice 240	None		12	
31	Antenna Wind w/Ice 270	None		12	
32	Antenna Wind w/Ice 300	None		12	
33	Antenna Wind w/Ice 315	None		12	
34	Antenna Wind w/Ice 330	None		12	
35	Member Dead	None	-1		
36	Member Wind 0	None			14
37	Member Wind 30	None			14
38	Member Wind 45	None			14
39	Member Wind 60	None			14
40	Member Wind 90	None			14
41	Member Wind 120	None			14
42	Member Wind 135	None			14
43	Member Wind 150	None			14
44	Member Wind 180	None			14
45	Member Wind 210	None			14
46	Member Wind 225	None			14
47	Member Wind 240	None			14
48	Member Wind 270	None			14
49	Member Wind 300	None			14
50	Member Wind 315	None			14
51	Member Wind 330	None			14
52	Member Ice Dead	None			7
53	Member Wind w/Ice 0	None			14
54	Member Wind w/Ice 30	None			14
55	Member Wind w/Ice 45	None			14
56	Member Wind w/Ice 60	None			14
57	Member Wind w/Ice 90	None			14
58	Member Wind w/Ice 120	None			14
59	Member Wind w/Ice 135	None			14
60	Member Wind w/Ice 150	None			14
61	Member Wind w/Ice 180	None			14
62	Member Wind w/Ice 210	None			14
63	Member Wind w/Ice 225	None			14
64	Member Wind w/Ice 240	None			14
65	Member Wind w/Ice 270	None			14
66	Member Wind w/Ice 300	None			14
67	Member Wind w/Ice 315	None			14
68	Member Wind w/Ice 330	None			14
69	LV-1	None			
70	LV-2	None			
71	LV-3	None			
72	LV-4	None			
73	LV-5	None			
74	LV-6	None			
75	LV-7	None			
76	LV-8	None			
77	LV-9	None			



**Basic Load Cases (Continued)**

	BLC Description	Category	Y Gravity	Point	Distributed
78	LV-10	None			
79	LV-11	None			
80	LV-12	None			
81	LV-13	None			
82	LV-14	None			
83	LV-15	None			
84	LM-1	None			
85	LM-2	None			
86	LM-3	None			
87	LM-4	None			
88	LM-5	None			
89	LM-6	None			
90	LM-7	None			
91	LM-8	None			
92	LM-9	None			
93	LM-10	None			
94	LM-11	None			
95	LM-12	None			
96	LM-13	None			
97	LM-14	None			
98	LM-15	None			

**Load Combinations**

	Description	Solve	P-Delta	BLC Factor	BLC	Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
1	1.4D	Yes	Y	1	1.4	35	1.4						
2	0.9D + 1.6 (0-Wind)	Yes	Y	1	0.9	35	0.9	2	1.6	36	1.6		
3	0.9D + 1.6 (30-Wind)	Yes	Y	1	0.9	35	0.9	3	1.6	37	1.6		
4	0.9D + 1.6 (45-Wind)	Yes	Y	1	0.9	35	0.9	4	1.6	38	1.6		
5	0.9D + 1.6 (60-Wind)	Yes	Y	1	0.9	35	0.9	5	1.6	39	1.6		
6	0.9D + 1.6 (90-Wind)	Yes	Y	1	0.9	35	0.9	6	1.6	40	1.6		
7	0.9D + 1.6 (120-Wind)	Yes	Y	1	0.9	35	0.9	7	1.6	41	1.6		
8	0.9D + 1.6 (135-Wind)	Yes	Y	1	0.9	35	0.9	8	1.6	42	1.6		
9	0.9D + 1.6 (150-Wind)	Yes	Y	1	0.9	35	0.9	9	1.6	43	1.6		
10	0.9D + 1.6 (180-Wind)	Yes	Y	1	0.9	35	0.9	10	1.6	44	1.6		
11	0.9D + 1.6 (210-Wind)	Yes	Y	1	0.9	35	0.9	11	1.6	45	1.6		
12	0.9D + 1.6 (225-Wind)	Yes	Y	1	0.9	35	0.9	12	1.6	46	1.6		
13	0.9D + 1.6 (240-Wind)	Yes	Y	1	0.9	35	0.9	13	1.6	47	1.6		
14	0.9D + 1.6 (270-Wind)	Yes	Y	1	0.9	35	0.9	14	1.6	48	1.6		
15	0.9D + 1.6 (300-Wind)	Yes	Y	1	0.9	35	0.9	15	1.6	49	1.6		
16	0.9D + 1.6 (315-Wind)	Yes	Y	1	0.9	35	0.9	16	1.6	50	1.6		
17	0.9D + 1.6 (330-Wind)	Yes	Y	1	0.9	35	0.9	17	1.6	51	1.6		
18	1.2D + 1.6 (0-Wind)	Yes	Y	1	1.2	35	1.2	2	1.6	36	1.6		
19	1.2D + 1.6 (30-Wind)	Yes	Y	1	1.2	35	1.2	3	1.6	37	1.6		
20	1.2D + 1.6 (45-Wind)	Yes	Y	1	1.2	35	1.2	4	1.6	38	1.6		
21	1.2D + 1.6 (60-Wind)	Yes	Y	1	1.2	35	1.2	5	1.6	39	1.6		
22	1.2D + 1.6 (90-Wind)	Yes	Y	1	1.2	35	1.2	6	1.6	40	1.6		
23	1.2D + 1.6 (120-Wind)	Yes	Y	1	1.2	35	1.2	7	1.6	41	1.6		
24	1.2D + 1.6 (135-Wind)	Yes	Y	1	1.2	35	1.2	8	1.6	42	1.6		
25	1.2D + 1.6 (150-Wind)	Yes	Y	1	1.2	35	1.2	9	1.6	43	1.6		
26	1.2D + 1.6 (180-Wind)	Yes	Y	1	1.2	35	1.2	10	1.6	44	1.6		
27	1.2D + 1.6 (210-Wind)	Yes	Y	1	1.2	35	1.2	11	1.6	45	1.6		
28	1.2D + 1.6 (225-Wind)	Yes	Y	1	1.2	35	1.2	12	1.6	46	1.6		
29	1.2D + 1.6 (240-Wind)	Yes	Y	1	1.2	35	1.2	13	1.6	47	1.6		
30	1.2D + 1.6 (270-Wind)	Yes	Y	1	1.2	35	1.2	14	1.6	48	1.6		
31	1.2D + 1.6 (300-Wind)	Yes	Y	1	1.2	35	1.2	15	1.6	49	1.6		



**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
32	1.2D + 1.6 (315-Wind)	Yes	Y	1	1.2	35	1.2	16	1.6	50	1.6				
33	1.2D + 1.6 (330-Wind)	Yes	Y	1	1.2	35	1.2	17	1.6	51	1.6				
34	1.2D + 1.0Di + 1.0 (0-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	19	1	53	1
35	1.2D + 1.0Di + 1.0 (30-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	20	1	54	1
36	1.2D + 1.0Di + 1.0 (45-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	21	1	55	1
37	1.2D + 1.0Di + 1.0 (60-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	22	1	56	1
38	1.2D + 1.0Di + 1.0 (90-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	23	1	57	1
39	1.2D + 1.0Di + 1.0 (120-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	24	1	58	1
40	1.2D + 1.0Di + 1.0 (135-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	25	1	59	1
41	1.2D + 1.0Di + 1.0 (150-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	26	1	60	1
42	1.2D + 1.0Di + 1.0 (180-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	27	1	61	1
43	1.2D + 1.0Di + 1.0 (210-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	28	1	62	1
44	1.2D + 1.0Di + 1.0 (225-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	29	1	63	1
45	1.2D + 1.0Di + 1.0 (240-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	30	1	64	1
46	1.2D + 1.0Di + 1.0 (270-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	31	1	65	1
47	1.2D + 1.0Di + 1.0 (300-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	32	1	66	1
48	1.2D + 1.0Di + 1.0 (315-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	33	1	67	1
49	1.2D + 1.0Di + 1.0 (330-Wind Ice)	Yes	Y	1	1.2	35	1.2	18	1	52	1	34	1	68	1
50	1.2D + 1.5LV-1	Yes	Y	1	1.2	35	1.2	69	1.5						
51	1.2D + 1.5LV-2	Yes	Y	1	1.2	35	1.2	70	1.5						
52	1.2D + 1.5LV-3	Yes	Y	1	1.2	35	1.2	71	1.5						
53	1.2D + 1.5LV-4	Yes	Y	1	1.2	35	1.2	72	1.5						
54	1.2D + 1.5LV-5	Yes	Y	1	1.2	35	1.2	73	1.5						
55	1.2D + 1.5LV-6	Yes	Y	1	1.2	35	1.2	74	1.5						
56	1.2D + 1.5LV-7	Yes	Y	1	1.2	35	1.2	75	1.5						
57	1.2D + 1.5LV-8	Yes	Y	1	1.2	35	1.2	76	1.5						
58	1.2D + 1.5LV-9	Yes	Y	1	1.2	35	1.2	77	1.5						
59	1.2D + 1.5LV-10	Yes	Y	1	1.2	35	1.2	78	1.5						
60	1.2D + 1.5LV-11	Yes	Y	1	1.2	35	1.2	79	1.5						
61	1.2D + 1.5LV-12	Yes	Y	1	1.2	35	1.2	80	1.5						
62	1.2D + 1.5LV-13	Yes	Y	1	1.2	35	1.2	81	1.5						
63	1.2D + 1.5LV-14	Yes	Y	1	1.2	35	1.2	82	1.5						
64	1.2D + 1.5LV-15	Yes	Y	1	1.2	35	1.2	83	1.5						
65	1.2D + 1.5LM-1 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	2	0.092	36	0.092		
66	1.2D + 1.5LM-1 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	3	0.092	37	0.092		
67	1.2D + 1.5LM-1 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	4	0.092	38	0.092		
68	1.2D + 1.5LM-1 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	5	0.092	39	0.092		
69	1.2D + 1.5LM-1 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	6	0.092	40	0.092		
70	1.2D + 1.5LM-1 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	7	0.092	41	0.092		
71	1.2D + 1.5LM-1 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	8	0.092	42	0.092		
72	1.2D + 1.5LM-1 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	9	0.092	43	0.092		
73	1.2D + 1.5LM-1 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	10	0.092	44	0.092		
74	1.2D + 1.5LM-1 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	11	0.092	45	0.092		
75	1.2D + 1.5LM-1 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	12	0.092	46	0.092		
76	1.2D + 1.5LM-1 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	13	0.092	47	0.092		
77	1.2D + 1.5LM-1 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	14	0.092	48	0.092		
78	1.2D + 1.5LM-1 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	15	0.092	49	0.092		
79	1.2D + 1.5LM-1 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	16	0.092	50	0.092		
80	1.2D + 1.5LM-1 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	84	1.5	17	0.092	51	0.092		
81	1.2D + 1.5LM-2 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	2	0.092	36	0.092		
82	1.2D + 1.5LM-2 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	3	0.092	37	0.092		
83	1.2D + 1.5LM-2 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	4	0.092	38	0.092		
84	1.2D + 1.5LM-2 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	5	0.092	39	0.092		
85	1.2D + 1.5LM-2 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	6	0.092	40	0.092		
86	1.2D + 1.5LM-2 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	7	0.092	41	0.092		

