BZA APPLICATION FORM

GENERAL INFORMATION

BZA-216930

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: 1815 Massachusetts Avenue

TYPE OF OCCUPANCY: Private College, University **ZONING DISTRICT:** Business C / Basement Housing

CITY CLERK'S OFFICE CAMBRIDGE, MASSACHUSETTS 2023 MAR 13 P 1:55

REASON FOR PETITION:

_____ Additions

_____ Change in Use/Occupancy

_____ Conversion to Addi'l Dwelling Unit's

_____ Dormer

✓ Other: Wireless Communications Facility upgrade

_____ New Structure

_____ Parking

_____ Sign

_____ Subdivision

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 and to replace (6) remote radio units with (6) new remote radio units and its associated cabling.

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

Date: 3/29/2023

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 Lesley University (OWNER)

Address: 29 Everett Street, Cambridge, Mass. 02138

State that I/We own the property located at 1815 Massachusetts Ave, Cambridge, Ma. 02140 which is the subject of this zoning application.

The record title of this property is in the name of Lesley University

*Pursuant to a deed of duly recorded in the date January 31, 1946 Middlesex South County Registry of Deeds at Book 7053, Page 401; or Middlesex Registry District of Land Court, Certificate No. _____

Book _____ Page _____.

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

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

Commonwealth of Massachusetts, County of Middlesex

The above-name Joanne Kossuth personally appeared before me, this 10th of April, 2023, and made oath that the above statement is true.

Notary

My commission expires _____ (Notary Seal).

Lisa M. Krouch
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
October 16, 2026

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

OWNERSHIP CERTIFICATE

Project Address: **Application Date:**

This form is to be completed by the property owner, signed, and submitted with the Special Permit Application:

I hereby authorize the following Applicant: AT&T Site MAL02243/10072079
at the following address: 1815 Massachusetts Ave, Cambridge, Ma. 02140
to apply for a special permit for: Modification of the Antenna Facilities
on premises located at: 1815 Massachusetts Ave., Cambridge, Ma. 02140
for which the record title stands in the name of: Lesley University
whose address is: 29 Everett Street, Cambridge, Ma. 02138

by a deed duly recorded in the:

Registry of Deeds of County: Middlesex Book: 7053 Page: 401

OR Registry District of the Land Court, Certificate No.: Book: Page:

Joanne Kossuth Chief Operations Officer

Signature of Land Owner (If authorized Trustee, Officer or Agent, so identify)

To be completed by Notary Public:

Commonwealth of Massachusetts, County of Middlesex

The above named Joanne Kossuth personally appeared before me,

on the month, day and year October 20, 2022 and made oath that the above statement is true.

Notary: [signature]

My Commission expires:

Lisa M. Krouch
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
October 16, 2026

Lisa M. Krouch
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
October 16, 2026

March 31, 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

Applicant:	New Cingular Wireless PCS, LLC ("AT&T")
Property Address:	840 Memorial Drive AKA 18 Blackstone Street Assessor's Map 129, Lot 58 (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 840 Memorial Drive AKA 18 Blackstone Street (the "Special Permit Application").[2]

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

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

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 11 pages dated 04/6/2022.

SHEET	TITLE	REV DATE
T1	Title Sheet	04/06/2022
GN-1	Notes and Specifications	04/06/2022
C1	Compound Plan	04/06/2022
C2	Elevation View	04/06/2022
C3	Antenna Layouts	04/06/2022
C4	Antenna Schedule	04/06/2022
A1-A2	Construction Details	04/06/2022
A3	Plumbing Diagram	04/06/2022
G1-G2	Grounding Details	04/06/2022

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 07/22/2022.

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 04/06/2022.

8. Maximum Permissible Exposure Study, Theoretical Report, by MobileComm, dated 07/28/2020.

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 (12) panel antennas (Alpha Sector: 4 antennas, Beta Sector: 4 antennas, and Gamma Sector: 4 antennas) that are mounted in three (3) locations. The proposed modifications include the replacement of twelve (12) antenna, (4) per sector, which will be mounted to the building façade, and will have no visible change to the current Facility's design. Six (6) remote radio-head units (RRU) will be added in close proximity to the antenna. Consistent with the concealment elements of the existing Facility's design, the new antenna and RRU 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,[3] as further implemented by the FCC Order.[4]

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

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

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

47 U.S.C. § 1455(a)(2).

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

FCC Order, ¶ 88.

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

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

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

due to "the more restricted scope of review applicable to applications under section 6409(a)." *FCC Order*, ¶ 108. If the Request is not acted upon within the 60-day period, it is deemed granted. 47 CFR §1.40001(c)(4).

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

VI. THE PROPOSED MODIFICATIONS ARE AN ELIGIBLE FACILITIES REQUEST

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

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

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

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

(i) Result in an increase in "the height of the structure by more than 10% or more than ten feet, whichever is greater" because the proposed replacement antennas will 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.[6]

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

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

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

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

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

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

2. **The Board of Zoning Appeal shall consider "[t]he extent to which the visual impact of the various elements of the proposed facility is minimized: (1) through the use of existing mechanical elements on the building's roof or other features of the building as support and background, (2) through the use in materials that in texture and color blend with the materials to which the facilities are attached, or (3) other effective means to reduce the visual impact of the facility on the site."**

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.[8] AT&T also seeks to substantially improve its ability to satisfy the ever-increasing need of its customers for data accessibility, navigation and use. This is especially critical in and around the area of 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

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

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.

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[9]

(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.

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

(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 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:** RES-&-DEV-FC

LOCATION: 1815 Massachusetts Avenue **ZONE:** Business C, Basement Housing

PHONE: 978-760-5577 **REQUESTED USE/OCCUPANCY:** N/A

		EXISTING CONDITIONS	*REQUESTED CONDITIONS*	*ORDINANCE REQUIREMENTS*[1]	
TOTAL GROSS FLOOR AREA:		0	0	0	(max.)
LOT AREA:		0		0	(min.)
RATIO OF GROSS FLOOR AREA TO LOT AREA:[2]		0	0	0	(max.)
LOT AREA FOR EACH DWELLING UNIT:		0	0	0	(min.)
SIZE OF LOT:	WIDTH	0		0	(min.)
	DEPTH				
Setbacks in Feet:	FRONT	0	0	0	(min.)
	REAR	0	0	0	(min.)
	LEFT SIDE	0	0	0	(min.)
	RIGHT SIDE	0	0	0	(min.)
SIZE OF BLDG.:	HEIGHT	0	0	0	(max.)
	LENGTH				
	WIDTH				
RATIO OF USABLE OPEN SPACE TO LOT AREA:[3])		0	0	0	(min.)
NO. OF DWELLING UNITS:		0	0	0	(max.)
NO. OF PARKING SPACES:		0	0	0	(min./max)
NO. OF LOADING AREAS:		0	0	0	(min.)
DISTANCE TO NEAREST BLDG. ON SAME LOT:		0	0	0	(min.)

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

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

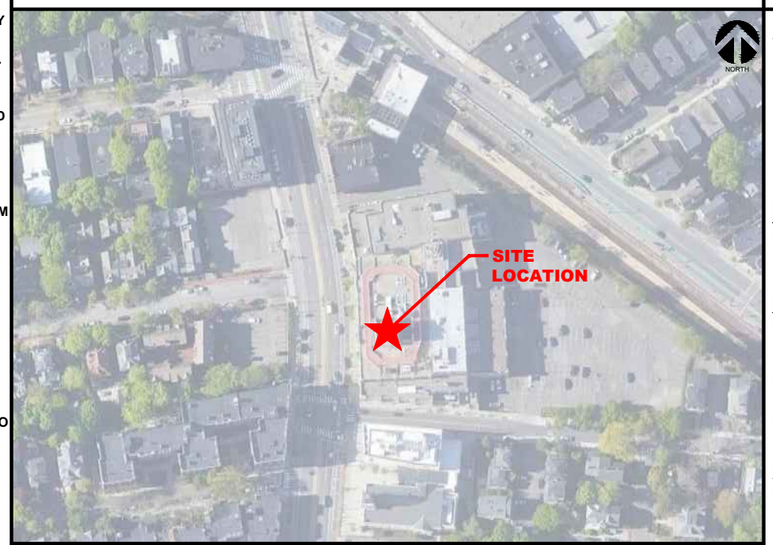
PROJECT NOTES:

1. SITE INFORMATION OBTAINED FROM THE FOLLOWING:
   A. PLAN ENTITLED "CAMBRIDGE MASS AVE." PREPARED BY INFINIGY OF ALBANY, NY LAST REVISED 10/16/2019.
   B. LIMITED FIELD OBSERVATION BY RAMAKER ON 05/04/2021.
2. THE CONTRACTOR SHALL COMPLY WITH ALL APPLICABLE CODES, ORDINANCES, LAWS AND REGULATIONS OF ALL MUNICIPALITIES, UTILITY COMPANIES OR OTHER PUBLIC/GOVERNING AUTHORITIES.
3. THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL PERMITS AND INSPECTIONS THAT MAY BE REQUIRED BY ANY FEDERAL, STATE, COUNTY OR MUNICIPAL AUTHORITIES.
4. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER, IN WRITING, OF ANY CONFLICTS, ERRORS OR OMISSIONS PRIOR TO THE SUBMISSION OF BIDS OR PERFORMANCE OF WORK.
5. THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROTECTING ALL EXISTING SITE IMPROVEMENTS PRIOR TO COMMENCING CONSTRUCTION. THE CONTRACTOR SHALL REPAIR ANY DAMAGE AS A RESULT OF CONSTRUCTION OF THIS FACILITY AT THE CONTRACTOR'S EXPENSE TO THE SATISFACTION OF THE OWNER.
6. THE SCOPE OF WORK FOR THIS PROJECT SHALL INCLUDE PROVIDING ALL MATERIALS, EQUIPMENT AND LABOR REQUIRED TO COMPLETE THIS PROJECT. ALL EQUIPMENT SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS.
7. THE CONTRACTOR SHALL VISIT THE PROJECT SITE PRIOR TO SUBMITTING THE BID TO VERIFY THAT THE PROJECT CAN BE CONSTRUCTED IN ACCORDANCE WITH THE CONTRACT DOCUMENTS AND CONSTRUCTION DRAWINGS.
8. THE CONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THESE DRAWINGS MUST BE VERIFIED. THE CONTRACTOR SHALL NOTIFY THE CONSTRUCTION MANAGER OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
9. SINCE THE CELL SITE MAY BE ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE REQUIRED TO BE WORN TO ALERT OF ANY POTENTIALLY DANGEROUS EXPOSURE LEVELS.
10. THE PROPOSED FACILITY WILL CAUSE NO INCREASE IN STORM WATER RUNOFF, THEREFORE, NO DRAINAGE STRUCTURES ARE PROPOSED.
11. NO NOISE, SMOKE, DUST OR ODOR WILL RESULT FROM THIS FACILITY AS TO CAUSE A NUISANCE.
12. THE FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION (NO HANDICAP ACCESS IS REQUIRED).
13. THE FACILITY DOES NOT REQUIRE POTABLE WATER OR SANITARY SERVICE.
14. CONTRACTOR SHALL VERIFY ANTENNA ELEVATION AND AZIMUTHS WITH RF ENGINEERING PRIOR TO INSTALLATION.
15. THE TOWER, MOUNTS AND ANTENNAS SHALL BE DESIGNED TO MEET EIA/TIA-222-G AS PER IBC REQUIREMENTS.
16. ALL STRUCTURAL ELEMENTS SHALL BE HOT DIPPED GALVANIZED STEEL.
17. CONTRACTOR MUST FIELD LOCATE ALL EXISTING UNDERGROUND UTILITIES PRIOR TO ANY EXCAVATION.
18. CONSTRUCTION SHALL NOT COMMENCE UNTIL COMPLETION OF A PASSING STRUCTURAL ANALYSIS CERTIFIED BY A LICENSED PROFESSIONAL ENGINEER. THE STRUCTURAL ANALYSIS IS TO BE PERFORMED BY OTHERS.
19. CONTRACTOR SHALL CONTACT STATE SPECIFIC ONE CALL SYSTEM THREE WORKING DAYS PRIOR TO ANY EARTH MOVING ACTIVITIES.

at&t

SITE NAME: CAMBRIDGE MASS. AVE
FA NUMBER: 10072079
SITE NUMBER: MAL02243
ADDRESS: 1815 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
SCOPE: 5G NR - MRCTB052148 (2101A101NN), BBU - MRCTB050995 (2101A0Z7MT), 5G NR - MRCTB051339 (2101A0Z862), 4TXRX - MRCTB051482 (2101A0Z7WV), 5G NR - MRCTB051372 (2101A0Z7ZW)

AERIAL MAP:



CODE COMPLIANCE:

ALL WORK SHALL BE PERFORMED AND MATERIALS INSTALLED IN ACCORDANCE WITH THE CURRENT EDITIONS OF THE FOLLOWING CODES AS ADOPTED BY THE LOCAL GOVERNING AUTHORITIES. NOTHING IN THESE PLANS IS TO BE CONSTRUED TO PERMIT WORK NOT CONFORMING TO THESE CODES.

1. 9TH EDITION OF THE MA STATE BUILDING CODE
2. 2015 INTERNATIONAL BUILDING CODE
3. 2015 INTERNATIONAL MECHANICAL CODE
4. ANSI/TIA-222-G STRUCTURAL STANDARD

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PROJECT INFORMATION:

SITE INFORMATION:
LATITUDE: 42.3869911° N
LONGITUDE: -71.1190000° W
JURISDICTION: MIDDLESEX COUNTY

APPLICANT/LESSEE:
COMPANY: AT&T
ADDRESS: NEW ENGLAND MARKET

PROPERTY OWNER:
PROPERTY OWNER: LESLEY UNIVERSITY
29 EVERTT STREET
CAMBRIDGE, MA 02138

REAL ESTATE:
COMPANY: SMARTLINK, LLC
ADDRESS: 85 RANGEWAY ROAD
BUILDING 3, SUITE 102
CITY, STATE, ZIP: NORTH BILLERICA, MA 01862
CONTACT: EVAN GIANNAKAS
E-MAIL: EVAN.GIANNAKAS@SMARTLINKGROUP.COM

CONSTRUCTION MANAGER:
COMPANY: SMARTLINK, LLC
ADDRESS: 85 RANGEWAY ROAD
BUILDING 3, SUITE 102
CITY, STATE, ZIP: NORTH BILLERICA, MA 01862
CONTACT: EVAN GIANNAKAS
E-MAIL: EVAN.GIANNAKAS@SMARTLINKGROUP.COM

ENGINEER:
COMPANY: RAMAKER & ASSOCIATES, INC.
ADDRESS: 855 COMMUNITY DRIVE
CITY, STATE, ZIP: SAUK CITY, WI 53583
CONTACT: ANGELA KVALHEIM
E-MAIL: AKVALHEIM@RAMAKER.COM

PROJECT DESCRIPTION/ SCOPE OF WORK

- REMOVE (3) EXISTING RRUS-11 B2 RRUs, (1) PER SECTOR
- REMOVE (3) EXISTING 4478 B5 RRUs, (1) PER SECTOR
- REMOVE (6) EXISTING RRUS-12 B2 RRUs, (2) PER SECTOR
- REMOVE (6) EXISTING DBC0061F1V51-2 DIPLEXERS, (2) PER SECTOR
- REMOVE (5) EXISTING DTMABP7819VG12A TMAs
- REMOVE (3) EXISTING ANDREW SBNHH-1D85A ANTENNAS, (1) PER SECTOR
- REMOVE (3) EXISTING KMW EPBQ-65L8H6-L2 ANTENNAS, (1) PER SECTOR
- REMOVE (3) EXISTING COMMSCOPE SBNHH-1D65AANTENNAS, (1) PER SECTOR
- REMOVE (4) DC TRUNKS
- REMOVE (3) DC6-48-60-08F SQUIDS, (1) PER SECTOR
- REMOVE (2) DC6-48-6018-8F SQUIDS
- INSTALL (3) NEW 4415 B25 RRUs, (1) PER SECTOR
- INSTALL (3) NEW 4449 B5/B12 RRUs, (1) PER SECTOR
- INSTALL (3) NEW QUINTEL QD6616-7 ANTENNAS, (1) PER SECTOR
- INSTALL (3) NEW ERICSSON AIR6449 N77D + (3) AIR6419 N77G STACKED ANTENNAS, (1) EACH PER SECTOR
- INSTALL (3) NEW CCI DMP65R-BU6DA ANTENNAS, (1) PER SECTOR
- INSTALL (3) NEW NEMA BOX STYLE DC9
- INSTALL (3) -48V RECTIFIERS
- INSTALL (3) NEW SAWG DC POWER CABLES
- ADD FRONTHAUL GATEWAY (FHG) 6648
- ADD (3) Y CABLES FOR DUAL BAND RADIO
- DECOM UMTS AND REMOVE UNUSED LINE ELEMENTS

PROPOSED PROJECT SCOPE BASED ON RFDS
ID# 4396806, VERSION 6.0, LAST UPDATED 03/22/2022.

SHEET INDEX

SHEET NUMBER	SHEET DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES
C-1	COMPOUND PLAN
C-2	EQUIPMENT LAYOUT PLAN
C-3	ANTENNA LAYOUTS
C-4	ANTENNA SCHEDULE
A-1	CONSTRUCTION DETAILS
A-2	CONSTRUCTION DETAILS
A-3	RF PLUMBING DIAGRAM
G-1	GROUNDING DETAILS
G-2	GROUNDING DETAILS

at&t

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

RAMAKER
employee-owned
(608) 643-4100 www.ramaker.com

Certification & Seal:
I hereby certify that this plan, specification, or report was prepared by me or under my direct supervision and that I am a duly Licensed Professional Engineer under the laws of the State of Massachusetts.