**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
87	1.2D + 1.5LM-2 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	8	0.092	42	0.092	
88	1.2D + 1.5LM-2 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	9	0.092	43	0.092	
89	1.2D + 1.5LM-2 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	10	0.092	44	0.092	
90	1.2D + 1.5LM-2 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	11	0.092	45	0.092	
91	1.2D + 1.5LM-2 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	12	0.092	46	0.092	
92	1.2D + 1.5LM-2 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	13	0.092	47	0.092	
93	1.2D + 1.5LM-2 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	14	0.092	48	0.092	
94	1.2D + 1.5LM-2 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	15	0.092	49	0.092	
95	1.2D + 1.5LM-2 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	16	0.092	50	0.092	
96	1.2D + 1.5LM-2 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	85	1.5	17	0.092	51	0.092	
97	1.2D + 1.5LM-3 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	2	0.092	36	0.092	
98	1.2D + 1.5LM-3 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	3	0.092	37	0.092	
99	1.2D + 1.5LM-3 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	4	0.092	38	0.092	
100	1.2D + 1.5LM-3 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	5	0.092	39	0.092	
101	1.2D + 1.5LM-3 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	6	0.092	40	0.092	
102	1.2D + 1.5LM-3 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	7	0.092	41	0.092	
103	1.2D + 1.5LM-3 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	8	0.092	42	0.092	
104	1.2D + 1.5LM-3 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	9	0.092	43	0.092	
105	1.2D + 1.5LM-3 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	10	0.092	44	0.092	
106	1.2D + 1.5LM-3 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	11	0.092	45	0.092	
107	1.2D + 1.5LM-3 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	12	0.092	46	0.092	
108	1.2D + 1.5LM-3 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	13	0.092	47	0.092	
109	1.2D + 1.5LM-3 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	14	0.092	48	0.092	
110	1.2D + 1.5LM-3 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	15	0.092	49	0.092	
111	1.2D + 1.5LM-3 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	16	0.092	50	0.092	
112	1.2D + 1.5LM-3 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	86	1.5	17	0.092	51	0.092	
113	1.2D + 1.5LM-4 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	2	0.092	36	0.092	
114	1.2D + 1.5LM-4 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	3	0.092	37	0.092	
115	1.2D + 1.5LM-4 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	4	0.092	38	0.092	
116	1.2D + 1.5LM-4 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	5	0.092	39	0.092	
117	1.2D + 1.5LM-4 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	6	0.092	40	0.092	
118	1.2D + 1.5LM-4 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	7	0.092	41	0.092	
119	1.2D + 1.5LM-4 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	8	0.092	42	0.092	
120	1.2D + 1.5LM-4 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	9	0.092	43	0.092	
121	1.2D + 1.5LM-4 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	10	0.092	44	0.092	
122	1.2D + 1.5LM-4 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	11	0.092	45	0.092	
123	1.2D + 1.5LM-4 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	12	0.092	46	0.092	
124	1.2D + 1.5LM-4 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	13	0.092	47	0.092	
125	1.2D + 1.5LM-4 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	14	0.092	48	0.092	
126	1.2D + 1.5LM-4 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	15	0.092	49	0.092	
127	1.2D + 1.5LM-4 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	16	0.092	50	0.092	
128	1.2D + 1.5LM-4 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	87	1.5	17	0.092	51	0.092	
129	1.2D + 1.5LM-5 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	2	0.092	36	0.092	
130	1.2D + 1.5LM-5 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	3	0.092	37	0.092	
131	1.2D + 1.5LM-5 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	4	0.092	38	0.092	
132	1.2D + 1.5LM-5 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	5	0.092	39	0.092	
133	1.2D + 1.5LM-5 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	6	0.092	40	0.092	
134	1.2D + 1.5LM-5 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	7	0.092	41	0.092	
135	1.2D + 1.5LM-5 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	8	0.092	42	0.092	
136	1.2D + 1.5LM-5 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	9	0.092	43	0.092	
137	1.2D + 1.5LM-5 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	10	0.092	44	0.092	
138	1.2D + 1.5LM-5 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	11	0.092	45	0.092	
139	1.2D + 1.5LM-5 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	12	0.092	46	0.092	
140	1.2D + 1.5LM-5 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	13	0.092	47	0.092	
141	1.2D + 1.5LM-5 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	14	0.092	48	0.092	



**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
142	1.2D + 1.5LM-5 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	15	0.092	49	0.092	
143	1.2D + 1.5LM-5 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	16	0.092	50	0.092	
144	1.2D + 1.5LM-5 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	88	1.5	17	0.092	51	0.092	
145	1.2D + 1.5LM-6 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	2	0.092	36	0.092	
146	1.2D + 1.5LM-6 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	3	0.092	37	0.092	
147	1.2D + 1.5LM-6 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	4	0.092	38	0.092	
148	1.2D + 1.5LM-6 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	5	0.092	39	0.092	
149	1.2D + 1.5LM-6 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	6	0.092	40	0.092	
150	1.2D + 1.5LM-6 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	7	0.092	41	0.092	
151	1.2D + 1.5LM-6 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	8	0.092	42	0.092	
152	1.2D + 1.5LM-6 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	9	0.092	43	0.092	
153	1.2D + 1.5LM-6 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	10	0.092	44	0.092	
154	1.2D + 1.5LM-6 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	11	0.092	45	0.092	
155	1.2D + 1.5LM-6 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	12	0.092	46	0.092	
156	1.2D + 1.5LM-6 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	13	0.092	47	0.092	
157	1.2D + 1.5LM-6 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	14	0.092	48	0.092	
158	1.2D + 1.5LM-6 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	15	0.092	49	0.092	
159	1.2D + 1.5LM-6 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	16	0.092	50	0.092	
160	1.2D + 1.5LM-6 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	89	1.5	17	0.092	51	0.092	
161	1.2D + 1.5LM-7 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	2	0.092	36	0.092	
162	1.2D + 1.5LM-7 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	3	0.092	37	0.092	
163	1.2D + 1.5LM-7 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	4	0.092	38	0.092	
164	1.2D + 1.5LM-7 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	5	0.092	39	0.092	
165	1.2D + 1.5LM-7 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	6	0.092	40	0.092	
166	1.2D + 1.5LM-7 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	7	0.092	41	0.092	
167	1.2D + 1.5LM-7 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	8	0.092	42	0.092	
168	1.2D + 1.5LM-7 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	9	0.092	43	0.092	
169	1.2D + 1.5LM-7 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	10	0.092	44	0.092	
170	1.2D + 1.5LM-7 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	11	0.092	45	0.092	
171	1.2D + 1.5LM-7 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	12	0.092	46	0.092	
172	1.2D + 1.5LM-7 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	13	0.092	47	0.092	
173	1.2D + 1.5LM-7 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	14	0.092	48	0.092	
174	1.2D + 1.5LM-7 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	15	0.092	49	0.092	
175	1.2D + 1.5LM-7 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	16	0.092	50	0.092	
176	1.2D + 1.5LM-7 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	90	1.5	17	0.092	51	0.092	
177	1.2D + 1.5LM-8 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	2	0.092	36	0.092	
178	1.2D + 1.5LM-8 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	3	0.092	37	0.092	
179	1.2D + 1.5LM-8 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	4	0.092	38	0.092	
180	1.2D + 1.5LM-8 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	5	0.092	39	0.092	
181	1.2D + 1.5LM-8 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	6	0.092	40	0.092	
182	1.2D + 1.5LM-8 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	7	0.092	41	0.092	
183	1.2D + 1.5LM-8 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	8	0.092	42	0.092	
184	1.2D + 1.5LM-8 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	9	0.092	43	0.092	
185	1.2D + 1.5LM-8 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	10	0.092	44	0.092	
186	1.2D + 1.5LM-8 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	11	0.092	45	0.092	
187	1.2D + 1.5LM-8 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	12	0.092	46	0.092	
188	1.2D + 1.5LM-8 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	13	0.092	47	0.092	
189	1.2D + 1.5LM-8 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	14	0.092	48	0.092	
190	1.2D + 1.5LM-8 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	15	0.092	49	0.092	
191	1.2D + 1.5LM-8 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	16	0.092	50	0.092	
192	1.2D + 1.5LM-8 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	91	1.5	17	0.092	51	0.092	
193	1.2D + 1.5LM-9 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	2	0.092	36	0.092	
194	1.2D + 1.5LM-9 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	3	0.092	37	0.092	
195	1.2D + 1.5LM-9 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	4	0.092	38	0.092	
196	1.2D + 1.5LM-9 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	5	0.092	39	0.092	