COMMONWEALTH OF MASSACHUSETTS
JEFFREY ZANDER
STRUCTURAL
No. 55191
REGISTERED
PROFESSIONAL ENGINEER

Registered Structural Engineer Signature: 4/19/2022 Date:

MARK	DATE	DESCRIPTION
2	04/19/22	FINAL FOR CONSTRUCTION
1	03/04/22	FINAL CDs ISSUED
0	02/03/22	CDs ISSUED FOR REVIEW

ISSUE PHASE: FOR CONSTRUCTION DATE ISSUED: 04/19/2022

PROJECT TITLE:
CAMBRIDGE MASS. AVE
FA# 10072079
SITE# MAL02243

PROJECT INFORMATION:
1815 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
MIDDLESEX COUNTY

SHEET TITLE:
TITLE SHEET

SCALE: NONE

PROJECT NUMBER: 51642
SHEET NUMBER: T-1

DRAWN BY: AEM CHECKED BY: AJK

GENERAL NOTES:

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.
2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.
3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND FOR GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5O HMS OR LESS.
4. THE SUBCONTRACTOR IS RESPONSIBLE FOR PROPERLY SEQUENCING GROUNDING AND UNDERGROUND CONDUIT INSTALLATION AS TO PREVENT ANY LOSS OF CONTINUITY IN THE GROUNDING SYSTEM OR DAMAGE TO THE CONDUIT.
5. METAL CONDUIT AND TRAY SHALL BE GROUNDED AND MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH #6 AWG COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.
6. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.
7. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE EQUIPMENT GROUND RING WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS; 2 AWG STRANDED COPPER FOR OUTDOOR BTS.
8. CONNECTIONS TO THE GROUND BUS SHALL NOT BE DOUBLED UP OR STACKED. BACK TO BACK CONNECTIONS ON OPPOSITE SIDES OF THE GROUND BUS ARE PERMITTED.
9. ALL EXTERIOR GROUND CONDUCTORS BETWEEN EQUIPMENT/GROUND BARS AND THE GROUND RING, SHALL BE #2 AWG SOLID TINNED COPPER UNLESS OTHERWISE INDICATED.
10. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.
11. USE OF 90° BENDS IN THE PROTECTION GROUNDING CONDUCTORS SHALL BE AVOIDED WHEN 45° BENDS CAN BE ADEQUATELY SUPPORTED. ALL BENDS SHALL BE MADE WITH 12" RADIUS OR LARGER.
12. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.
13. ALL GROUND CONNECTIONS ABOVE GRADE (INTERIOR) SHALL BE FORMED USING HIGH PRESS CRIMPS EXCEPT FOR GROUND BAR CONNECTION FROM MGB TO OUTSIDE EXTERIOR GROUND SHALL ALL BE CADWELD CONNECTIONS.
14. COMPRESSION GROUND CONNECTIONS MAY BE REPLACED BY EXOTHERMIC WELD CONNECTIONS.
15. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED TO THE TOWER GROUND BAR.
16. APPROVED ANTIOXIDANT COATINGS (I.E. CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.
17. ALL EXTERIOR AND INTERIOR GROUND CONNECTIONS SHALL BE COATED WITH A CORROSION RESISTANT MATERIAL.
18. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.
19. BOND ALL METALLIC OBJECTS WITHIN 6 FT OF MAIN GROUND WIRES WITH 1-#2 AWG TIN-PLATED COPPER GROUND CONDUCTOR.
20. GROUND CONDUCTORS USED IN THE FACILITY GROUND AND LIGHTNING PROTECTION SYSTEMS SHALL NOT BE ROUTED THROUGH METALLIC OBJECTS THAT FORM A RING AROUND THE CONDUCTOR, SUCH AS METALLIC CONDUITS, METAL SUPPORT CLIPS OR SLEEVES THROUGH WALLS OR FLOORS. WHEN IT IS REQUIRED TO BE HOUSED IN CONDUIT TO MEET CODE REQUIREMENTS OR LOCAL CONDITIONS, NON-METALLIC MATERIAL SUCH AS PVC PLASTIC CONDUIT SHALL BE WHERE USE OF METAL CONDUIT IS UNAVOIDABLE (E.G. NON-METALLIC CONDUIT PROHIBITED BY LOCAL CODE) THE GROUND CONDUCTOR SHALL BE BONDED TO EACH END OF THE METAL CONDUIT.
21. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/4" IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50.
22. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:
    CONTRACTOR - SMARTLINK
    SUBCONTRACTOR - GENERAL CONTRACTOR (CONSTRUCTION)
    OWNER - AT&T (NEW CINGULAR WIRELESS PCS, LLC)
23. ALL SITE WORK SHALL BE COMPLETED AS INDICATED ON THE DRAWINGS AND PROJECT SPECIFICATIONS.
24. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.
25. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK.
26. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.
27. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.
28. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.
29. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.
30. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.
31. THE SUBCONTRACTOR SHALL CONTACT UTILITY LOCATING SERVICES PRIOR TO THE START OF CONSTRUCTION.
32. ALL EXISTING ACTIVE SEWER, WATER, GAS, ELECTRIC, AND OTHER UTILITIES WHERE ENCOUNTERED IN THE WORK, SHALL BE PROTECTED AT ALL TIMES, AND WHERE REQUIRED FOR THE PROPER EXECUTION OF THE WORK, SHALL BE RELOCATED AS DIRECTED BY THE RESPONSIBLE ENGINEER. EXTREME CAUTION SHOULD BE USED BY THE SUBCONTRACTOR WHEN EXCAVATING OR DRILLING PIERS AROUND OR NEAR UTILITIES. SUBCONTRACTOR SHALL PROVIDE SAFETY TRAINING FOR THE WORKING CREW. THIS WILL INCLUDE BUT NOT BE LIMITED TO A) FALL PROTECTION B) CONFINED SPACE C) ELECTRICAL SAFETY D) TRENCHING & EXCAVATION.
33. ALL EXISTING INACTIVE SEWER, WATER, GAS, ELECTRIC AND OTHER UTILITIES, WHICH INTERFERE WITH THE EXECUTION OF THE WORK, SHALL BE REMOVED AND/OR CAPPED, PLUGGED OR OTHERWISE DISCONTINUED AT POINTS WHICH WILL NOT INTERFERE WITH THE EXECUTION OF THE WORK, AS DIRECTED BY THE RESPONSIBLE ENGINEER, AND SUBJECT TO THE APPROVAL OF THE OWNER AND/OR LOCAL UTILITIES.
34. THE AREAS OF THE OWNER'S PROPERTY DISTURBED BY THE WORK AND NOT COVERED BY THE TOWER, EQUIPMENT OR DRIVEWAY SHALL BE GRADED TO A UNIFORM SLOPE AND STABILIZED TO PREVENT EROSION.
35. SUBCONTRACTOR SHALL MINIMIZE DISTURBANCE TO EXISTING SITE DURING CONSTRUCTION. EROSION CONTROL MEASURES, IF REQUIRED DURING CONSTRUCTION, SHALL BE IN CONFORMANCE WITH THE LOCAL GUIDELINES FOR EROSION AND SEDIMENT CONTROL.
36. NO FILL OR EMBANKMENT MATERIAL SHALL BE PLACED ON FROZEN GROUND. FROZEN MATERIALS, SNOW OR ICE SHALL NOT BE PLACED IN ANY FILL OR EMBANKMENT.
37. THE SUBGRADE SHALL BE COMPACTED AND BROUGHT TO A SMOOTH UNIFORM GRADE PRIOR TO FINISHED SURFACE APPLICATION.
38. THE SITE SHALL BE GRADED TO CAUSE SURFACE WATER TO FLOW AWAY FROM THE BTS EQUIPMENT AND TOWER AREAS.
39. IF NECESSARY, RUBBISH, STUMPS, DEBRIS, STICKS, STONES AND OTHER REFUSE SHALL BE REMOVED FROM THE SITE AND DISPOSED OF LEGALLY.
40. THE SUBCONTRACTOR SHALL PROVIDE SITE SIGNAGE IN ACCORDANCE WITH THE TECHNICAL SPECIFICATION FOR SITE SIGNAGE.
41. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.
42. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF THE CONTRACTOR.
43. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.
44. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.
45. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS.
46. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (FY = 36 KSI) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (FY = 35 KSI). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.
47. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T MOBILITY SITES."
48. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.
49. THE EXISTING CELL SITE IS IN FULL COMMERCIAL OPERATION, ANY CONSTRUCTION WORK BY SUBCONTRACTOR SHALL NOT DISRUPT THE EXISTING NORMAL OPERATION. ANY WORK ON EXISTING EQUIPMENT MUST BE COORDINATED WITH CONTRACTOR. ALSO, WORK SHOULD BE SCHEDULED FOR AN APPROPRIATE MAINTENANCE WINDOW USUALLY IN LOW TRAFFIC PERIODS AFTER MIDNIGHT.
50. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN ALERT OF DANGEROUS EXPOSURE LEVELS.

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COMMONWEALTH OF MASSACHUSETTS
JEFFREY ZANDER
STRUCTURAL
No. 55191
REGISTERED
PROFESSIONAL ENGINEER

Registered Structural Engineer Signature: 4/19/2022 Date:

MARK	DATE	DESCRIPTION
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1	03/04/22	FINAL CDs ISSUED
0	02/03/22	CDs ISSUED FOR REVIEW

ISSUE PHASE: FOR CONSTRUCTION DATE ISSUED: 04/19/2022

PROJECT TITLE:
CAMBRIDGE MASS. AVE
FA# 10072079
SITE# MAL02243

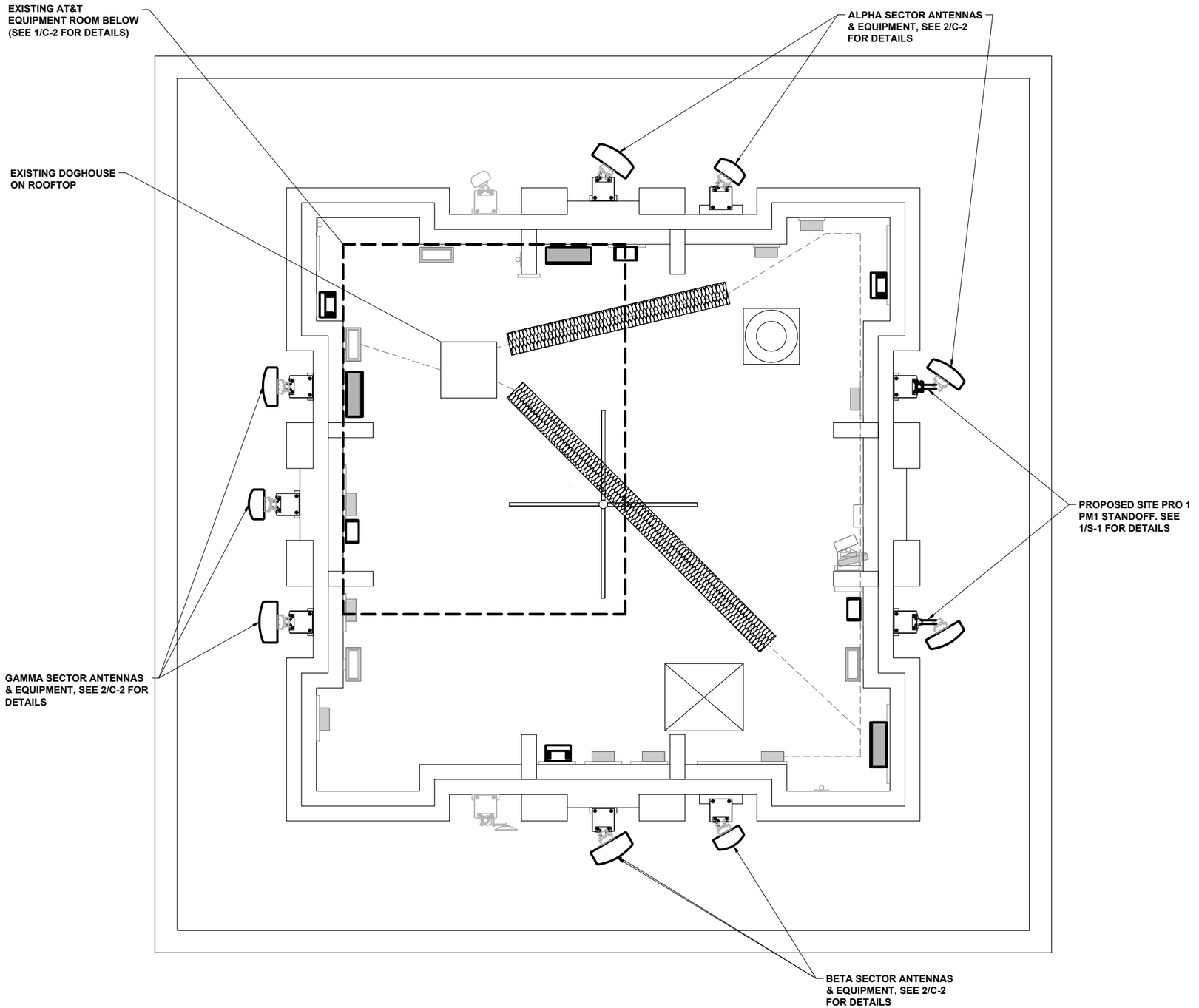
PROJECT INFORMATION:
1815 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
MIDDLESEX COUNTY

SHEET TITLE:
NOTES

SCALE: NONE

PROJECT NUMBER: 51642
SHEET NUMBER: GN-1

BASED ON: RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_BOSTON_MAL02243_2021-5G-NR-Radio_5G-NR-1SR-CBAND_mh705r_2101A121GT_10072079_3109_03-04-2021_Final-Approved_v6.00" LAST REVISED 3/22/2022.



NORTH

COMPOUND PLAN
SCALE: 1" = 5'
1

ALL EQUIPMENT SHOULD BE PAINTED TO MATCH EXISTING CONDITIONS.

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JEFFREY ZANDER STRUCTURAL No. 55191 REGISTERED PROFESSIONAL ENGINEER

Registered Structural Engineer Signature: 4/19/2022 Date:

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FA# 10072079
SITE# MAL02243

PROJECT INFORMATION:
1815 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
MIDDLESEX COUNTY

SHEET TITLE:
COMPOUND PLAN

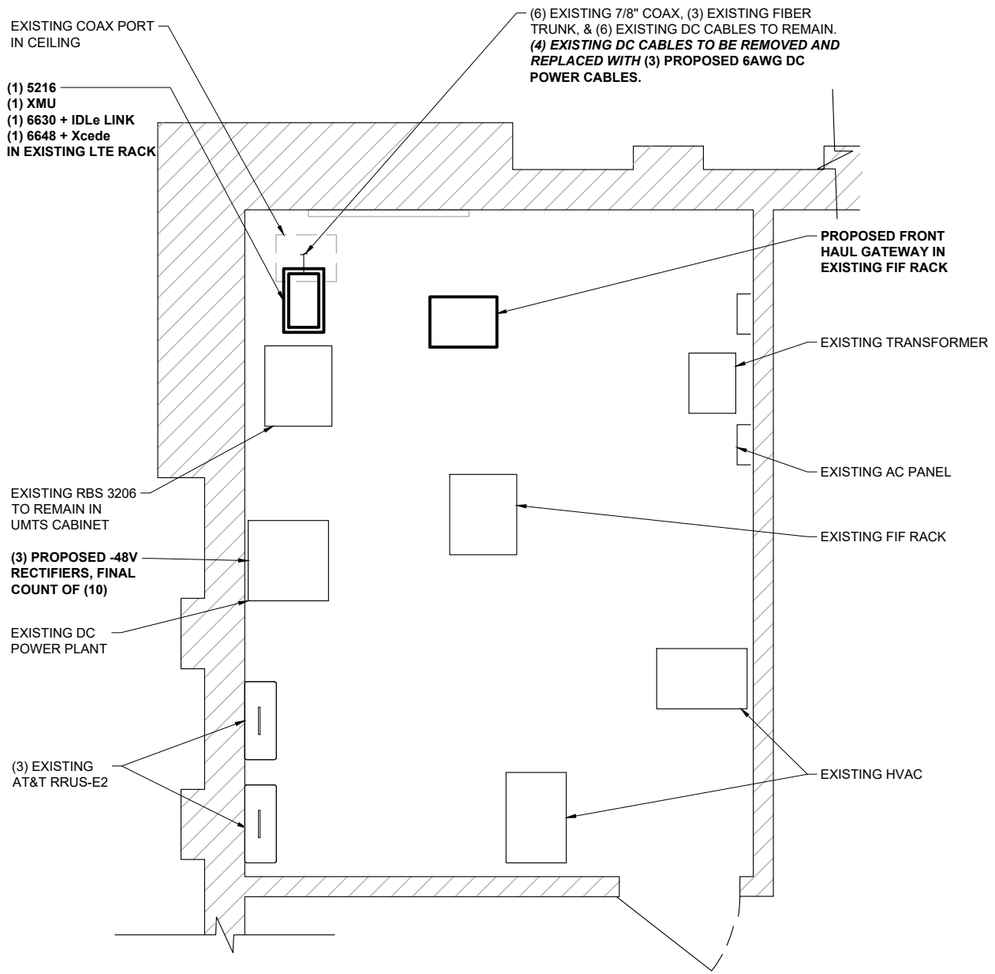
0 2.5' 5' 10'
11" x 17" - 1" = 5'
22" x 34" - 1" = 2.5'

PROJECT NUMBER: 51642
SHEET NUMBER: C-1

BASED ON: RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_BOSTON_MAL02243_2021-5G-NR-Radio_5G-NR-1SR-CBAND_mh705r_2101A121GT_10072079_3109_03-04-2021_Final-Approved_v6.00" LAST REVISED 3/22/2022.

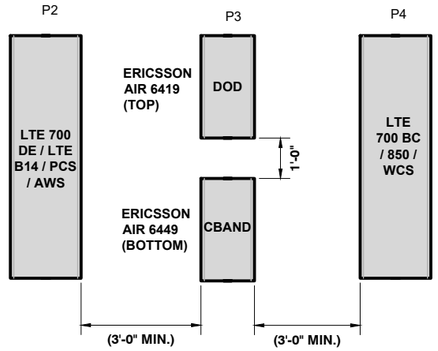
NORTH

ALL EQUIPMENT SHOULD BE PAINTED TO MATCH EXISTING CONDITIONS.



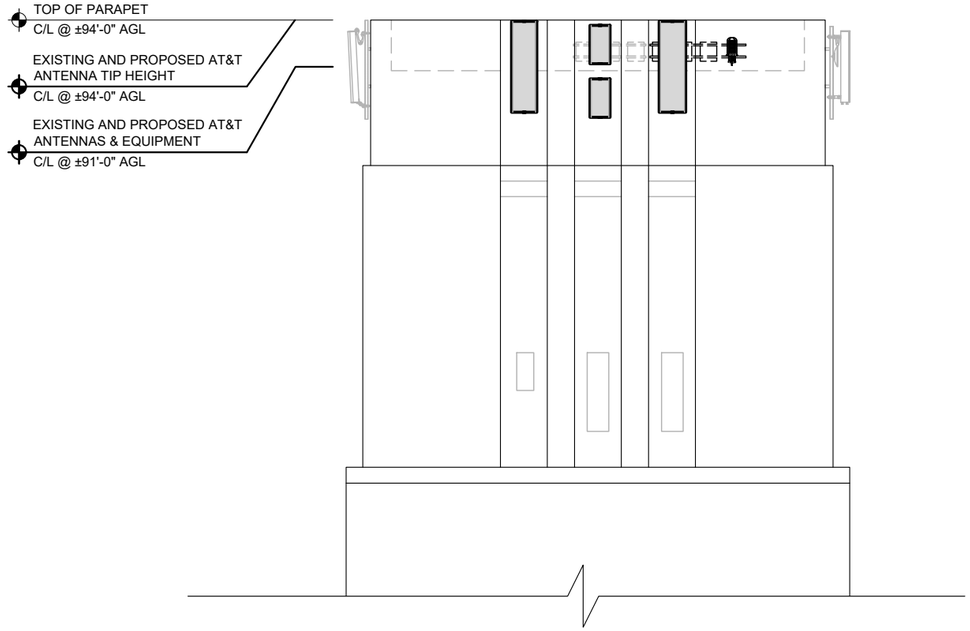
EQUIPMENT LAYOUT
SCALE: 1" = 3.75'
1

NOTE:
ANTENNA LAYOUT PER ALPHA & GAMMA SECTORS. BETA HAS DIFFERENT ANTENNA POSITIONS.



ENLARGED ELEVATION ANTENNA LAYOUT
SCALE: NTS
2

NOTE:
A STRUCTURAL ASSESSMENT OF THE ANTENNA AND EQUIPMENT MOUNTING STRUCTURE HAS BEEN COMPLETED BY RAMAKER & ASSOCIATES, INC., DATED JANUARY 26, 2022.



ELEVATION VIEW
SCALE: 1" = 10'
2

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Registered Structural Engineer Signature: 4/19/2022 Date:

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PROJECT TITLE:
CAMBRIDGE MASS. AVE
FA# 10072079
SITE# MAL02243

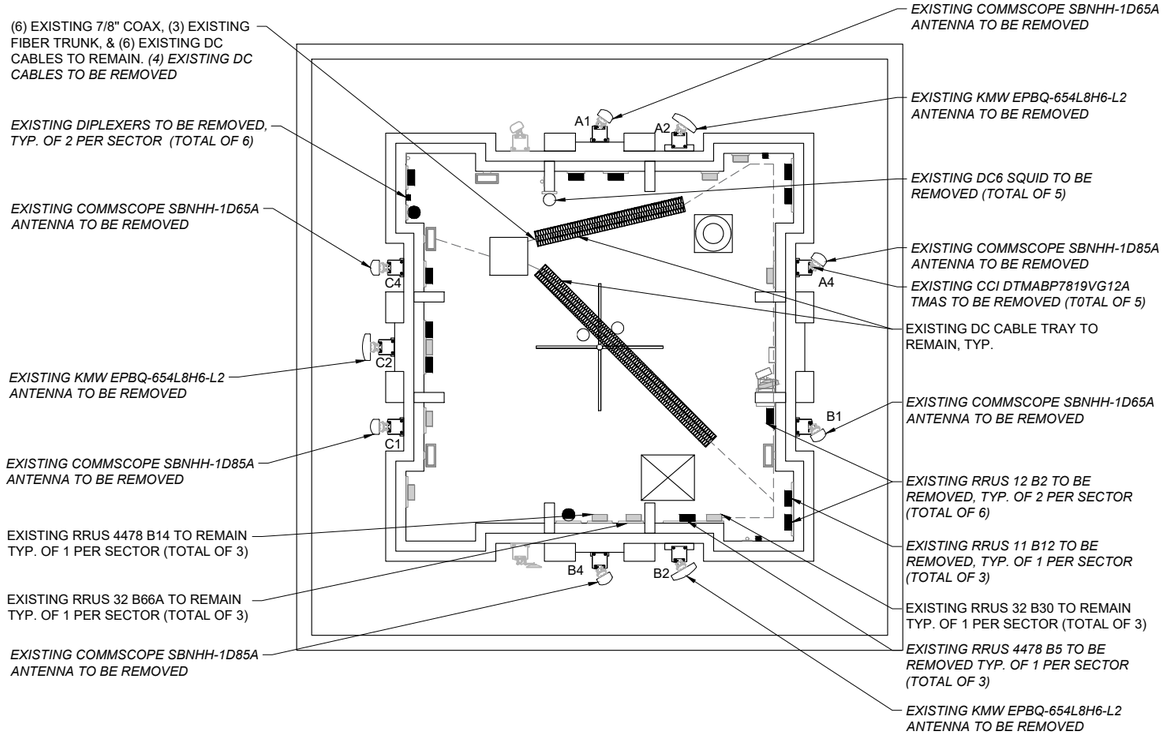
PROJECT INFORMATION:
1815 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
MIDDLESEX COUNTY

SHEET TITLE:
EQUIPMENT LAYOUT AND ELEVATION VIEW

SCALE:
AS NOTED

PROJECT NUMBER: 51642
SHEET NUMBER: C-2

BASED ON: RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_BOSTON_MAL02243_2021-5G-NR-Radio_5G-NR-1SR-CBAND_mh705r_2101A121GT_10072079_3109_03-04-2021_Final-Approved_v6.00" LAST REVISED 3/22/2022.

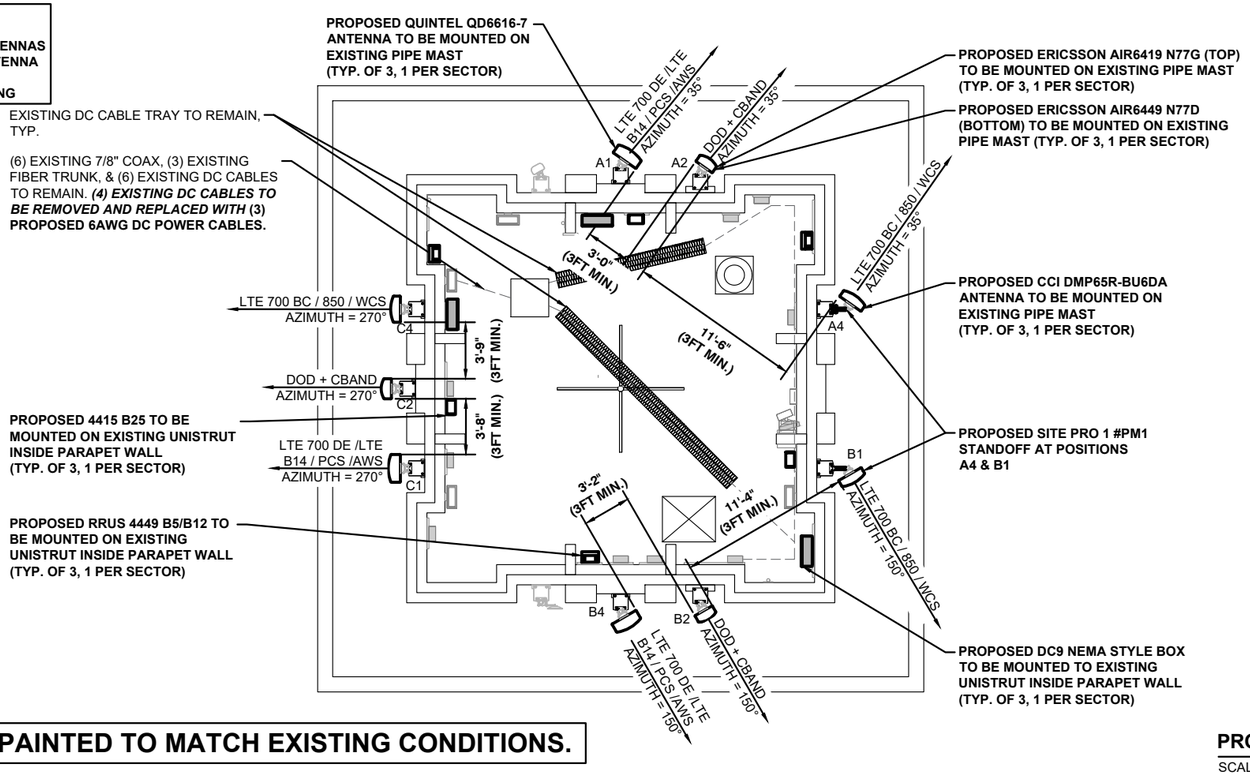


EXISTING ANTENNA LAYOUT (1)

SCALE: NTS

NORTH

NOTES:
-3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNAS
-6 FEET MINIMUM SEPARATION BETWEEN 700 BC & 700 DE ANTENNAS
-8 INCH MINIMUM SEPARATION BETWEEN BACK OF PANEL ANTENNA AND EXISTING/PROPOSED EQUIPMENT
-ALL NEW EQUIPMENT SHOULD BE PAINTED TO MATCH EXISTING



ALL EQUIPMENT SHOULD BE PAINTED TO MATCH EXISTING CONDITIONS.

PROPOSED ANTENNA LAYOUT (2)

SCALE: NTS

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Registered Structural Engineer Signature: 4/19/2022 Date:

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PROJECT TITLE:
CAMBRIDGE MASS. AVE
FA# 10072079
SITE# MAL02243

PROJECT INFORMATION:
1815 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
MIDDLESEX COUNTY

SHEET TITLE:
ANTENNA LAYOUTS

SCALE: NONE

PROJECT NUMBER: 51642
SHEET NUMBER: C-3

BASED ON: RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_BOSTON_MAL02243_2021-5G-NR-Radio_5G-NR-1SR-CBAND_mh705r_2101A121GT_10072079_3109_03-04-2021_Final-Approved_v6.00" LAST REVISED 3/22/2022.

ALL EQUIPMENT SHOULD BE PAINTED TO MATCH EXISTING CONDITIONS.

SECTOR		EXISTING ANTENNA	PROPOSED ANTENNA	TECHNOLOGY	ANTENNA STATUS	HEIGHT (IN.)	WIDTH (IN.)	DEPTH (IN.)	WEIGHT (LBS.)	ANTENNA AZIMUTH (DEG.)	ANT. C/L ELEV. (FT.)	ANT. TIP ELEV. (FT.)	REMOTE RADIO/TMA CONFIGURATION	TRANSMISSION CABLE QUANTITY	TRANSMISSION CABLE TYPE	TRANSMISSION CABLE STATUS	RAYCAP UNIT
SECTOR 1	1	*COMMSCOPE SBNHH-1D65A*	-	-	VACANT	-	-	-	-	-	-	-	-	-	-	-	**(3) PROPOSED DC9 NEMA BOX STYLE**
	2	*KMW EPBQ-654L8H6-L2*	**QUINTEL QD6616-7**	**LTE 700 DE / LTE B14 / PCS / AWS**	**PROPOSED**	**72.0**	**22.0**	**9.6**	**59.1**	**35**	**91**	**94**	(1) RRUS-32 B66A (1) 4478 B14 **(1) 4415 B25**	2	7/8" COAX	EXISTING	
	3	-	**ERICSSON AIR6419 (TOP)** **ERICSSON AIR6449 (BOTTOM)**	**DOD + CBAND**	**PROPOSED**	**30.4**	**15.9**	**8.1**	**81**	**35**	**91**	**94**	-	1 2 **1**	FIBER TRUNK 6AWG DC POWER **6AWG DC POWER**	EXISTING EXISTING **PROPOSED**	
	4	*COMMSCOPE SBNHH-1D85A*	**CCI DMP65R-BU6DA**	**LTE 700 BC / 850 / WCS**	**PROPOSED**	**71.2**	**20.7**	**7.7**	**79**	**35**	**91**	**94**	(1) RRUS-32 B30 *(RELOC.)* **(1) 4449 B5/B12**				
SECTOR 2	1	*COMMSCOPE SBNHH-1D65A*	-	-	VACANT	-	-	-	-	-	-	-	-	-	-	-	
	2	*KMW EPBQ-654L8H6-L2*	**CCI DMP65R-BU6DA**	**LTE 700 BC / 850 / WCS**	**PROPOSED**	**71.2**	**20.7**	**7.7**	**79**	**150**	**91**	**94**	(1) RRUS-32 B66A **(1) 4478 B14** **(1) 4415 B25**	2	7/8" COAX	EXISTING	
	3	-	**ERICSSON AIR6419 (TOP)** **ERICSSON AIR6449 (BOTTOM)**	**DOD + CBAND**	**PROPOSED**	**30.4**	**15.9**	**8.1**	**81**	**150**	**91**	**94**	-	1 2 **1**	FIBER TRUNK 6AWG DC POWER **6AWG DC POWER**	EXISTING EXISTING **PROPOSED**	
	4	*COMMSCOPE SBNHH-1D85A*	**QUINTEL QD6616-7**	**LTE 700 DE / LTE B14 / PCS / AWS**	**PROPOSED**	**72.0**	**22.0**	**9.6**	**59.1**	**150**	**91**	**94**	(1) RRUS-32 B30 *(RELOC.)* **(1) 4449 B5/B12**				
SECTOR 3	1	*ANDREW SBNHH-1D85A*	-	-	VACANT	-	-	-	-	-	-	-	-	-	-	-	
	2	*KMW EPBQ-654L8H6-L2*	**QUINTEL QD6616-7**	**LTE 700 DE / LTE B14 / PCS / AWS**	**PROPOSED**	**72.0**	**22.0**	**9.6**	**59.1**	**270**	**91**	**94**	(1) RRUS-32 B66A **(1) 4478 B14** **(1) 4415 B25**	2	7/8" COAX	EXISTING	
	3	-	**ERICSSON AIR6419 (TOP)** **ERICSSON AIR6449 (BOTTOM)**	**DOD + CBAND**	**PROPOSED**	**30.4**	**15.9**	**8.1**	**81**	**270**	**91**	**94**	-	1 2 **1**	FIBER TRUNK 6AWG DC POWER **6AWG DC POWER**	EXISTING EXISTING **PROPOSED**	
	4	*COMMSCOPE SBNHH-1D65A*	**CCI DMP65R-BU6DA**	**LTE 700 BC / 850 / WCS**	**PROPOSED**	**71.2**	**20.7**	**7.7**	**79**	**270**	**91**	**94**	(1) RRUS-32 B30 *(RELOC.)* **(1) 4449 B5/B12**				

ANTENNA SCHEDULE (1)
SCALE: NTS

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FA# 10072079
SITE# MAL02243

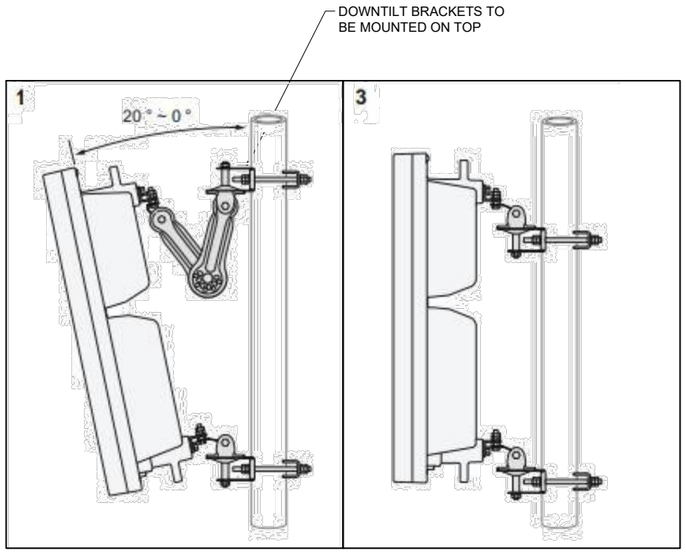
PROJECT INFORMATION:
1815 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
MIDDLESEX COUNTY

SHEET TITLE:
ANTENNA SCHEDULE

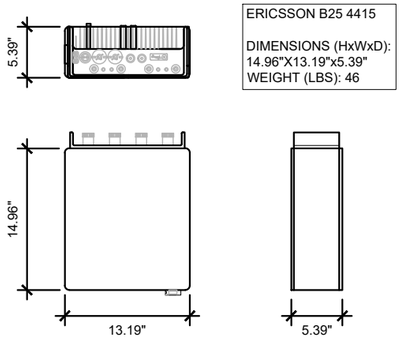
SCALE: NONE

PROJECT NUMBER: 51642
SHEET NUMBER: C-4

BASED ON: RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_BOSTON_MAL02243_2021-5G-NR-Radio_5G-NR-1SR-CBAND_mh705r_2101A121GT_10072079_3109_03-04-2021_Final-Approved_v6.00" LAST REVISED 3/22/2022.



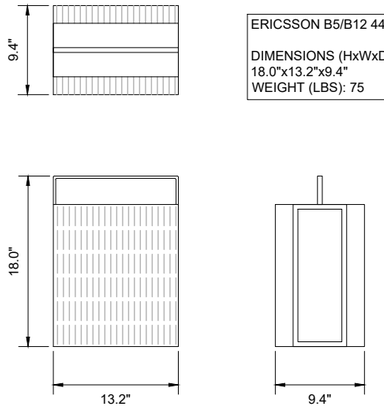
ANTENNA MOUNTING DETAIL (1)
SCALE: NTS



ERICSSON B25 4415

DIMENSIONS (HxWxD):
14.96"X13.19"x5.39"
WEIGHT (LBS): 46

ERICSSON 4415 B25 RRUs (2)
SCALE: NTS



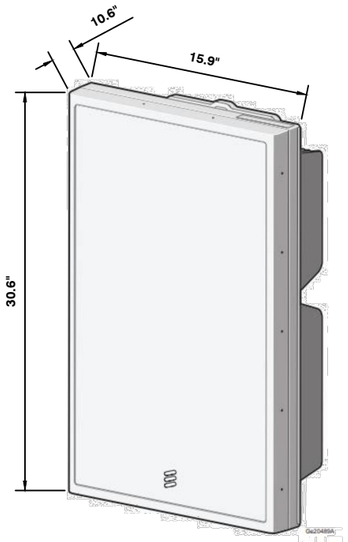
ERICSSON B5/B12 4449

DIMENSIONS (HxWxD):
18.0"x13.2"x9.4"
WEIGHT (LBS): 75

ERICSSON 4449 N5/B12 RRUs (3)
SCALE: NTS

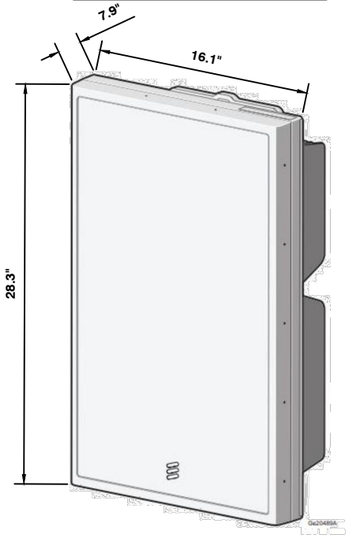
MANUFACTURER: ERICSSON
MODEL: AIR 6449
DIMENSIONS: 30.6"x15.9"x10.6"
WEIGHT: 83.8 LBS
FREQUENCY: REFER TO RFDS SHEET

NOTE:
1FT TIP TO TIP SEPARATION BETWEEN AIR ANTENNAS REQUIRED.



ANTENNA DETAIL (4)
SCALE: NTS

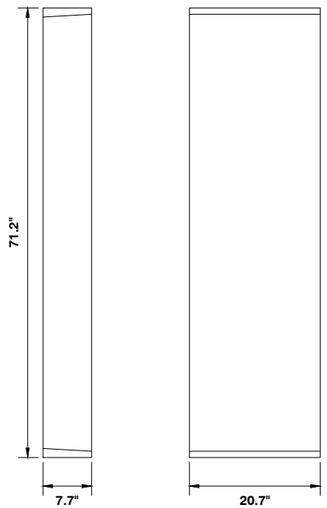
MANUFACTURER: ERICSSON
MODEL: AIR 6419
DIMENSIONS: 28.3"x16.1"x7.9"
WEIGHT: 77 LBS
FREQUENCY: REFER TO RFDS SHEET



ANTENNA DETAIL (5)
SCALE: NTS

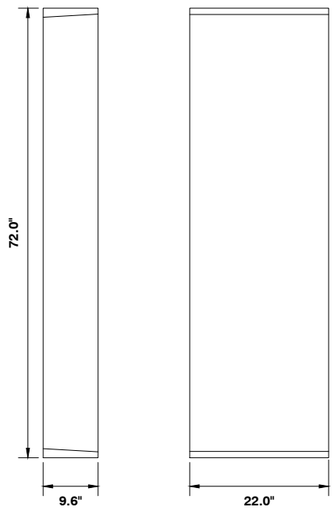
CCI DMP65R-BU6DA

DIMENSIONS (HxWxD):
71.2"x20.7"x7.7"
WEIGHT (LBS): 79.4



ANTENNA DETAIL (6)
SCALE: NTS

QUINTEL QD6616-7
DIMENSIONS (HxWxD):
72"x22"x9.6"
WEIGHT (LBS): 59.1



ANTENNA DETAIL (7)
SCALE: NTS

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COMMONWEALTH OF MASSACHUSETTS
JEFFREY ZANDER STRUCTURAL No. 55191 REGISTERED PROFESSIONAL ENGINEER

4/19/2022
Registered Structural Engineer Signature: Date:

MARK	DATE	DESCRIPTION
2	04/19/22	FINAL FOR CONSTRUCTION
1	03/04/22	FINAL CDs ISSUED
0	02/03/22	CDs ISSUED FOR REVIEW

ISSUE PHASE: FOR CONSTRUCTION DATE ISSUED: 04/19/2022

PROJECT TITLE:
CAMBRIDGE MASS. AVE
FA# 10072079
SITE# MAL02243

PROJECT INFORMATION:
1815 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
MIDDLESEX COUNTY

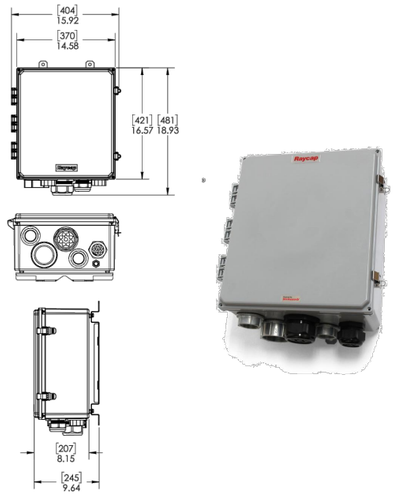
SHEET TITLE:
CONSTRUCTION DETAILS

SCALE: NONE

PROJECT NUMBER: 51642
SHEET NUMBER: A-1

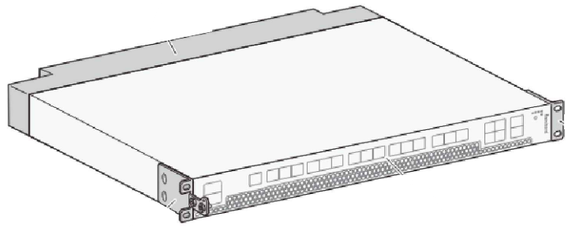
BASED ON: RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_BOSTON_MAL02243_2021-5G-NR-Radio_5G-NR-1SR-CBAND_mh705r_2101A121GT_10072079_3109_03-04-2021_Final-Approved_v6.00" LAST REVISED 3/22/2022.

MANUFACTURER: RAYCAP
MODEL: DC9-48-60-24-PC16-EV
DIMENSIONS: 16.34" × 16.57" × 8.19"
WEIGHT: 34.9 LBS
FREQUENCY: REFER TO RFDS SHEET

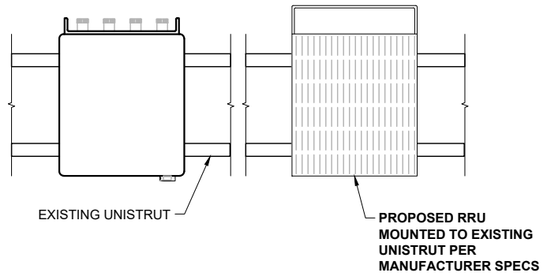


DC9-48-60-24-PC16-EV DETAIL (1)
SCALE: NTS

MANUFACTURER: ERICSSON
MODEL: ROUTER 6648
DIMENSIONS: 1.75"x19"x13.858"
WEIGHT: 16.585 LBS
FREQUENCY: REFER TO RFDS SHEET



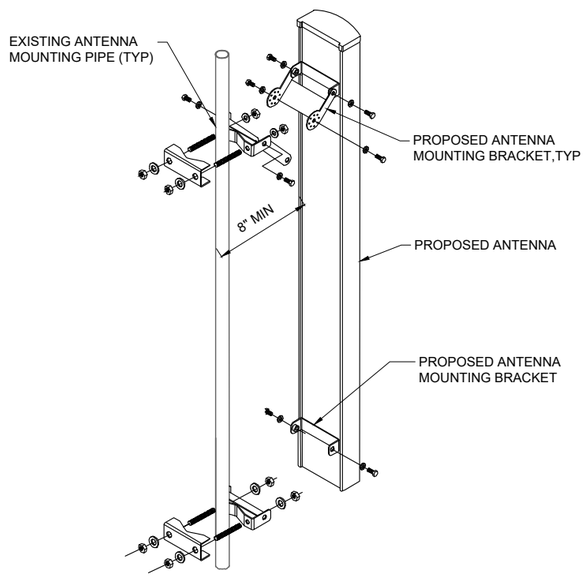
ROUTER 6648 DETAIL (2)
SCALE: NTS



RRU MOUNTING DETAIL (5)
SCALE: NTS

NOTES:
-3 FEET MINIMUM SEPARATION BETWEEN LTE ANTENNAS

-8 INCH MINIMUM SEPARATION BETWEEN BACK OF PANEL ANTENNA AND EXISTING/PROPOSED EQUIPMENT



ANTENNA MOUNTING DETAIL (4)
SCALE: NTS

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JEFFREY ZANDER STRUCTURAL No. 55191 REGISTERED
PROFESSIONAL ENGINEER

Registered Structural Engineer Signature: 4/19/2022 Date:

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PROJECT TITLE:
CAMBRIDGE MASS. AVE
FA# 10072079
SITE# MAL02243

PROJECT INFORMATION:
1815 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
MIDDLESEX COUNTY

SHEET TITLE:
CONSTRUCTION DETAILS

SCALE: NONE

PROJECT NUMBER: 51642
SHEET NUMBER: A-2

BASED ON: RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_BOSTON_MAL02243_2021-5G-NR-Radio_5G-NR-1SR-CBAND_mh705r_2101A121GT_10072079_3109_03-04-2021_Final-Approved_v6.00" LAST REVISED 3/22/2022.