**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC Factor	BLC	Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
197	1.2D + 1.5LM-9 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	6	0.092	40	0.092
198	1.2D + 1.5LM-9 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	7	0.092	41	0.092
199	1.2D + 1.5LM-9 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	8	0.092	42	0.092
200	1.2D + 1.5LM-9 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	9	0.092	43	0.092
201	1.2D + 1.5LM-9 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	10	0.092	44	0.092
202	1.2D + 1.5LM-9 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	11	0.092	45	0.092
203	1.2D + 1.5LM-9 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	12	0.092	46	0.092
204	1.2D + 1.5LM-9 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	13	0.092	47	0.092
205	1.2D + 1.5LM-9 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	14	0.092	48	0.092
206	1.2D + 1.5LM-9 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	15	0.092	49	0.092
207	1.2D + 1.5LM-9 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	16	0.092	50	0.092
208	1.2D + 1.5LM-9 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	92	1.5	17	0.092	51	0.092
209	1.2D + 1.5LM-10 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	2	0.092	36	0.092
210	1.2D + 1.5LM-10 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	3	0.092	37	0.092
211	1.2D + 1.5LM-10 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	4	0.092	38	0.092
212	1.2D + 1.5LM-10 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	5	0.092	39	0.092
213	1.2D + 1.5LM-10 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	6	0.092	40	0.092
214	1.2D + 1.5LM-10 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	7	0.092	41	0.092
215	1.2D + 1.5LM-10 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	8	0.092	42	0.092
216	1.2D + 1.5LM-10 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	9	0.092	43	0.092
217	1.2D + 1.5LM-10 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	10	0.092	44	0.092
218	1.2D + 1.5LM-10 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	11	0.092	45	0.092
219	1.2D + 1.5LM-10 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	12	0.092	46	0.092
220	1.2D + 1.5LM-10 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	13	0.092	47	0.092
221	1.2D + 1.5LM-10 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	14	0.092	48	0.092
222	1.2D + 1.5LM-10 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	15	0.092	49	0.092
223	1.2D + 1.5LM-10 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	16	0.092	50	0.092
224	1.2D + 1.5LM-10 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	93	1.5	17	0.092	51	0.092
225	1.2D + 1.5LM-11 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	2	0.092	36	0.092
226	1.2D + 1.5LM-11 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	3	0.092	37	0.092
227	1.2D + 1.5LM-11 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	4	0.092	38	0.092
228	1.2D + 1.5LM-11 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	5	0.092	39	0.092
229	1.2D + 1.5LM-11 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	6	0.092	40	0.092
230	1.2D + 1.5LM-11 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	7	0.092	41	0.092
231	1.2D + 1.5LM-11 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	8	0.092	42	0.092
232	1.2D + 1.5LM-11 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	9	0.092	43	0.092
233	1.2D + 1.5LM-11 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	10	0.092	44	0.092
234	1.2D + 1.5LM-11 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	11	0.092	45	0.092
235	1.2D + 1.5LM-11 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	12	0.092	46	0.092
236	1.2D + 1.5LM-11 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	13	0.092	47	0.092
237	1.2D + 1.5LM-11 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	14	0.092	48	0.092
238	1.2D + 1.5LM-11 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	15	0.092	49	0.092
239	1.2D + 1.5LM-11 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	16	0.092	50	0.092
240	1.2D + 1.5LM-11 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	94	1.5	17	0.092	51	0.092
241	1.2D + 1.5LM-12 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	2	0.092	36	0.092
242	1.2D + 1.5LM-12 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	3	0.092	37	0.092
243	1.2D + 1.5LM-12 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	4	0.092	38	0.092
244	1.2D + 1.5LM-12 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	5	0.092	39	0.092
245	1.2D + 1.5LM-12 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	6	0.092	40	0.092
246	1.2D + 1.5LM-12 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	7	0.092	41	0.092
247	1.2D + 1.5LM-12 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	8	0.092	42	0.092
248	1.2D + 1.5LM-12 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	9	0.092	43	0.092
249	1.2D + 1.5LM-12 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	10	0.092	44	0.092
250	1.2D + 1.5LM-12 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	11	0.092	45	0.092
251	1.2D + 1.5LM-12 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	12	0.092	46	0.092



**Load Combinations (Continued)**

	Description	Solve	P-Delta	BLC Factor	BLC	Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor	BLC Factor
252	1.2D + 1.5LM-12 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	13	0.092	47	0.092	
253	1.2D + 1.5LM-12 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	14	0.092	48	0.092	
254	1.2D + 1.5LM-12 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	15	0.092	49	0.092	
255	1.2D + 1.5LM-12 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	16	0.092	50	0.092	
256	1.2D + 1.5LM-12 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	95	1.5	17	0.092	51	0.092	
257	1.2D + 1.5LM-13 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	2	0.092	36	0.092	
258	1.2D + 1.5LM-13 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	3	0.092	37	0.092	
259	1.2D + 1.5LM-13 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	4	0.092	38	0.092	
260	1.2D + 1.5LM-13 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	5	0.092	39	0.092	
261	1.2D + 1.5LM-13 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	6	0.092	40	0.092	
262	1.2D + 1.5LM-13 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	7	0.092	41	0.092	
263	1.2D + 1.5LM-13 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	8	0.092	42	0.092	
264	1.2D + 1.5LM-13 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	9	0.092	43	0.092	
265	1.2D + 1.5LM-13 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	10	0.092	44	0.092	
266	1.2D + 1.5LM-13 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	11	0.092	45	0.092	
267	1.2D + 1.5LM-13 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	12	0.092	46	0.092	
268	1.2D + 1.5LM-13 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	13	0.092	47	0.092	
269	1.2D + 1.5LM-13 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	14	0.092	48	0.092	
270	1.2D + 1.5LM-13 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	15	0.092	49	0.092	
271	1.2D + 1.5LM-13 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	16	0.092	50	0.092	
272	1.2D + 1.5LM-13 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	96	1.5	17	0.092	51	0.092	
273	1.2D + 1.5LM-14 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	2	0.092	36	0.092	
274	1.2D + 1.5LM-14 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	3	0.092	37	0.092	
275	1.2D + 1.5LM-14 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	4	0.092	38	0.092	
276	1.2D + 1.5LM-14 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	5	0.092	39	0.092	
277	1.2D + 1.5LM-14 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	6	0.092	40	0.092	
278	1.2D + 1.5LM-14 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	7	0.092	41	0.092	
279	1.2D + 1.5LM-14 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	8	0.092	42	0.092	
280	1.2D + 1.5LM-14 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	9	0.092	43	0.092	
281	1.2D + 1.5LM-14 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	10	0.092	44	0.092	
282	1.2D + 1.5LM-14 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	11	0.092	45	0.092	
283	1.2D + 1.5LM-14 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	12	0.092	46	0.092	
284	1.2D + 1.5LM-14 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	13	0.092	47	0.092	
285	1.2D + 1.5LM-14 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	14	0.092	48	0.092	
286	1.2D + 1.5LM-14 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	15	0.092	49	0.092	
287	1.2D + 1.5LM-14 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	16	0.092	50	0.092	
288	1.2D + 1.5LM-14 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	97	1.5	17	0.092	51	0.092	
289	1.2D + 1.5LM-15 + Maintenance (0-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	2	0.092	36	0.092	
290	1.2D + 1.5LM-15 + Maintenance (30-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	3	0.092	37	0.092	
291	1.2D + 1.5LM-15 + Maintenance (45-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	4	0.092	38	0.092	
292	1.2D + 1.5LM-15 + Maintenance (60-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	5	0.092	39	0.092	
293	1.2D + 1.5LM-15 + Maintenance (90-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	6	0.092	40	0.092	
294	1.2D + 1.5LM-15 + Maintenance (120-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	7	0.092	41	0.092	
295	1.2D + 1.5LM-15 + Maintenance (135-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	8	0.092	42	0.092	
296	1.2D + 1.5LM-15 + Maintenance (150-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	9	0.092	43	0.092	
297	1.2D + 1.5LM-15 + Maintenance (180-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	10	0.092	44	0.092	
298	1.2D + 1.5LM-15 + Maintenance (210-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	11	0.092	45	0.092	
299	1.2D + 1.5LM-15 + Maintenance (225-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	12	0.092	46	0.092	
300	1.2D + 1.5LM-15 + Maintenance (240-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	13	0.092	47	0.092	
301	1.2D + 1.5LM-15 + Maintenance (270-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	14	0.092	48	0.092	
302	1.2D + 1.5LM-15 + Maintenance (300-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	15	0.092	49	0.092	
303	1.2D + 1.5LM-15 + Maintenance (315-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	16	0.092	50	0.092	
304	1.2D + 1.5LM-15 + Maintenance (330-Wind)	Yes	Y	1	1.2	35	1.2	98	1.5	17	0.092	51	0.092	



**Envelope Node Reactions**

Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC	
1	N6	max	490.347	14	509.856	42	775.553	18	0	304	321.171	14	0	304
2		min	-490.347	6	-360.843	2	-734.515	10	0	1	-321.171	6	0	1
3	N5	max	107.169	30	508.995	34	153.921	2	0	304	68.792	30	0	304
4		min	-107.169	22	-356.8	10	-195.423	26	0	1	-68.792	22	0	1
5	N11	max	418.891	14	459.409	42	668.818	18	0	304	139.91	14	0	304
6		min	-418.891	6	-225.421	2	-651.388	10	0	1	-139.91	6	0	1
7	N12	max	152.842	30	458.906	34	257.593	2	0	304	51.049	30	0	304
8		min	-152.842	22	-223.754	10	-275.412	26	0	1	-51.049	22	0	1
9	N32	max	388.485	14	563.718	42	876.188	34	0	304	1055.138	14	0	304
10		min	-388.485	6	-184.15	2	-361.353	10	0	1	-1055.138	6	0	1
11	N33	max	336.181	30	574.042	34	365.149	2	0	304	906.662	30	0	304
12		min	-336.181	22	-182.713	10	-871.615	42	0	1	-906.662	22	0	1
13	Totals:	max	1893.425	14	2704.321	42	2784.485	18						
14		min	-1893.425	6	351.982	2	-2784.485	10						

**Envelope AISC 14TH (360-10): LRFD Member Steel Code Checks**

Member	Shape	Code	Check	Loc[ft]	LC	Shear	Check	Loc[ft]	Dir	LC	phi*Pnc [lb]	phi*Pnt [lb]	phi*Mn y-y [lb-ft]	phi*Mn z-z [lb-ft]	Cb	Eqn
1	MPA2	PIPE 2.0	0.715	4.414	10	0.048	4.414	10		10	10899.277	32130	1871.625	1871.625	1	H1-1b
2	SA3	HSS4X4X4	0.027	0	34	0.017	0.667	y	34	109029.013	109188	12663	12663	1.645	H1-1b	
3	SA4	HSS4X4X4	0.029	0	26	0.017	0.667	y	42	109029.013	109188	12663	12663	1.651	H1-1b	
4	MPA3	PIPE 2.0	0.597	3.934	10	0.048	3.934	10		10	10899.277	32130	1871.625	1871.625	1	H1-1b
5	MPB2	PIPE 2.0	0.746	4.455	34	0.082	4.455	47		47	8922.084	32130	1871.625	1871.625	1	H1-1b
6	SA1	HSS4X4X4	0.126	0	34	0.019	3	y	34	106016.371	109188	12663	12663	1.611	H1-1b	
7	SA2	HSS4X4X4	0.126	0	42	0.019	3	y	42	106016.371	109188	12663	12663	1.611	H1-1b	

**Wind Load on Antennas TIA-222-G**

$$q_z = 0.00256 K_z K_{zt} K_d V^2 I$$

$$F = q_z G_h C_a A_a$$

Occupancy :	II	Classification of Structures (Table 2-1)
Exposure :	C	Exposure Category
V :	99 mph	Basic Wind Speed (Annex B)
z :	98.5 ft	Height above ground level to the center of the antenna
I :	1.00	Importance Factor (Table 2-3)
K <sub>z</sub> :	1.26	Velocity Pressure Coefficient (2.6.5.2)
K <sub>zt</sub> :	1.00	Topographic Factor (2.6.6.4)
K <sub>d</sub> :	0.95	Wind Direction Probability Factor (Table 2-2)
q <sub>z</sub> :	30.1 psf	Velocity Pressure at Height z
G <sub>h</sub> :	1.00	Strength Design of Appurtenances and their Connections

**Mount & Antenna Wind Loads**

Appurtenance	Height	Width	h/D	Shape	C <sub>a</sub>	A <sub>a</sub>	Force	Force
	<i>in</i>	<i>in</i>				<i>sq ft</i>	<i>lb</i>	<i>plf</i>
QD8616-7	96.0	22.0	4.4	Flat	1.283	14.67	566.9	
Air 6449 B77D	30.6	15.9	1.9	Flat	1.200	3.37	122.0	
Air 6419 N77G	31.1	16.1	1.9	Flat	1.200	3.48	125.7	
Pipe2STD x 9.5 ft	114.0	2.4	48.0	Round	1.200	1.88	68.0	7.2
Pipe2STD x 8 ft	96.0	2.4	40.4	Round	1.200	1.58	57.3	7.2
Pipe2STD x 10.5 ft	126.0	2.4	53.1	Round	1.200	2.08	75.1	7.2
HSS4X4X1/4 x 0.667 ft	8.0	4.0	2.0	Flat	1.200	0.22	8.0	12.1
HSS4X4X1/4 x 3 ft	36.0	4.0	9.0	Flat	1.467	1.00	44.2	14.7



**Wind Load on Antennas TIA-222-G**

$$q_z = 0.00256 K_z K_{zt} K_d V^2 I$$

$$F = q_z G_h C_a A_a$$

Occupancy :	II	Classification of Structures (Table 2-1)
Exposure :	C	Exposure Category
V :	99 mph	Basic Wind Speed (Annex B)
z :	98.5 ft	Height above ground level to the center of the antenna
I :	1.00	Importance Factor (Table 2-3)
K <sub>z</sub> :	1.26	Velocity Pressure Coefficient (2.6.5.2)
K <sub>zt</sub> :	1.00	Topographic Factor (2.6.6.4)
K <sub>d</sub> :	0.95	Wind Direction Probability Factor (Table 2-2)
q <sub>z</sub> :	30.1 psf	Velocity Pressure at Height z
G <sub>h</sub> :	1.00	Strength Design of Appurtenances and their Connections

**Mount & Antenna Wind Loads**

Appurtenance	Height <i>in</i>	Depth <i>in</i>	h/D	Shape	C <sub>a</sub>	A <sub>a</sub> <i>sq ft</i>	Force <i>lb</i>	Force <i>plf</i>
QD8616-7	96.0	9.6	10.0	Flat	1.500	6.40	289.3	
Air 6449 B77D	30.6	10.6	2.9	Flat	1.218	2.24	82.4	
Air 6419 N77G	31.1	7.3	4.3	Flat	1.278	1.58	60.7	
Pipe2STD x 9.5 ft	114.0	2.4	48.0	Round	1.200	1.88	68.0	7.2
Pipe2STD x 8 ft	96.0	2.4	40.4	Round	1.200	1.58	57.3	7.2
Pipe2STD x 10.5 ft	126.0	2.4	53.1	Round	1.200	2.08	75.1	7.2
HSS4X4X1/4 x 0.667 ft	8.0	4.0	2.0	Flat	1.200	0.22	8.0	12.1
HSS4X4X1/4 x 3 ft	36.0	4.0	9.0	Flat	1.467	1.00	44.2	14.7

**Ice Wind Load on Antennas TIA-222-G**

$$q_z = 0.00256 K_z K_{zt} K_d V^2 I$$

$$F = q_z G_h C_a A_a$$

Occupancy :	II	Classification of Structures (Table 2-1)
Exposure :	C	Exposure Category
$V_i$ :	50 mph	Basic Wind Speed (Annex B)
$z$ :	98.5 ft	Height above ground level to the center of the antenna
$I$ :	1.00	Importance Factor (Table 2-3)
$K_z$ :	1.26	Velocity Pressure Coefficient (2.6.5.2)
$K_{zt}$ :	1.00	Topographic Factor (2.6.6.4)
$K_d$ :	0.95	Wind Direction Probability Factor (Table 2-2)
$q_z$ :	7.67 psf	Velocity Pressure at Height $z$
$G_h$ :	1.00	Strength Design of Appurtenances and their Connections
$t_{iz}$ :	2.23 in	Design Thickness of Radial Ice at Height $z$ (2.6.8)

**Mount & Antenna Ice Wind Loads**

Appurtenance	Height	Width	h/D	Shape	$C_a$	$A_a$	Force	Force
	<i>in</i>	<i>in</i>				<i>sq ft</i>	<i>lb</i>	<i>plf</i>
QD8616-7	100.5	26.5	3.8	Flat	1.258	18.46	178.1	
Air 6449 B77D	35.1	20.3	1.7	Flat	1.200	4.95	45.6	
Air 6419 N77G	35.6	20.6	1.7	Flat	1.200	5.08	46.7	
Pipe2STD x 9.5 ft	118.5	6.8	17.3	Round	1.029	5.62	44.4	4.5
Pipe2STD x 8 ft	100.5	6.8	14.7	Round	0.971	4.77	35.5	4.2
Pipe2STD x 10.5 ft	130.5	6.8	19.1	Round	1.068	6.19	50.8	4.7
HSS4X4X1/4 x 0.667 ft	12.5	8.5	1.5	Flat	1.200	0.73	6.7	6.5
HSS4X4X1/4 x 3 ft	40.5	8.5	4.8	Flat	1.301	2.38	23.7	7.0

**Ice Wind Load on Antennas TIA-222-G**

$$q_z = 0.00256 K_z K_{zt} K_d V^2 I$$

$$F = q_z G_h C_a A_a$$

Occupancy :	II	Classification of Structures (Table 2-1)
Exposure :	C	Exposure Category
$V_i$ :	50 mph	Basic Wind Speed (Annex B)
$z$ :	98.5 ft	Height above ground level to the center of the antenna
$I$ :	1.00	Importance Factor (Table 2-3)
$K_z$ :	1.26	Velocity Pressure Coefficient (2.6.5.2)
$K_{zt}$ :	1.00	Topographic Factor (2.6.6.4)
$K_d$ :	0.95	Wind Direction Probability Factor (Table 2-2)
$q_z$ :	7.67 psf	Velocity Pressure at Height $z$
$G_h$ :	1.00	Strength Design of Appurtenances and their Connections
$t_{iz}$ :	2.23 in	Design Thickness of Radial Ice at Height $z$ (2.6.8)

**Mount & Antenna Ice Wind Loads**

Appurtenance	Height <i>in</i>	Depth <i>in</i>	h/D	Shape	$C_a$	$A_a$ <i>sq ft</i>	Force <i>lb</i>	Force <i>plf</i>
QD8616-7	100.5	14.1	7.1	Flat	1.405	9.81	105.7	
Air 6449 B77D	35.1	15.0	2.3	Flat	1.200	3.66	33.7	
Air 6419 N77G	35.6	11.8	3.0	Flat	1.223	2.90	27.3	
Pipe2STD x 9.5 ft	118.5	6.8	17.3	Round	1.029	5.62	44.4	4.5
Pipe2STD x 8 ft	100.5	6.8	14.7	Round	0.971	4.77	35.5	4.2
Pipe2STD x 10.5 ft	130.5	6.8	19.1	Round	1.068	6.19	50.8	4.7
HSS4X4X1/4 x 0.667 ft	12.5	8.5	1.5	Flat	1.200	0.73	6.7	6.5
HSS4X4X1/4 x 3 ft	40.5	8.5	4.8	Flat	1.301	2.38	23.7	7.0