DRAWN BY: AEM CHECKED BY: AJK

C:\Users\akvalheim\appdata\local\temp\AcPublish_20984\51642_10072079_AE201_220111_MAL02243_REV0_Cband.dwg Printed by: akvalheim on Apr 19, 2022 - 9:58pm

Diagram - Sector	A	Diagram File Name - MA2243_C-Band_DoD_Alpha_Gamma_Rev.2.vsd					
Atoll Site Name -	MAL02243	Location Name -	CAMBRIDGE MASS. AVE (MA0188)	Market -	BOSTON	Market Cluster -	NEW ENGLAND
Comments: Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ Radio Port connections Field Notice (RF-HW-2016-265)							

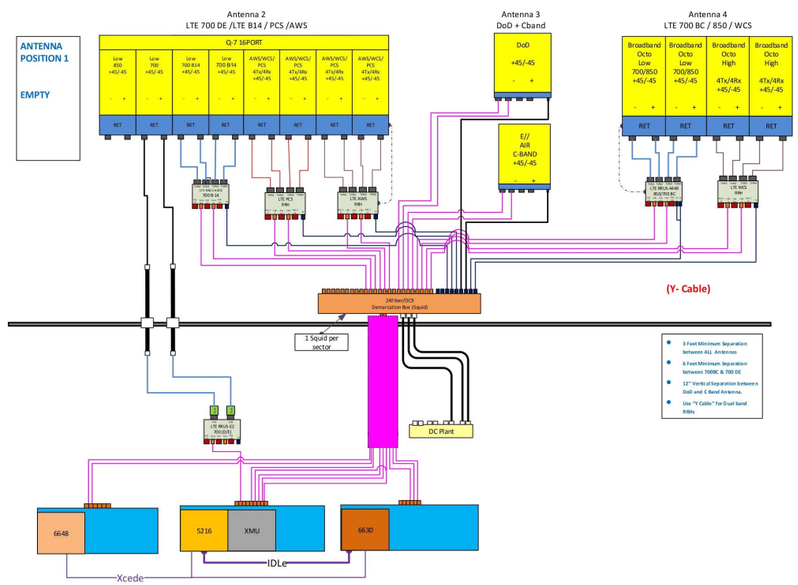


Diagram - Sector	B	Diagram File Name - MA2243_C-Band_DoD_Beta_Rev.2.vsd					
Atoll Site Name -	MAL02243	Location Name -	CAMBRIDGE MASS. AVE (MA0188)	Market -	BOSTON	Market Cluster -	NEW ENGLAND
Comments: Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ Radio Port connections Field Notice (RF-HW-2016-265)							

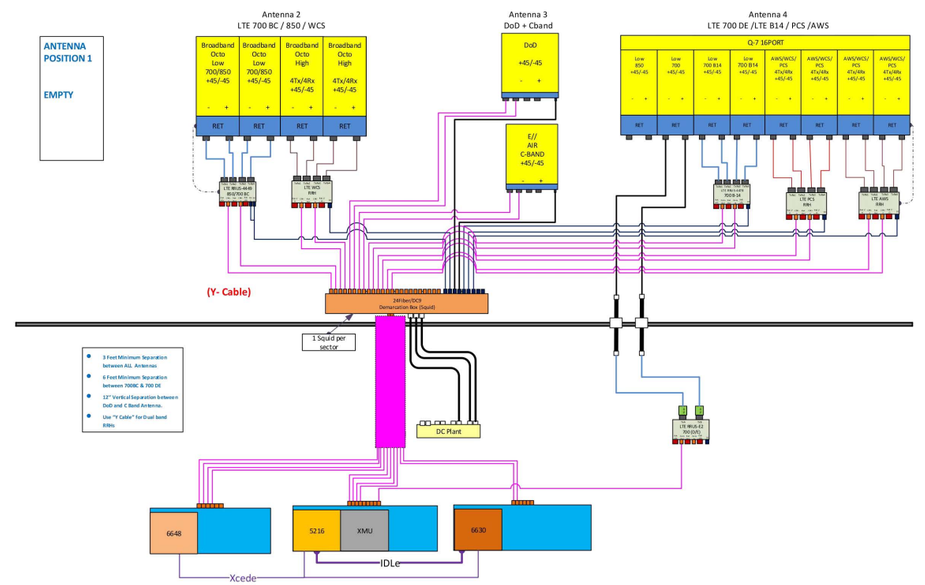
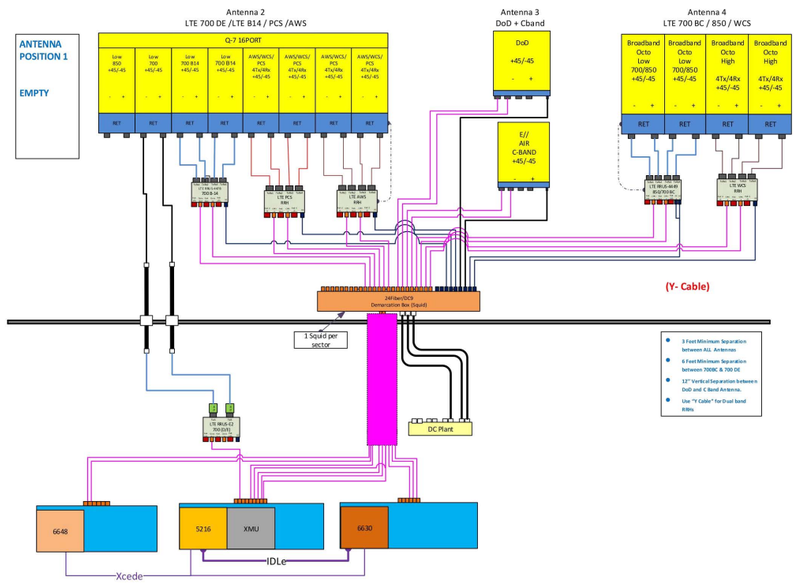


Diagram - Sector	C	Diagram File Name - MA2243_C-Band_DoD_Alpha_Gamma_Rev.2.vsd					
Atoll Site Name -	MAL02243	Location Name -	CAMBRIDGE MASS. AVE (MA0188)	Market -	BOSTON	Market Cluster -	NEW ENGLAND
Comments: Important Note: For detailed radio to antenna wiring refer to the latest 4T4R Antenna/ Radio Port connections Field Notice (RF-HW-2016-265)							



RF PLUMBING DIAGRAMS

SCALE: NTS

1

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PROJECT TITLE:

CAMBRIDGE MASS. AVE
FA# 10072079
SITE# MAL02243

PROJECT INFORMATION:
1815 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
MIDDLESEX COUNTY

SHEET TITLE:

RF PLUMBING DIAGRAMS

SCALE: NONE

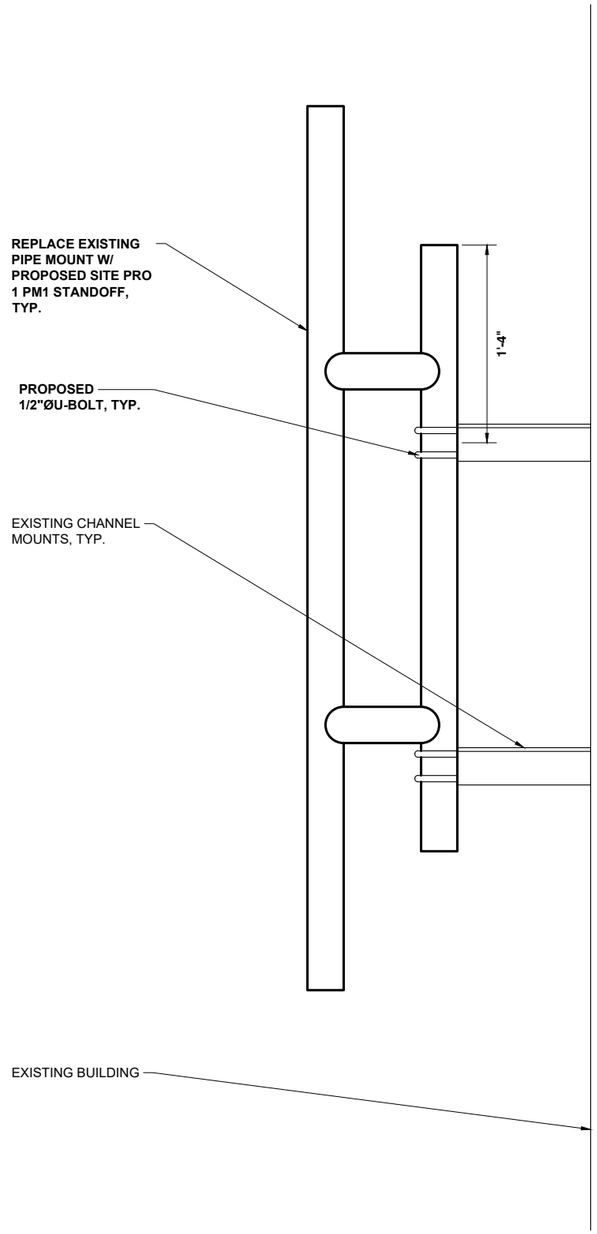
PROJECT NUMBER: 51642

SHEET NUMBER: A-3

BASED ON: RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_BOSTON_MAL02243_2021-5G-NR-Radio_5G-NR-1SR-CBAND_mh705r_2101A121GT_10072079_3109_03-04-2021_Final-Approved_v6.00" LAST REVISED 3/22/2022.

DRAWN BY: AEM CHECKED BY: AJK

C:\Users\akvalheim\appdata\local\temp\AcPublish_20984\51642_10072079_AE201_220111_MAL02243_REV0_Cband.dwg Printed by: akvalheim on Apr 19, 2022 - 9:58pm



MOUNT MODIFICATION - ALPHA POSITION 4/BETA POSITION 1

SCALE: 1" = 1'

1

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PROJECT TITLE:
CAMBRIDGE MASS. AVE
FA# 10072079
SITE# MAL02243

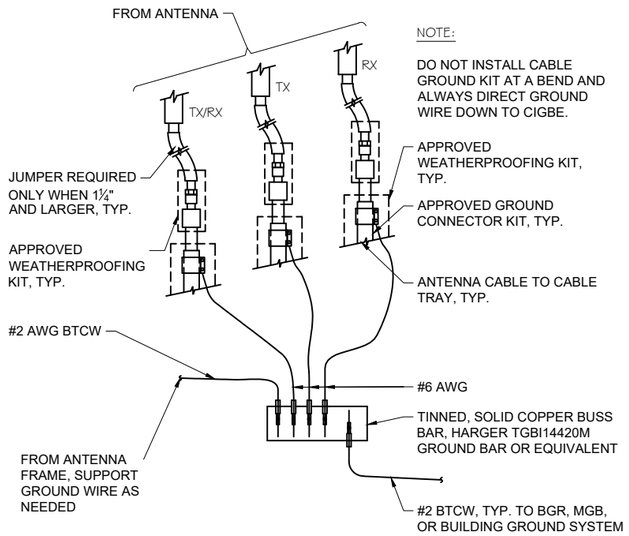
PROJECT INFORMATION:
1815 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
MIDDLESEX COUNTY

SHEET TITLE:
EQUIPMENT LAYOUT AND ELEVATION VIEW

SCALE:
AS NOTED

PROJECT NUMBER: 51642

SHEET NUMBER: S-1

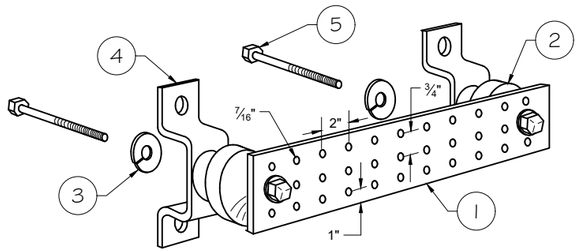


GROUND WIRE TO GROUND BAR DETAIL (1)

SCALE: NTS

NOTES:

1. ALL MOUNTING HARDWARE CAN BE USED ON 6", 12", 18", ETC. GROUND BARS.
2. ENTIRE ASSEMBLY AVAILABLE FROM NEWTON INSTRUMENT CO. CAT. NO. 2106060010 OR AS HARGER TGBI14420M.

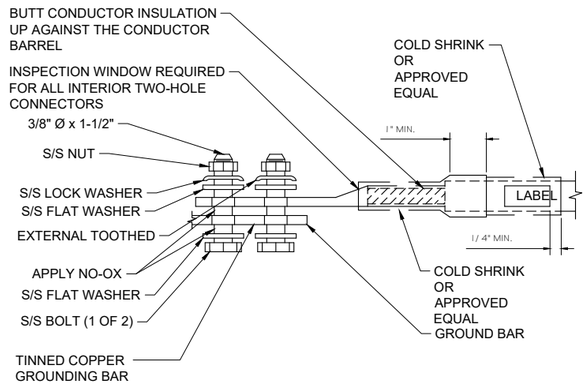


LEGEND

1. TINNED COPPER GROUND BAR, ¼" x 4" x 20", NEWTON CO., HARGER TGBI14420M, OR EQUIVALENT. HOLE CENTERS TO MATCH NEMA DOUBLE LUG CONFIGURATION.
2. INSULATORS. INSTRUMENT CO. CAT. NO. 3061-4 OR HARGER EQUIVALENT.
3. ⅝" LOCKWASHERS, NEWTON INSTRUMENT CO. CAT. NO. 3015-8 OR EQUIVALENT.
4. WALL MOUNTING BRACKET, NEWTON INSTRUMENT CO. CAT. NO. A-6056 OR HARGER EQUIVALENT.
5. ⅝" x 1" H.H.C.S. BOLTS, NEWTON INSTRUMENT CO. CAT. NO. 3012-1 OR HARGER EQUIVALENT.

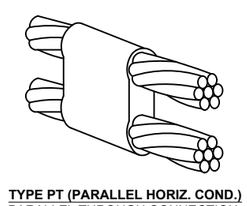
TYPICAL GROUND BAR DETAIL (2)

SCALE: NTS

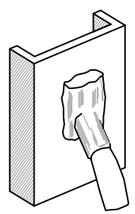


TYPICAL GROUND BAR CONNECTION DETAIL (3)

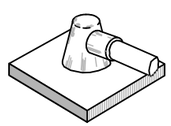
SCALE: NTS



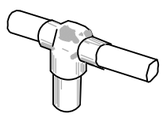
TYPE PT (PARALLEL HORIZ. COND.)
PARALLEL THROUGH CONNECTION OF HORIZONTAL CABLES



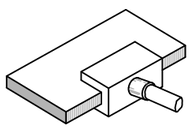
TYPE VS (VERT. STEEL SURFACE)
CABLE TAP DOWN AT 45° TO VERTICAL STEEL SURFACE INCLUDING PIPE



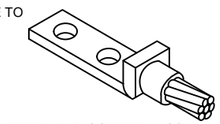
TYPE HS (HORIZ. STEEL SURFACE)
TO FLAT STEEL SURFACE OR HORIZONTAL PIPE



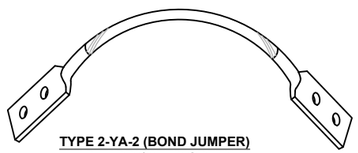
TYPE GT (THROUGH CABLE TO GROUND ROD)
THROUGH CABLE TO TOP OF GROUND ROD



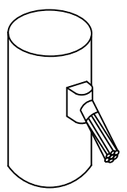
TYPE LJ (FLAT BUSBAR)
TAP OF HORIZONTAL CABLE TO EDGE OF HORIZONTAL



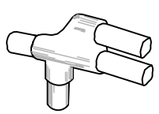
TYPE YA-2 (COPPER LUGS)
TWO HOLE- LONG BARREL LENGTH



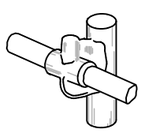
TYPE 2-YA-2 (BOND JUMPER)
FIELD FABRICATED GREEN STRANDED INSULATED



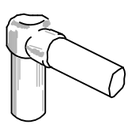
TYPE VS (VERTICAL PIPE)
CABLE TAP DOWN AT 45° TO RANGE OF VERTICAL PIPES



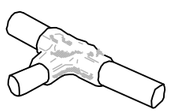
TYPE NC
THROUGH AND TAP CABLES TO GROUND ROD



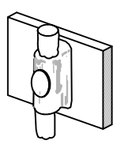
TYPE GY
THROUGH CABLE TO SIDE OF GROUND ROD



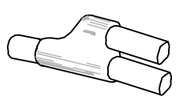
TYPE GR
CABLE TAP TO TOP OF GROUND ROD



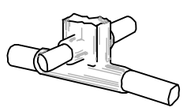
TYPE TA
TEE OF HORIZONTAL RUN AND TAP CABLES



TYPE W
THROUGH VERTICAL CABLE TO VERTICAL STEEL SURFACE OR TO THE SIDE OF EITHER HORIZONTAL OR VERTICAL PIPE



TYPE PC
PARALLEL TAP CABLES



TYPE XB
CROSS OF HORIZONTAL CABLES. LAPPED AND NOT CUT.

TYPICAL CADWELD TYPES DETAIL (4)

SCALE: NTS

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FA# 10072079
SITE# MAL02243

PROJECT INFORMATION:
1815 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
MIDDLESEX COUNTY

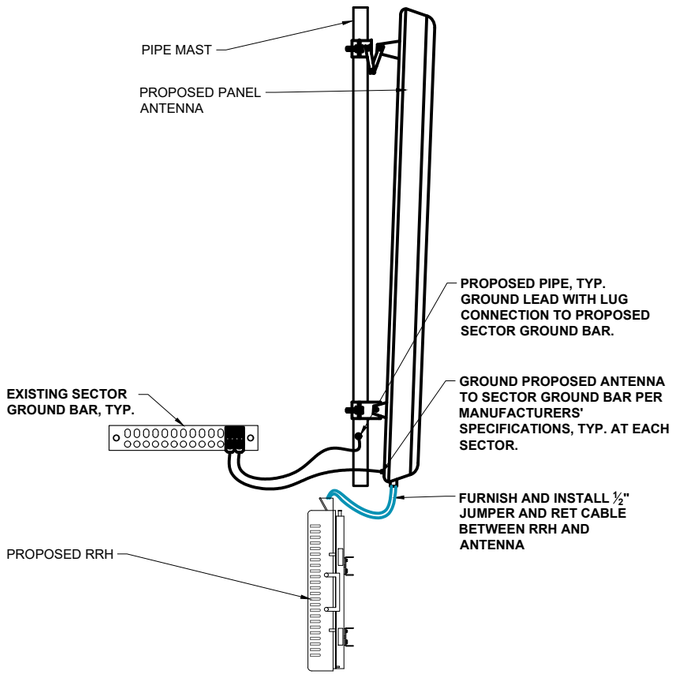
SHEET TITLE:
GROUNDING DETAILS

SCALE: NONE

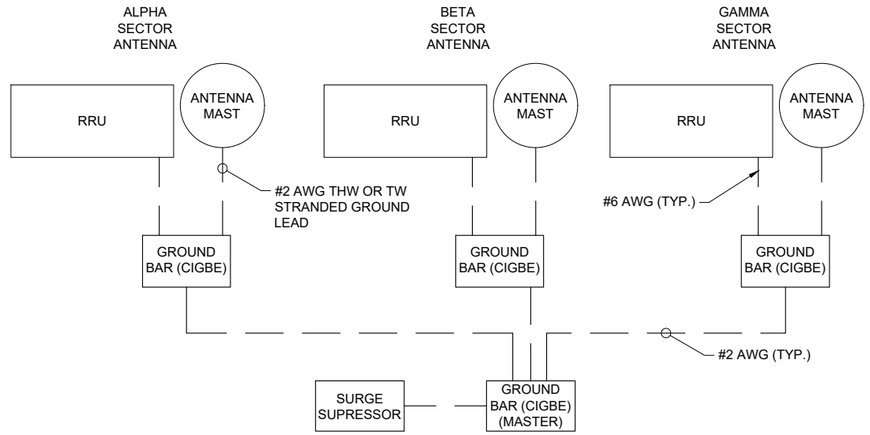
PROJECT NUMBER: 51642
SHEET NUMBER: G-1

BASED ON: RF ENGINEERING DESIGN ENTITLED "NEW-ENGLAND_BOSTON_MAL02243_2021-5G-NR-Radio_5G-NR-1SR-CBAND_mh705r_2101A121GT_10072079_3109_03-04-2021_Final-Approved_v6.00" LAST REVISED 3/22/2022.