**Ice Load on Antennas TIA-222-G**

Ice Weight :	56	pcf	Ice Density
t <sub>i</sub> :	1.00		Design Ice Thickness
Occupancy :	II		Classification of Structures (Table 2-1)
Exposure :	C		Exposure Category
V <sub>i</sub> :	50	mph	Basic Wind Speed (Annex B)
z :	98.5	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K <sub>iz</sub> :	1.12		Height Escalation Factor for Ice Thickness
K <sub>zt</sub> :	1.00		Topographic Factor (2.6.6.4)
t <sub>iz</sub> :	2.23	in	Design Thickness of Radial Ice at Height z (2.6.8)

Platform Grating : **None**  
Ice Load :               psf

**Mount & Antenna Ice Wind Loads**

Appurtenance	Height	Width	Depth	Diam.	Area	Perim.	Ice Weight	
	<i>in</i>	<i>in</i>	<i>in</i>	<i>in</i>	<i>sq in</i>	<i>in</i>	<i>lb</i>	<i>plf</i>
QD8616-7	100.5	26.5	14.1	24.00	183.88	72.12	572.1	
Air 6449 B77D	35.1	20.3	15.0	19.05	149.19	61.76	148.1	
Air 6419 N77G	35.6	20.6	11.8	17.68	139.55	55.72	140.6	
Pipe2STD x 9.5 ft	118.5	6.8	6.8	2.38	32.29	14.47	119.3	12.6
Pipe2STD x 8 ft	100.5	6.8	6.8	2.38	32.29	14.47	100.4	12.6
Pipe2STD x 10.5 ft	130.5	6.8	6.8	2.38	32.29	14.47	131.8	12.6
HSS4X4X1/4 x 0.667 ft	12.5	8.5	8.5	5.19	52.02	30.81	13.5	20.2
HSS4X4X1/4 x 3 ft	40.5	8.5	8.5	5.19	52.02	30.81	60.7	20.2

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## 102 Sherman St

### Property Information

<b>Property Class</b>	AFFORDABLE APT
<b>State Class Code</b>	114
<b>Zoning (Unofficial)</b>	C-2
<b>Map/Lot</b>	203B-66
<b>Land Area (sq. ft)</b>	327,837

### Property Value

<b>Year of Assessment</b>	2023
<b>Tax District</b>	C10
<b>Residential Exemption</b>	No
<b>Building Value</b>	\$8,352,700
<b>Land Value</b>	\$26,280,000
<b>Assessed Value</b>	\$34,632,700
<b>Sale Price</b>	\$1,449,468
<b>Book/Page</b>	31876/596
<b>Sale Date</b>	September 29, 2000
<b>Previous Assessed Value</b>	\$30,920,800

### Owner Information

## Photos



<b>Owner(s)</b>	WSQ LIMITED PARTNERSHIP C/O WINN RESIDENTIAL ATTN: LI SOSNA 6 FANEUIL HALL MARKETPLACE BOSTON, MA 02109
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**Building Information**

*Commercial Building Number 1, Section 1*

**Exterior**

<b>Style</b>	APARTMENTS
<b>Occupancy</b>	AFFORDABLE APT
<b>Number of Stories</b>	3
<b>Exterior Wall Type</b>	BRICK
<b>Roof Material</b>	RUBBER-MEMBRAN
<b>Wall Height</b>	11
<b>Partitions</b>	AVERAGE



**Interior**

<b>Living Area (sq. ft.)</b>	30,498
<b>Number of Units</b>	30

**Systems**

<b>Heat Type</b>	HOT-WATER
<b>Heat Fuel</b>	
<b>Plumbing</b>	AVERAGE

**Condition & Grade**

<b>Year Built</b>	1975
<b>Overall Condition</b>	Average
<b>Overall Grade</b>	Average

**Subareas**

Code	Description	Gross Area	Living Area
BAS	First Floor	10,166	10,166
FUS	Upper Story, Finished	20,332	20,332
<b>Total:</b>		<b>30,498</b>	<b>30,498</b>



**Extra Features / Outbuildings**

<b>Description</b>	CELL TOWER
<b>Number of Units</b>	1.00
<b>Unit Type</b>	U

*Commercial Building Number 2, Section 1*

**Exterior**

<b>Style</b>	APARTMENTS
<b>Occupancy</b>	AFFORDABLE APT
<b>Number of Stories</b>	3
<b>Exterior Wall Type</b>	BRICK
<b>Roof Material</b>	RUBBER-MEMBRAN
<b>Wall Height</b>	11
<b>Partitions</b>	AVERAGE

**Interior**

<b>Living Area (sq. ft.)</b>	27,000
<b>Number of Units</b>	20

**Systems**

**Sketches**

<b>Heat Type</b>	HOT-WATER
<b>Heat Fuel</b>	
<b>Plumbing</b>	AVERAGE

**Condition & Grade**

<b>Year Built</b>	1975
<b>Overall Condition</b>	Average
<b>Overall Grade</b>	Average

**Subareas**

Code	Description	Gross Area	Living Area
BAS	First Floor	9,000	9,000
FUS	Upper Story, Finished	18,000	18,000
<b>Total:</b>		<b>27,000</b>	<b>27,000</b>

*Commercial Building Number 3, Section 1*

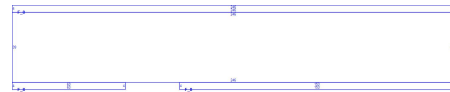
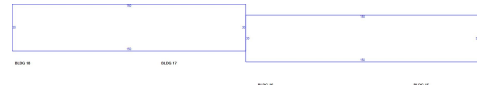
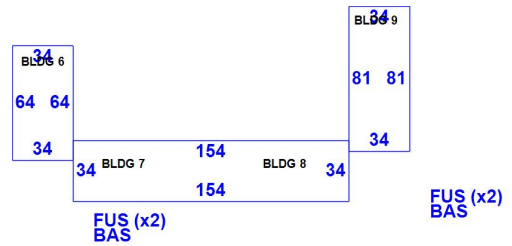
**Exterior**

<b>Style</b>	APARTMENTS
<b>Occupancy</b>	AFFORDABLE APT
<b>Number of Stories</b>	9
<b>Exterior Wall Type</b>	BRICK
<b>Roof Material</b>	RUBBER-MEMBRAN
<b>Wall Height</b>	11
<b>Partitions</b>	AVERAGE

**Interior**

<b>Living Area (sq. ft.)</b>	101,130
<b>Number of Units</b>	100

**Systems**





<b>Heat Type</b>	HOT-WATER
<b>Heat Fuel</b>	
<b>Plumbing</b>	AVERAGE

**Condition & Grade**

<b>Year Built</b>	1975
<b>Overall Condition</b>	Average
<b>Overall Grade</b>	Good

**Subareas**

Code	Description	Gross Area	Living Area
BAS	First Floor	9,594	9,594
F_8	Upper Finish 8 Stry	11,442	91,536
UBM	Basement	9,594	0
<b>Total:</b>		<b>30,630</b>	<b>101,130</b>

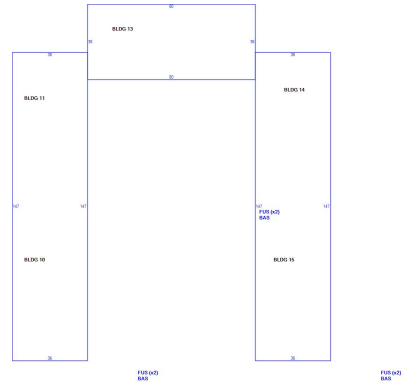
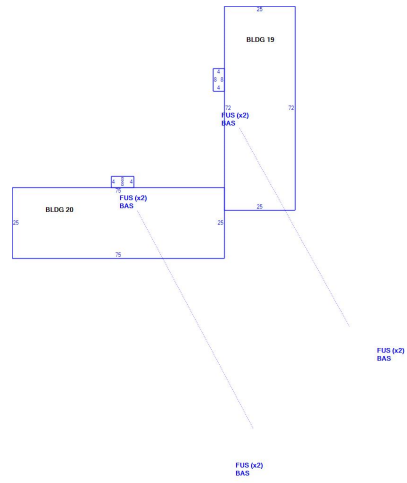
*Commercial Building Number 4, Section 1*  
**Exterior**

<b>Style</b>	APARTMENTS
<b>Occupancy</b>	AFFORDABLE APT
<b>Number of Stories</b>	3
<b>Exterior Wall Type</b>	BRICK
<b>Roof Material</b>	RUBBER-MEMBRAN
<b>Wall Height</b>	11
<b>Partitions</b>	AVERAGE

**Interior**

<b>Living Area (sq. ft.)</b>	11,217
<b>Number of Units</b>	10

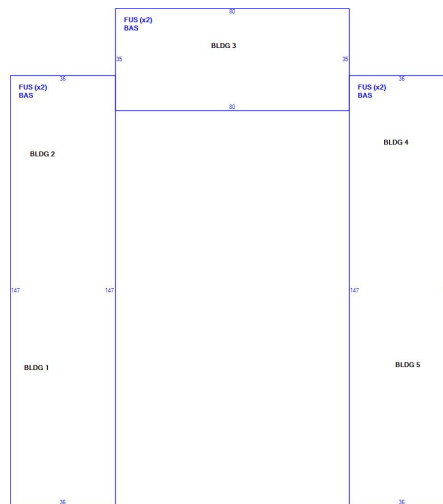
**Systems**



<b>Heat Type</b>	HOT-WATER
<b>Heat Fuel</b>	
<b>Plumbing</b>	AVERAGE

**Condition & Grade**

<b>Year Built</b>	1975
<b>Overall Condition</b>	Average
<b>Overall Grade</b>	Average



**Subareas**

Code	Description	Gross Area	Living Area
BAS	First Floor	3,739	3,739
FUS	Upper Story, Finished	7,478	7,478
Total:		11,217	11,217

*Commercial Building Number 5, Section 1*

**Exterior**

<b>Style</b>	APARTMENTS
<b>Occupancy</b>	AFFORDABLE APT
<b>Number of Stories</b>	3
<b>Exterior Wall Type</b>	BRICK
<b>Roof Material</b>	RUBBER-MEMBRAN
<b>Wall Height</b>	10
<b>Partitions</b>	AVERAGE

**Interior**

<b>Living Area (sq. ft.)</b>	40,392
<b>Number of Units</b>	40

**Systems**

<b>Heat Type</b>	HOT-WATER
<b>Heat Fuel</b>	
<b>Plumbing</b>	AVERAGE

### Condition & Grade

<b>Year Built</b>	1975
<b>Overall Condition</b>	Average
<b>Overall Grade</b>	Average

### Subareas

Code	Description	Gross Area	Living Area
BAS	First Floor	13,464	13,464
FUS	Upper Story, Finished	26,928	26,928
Total:		40,392	40,392

#### *Commercial Building Number 6, Section 1*

### Exterior

<b>Style</b>	APARTMENTS
<b>Occupancy</b>	AFFORDABLE APT
<b>Number of Stories</b>	3
<b>Exterior Wall Type</b>	BRICK
<b>Roof Material</b>	RUBBER-MEMBRAN
<b>Wall Height</b>	10
<b>Partitions</b>	AVERAGE

### Interior

<b>Living Area (sq. ft.)</b>	40,152
<b>Number of Units</b>	40

### Systems

<b>Heat Type</b>	HOT-WATER
<b>Heat Fuel</b>	
<b>Plumbing</b>	AVERAGE

**Condition & Grade**

<b>Year Built</b>	1975
<b>Overall Condition</b>	Average
<b>Overall Grade</b>	Average

**Subareas**

<b>Code</b>	<b>Description</b>	<b>Gross Area</b>	<b>Living Area</b>
BAS	First Floor	13,384	13,384
FUS	Upper Story, Finished	26,768	26,768
<b>Total:</b>		<b>40,152</b>	<b>40,152</b>

April 28, 2023

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: 102 Sherman Avenue  
 Assessor’s Map 203B, Lot 66 (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 102 Sherman Avenue (the “Special Permit Application”).<sup>2</sup>

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

<sup>2</sup> 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.

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 PUD-2 & Residence C-3A 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 Ramaker consisting of 10 pages dated 03/14/2022.

SHEET	TITLE	REV DATE
T1	Title Sheet	03/14/2022
GN-1	Notes and Specifications	03/14/2022
C1	Compound Plan	03/14/2022
C2	Elevation View	03/14/2022
C3	Antenna Layouts	03/14/2022
C4	Antenna Schedule	03/14/2022
A1	Construction Details	03/14/2022
A2	Plumbing Diagram	03/14/2022
G1-G2	Grounding Details	03/14/2022

4. Manufacturer’s specification sheets for AT&T’s proposed antennas and other featured equipment;

5. Photographs of the existing building and photo simulations of the proposed modifications Facility by Ramaker dated 03/14/2022.
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 Ramaker dated 02/08/2022.
8. Maximum Permissible Exposure Study, Theoretical Report, by Site Safe, dated 04/08/2022.
9. Letter of Authorization from Owner of Subject Property.
10. Deed to subject property; and
11. Attorney General's letters to the Towns of Mount Washington, Lynnfield, and Montague.

## **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 twelve (9) panel antennas (Alpha Sector: 3 antennas, Beta Sector: 3 antennas, and Gamma Sector: 3 antennas) that are mounted in three (3) locations. The proposed modifications include the replacement of nine (9) antenna, (3) per sector, which will be mounted to the building façade, and will have no visible change to the current Facility's design. Consistent with the concealment elements of the existing Facility's design, the new antenna will be located along with the existing equipment.

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 and photo simulations (Exhibit 5) show the existing Facility from various locations in the neighborhood around the Property and as simulated with proposed modifications. 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. 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,<sup>3</sup> as further implemented by the FCC Order.<sup>4</sup>

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 “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.

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<sup>3</sup> 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).

<sup>4</sup> 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.

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.<sup>5</sup> 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 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).”

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<sup>5</sup> *See* 47 CFR §§1.40001(c)(1) - (c)(4).

*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 either be mounted and located below the screen wall or utilize the existing equipment mounting frame that 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 located behind the existing

screen wall or utilize the existing mounting frame and will continue to integrate the Facility into the existing architecture of the building. . 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.<sup>6</sup>

### 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:<sup>7</sup>

**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 PUD-2 & Residence C-3A 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).

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<sup>6</sup> 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).

<sup>7</sup> 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.

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.”**

**AT&T’s Response:** The design of the overall Facility, including the choice and placement of replacement antennas and associated equipment, behind the existing screen wall or utilizing the existing mounting frame, minimizes the visual impact of the proposed Facility. This is because the any visible antennas and equipment will be minimally visible and consistent with the elements of the existing Facility. The minimal visual impact of the Facility is shown in the photographs of the existing Facility and the photosimulations that superimpose the proposed modifications to 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.<sup>8</sup> 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 Brookline 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. Further, by modifying its existing Facility, and obviating the need to construct an entirely new facility within this area of Cambridge in order to meet its wireless network coverage needs, of the residents, businesses, and general public.

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<sup>8</sup> 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.

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.**

**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 and photosimulations (*see* Exhibit 5) the proposed modifications to the existing Facility will result in a *de minimis* change in the appearance of the building. 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 PUD-2 & Residence C-3A 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 screen wall and within the building, or otherwise obstructed from view, and the remaining equipment utilizes the existing antenna mounting frame and blends with the structures and colors of the building to the extent feasible. The proposed modifications to the existing Facility are consistent with the previously approved 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 include<sup>9</sup>**

**(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 photosimulations (*see* Exhibit 5), the existing Facility, as proposed to be modified herein, will continue to be visually consistent with the color and

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

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.

**(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 be mounted behind the existing screen wall or on an existing antenna mounting frame already located on 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**

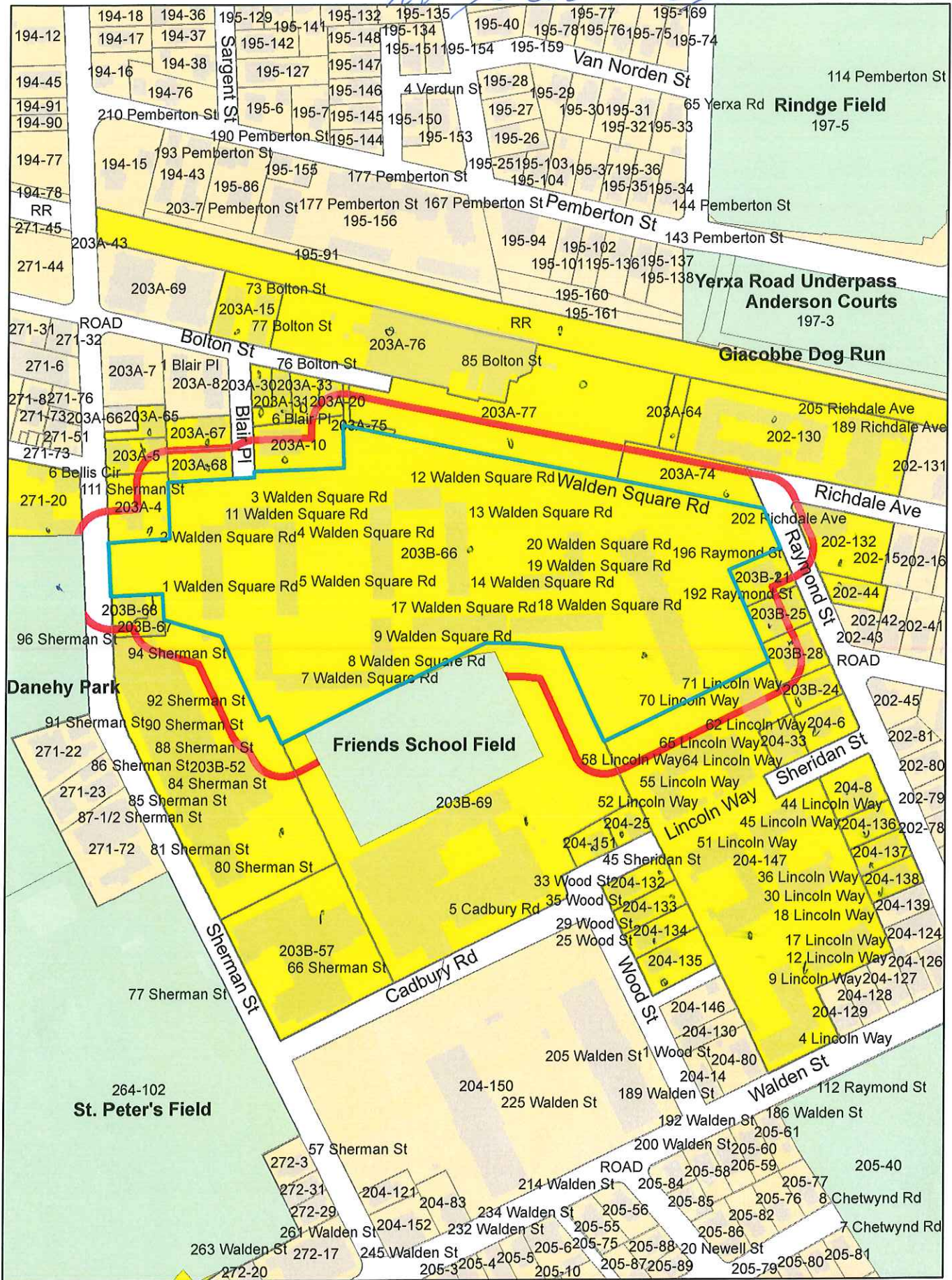
For the foregoing reasons AT&T respectfully requests that the Board to determine that pursuant to the Spectrum Act and the FCC Order, the Request constitutes and eligible facilities request and therefore AT&T's Request must be approved administratively, including the issuance of a building permit, without 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,

Carolyn Seeley  
Authorized Agent to New Cingular Wireless PCS, LLC ("AT&T")

cc: Jonathan T. Elder, Esq.