DRAWN BY: AEM CHECKED BY: AJK



ANTENNA & RRU GROUNDING DETAIL (1)
SCALE: NTS



SCHEMATIC DIAGRAM GROUNDING SYSTEM (2)
SCALE: NTS

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STRUCTURAL
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Registered Structural Engineer Signature: 4/19/2022 Date:

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1	03/04/22	FINAL CDs ISSUED
0	02/03/22	CDs ISSUED FOR REVIEW

ISSUE PHASE: FOR CONSTRUCTION DATE ISSUED: 04/19/2022

PROJECT TITLE:
CAMBRIDGE MASS. AVE
FA# 10072079
SITE# MAL02243

PROJECT INFORMATION:
1815 MASSACHUSETTS AVENUE
CAMBRIDGE, MA 02140
MIDDLESEX COUNTY

SHEET TITLE:
GROUNDING DETAILS

SCALE: NONE

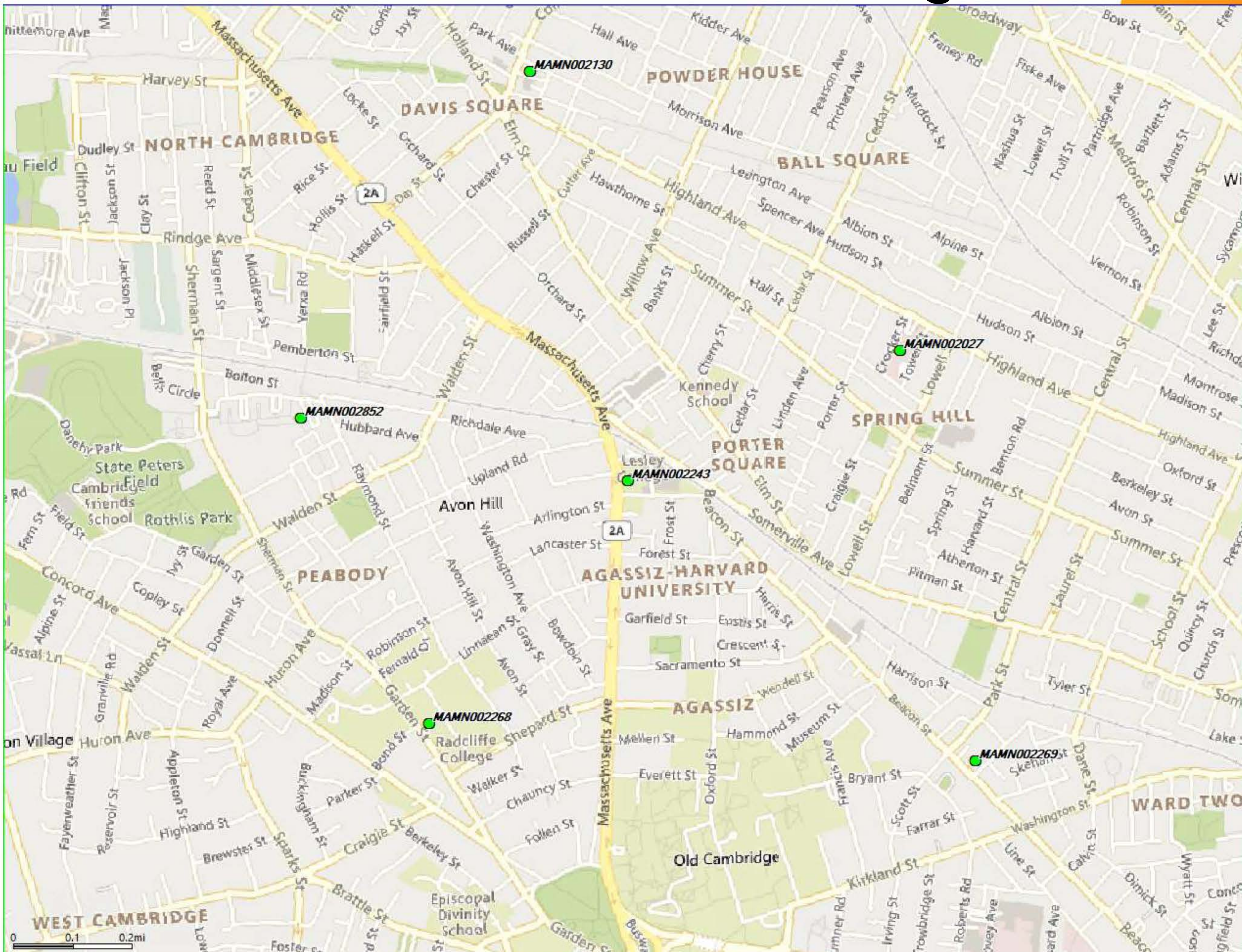
PROJECT NUMBER: 51642
SHEET NUMBER: G-2

Rethink Possible

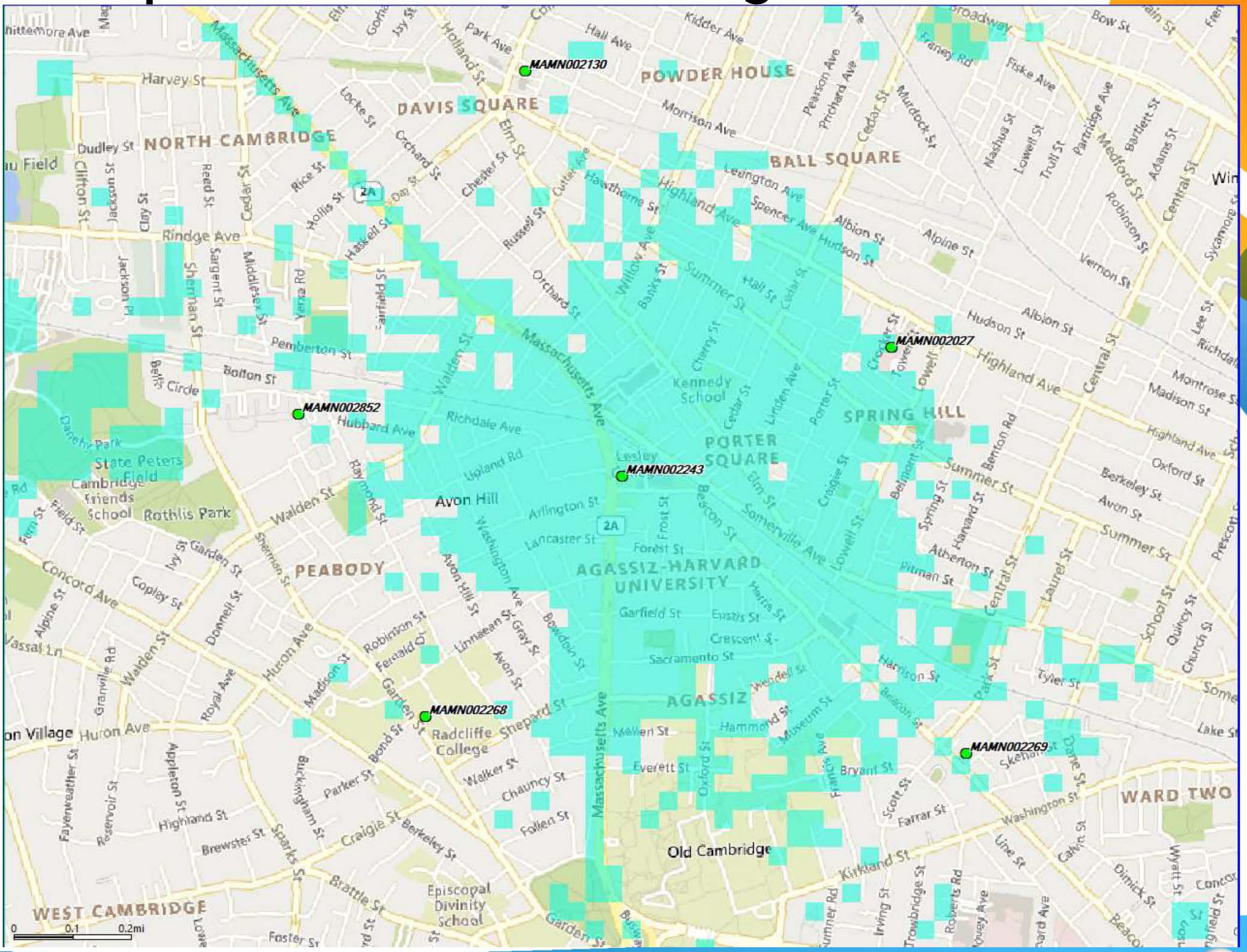
MAL02243 5G NR Coverage Pl

- 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 – MAMN002243



SHEET TITLE:
PHOTO RENDERING/SIMULATION LOCATION MAP

PROJECT TITLE:
CAMBRIDGE MASS. AVE

PROJECT NUMBER:
51642

PROJECT LOCATION:
1815 MASSACHUSETTS AVENUE CAMBRIDGE, MA 02140

at&t

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

RAMAKER
employee-owned
(608) 643-4100 www.ramaker.com

SHEET TITLE:
BEFORE PHOTO RENDERING/SIMULATION - LOOKING WEST

PROJECT TITLE:
CAMBRIDGE MASS. AVE

PROJECT NUMBER:
51642

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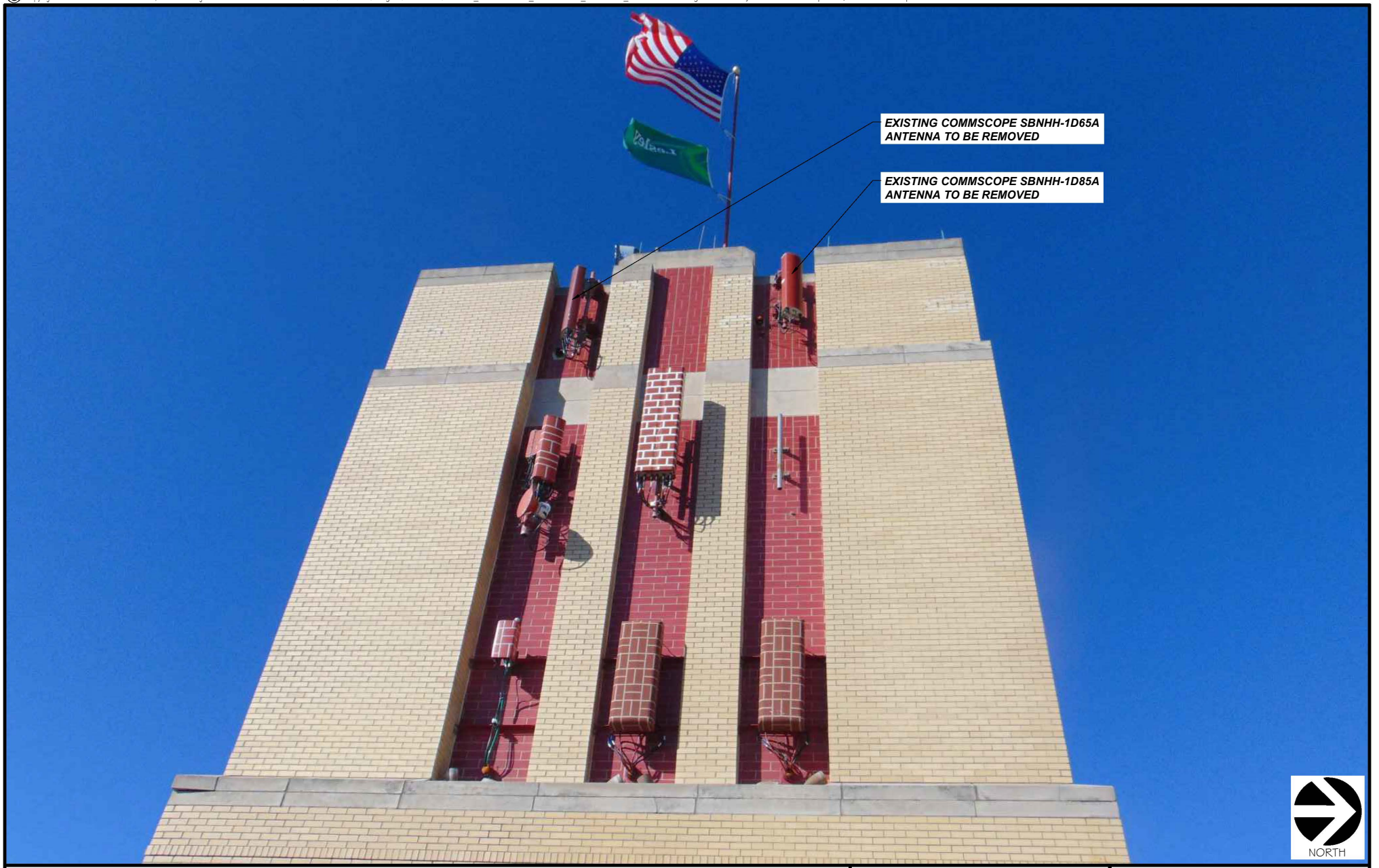

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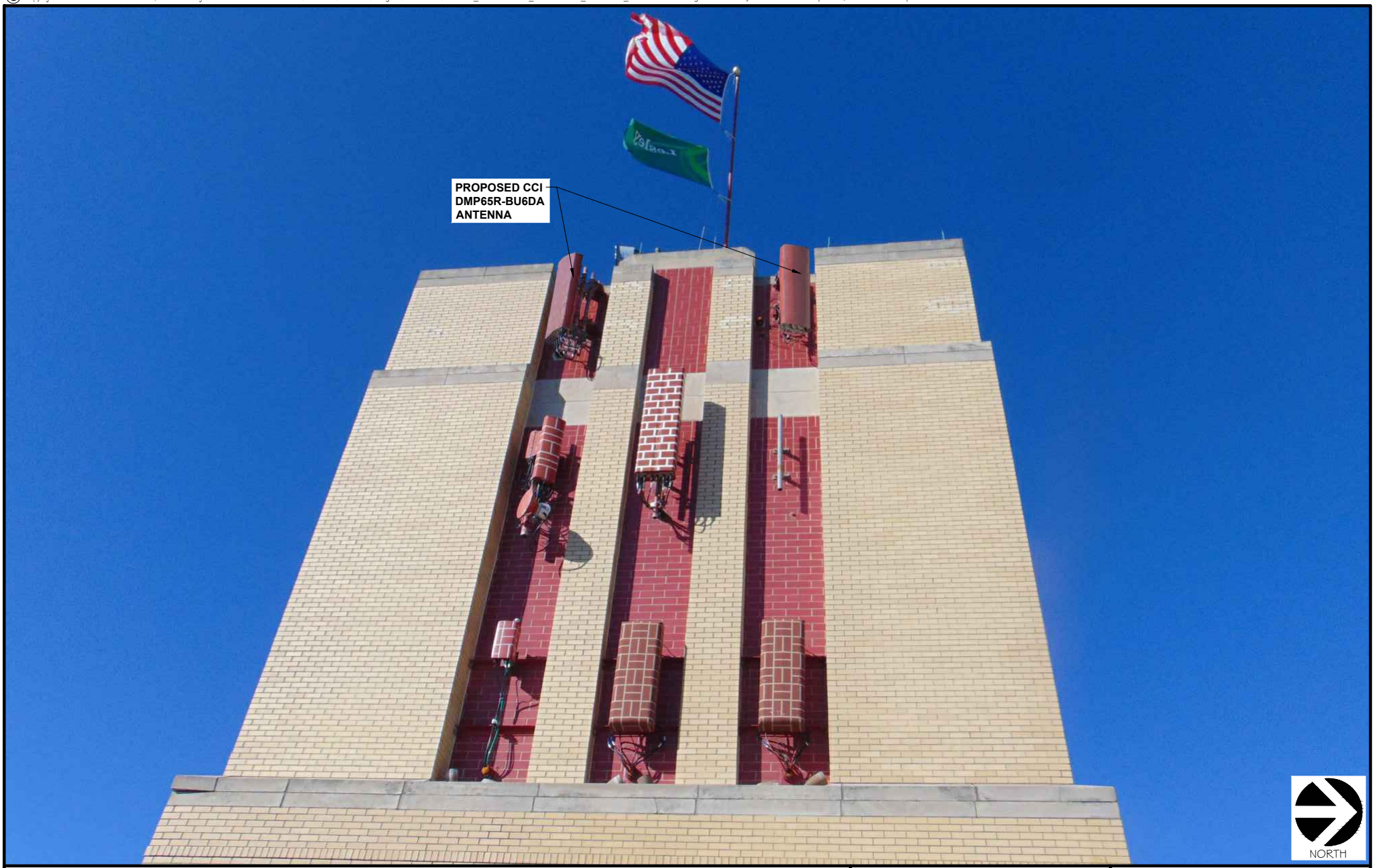

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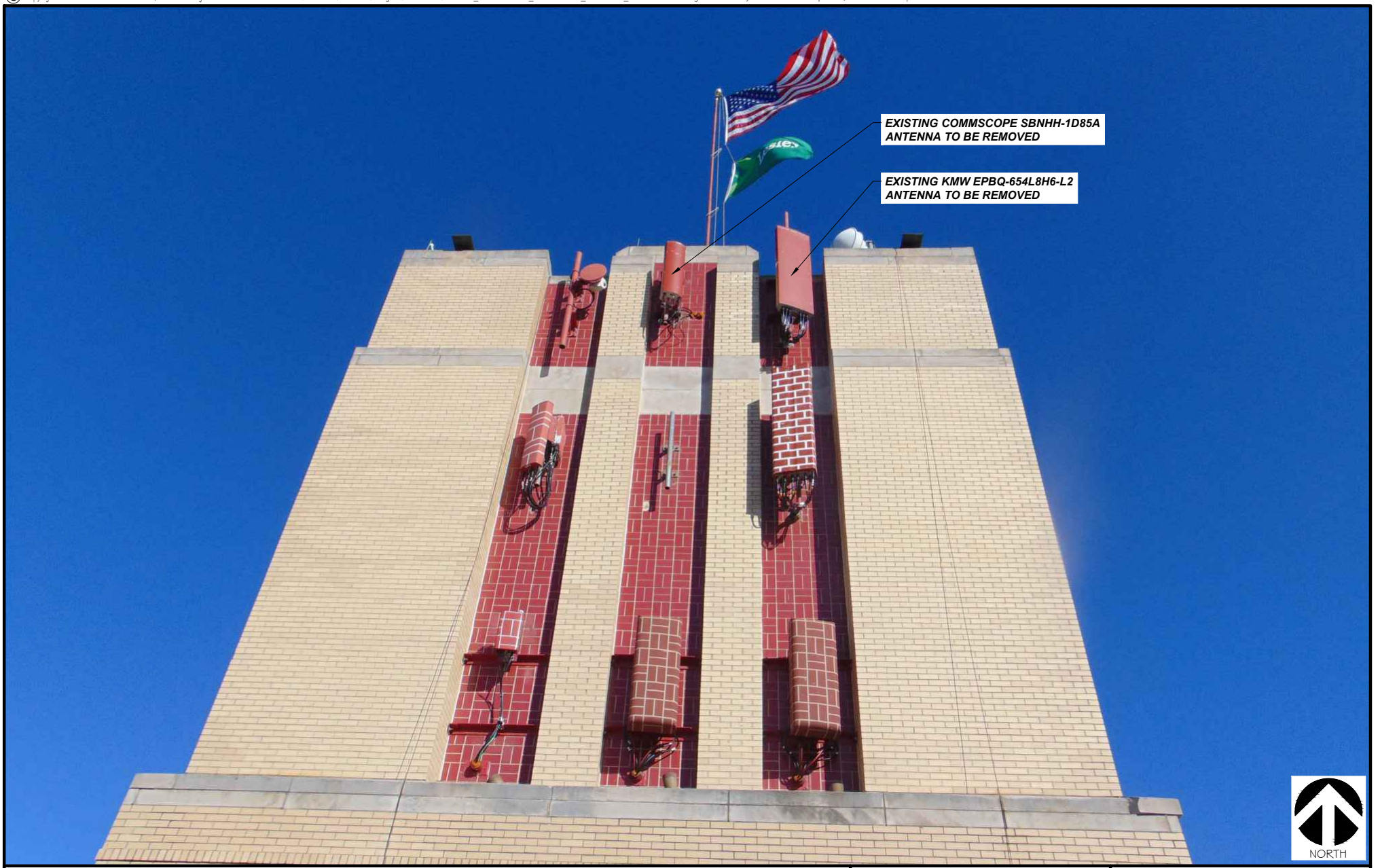