102 Sherman St.



102 Sherman St.

1045

Rehman

204-147  
CAMBRIDGE AFFORDABLE PRESIDENTIAL  
APARTMENTS LLC.  
362 GREEN STREET, 3RD FLOOR  
CAMBRIDGE, MA 02139

202-130  
VAILLANT, ELIZA  
129-205 RICHDALE AVE., #A/6  
CAMBRIDGE, MA 02140

SMARTLINK  
C/O CAROLYN SEELEY, AGENT  
85 RANGWAY ROAD - BLDG 3 SUITE 102  
NORTH BILLERICA, MA 01862

202-44  
NELSON, JEAN MARC  
189 RAYMOND ST  
CAMBRIDGE, MA 02140

202-130  
QI, QIN  
189 RICHDALE AVE UNIT #B-3  
CAMBRIDGE, MA 02140

202-130  
BERKEL, LINDA A.  
205 RICHDALE AVE., UNIT# A/16  
CAMBRIDGE, MA 02140

202-130  
HEACOCK, JOSHUA J.  
205 RICHDALE AVE UNIT A22  
CAMBRIDGE, MA 02140

202-130  
RAHMAN, MAHMOODUR & SAIRA S. YUNUS  
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DAVE, AKSHAY JYOTI.  
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202-130  
MCLENDON, CHRISTOPHER LEE &  
TING-TING WU MCLENDON  
205 RICHDALE AVE., #A/27  
CAMBRIDGE, MA 02140

202-132  
BOULANGER, SUSAN, JOHN TRAVIS &  
CITY OF CAMBRIDGE TAX TITLE  
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CAMBRIDGE, MA 02140

204-8  
NICRON, LLC  
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204-137  
WILSON, BRYAN P. & SYLVIA E. WILSON,  
TRS OF RAYMOND REALTY TRUST  
28 MUZZEY STREET  
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202-130  
ZEIN, HAIKEL  
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202-130  
SIZER, JUDITH R.  
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202-130  
ADAMJEE, RIAZ & SAEEDA TAHER CARRIMJEE  
205 RICHDALE AVE #A/13  
CAMBRIDGE, MA 02140

202-130  
MOSES, JOANNE C.  
205 RICHDALE AVE., #A-14  
CAMBRIDGE, MA 02140

202-130  
ASHAR, HIMADRAYA & SHALINI GAUTAM  
205 RICHDALE AVE. A/15  
CAMBRIDGE, MA 02140

202-130  
ROSENBLUM, DEBRA  
205 RICHDALE AVE., UNIT# A/17  
CAMBRIDGE, MA 02140

202-130  
GOYAL, BRAJESH & MEGHNA MITTAL  
205 RICHDALE AVE. UNIT A/21  
CAMBRIDGE, MA 02140

202-132  
KABIR, NURUL & NASIMA KHATOON  
202 RICHDALE AVE UNIT 3  
CAMBRIDGE, MA 02140

204-8  
NICRON, LLC  
50 HUNTERS RIDGE RD  
CONCORD, MA 01742

202-132  
KABIR, NURUL & NASIMA KHATOON  
202 RICHDALE AVE UNIT 2  
CAMBRIDGE, MA 02140

204-8  
HANSEN, RICHARD B., MYONG HUI HANSEN &  
SARAH K. HANSEN  
13812 N OLD FOREST TRL  
ORO VALLEY, AZ 85755

204-133  
ANDERSEN, ERIC RILEY &  
CAREY CAPONE ANDERSEN  
29-31 WOOD ST., #31/2  
CAMBRIDGE, MA 02140

202-130  
LUM, VICTOR.  
189 RICHDALE AVE., UNIT# B/5  
CAMBRIDGE, MA 02140

202-130  
UNGER, BARRY  
129-205 RICHDALE AVE., #B-9  
CAMBRIDGE, MA 02140

202-130  
SUN, CHICHENG  
205 RICHDALE AVE., #A/20  
CAMBRIDGE, MA 02140

202-130  
COWEN, ROBERT H. & LISA R. COWEN  
129-205 RICHDALE AVE. UNIT#A/23  
CAMBRIDGE, MA 02140

202-130  
CHEUNG, LO  
189 RICHDALE AVE., UNIT#B10  
CAMBRIDGE, MA 02139

202-130  
DOSS, DEBORAH S.  
189 RICHDALE AVE., #B-11  
CAMBRIDGE, MA 02140-3338

204-8  
NICRON, LLC,  
C/O RYAN HUNT  
11 ELKINS STREET APT # 250  
BOSTON, MA 02127

204-132  
SHEA, ED & BROOKSANY COE  
33 WOOD ST  
CAMBRIDGE, MA 02140

204-133  
ROUHANI, PARISA & HOUTAN SADAFI  
33 BEDFORD ST  
BURLINGTON, MA 01803

203A-5  
WOOLFE, CAROL  
10 BRANDYWYNE  
WAYLAND, MA 01778

203A-15  
DESJARDINS, ANNE M.  
77A BOLTON ST  
CAMBRIDGE, MA 02140

203A-33  
WESTON, SYLVIA  
78 BOLTON ST.  
CAMBRIDGE, MA 02140-3321

203B-69  
CAMBRIDGE FRIENDS SCHOOL INC  
5 CADBURY RD  
CAMBRIDGE, MA 02140

203B-67  
SEUFERT, THOMAS S. & CAROLYN F. FISHER  
98R SHERMAN ST  
CAMBRIDGE, MA 02140

203A-4  
CAMBRIDGE ELECTRIC LIGHT CO  
C/O NSTAR CO  
P.O. BOX 270  
HARTFORD, CT 06141-0270

203A-15  
NAZIWA, CATHERINE & STEPHEN BABUMBA  
71 BOLTON ST., UNIT #71  
CAMBRIDGE, MA 02138

203A-15  
HICKEY, KATHLEEN M.  
73 BOLTON ST., UNIT #73A  
CAMBRIDGE, MA 02138

203A-20  
LOWER, CHARLES B. & MICHELLE K. LOWER  
80 BOLTON ST  
CAMBRIDGE, MA 02140

203A-76  
BOLTON STREET PARTNERS, LLC.  
181 DUDLEY RD  
NEWTON, MA 02459-2884

203B-57  
CJK SHERMAN LIMITED PARTNERSHIP C/O CWA  
66 SHERMAN ST.  
CAMBRIDGE, MA 02140-3527

203A-10  
6 BLAIR PLACE, LLC  
C/O HIGH ST. PROPERTY MGMT CORP  
92 HIGH ST. SUITE 22  
MEDFORD, MA 02155

203A-15  
OLUWOLE, BANKE  
73B BLOTON STREET  
CAMBRIDGE, MA 02140

203A-15  
FIGUEROA, MIRIAM J.  
75 BOLTON ST., #75B  
CAMBRIDGE, MA 02140

203A-64  
CAMBRIDGE REDEVELOPMENT AUTHORITY  
255 MAIN ST., 4TH FLOOR  
CAMBRIDGE, MA 02142

203A-68  
BASILE, MARILYN  
9 BLAIR PL.  
CAMBRIDGE, MA 02140

203A-5  
FITZPATRICK, BRIAN A.  
116 SHERMAN ST., UNIT 120.5  
CAMBRIDGE, MA 02140

203B-66  
WSQ LIMITED PARTNERSHIP  
C/O WINN RESIDENTIAL  
ONE WASHINGTON MALL, SUITE 500  
BOSTON, MA 02108

203B-68  
DINARDO, VALERIE J.  
98-100 SHERMAN ST  
CAMBRIDGE, MA 02140

203A-5  
GANGAL, PUNEET GEETI GANGAL TRS  
25 ANNAWAN RD  
WABAN, MA 02468

203A-5  
KASHINATH, ABISHEK & SRRUTHI MALLIK  
116 SHERMAN ST., #120  
CAMBRIDGE, MA 02140

203A-15  
CHARLES, MARIE R.  
75 BOLTON ST., #75A  
CAMBRIDGE, MA 02140

203A-15  
RETTA, GIRUM & ALEMMTSEHAY MEKONNEN  
77B BOLTON ST  
CAMBRIDGE, MA 02139

203A-30  
EVANS MARY E. & JOHN S. EVANS  
74 BOLTON ST  
CAMBRIDGE, MA 02140

102 Sherman St

3 of 5

203B-21  
BERTOLI, LEONARD  
58 TRENTON ST.  
MELROSE, MA 02176

203B-52  
KERNOCHAN, JOHN A.,  
TR. OF BRICKYARD REALTY TRUST  
HAMMOND PROPERTY MGMT  
TWO BRATTLE SQ  
CAMBRIDGE, MA 02138

271-20  
KIM, JENNIFER Y. & LAWRENCE K. KIM  
1 BELLIS CT. UNIT A  
CAMBRIDGE, MA 02140

271-20  
GILL, RICHARD J. & SUZAN E. WOLPOW  
111 SHERMAN ST UNIT E  
CAMBRIDGE, MA 02140

271-20  
KERAMARIS, JOHN & NICHOLAS KERAMARIS  
111 SHERMAN ST., #F  
CAMBRIDGE, MA 02140

271-20  
ROWLANDS, DAVID JOHN & MARIANNA  
PAPASPYRIDONOS  
2 BELLIS COURT  
CAMBRIDGE, MA 02140

271-20  
SUN, GERALD & TING FENG  
111 SHERMAN STREET UNIT C  
CAMBRIDGE, MA 02138

271-20  
WEITZMAN, CATHERINE EZELL AND  
ARTHUR J. WEITZMAN  
4 JOHN F. BELLIS CT  
CAMBRIDGE, MA 02140

202-130  
LIPPERT, SARAH A.  
205 RICHDALE AVE. UNIT#A9  
CAMBRIDGE, MA 02140

204-25  
APPLEWHITE, BROOKS PUCHNER & DINAH P  
APPLEWHITE  
41 SHERIDAN ST  
CAMBRIDGE, MA 02140

204-136  
GIVON, LIOR  
156 RAYMOND ST. UNIT#2  
CAMBRIDGE, MA 02138

203A-67  
GRABINER, ELLEN  
7 BLAIR PL., UNIT #1  
CAMBRIDGE, MA 02139

203A-67  
NEWMAN, AARON W. & LISA A. LASSNER  
7 BLAIR PL., #2  
CAMBRIDGE, MA 02140

203B-24  
BENSON, ANDREW C.  
180 RAYMOND ST., #2  
CAMBRIDGE, MA 02140

203B-28  
STANTON, GARY L. &  
REBECCA HANDALI STANTON  
184 RAYMOND ST., #5  
CAMBRIDGE, MA 02139

203A-74  
CITY OF CAMBRIDGE  
795 MASSACHUSETTS AVE  
CAMBRIDGE, MA 02139

203B-24  
FERRER, DOUGLAS W.  
180 RAYMOND ST, UNIT #1  
CAMBRIDGE, MA 02140

203B-28  
SANDRASEGARAN, KUMARESAN & RUKSHINI  
SANDRASEGARAN  
184 RAYMOND ST UNIT 2  
CAMBRIDGE, MA 02140

204-135  
YU, VIONNIE  
21-23 WOOD ST., UNIT #3  
CAMBRIDGE, MA 02141

204-135  
HELDMAN, NIMROD & HADAS HELDELMAN  
21 WOOD ST., #2  
CAMBRIDGE, MA 02141

204-138  
KENNY, TARA L. & BRANDON T. JAMES  
148-150 RAYMOND ST., #148  
CAMBRIDGE, MA 02140

204-138  
SPEK, ERIK J. & SONJIA J. KENNY  
150 RAYMOND STREET, UNIT 150  
CAMBRIDGE, MA 02139

204-33  
BATTLE, JEREMY D. & JESSICA L. PARKER-BATTLE  
5 WOOD ST #3  
CAMBRIDGE, MA 02140

204-33  
CHAN, JUSTIN H. & FLORENCE Y. ONG  
162 SLOCUM CRESCENT  
FOREST HILLS, NY 11375

204-33  
CATTERUCCIA, FLAMINIA  
68 LINE ST., #3  
SOMERVILLE, MA 02143

204-6  
MASFERRER, JAIME L. & ROSSANA SCIOLLA TRS.,  
MASFERRER-SCIOLLA REV. LIV. TRS  
176-178 RAYMOND ST., #176  
CAMBRIDGE, MA 02140

203B-25  
WANG, QI  
192 RAYMOND ST. UNIT 4  
CAMBRIDGE, MA 02140

203B-25  
CAVALIERE, SEAN P.  
192 RAYMOND ST. UNIT 7  
CAMBRIDGE, MA 02140

203B-25  
WEINTRAUB, JUSTIN S.  
192 RAYMOND ST., #5  
CAMBRIDGE, MA 02140

203B-25  
O'FARRELL, MICHAEL P.  
192 RAYMOND ST. UNIT 8  
CAMBRIDGE, MA 02140



102 Sherman St

#95

202-130  
SIRCAR, MONICA  
205 RICHDALE AVENUE UNIT A/26  
CAMBRIDGE, MA 02140

203B-28  
HUANG, ZEN SOUN SHU CHEN HUANG, TRS  
76 PHILLIPS CIR  
WALTHAM, MA 02452

204-136  
POSNER, CHARLES & KELSEY KEITH POSNER  
156-158 RAYMOND ST UNIT 1  
CAMBRIDGE, MA 02138

204-135  
FURR, RENEE & WILLIAM FURR  
21-23 WOOD STREET 1  
CAMBRIDGE, MA 02141

202-130  
DEMOTT, SARAH  
189 RICHDALE AVE UNIT B/8  
CAMBRIDGE, MA 02140

202-130  
ANTONUCCIO, ROBERT M.  
JEANETTE L. ANTONUCCIO, TRS  
126 ABONDANCE DR  
PALM BEACH GARDENS, FL 33410

203B-25  
CROWE BENJAMIN SMITH-CROWE KRISTIN  
192 RAYMOND ST UNIT 3  
CAMBRIDGE, MA 02140

203B-28  
CUSHING, KAREN B.,  
TRS WILLIAM D. B. LOOS, TRS  
184 RAYMOND ST UNIT 6  
CAMBRIDGE, MA 02140

203B-25  
KIM MISO  
192 RAYMOND ST #2  
CAMBRIDGE, MA 02140

202-130  
DAROM NIR & NAOMI DAROM  
189 RICHDALE AVE - UNT B-7  
CAMBRIDGE, MA 02140

202-130  
GHASSEM-ZADEH, SEAN AMIR  
SHANA LEIGH WICKETT  
205 RICHDALE AVE, UNIT A/11  
CAMBRIDGE, MA 02140

204-33  
QI, QI  
2 PEABODY TER. UNIT 901  
CAMBRIDGE, MA 02138

203B-25  
TRYZELAAR LIESBETH  
192 RAYMOND ST - UNIT 1  
CAMBRIDGE, MA 02140

202-130  
YAMIN, M. JEREMY ALICIA ELY YAMIN  
205 RICHADALE AVE UNIT A-12  
CAMBRIDGE, MA 02140

203A-31  
D'AGATA CAITLIN G. ANDREW M. CRIPPS  
76 BOLTON ST  
CAMBRIDGE, MA 02140

203B-28  
KOUL, ASHISH & DEEPALI DHAR  
310 WEST 120TH ST  
NEW YORK, NY 10026

202-130  
WOLFE, JUSTIN LINDA LIU  
161 FAYERWEATHER ST #2  
CAMBRIDGE, MA 02138

202-130  
GEIGER, KATHRYN A.,  
TRS THE KATHRYN A. GEIGER REV TRUST  
205 RICHDALE AVE UNIT A-19  
CAMBRIDGE, MA 02140

203B-25  
HSU, KEVIN T. STEPHANIE L. HSU  
192 RAYMOND ST UNIT #6  
CAMBRIDGE, MA 02140

203A-65  
STECHER RYAN G WEI SIQI  
122 SHERMAN ST - UNIT 1  
CAMBRIDGE, MA 02140

202-130  
PRESTON DESMOND J  
205 RICHDALE AVE - UNIT A-1  
CAMBRIDGE, MA 02140

202-130  
SHANAHAN CHRISTOPHER &  
CATHERINE SHANAHAN TRS  
46 STOCKBRIDGE ST  
COHASSET, MA 02025

203A-65  
STECHER, RYAN G. & SIQI WEI  
122 SHERMAN ST - UNIT 1  
CAMBRIDGE, MA 02140

204-6  
MAKARIOUS MINA S  
DANIELLE D MAKARIOUS TRS  
178 RAYMOND ST  
CAMBRIDGE, MA 02140

204-133  
DIENER SANDRA R  
TRS THE 2021 SANDRA R DIENER TR  
31 WOOD ST  
CAMBRIDGE, MA 02140

204-151  
BONDER JULIAN N  
45 SHERIDAN ST  
CAMBRIDGE, MA 02140

202-130  
BARTHOLOMEW MELISSA  
EDWARD P BARTHOLOMEW  
189 RICHDALE AVE - B-13  
CAMBRIDGE, MA 02140

202-130  
STAHL KAREN E TRS THE PAPER BIRCH TR  
189 RICHDALE AVE - UNIT B-1  
CAMBRIDGE, MA 02140

203A-77  
WALDEN STREET PARTNERS LLC  
181 DUDLEY RD  
NEWTON, MA 02459

204-134  
JOHNSON, VIJAY  
11 GRANTON PARK  
ARLINGTON, AL 02474

100 Sherman St.

595

202-130  
GUSTAVSSON, SIMON MCQUIGHAN KELLY  
TRS 189 RICHDALE AVE -UNIT B12  
CAMBRIDGE, MA 02140

202-130  
WOSS, GREGERY  
205 RICHDALE AVE - UNIT A-10  
CAMBRIDGE, MA 02140

202-130  
LOPEZ, ANTONIO SANTIAGO IBANEZ  
205 RICHDALE AVE - UNIT #A4  
CAMBRIDGE, MA 02140

202-130  
MASON, STEFANIE & SEBASTIAN EASTHAM  
205 RICHDALE AVE - UNIT A-25  
CAMBRIDGE, MA 02140

203B-28  
JAYARAM, HARIHARAN GEETA ATHALYE TRS  
91 SHERMAN ST - UNIT 6  
CAMBRIDGE, MA 02140

202-130  
LI, ANNE LING TRS THE ANNE LING LI TR  
205 RICHDALE AVE - UNIT A-18  
CAMBRIDGE, MA 02140

264-102 & 203A-75  
CITY OF CAMBRIDGE  
C/O YI-AN HUANG  
CITY MANAGER

264-102  
CAMBRIDGE CITY OF PWD  
147 HAMPSHIRE ST  
CAMBRIDGE, MA 02139

203A-75 & 264-102  
CITY OF CAMBRIDGE  
C/O NANCY GLOWA  
CITY SOLICITOR

BOSTON & MAIN RAILROAD  
IRON HORSE PARK  
N. BILLERICA, MA 01862