SHEET TITLE:
BEFORE PHOTO RENDERING/SIMULATION - LOOKING NORTH

PROJECT TITLE:
CAMBRIDGE MASS. AVE

PROJECT NUMBER:
51642

PROJECT LOCATION:
1815 MASSACHUSETTS AVENUE CAMBRIDGE, MA 02140

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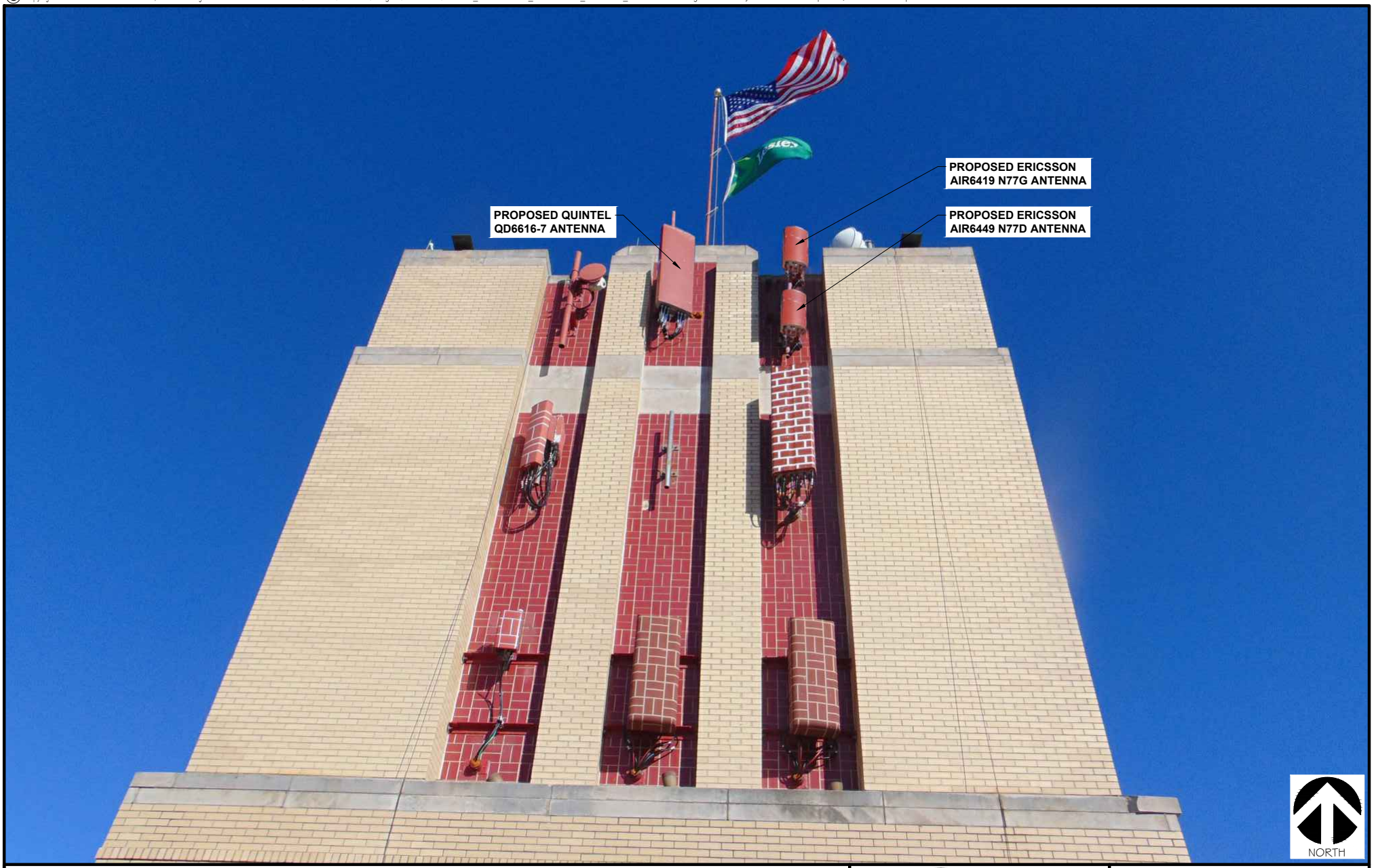

SHEET TITLE:
AFTER PHOTO RENDERING/SIMULATION - LOOKING NORTH

PROJECT TITLE:
CAMBRIDGE MASS. AVE

PROJECT NUMBER:
51642

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SHEET TITLE:
BEFORE PHOTO RENDERING/SIMULATION - LOOKING EAST

PROJECT TITLE:
CAMBRIDGE MASS. AVE

PROJECT NUMBER:
51642

PROJECT LOCATION:
1815 MASSACHUSETTS AVENUE CAMBRIDGE, MA 02140

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SHEET TITLE:
AFTER PHOTO RENDERING/SIMULATION - LOOKING EAST

PROJECT TITLE:
CAMBRIDGE MASS. AVE

PROJECT NUMBER:
51642

PROJECT LOCATION:
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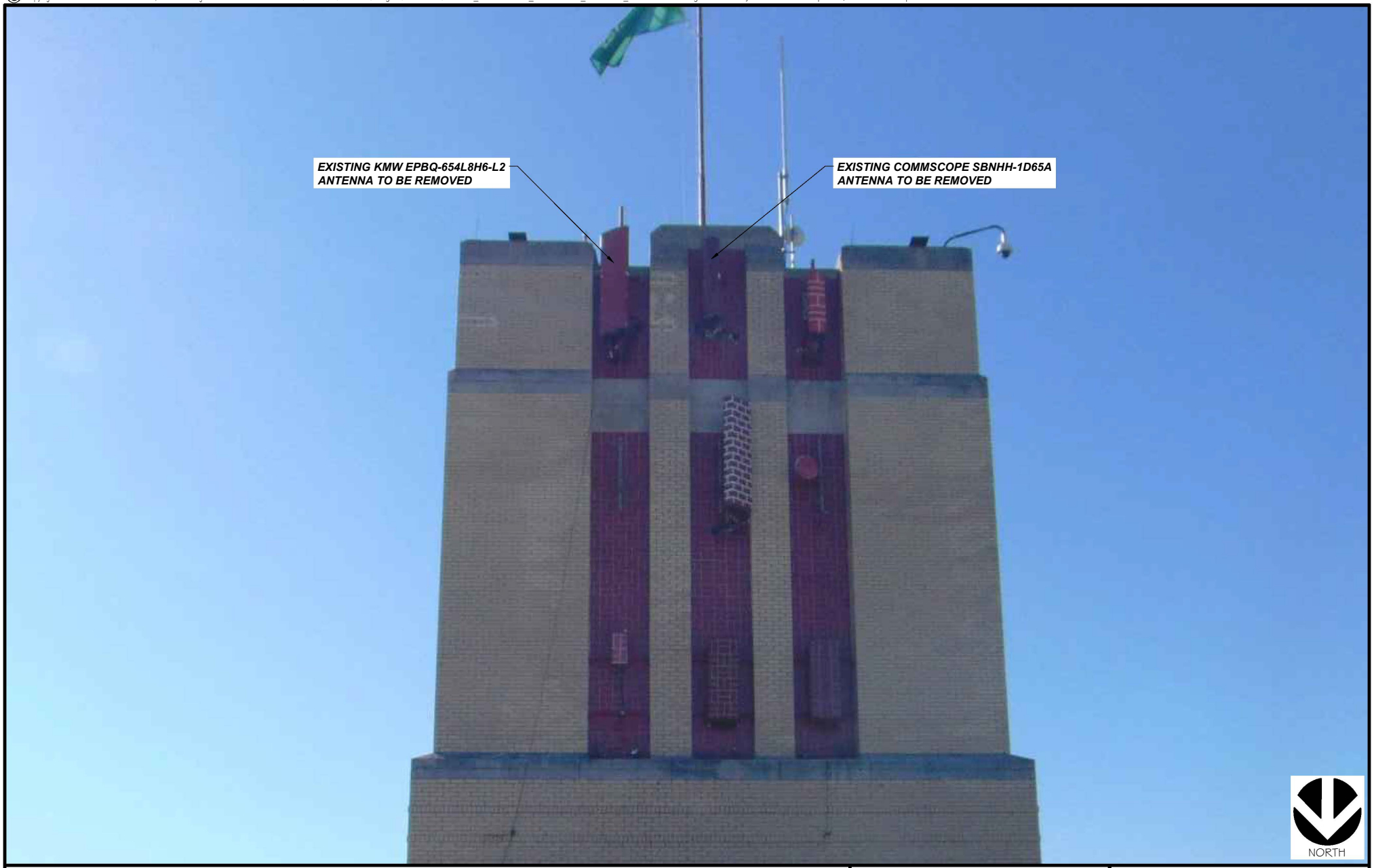

SHEET TITLE:
BEFORE PHOTO RENDERING/SIMULATION - LOOKING SOUTH

PROJECT TITLE:
CAMBRIDGE MASS. AVE

PROJECT NUMBER:
51642

PROJECT LOCATION:
1815 MASSACHUSETTS AVENUE CAMBRIDGE, MA 02140

at&t

smartlink
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NORTH BILLERICA, MA 01862
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SHEET TITLE:
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March 2, 2022

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

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

SUBJECT:	**POST MOD STRUCTURAL ASSESSMENT**
CARRIER:	**AT&T**
SITE:	**CAMBRIDGE MASS. AVE (MAL02243)**
ADDRESS:	**1815 MASSACHUSETTS AVENUE** **CAMBRIDGE, MIDDLESEX COUNTY, MASSACHUSETTS 02140**
LATITUDE:	**42.386991°**
LONGITUDE:	**-71.119000°**
FA LOCATION CODE:	**10072079**
SCOPE:	**5G NR/ BBU/ 5G NR/ 4TXRX/ 5G NR**
PACE NUMBER:	**MRCTB052148/ MRCTB050995/ MRCTB051339/MRCTB051482/ MRCTB051372**
PTN NUMBER:	**2101A101NN/2101A0Z7MT/2101A0Z862/2101A0Z7WV/2101A0Z7ZW**

RAMAKER & ASSOCIATES PROJECT NUMBER: 51642

RESULTS:	**MOUNT:**	**PASS**	**56.5%**
	SUPPORTING STRUCTURE:	**PASS**	

Dear Smartlink:

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.

Simon V. Breunig
Structural Designer

Jeffrey H. Zander, P.E.
Supervising Engineer

COMMONWEALTH OF MASSACHUSETTS
JEFFREY ZANDER
STRUCTURAL
No. 55191
REGISTERED
PROFESSIONAL ENGINEER

TABLE OF CONTENTS

ANALYSIS CRITERIA

State Building Code	Massachusetts 9th Edition Building Code
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)
Basic Wind Speed w/ Ice	50 mph (3 sec. gust)
Ice Thickness	3/4 inch
Exposure Category	B
Topographic Feature	None

SUPPORTING DOCUMENTATION

- Final RFDS version 7.00 by AT&T, RFDS ID: 4396806, dated July 12, 2022
- Previous mount analysis by Infinigy, job number 499-009, dated December 14, 2017
- Mount mapping by FDH, job number PR-007100 (R1), dated November 9, 2021
- Construction drawings by RAMAKER, project number 51642
- 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**
91	**(3) Andrew SBNHH-1D85A**	(7) Mount Pipe **(2) Mount Pipe**	**Remove**
	(3) KMW EPBQ-654L8H6-L2		
	(3) Commscope SBNHH-1D65A		
	(3) Quintel QD6616-7		**Proposed**
	(3) Ericsson AIR6419 N77G (TOP) **(3) Ericsson AIR6449 N77D (BOTTOM)**		
	(3) CCI DMP65R-BU6DA		
	(5) Raycap DC6 Squid	Wall mounted	**Remove**
	(3) Ericsson RRUS-11 B12		
	(6) Ericsson RRUS-12 B2		
	(3) Ericsson 4478 B5		
	(3) DTMABP7819VG12A		
	(6) Commscope DBC0061F1V51-2		
	(3) Ericsson RRUS-32 B30		Existing
	(3) Ericsson RRUS-E2 B29		
	(3) Ericsson RRUS-32 B66A		
	(3) Ericsson 4478 B14		
	(3) Ericsson 4449 B5/B12		**Proposed**
	(3) Ericsson 4415 B25		
	(3) Raycap DC9-48-60-24-8C-EV		

RESULTS

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

Component Type	Percent Capacity	Pass/Fail
Mount Pipe	56.5	Pass
Standoff Arm	17.1	Pass
RATING	**56.5**	**PASS**

By engineering calculation and inspection, the existing and modified 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), provided the proposed structural modifications are completed prior to antenna and equipment installation. See associated RAMAKER construction drawings for modification details.

As a result of the proposed loading configurations, the parapet wall structure will experience a negligible increase in dead and wind loads from what are currently present. However, it is RAMAKER's assessment that the associated parapet 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

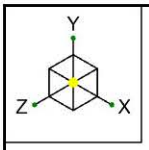
This analysis may be affected if any assumptions are not valid or have been made in error. RAMAKER should be notified to determine the effect on the structural integrity of the mount.

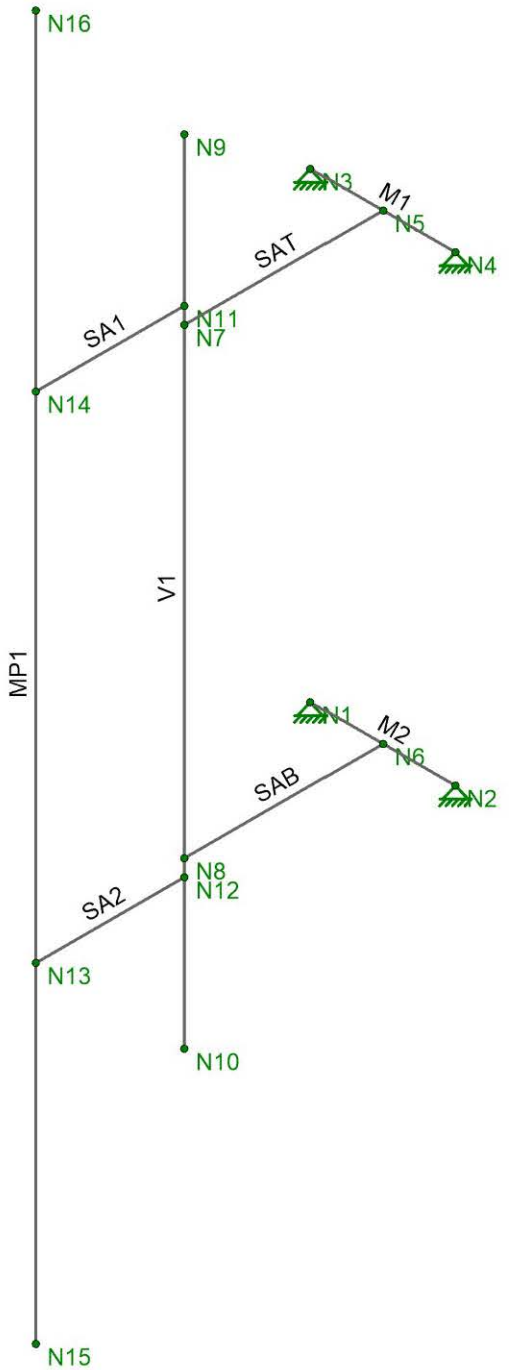
SCOPE AND LIMITATIONS

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

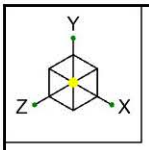
- Analysis Figures
- Analysis Calculations

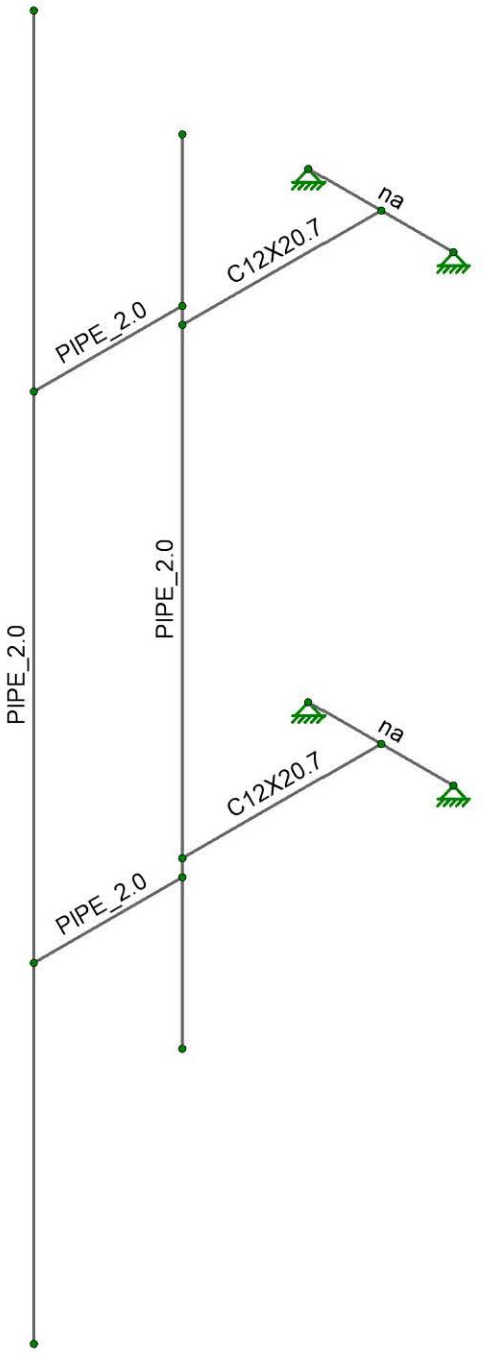




Envelope Only Solution

RAMAKER & ASSOCIATES	Cambridge Mass. Ave (MAL02243)	SK-1
SVB		Mar 02, 2022
51642		51642_Rev1.r3d





Envelope Only Solution

RAMAKER & ASSOCIATES	Cambridge Mass. Ave (MAL02243)	SK-2
SVB		Mar 02, 2022
51642		51642_Rev1.r3d

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	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	A500 Gr.C RND	29000	11154	0.3	0.65	0.527	46	1.4	62	1.3
7	A500 Gr.C RECT	29000	11154	0.3	0.65	0.527	50	1.4	62	1.3
8	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
9	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
10	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 [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Pipe_2.0	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
2	C12X20.7	C12X20.7	Beam	Channel	A36 Gr.36	Typical	6.08	3.86	129	0.369

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N3	N4		RIGID	None	None	RIGID	Typical
2	M2	N1	N2		RIGID	None	None	RIGID	Typical
3	SAT	N5	N7	90	C12X20.7	Beam	Channel	A36 Gr.36	Typical
4	SAB	N6	N8	90	C12X20.7	Beam	Channel	A36 Gr.36	Typical
5	V1	N10	N9		Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
6	MP1	N15	N16		Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
7	SA2	N13	N12		Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical
8	SA1	N14	N11		Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical

Basic Load Cases

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

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Point	Distributed
23	Antenna Wind w/Ice 90	None		4	
24	Antenna Wind w/Ice 120	None		4	
25	Antenna Wind w/Ice 135	None		4	
26	Antenna Wind w/Ice 150	None		4	
27	Antenna Wind w/Ice 180	None		4	
28	Antenna Wind w/Ice 210	None		4	
29	Antenna Wind w/Ice 225	None		4	
30	Antenna Wind w/Ice 240	None		4	
31	Antenna Wind w/Ice 270	None		4	
32	Antenna Wind w/Ice 300	None		4	
33	Antenna Wind w/Ice 315	None		4	
34	Antenna Wind w/Ice 330	None		4	
35	Member Dead	None	-1		
36	Member Wind 0	None			12
37	Member Wind 30	None			12
38	Member Wind 45	None			12
39	Member Wind 60	None			12
40	Member Wind 90	None			12
41	Member Wind 120	None			12
42	Member Wind 135	None			12
43	Member Wind 150	None			12
44	Member Wind 180	None			12
45	Member Wind 210	None			12
46	Member Wind 225	None			12
47	Member Wind 240	None			12
48	Member Wind 270	None			12
49	Member Wind 300	None			12
50	Member Wind 315	None			12
51	Member Wind 330	None			12
52	Member Ice Dead	None			6
53	Member Wind w/Ice 0	None			12
54	Member Wind w/Ice 30	None			12
55	Member Wind w/Ice 45	None			12
56	Member Wind w/Ice 60	None			12
57	Member Wind w/Ice 90	None			12
58	Member Wind w/Ice 120	None			12
59	Member Wind w/Ice 135	None			12
60	Member Wind w/Ice 150	None			12
61	Member Wind w/Ice 180	None			12
62	Member Wind w/Ice 210	None			12
63	Member Wind w/Ice 225	None			12
64	Member Wind w/Ice 240	None			12
65	Member Wind w/Ice 270	None			12
66	Member Wind w/Ice 300	None			12
67	Member Wind w/Ice 315	None			12
68	Member Wind w/Ice 330	None			12
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
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
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
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
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
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	N1	max	97.642	14	195.767	22	487.423	31	0	304	0	304	0	304
2		min	-97.642	6	-122.398	14	-406.056	7	0	1	0	1	0	1
3	N2	max	97.642	14	195.767	30	487.423	21	0	304	0	304	0	304
4		min	-97.642	6	-122.398	6	-406.056	13	0	1	0	1	0	1
5	N3	max	92.031	30	191.609	46	376.627	15	0	304	0	304	0	304
6		min	-92.031	22	-111.931	6	-457.816	23	0	1	0	1	0	1
7	N4	max	92.031	30	191.609	38	376.627	5	0	304	0	304	0	304
8		min	-92.031	22	-111.931	14	-457.816	29	0	1	0	1	0	1
9	Totals:	max	379.336	14	641.182	46	535.428	18						
10		min	-379.336	6	125.831	2	-535.428	26						

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	SAT	C12X20.7	0.044	1	45	0.008	0.469	z	30	194653.758	196992	7437.645	69120	1.336	H1-1b
2	SAB	C12X20.7	0.044	1	46	0.009	0.469	z	30	194653.758	196992	7437.645	69120	1.337	H1-1b
3	V1	PIPE_2.0	0.179	3.167	34	0.091	0.833		30	26521.424	32130	1871.625	1871.625	1	H1-1b
4	MP1	PIPE_2.0	0.186	1.641	26	0.026	5.408		26	21367.037	32130	1871.625	1871.625	1	H1-1b
5	SA2	PIPE_2.0	0.171	0	26	0.086	0.75		29	31914.035	32130	1871.625	1871.625	1.858	H1-1b
6	SA1	PIPE_2.0	0.165	0	18	0.082	0.75		31	31914.035	32130	1871.625	1871.625	1.914	H1-1b

RAMAKER employee-owned

Job	Cambridge Mass Ave (MAL02243)
Project	51642
By	KD
Date	3/2/22

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 :	B		Exposure Category
V :	99	mph	Basic Wind Speed (Annex B)
z :	91	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_z :	0.96		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 :	23.0	psf	Velocity Pressure at Height z
G_h :	1.00		Strength Design of Appurtenances and their Connections

Mount & Antenna Wind Loads

Appurtenance	Height	Width	h/D	Shape	C_a	A_a	Force	Force
	in	*in*				*sq ft*	*lb*	*plf*
QD6616-7	72.0	22.0	3.3	Flat	1.234	11.00	312.3	
Pipe2STD x 5.8333 ft	70.0	2.4	29.5	Round	1.200	1.15	31.9	5.5
C12X20.7 x 1 ft	12.0	12.0	1.0	Flat	1.200	1.00	27.6	27.6
Pipe2STD x 4 ft	48.0	2.4	20.2	Round	1.094	0.79	19.9	5.0
Pipe2STD x 0.75 ft	9.0	2.4	3.8	Round	0.729	0.15	2.5	3.3

RAMAKER employee-owned

Job	Cambridge Mass Ave (MAL02243)
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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 :	B		Exposure Category
V :	99	mph	Basic Wind Speed (Annex B)
z :	91	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_z :	0.96		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 :	23.0	psf	Velocity Pressure at Height z
G_h :	1.00		Strength Design of Appurtenances and their Connections

Mount & Antenna Wind Loads

Appurtenance	Height	Depth	h/D	Shape	C_a	A_a	Force	Force
	in	*in*				*sq ft*	*lb*	*plf*
QD6616-7	72.0	9.6	7.5	Flat	1.417	4.80	156.4	
Pipe2STD x 5.8333 ft	70.0	2.4	29.5	Round	1.200	1.15	31.9	5.5
C12X20.7 x 1 ft	12.0	2.9	4.1	Flat	1.270	0.25	7.2	7.2
Pipe2STD x 4 ft	48.0	2.4	20.2	Round	1.094	0.79	19.9	5.0
Pipe2STD x 0.75 ft	9.0	2.4	3.8	Round	0.729	0.15	2.5	3.3

Job	Cambridge Mass Ave (MAL02243)
Project	51642
By	KD
Date	3/2/22

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 :	B		Exposure Category
V_i :	50	mph	Basic Wind Speed (Annex B)
z :	91	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_z :	0.96		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 :	5.85	psf	Velocity Pressure at Height z
G_h :	1.00		Strength Design of Appurtenances and their Connections
t_{iz} :	1.66	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
	in	*in*				*sq ft*	*lb*	*plf*
QD6616-7	75.3	25.3	3.0	Flat	1.221	13.24	94.6	
Pipe2STD x 5.8333 ft	73.3	5.7	12.9	Round	0.931	2.90	15.8	2.6
C12X20.7 x 1 ft	15.3	15.3	1.0	Flat	1.200	1.63	11.4	9.0
Pipe2STD x 4 ft	51.3	5.7	9.0	Round	0.845	2.03	10.0	2.3
Pipe2STD x 0.75 ft	12.3	5.7	2.2	Round	0.700	0.49	2.0	1.9

Job	Cambridge Mass Ave (MAL02243)
Project	51642
By	KD
Date	3/2/22

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 :	B		Exposure Category
V_i :	50	mph	Basic Wind Speed (Annex B)
z :	91	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_z :	0.96		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 :	5.85	psf	Velocity Pressure at Height z
G_h :	1.00		Strength Design of Appurtenances and their Connections
t_{iz} :	1.66	in	Design Thickness of Radial Ice at Height z (2.6.8)

Mount & Antenna Ice Wind Loads

Appurtenance	Height	Depth	h/D	Shape	C_a	A_a	Force	Force
	in	*in*				*sq ft*	*lb*	*plf*
QD6616-7	75.3	12.9	5.8	Flat	1.348	6.76	53.3	
Pipe2STD x 5.8333 ft	73.3	5.7	12.9	Round	0.931	2.90	15.8	2.6
C12X20.7 x 1 ft	15.3	6.3	2.4	Flat	1.200	0.67	4.7	3.7
Pipe2STD x 4 ft	51.3	5.7	9.0	Round	0.845	2.03	10.0	2.3
Pipe2STD x 0.75 ft	12.3	5.7	2.2	Round	0.700	0.49	2.0	1.9

RAMAKER employee-owned

Job	Cambridge Mass Ave (MAL02243)
Project	51642
By	KD
Date	3/2/22

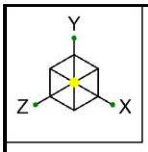
Ice Load on Antennas TIA-222-G

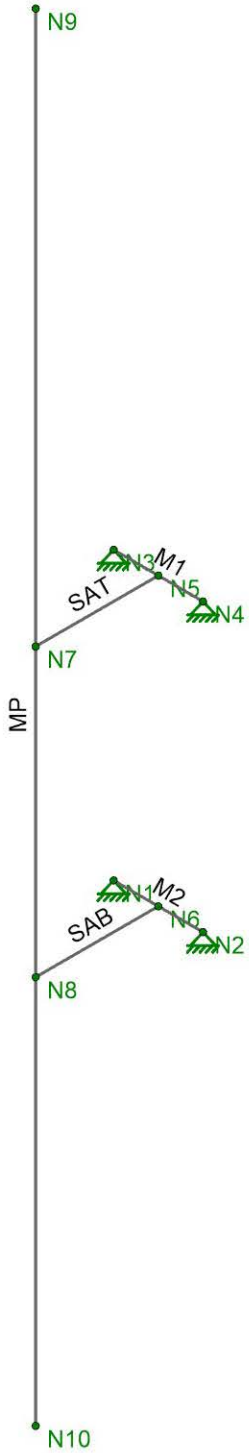
Ice Weight :	56	pcf	Ice Density
t_i :	0.75		Design Ice Thickness
Occupancy :	II		Classification of Structures (Table 2-1)
Exposure :	B		Exposure Category
V_i :	50	mph	Basic Wind Speed (Annex B)
z :	91	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_{iz} :	1.11		Height Escalation Factor for Ice Thickness
K_{zt} :	1.00		Topographic Factor (2.6.6.4)
t_{iz} :	1.66	in	Design Thickness of Radial Ice at Height z (2.6.8)

Platform Grating :	None	
Ice Load :		psf

Mount & Antenna Ice Wind Loads

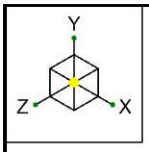
Appurtenance	Height	Width	Depth	Diam.	Area	Perim.	Ice Weight	
	in	*in*	*in*	*in*	*sq in*	*in*	*lb*	*plf*
QD6616-7	75.3	25.3	12.9	24.00	133.85	69.84	312.3	
Pipe2STD x 5.8333 ft	73.3	5.7	5.7	2.38	21.05	12.68	47.7	8.2
C12X20.7 x 1 ft	15.3	15.3	6.3	12.35	73.10	41.84	28.4	28.4
Pipe2STD x 4 ft	51.3	5.7	5.7	2.38	21.05	12.68	32.7	8.2
Pipe2STD x 0.75 ft	12.3	5.7	5.7	2.38	21.05	12.68	6.1	8.2

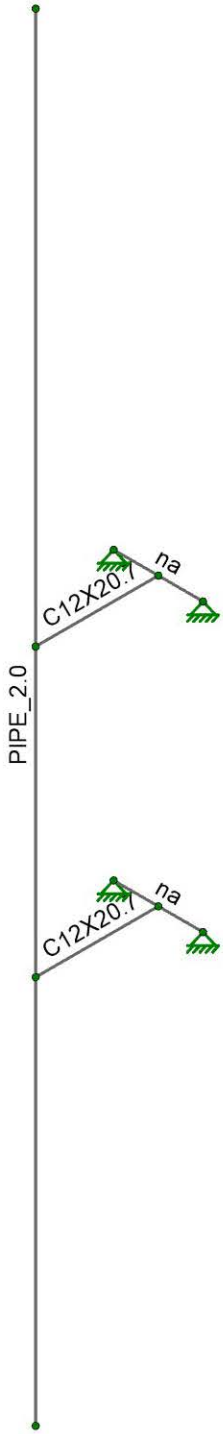




Envelope Only Solution

RAMAKER & ASSOCIATES	Cambridge Mass. Ave (MAL02243)	SK-1
kdael		Feb 04, 2022
51642		51642.r3d





Envelope Only Solution

RAMAKER & ASSOCIATES	Cambridge Mass. Ave (MAL02243)	SK-2
kdael		Feb 04, 2022
51642		51642.r3d

Hot Rolled Steel Properties

	Label	E [ksi]	G [ksi]	Nu	Therm. Coeff. [1e⁵°F⁻¹]	Density [k/ft³]	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	A500 Gr.C RND	29000	11154	0.3	0.65	0.527	46	1.4	62	1.3
7	A500 Gr.C RECT	29000	11154	0.3	0.65	0.527	50	1.4	62	1.3
8	A53 Gr.B	29000	11154	0.3	0.65	0.49	35	1.6	60	1.2
9	A1085	29000	11154	0.3	0.65	0.49	50	1.4	65	1.3
10	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 [in²]	Iyy [in⁴]	Izz [in⁴]	J [in⁴]
1	Pipe_2.0	PIPE_2.0	Beam	Pipe	A53 Gr.B	Typical	1.02	0.627	0.627	1.25
2	C12X20.7	C12X20.7	Beam	Channel	A36 Gr.36	Typical	6.08	3.86	129	0.369

Member Primary Data

	Label	I Node	J Node	Rotate(deg)	Section/Shape	Type	Design List	Material	Design Rule
1	M1	N3	N4		RIGID	None	None	RIGID	Typical
2	M2	N1	N2		RIGID	None	None	RIGID	Typical
3	SAT	N5	N7	270	C12X20.7	Beam	Channel	A36 Gr.36	Typical
4	SAB	N6	N8	270	C12X20.7	Beam	Channel	A36 Gr.36	Typical
5	MP	N10	N9		Pipe_2.0	Beam	Pipe	A53 Gr.B	Typical

Basic Load Cases

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

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Point	Distributed
26	Antenna Wind w/Ice 150	None		4	
27	Antenna Wind w/Ice 180	None		4	
28	Antenna Wind w/Ice 210	None		4	
29	Antenna Wind w/Ice 225	None		4	
30	Antenna Wind w/Ice 240	None		4	
31	Antenna Wind w/Ice 270	None		4	
32	Antenna Wind w/Ice 300	None		4	
33	Antenna Wind w/Ice 315	None		4	
34	Antenna Wind w/Ice 330	None		4	
35	Member Dead	None	-1		
36	Member Wind 0	None			6
37	Member Wind 30	None			6
38	Member Wind 45	None			6
39	Member Wind 60	None			6
40	Member Wind 90	None			6
41	Member Wind 120	None			6
42	Member Wind 135	None			6
43	Member Wind 150	None			6
44	Member Wind 180	None			6
45	Member Wind 210	None			6
46	Member Wind 225	None			6
47	Member Wind 240	None			6
48	Member Wind 270	None			6
49	Member Wind 300	None			6
50	Member Wind 315	None			6
51	Member Wind 330	None			6
52	Member Ice Dead	None			3
53	Member Wind w/Ice 0	None			6
54	Member Wind w/Ice 30	None			6
55	Member Wind w/Ice 45	None			6
56	Member Wind w/Ice 60	None			6
57	Member Wind w/Ice 90	None			6
58	Member Wind w/Ice 120	None			6
59	Member Wind w/Ice 135	None			6
60	Member Wind w/Ice 150	None			6
61	Member Wind w/Ice 180	None			6
62	Member Wind w/Ice 210	None			6
63	Member Wind w/Ice 225	None			6
64	Member Wind w/Ice 240	None			6
65	Member Wind w/Ice 270	None			6
66	Member Wind w/Ice 300	None			6
67	Member Wind w/Ice 315	None			6
68	Member Wind w/Ice 330	None			6
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			
78	LV-10	None			
79	LV-11	None			
80	LV-12	None			

Basic Load Cases (Continued)

	BLC Description	Category	Y Gravity	Point	Distributed
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
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				
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

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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		
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		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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		
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		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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		
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		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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		
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		

Load Combinations (Continued)

	Description	Solve	P-Delta	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor	BLC	Factor
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	N1	max	54.938	14	262.393	26	225.986	28	0	304	0	304	0	304
2		min	-54.938	6	-192.542	2	-174.639	4	0	1	0	1	0	1

Envelope Node Reactions (Continued)

	Node Label		X [lb]	LC	Y [lb]	LC	Z [lb]	LC	MX [lb-ft]	LC	MY [lb-ft]	LC	MZ [lb-ft]	LC
3	N2	max	54.938	14	262.393	26	225.986	24	0	304	0	304	0	304
4		min	-54.938	6	-192.542	2	-174.639	16	0	1	0	1	0	1
5	N3	max	125.322	30	778.677	31	499.901	16	0	304	0	304	0	304
6		min	-125.322	22	-707.034	7	-551.262	24	0	1	0	1	0	1
7	N4	max	125.322	30	778.677	21	499.901	4	0	304	0	304	0	304
8		min	-125.322	22	-707.034	13	-551.262	28	0	1	0	1	0	1
9	Totals:	max	360.507	30	613.215	44	534.573	18						
10		min	-360.507	6	121.664	17	-534.573	26						

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	SAT	C12X20.7	0.1	1	32	0.037	0.49	z	30	194653.758	196992	7437.645	69120	1.678	H1-1b
2	SAB	C12X20.7	0.07	1	26	0.009	0	z	26	194653.758	196992	7437.645	69120	1	H1-1b
3	MP	PIPE_2.0	0.565	5.52	26	0.062	5.416		26	9838.565	32130	1871.625	1871.625	1	H1-1b

Job	Cambridge Mass Ave (MAL02243)
Project	51642
By	KD
Date	2/4/22

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 :	B		Exposure Category
V :	99	mph	Basic Wind Speed (Annex B)
z :	91	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_z :	0.96		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 :	23.0	psf	Velocity Pressure at Height z
G_h :	1.00		Strength Design of Appurtenances and their Connections

Mount & Antenna Wind Loads

Appurtenance	Height	Width	h/D	Shape	C_a	A_a	Force	Force
	in	*in*				*sq ft*	*lb*	*plf*
QD6616-7	72.0	22.0	3.3	Flat	1.234	11.00	312.3	
Pipe2STD x 10 ft	120.0	2.4	50.5	Round	1.200	1.98	54.6	5.5
C12X20.7 x 1 ft	12.0	12.0	1.0	Flat	1.200	1.00	27.6	27.6

Job	Cambridge Mass Ave (MAL02243)
Project	51642
By	KD
Date	2/4/22

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 :	B		Exposure Category
V :	99	mph	Basic Wind Speed (Annex B)
z :	91	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_z :	0.96		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 :	23.0	psf	Velocity Pressure at Height z
G_h :	1.00		Strength Design of Appurtenances and their Connections

Mount & Antenna Wind Loads

Appurtenance	Height	Depth	h/D	Shape	C_a	A_a	Force	Force
	in	*in*				*sq ft*	*lb*	*plf*
QD6616-7	72.0	9.6	7.5	Flat	1.417	4.80	156.4	
Pipe2STD x 10 ft	120.0	2.4	50.5	Round	1.200	1.98	54.6	5.5
C12X20.7 x 1 ft	12.0	2.9	4.1	Flat	1.270	0.25	7.2	7.2

Job	Cambridge Mass Ave (MAL02243)
Project	51642
By	KD
Date	2/4/22

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 :	B		Exposure Category
V_i :	50	mph	Basic Wind Speed (Annex B)
z :	91	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_z :	0.96		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 :	5.85	psf	Velocity Pressure at Height z
G_h :	1.00		Strength Design of Appurtenances and their Connections
t_{iz} :	1.66	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
	in	*in*				*sq ft*	*lb*	*plf*
QD6616-7	75.3	25.3	3.0	Flat	1.221	13.24	94.6	
Pipe2STD x 10 ft	123.3	5.7	21.7	Round	1.126	4.88	32.1	3.1
C12X20.7 x 1 ft	15.3	15.3	1.0	Flat	1.200	1.63	11.4	9.0

Job	Cambridge Mass Ave (MAL02243)
Project	51642
By	KD
Date	2/4/22

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 :	B		Exposure Category
V_i :	50	mph	Basic Wind Speed (Annex B)
z :	91	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_z :	0.96		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 :	5.85	psf	Velocity Pressure at Height z
G_h :	1.00		Strength Design of Appurtenances and their Connections
t_{iz} :	1.66	in	Design Thickness of Radial Ice at Height z (2.6.8)

Mount & Antenna Ice Wind Loads

Appurtenance	Height	Depth	h/D	Shape	C_a	A_a	Force	Force
	in	*in*				*sq ft*	*lb*	*plf*
QD6616-7	75.3	12.9	5.8	Flat	1.348	6.76	53.3	
Pipe2STD x 10 ft	123.3	5.7	21.7	Round	1.126	4.88	32.1	3.1
C12X20.7 x 1 ft	15.3	6.3	2.4	Flat	1.200	0.67	4.7	3.7

RAMAKER employee-owned

Job	Cambridge Mass Ave (MAL02243)
Project	51642
By	KD
Date	2/4/22

Ice Load on Antennas TIA-222-G

Ice Weight :	56	pcf	Ice Density
t_i :	0.75		Design Ice Thickness
Occupancy :	II		Classification of Structures (Table 2-1)
Exposure :	B		Exposure Category
V_i :	50	mph	Basic Wind Speed (Annex B)
z :	91	ft	Height above ground level to the center of the antenna
I :	1.00		Importance Factor (Table 2-3)
K_{iz} :	1.11		Height Escalation Factor for Ice Thickness
K_{zt} :	1.00		Topographic Factor (2.6.6.4)
t_{iz} :	1.66	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	
	in	*in*	*in*	*in*	*sq in*	*in*	*lb*	*plf*
QD6616-7	75.3	25.3	12.9	24.00	133.85	69.84	312.3	
Pipe2STD x 10 ft	123.3	5.7	5.7	2.38	21.05	12.68	81.8	8.2
C12X20.7 x 1 ft	15.3	15.3	6.3	12.35	73.10	41.84	28.4	28.4

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 Lesley University
(OWNER)

Address: 29 Everett Street, Cambridge, Mass. 02138

State that I/We own the property located at 1815 Massachusetts Ave, Cambridge, Ma. 02140 which is the subject of this zoning application.

The record title of this property is in the name of Lesley University

*Pursuant to a deed of duly recorded in the date January 31, 1946 Middlesex South County Registry of Deeds at Book 7053, Page 401; or Middlesex Registry District of Land Court, Certificate No. _____ Book _____ Page _____.

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

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

Commonwealth of Massachusetts, County of Middlesex

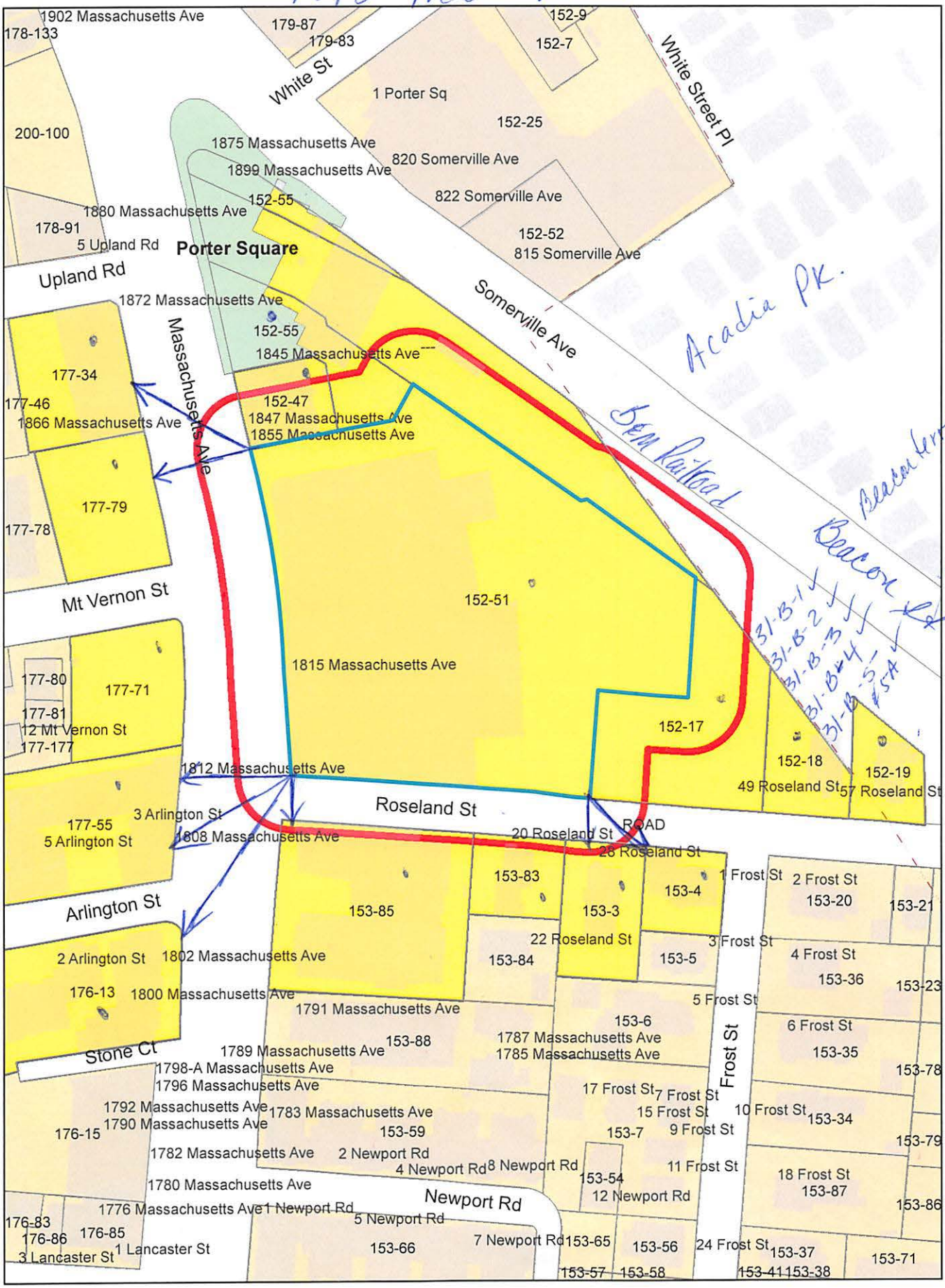
The above-name Joanne Kossuth personally appeared before me, this 10th of April, 2023, and made oath that the above statement is true.

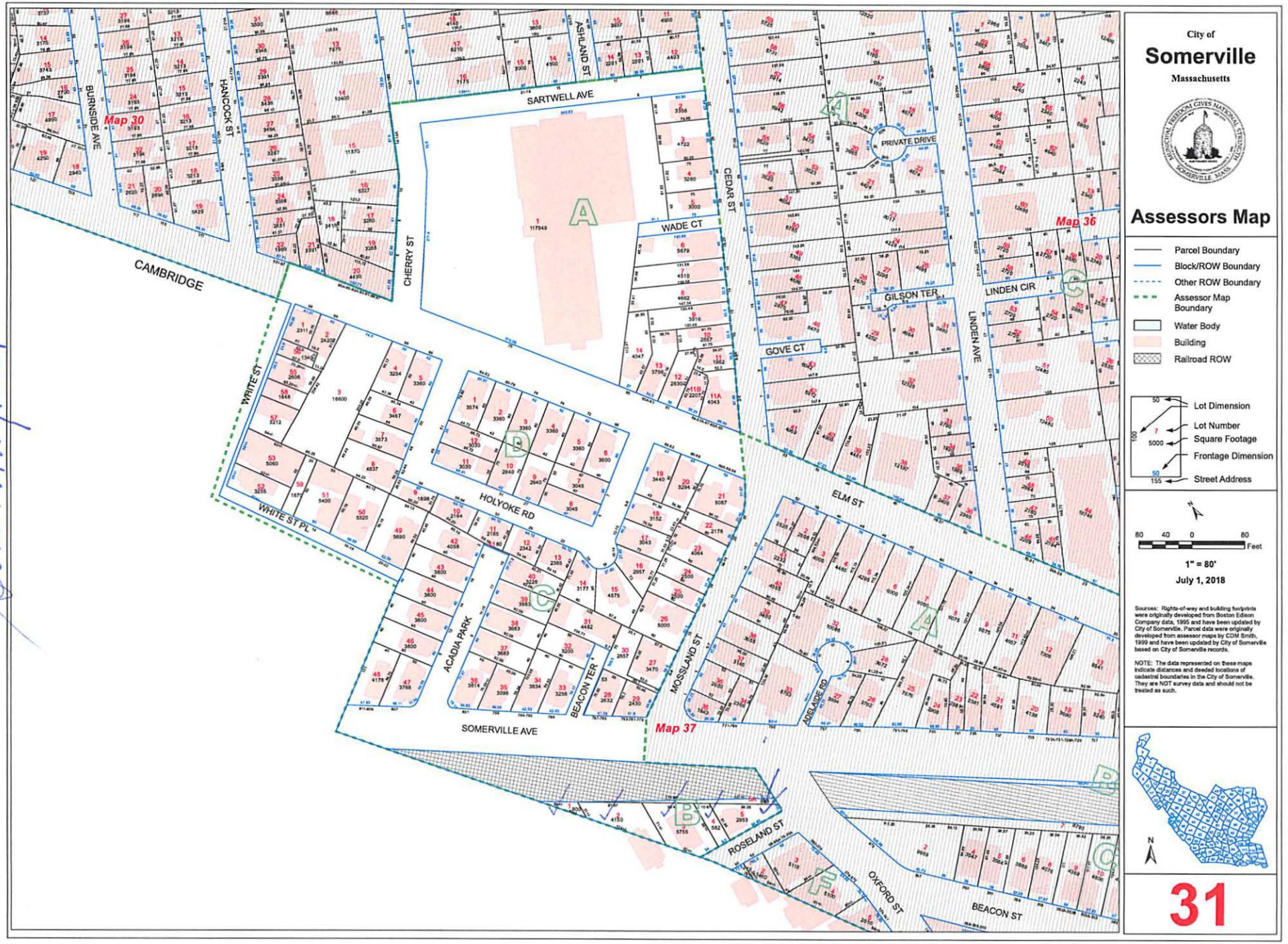
Notary

My commission expires _____ (Notary Seal).

Lisa M. Krouch
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires
October 16, 2026

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


1815 Mass Ave
1902 Massachusetts Ave
178-133
179-87
179-83
152-9
152-7
White St
White Street Pl
1 Porter Sq
152-25
200-100
1875 Massachusetts Ave
820 Somerville Ave
1899 Massachusetts Ave
822 Somerville Ave
152-55
1880 Massachusetts Ave
178-91
5 Upland Rd
Porter Square
152-52
815 Somerville Ave
Upland Rd
Somerville Ave
Acadia Pk.
1872 Massachusetts Ave
152-55
1845 Massachusetts Ave
Massachusetts Ave
177-34
177-46
1866 Massachusetts Ave
152-47
1847 Massachusetts Ave
1855 Massachusetts Ave
B&M Railroad
Beacon Terrace
Beacon
177-79
177-78
Mt Vernon St
152-51
177-80
177-71
177-81
12 Mt Vernon St
177-177
1815 Massachusetts Ave
152-17
152-18
49 Roseland St
152-19
57 Roseland St
1812 Massachusetts Ave
Roseland St
177-55
3 Arlington St
5 Arlington St
1808 Massachusetts Ave
20 Roseland St
ROAD
28 Roseland St
153-83
153-4
1 Frost St
2 Frost St
153-20
153-21
153-85
153-3
Arlington St
22 Roseland St
3 Frost St
2 Arlington St
1802 Massachusetts Ave
153-84
153-5
4 Frost St
153-36
153-23
176-13
1800 Massachusetts Ave
5 Frost St
1791 Massachusetts Ave
153-6
6 Frost St
153-88
1787 Massachusetts Ave
153-35
Stone Ct
1789 Massachusetts Ave
1785 Massachusetts Ave
153-78
1798-A Massachusetts Ave
1796 Massachusetts Ave
17 Frost St
7 Frost St
Frost St
1792 Massachusetts Ave
15 Frost St
10 Frost St
153-34
1790 Massachusetts Ave
1783 Massachusetts Ave
176-15
153-59
153-7
9 Frost St
153-79
1782 Massachusetts Ave
2 Newport Rd
4 Newport Rd
8 Newport Rd
11 Frost St
1780 Massachusetts Ave
153-54
18 Frost St
153-87
Newport Rd
12 Newport Rd
1776 Massachusetts Ave
1 Newport Rd
153-86
5 Newport Rd
176-83
176-86
176-85
1 Lancaster St
3 Lancaster St
153-66
7 Newport Rd
153-65
153-56
24 Frost St
153-37
153-71
153-57
153-58
153-41
153-38
31-B-1
31-B-2
31-B-3
31-B-4
31-B-5
31-B-5A


Somerville
Map 30
Map 36
Map 37
BURNSIDE AVE
HANCOCK ST
ASHLAND ST
SARTWELL AVE
CHERRY ST
CEDAR ST
WADE CT
PRIVATE DRIVE
GILSON TER
LINDEN CIR
LINDEN AVE
GOVE CT
ELM ST
CAMBRIDGE
WHITE ST
WHITE ST PL
HOLYOKE RD
ACADIA PARK
BEACON TER
MOSSLAND ST
ADELAIDE RD
SOMERVILLE AVE
ROSELAND ST
OXFORD ST
BEACON ST
City of
Somerville
Massachusetts
Assessors Map
Parcel Boundary
Block/ROW Boundary
Other ROW Boundary
Assessor Map Boundary
Water Body
Building
Railroad ROW
Lot Dimension
Lot Number
Square Footage
Frontage Dimension
Street Address
80 40 0 80 Feet
1" = 80'
July 1, 2018
Sources: Rights-of-way and building footprints were originally developed from Boston Edison Company data, 1995 and have been updated by City of Somerville. Parcel data were originally developed from assessor maps by CDM Smith, 1999 and have been updated by City of Somerville based on City of Somerville records.
NOTE: The data represented on these maps indicate distances and deeded locations of cadastral boundaries in the City of Somerville. They are NOT survey data and should not be treated as such.
31

ROSELAND ST

Location	ROSELAND ST	**Mblu**	31/ B/ 1/ /
Acct#	19611020	**Owner**	LESLEY COLLEGE
Assessment	$176,300	**PID**	328
Building Count	1		

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2023	$1,500	$174,800	$176,300

Owner of Record

Owner	LESLEY COLLEGE	**Sale Price**	$1
Co-Owner		**Certificate**	
Address	29 EVERETT ST CAMBRIDGE, MA 02138	**Book & Page**	25269/ 543
		Sale Date	04/05/1995
		Instrument	1F

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
LESLEY COLLEGE	$1		25269/ 543	1F	04/05/1995
LESLEY REALTY CORP	$10		24763/ 155	1F	08/05/1994
C D I A INC TRUSTEE	$0				

Building Information

Building 1 : Section 1

Year Built:	
Living Area:	0
Replacement Cost:	$0
Building Percent Good:	
Replacement Cost Less Depreciation:	$0

Building Attributes	
Field	**Description**

49 ROSELAND ST

Location	49 ROSELAND ST	**Mblu**	31/ B/ 2/ /
Acct#	06259086	**Owner**	LESLEY REALTY CORP
Assessment	$1,016,500	**PID**	329
Building Count	1		

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2023	$121,400	$895,100	$1,016,500

Owner of Record

Owner	LESLEY REALTY CORP	**Sale Price**	$0
Co-Owner	C/O LESLEY COLLEGE	**Certificate**	
Address	29 EVERETT STREET CAMBRIDGE, MA 02138	**Book & Page**	24763/ 155
		Sale Date	08/05/1994
		Instrument	1F

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
LESLEY REALTY CORP	$0		24763/ 155	1F	08/05/1994
TRUST 1815 REALTY	$0				

Building Information

Building 1 : Section 1

Year Built:	1900
Living Area:	4,156
Replacement Cost:	$1,180,297
Building Percent Good:	10
Replacement Cost Less Depreciation:	$118,000

Building Attributes	
Field	**Description**
Style	Mansard-Apts

57 ROSELAND ST

Location	57 ROSELAND ST	**Mblu**	31/ B/ 3/ F/ B4
Acct#	18572090	**Owner**	MAREK JITKA LIFE ESTATE
Assessment	$1,547,100	**PID**	6085
Building Count	1		

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2023	$734,800	$812,300	$1,547,100

Owner of Record

Owner	MAREK JITKA LIFE ESTATE	**Sale Price**	$1
Co-Owner	57 ROSELAND ST TRUST	**Certificate**	
Address	57 ROSELAND ST SOMERVILLE, MA 02143	**Book & Page**	78029/ 293
		Sale Date	06/16/2021
		Instrument	1F

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
MAREK JITKA LIFE ESTATE	$1		78029/ 293	1F	06/16/2021
MAREK JITKA	$314,000		21567/ 082	A	11/27/1991
FREDERIC RAPHAEL	$0				

Building Information

Building 1 : Section 1

Year Built:	1860
Living Area:	3,364
Replacement Cost:	$1,064,931
Building Percent Good:	69
Replacement Cost Less Depreciation:	$734,800

Building Attributes	
Field	**Description**

000R BEACON ST

Location 000R BEACON ST
Mblu 31/ B/ 5/A /

Acct# 20131200
Owner MBTA

Assessment $175,900
PID 110228

Building Count 1

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2023	$0	$175,900	$175,900

Owner of Record

Owner MBTA
Co-Owner C/O MARK DOYLE R E DIRECTOR
Address 10 PARK PLAZA SUITE 5720
BOSTON, MA 02116

Sale Price $0
Certificate
Book & Page 00000/ 000
Sale Date 01/01/1970

Ownership History

Ownership History				
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Sale Date**
MBTA	$0		00000/ 000	01/01/1970

Building Information

Building 1 : Section 1

Year Built:
Living Area: 0
Replacement Cost: $0
Building Percent Good:
Replacement Cost
Less Depreciation: $0

Building Attributes	
Field	**Description**
Style	Vacant Land
Model	

61 ROSELAND ST #1

Location 61 ROSELAND ST #1 **Mblu** 31/ B/ 5/ 1/

Acct# 20131100 **Owner** DANGERFIELD ANTHONY

Assessment $126,500 **PID** 110218

Building Count 1

Current Value

Assessment			
Valuation Year	Improvements	Land	Total
2023	$126,500	$0	$126,500

Owner of Record

Owner DANGERFIELD ANTHONY
Co-Owner
Address 5 JOHNSON RD
MEDFORD, MA 02155

Sale Price $99,000
Certificate
Book & Page 56921/ 151
Sale Date 05/31/2011
Instrument 00

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
DANGERFIELD ANTHONY	$99,000		56921/ 151	00	05/31/2011
BEAUDET DOUGLAS S	$480,000		54931/ 211	1P	07/01/2010

Building Information

Building 1 : Section 1

Year Built: 2010
Living Area: 207
Replacement Cost: $139,353
Building Percent Good: 90
Replacement Cost Less Depreciation: $125,400

Building Attributes	
Field	Description
STYLE	Retail Condo

61 ROSELAND ST #2

Location	61 ROSELAND ST #2	**Mblu**	31/ B/ 5/ 2/
Acct#	20131110	**Owner**	BROWN JEFFREY L TRUSTEE
Assessment	$74,700	**PID**	110219
Building Count	1		

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2023	$74,700	$0	$74,700

Owner of Record

Owner	BROWN JEFFREY L TRUSTEE	**Sale Price**	$72,500
Co-Owner	SPRING MOUNTAIN REALTY TRUST	**Certificate**	
Address	61 ROSELAND ST 2 SOMERVILLE, MA 02143	**Book & Page**	70679/ 238
		Sale Date	02/28/2018
		Instrument	00

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
BROWN JEFFREY L TRUSTEE	$72,500		70679/ 238	00	02/28/2018
TRINCA LLC	$40,000		58601/ 250	00	03/02/2012
BEAUDET DOUGLAS S	$480,000		54931/ 211	1P	07/01/2010
WOMANS MENTAL HEALTH COLLECTIVE INC	$65,000		13698/ 567	1K	05/25/1979

Building Information

Building 1 : Section 1

Year Built:	2010
Living Area:	135
Replacement Cost:	$82,980
Building Percent Good:	90
Replacement Cost Less Depreciation:	$74,700

Building Attributes

61 ROSELAND ST #3

Location 61 ROSELAND ST #3 **Mblu** 31/ B/ 5/ 3/

Acct# 20131120 **Owner** BROWN JEFFREY L TRUSTEE

Assessment $84,800 **PID** 110220

Building Count 1

Current Value

Assessment			
Valuation Year	Improvements	Land	Total
2023	$84,800	$0	$84,800

Owner of Record

Owner BROWN JEFFREY L TRUSTEE
Co-Owner SPRING MOUNTAIN REALTY TRUST
Address 691 MASSACHUSETTS AVE SUITE #3
ARLINGTON, MA 02476

Sale Price $65,000
Certificate
Book & Page 57223/ 458
Sale Date 07/29/2011
Instrument 00

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
BROWN JEFFREY L TRUSTEE	$65,000		57223/ 458	00	07/29/2011
BEAUDET DOUGLAS S	$480,000		54931/ 211	1P	07/01/2010

Building Information

Building 1 : Section 1

Year Built: 2010
Living Area: 140
Replacement Cost: $94,248
Building Percent Good: 90
Replacement Cost Less Depreciation: $84,800

Building Attributes	
Field	Description
STYLE	Retail Condo

61 ROSELAND ST #4

Location 61 ROSELAND ST #4 **Mblu** 31/ B/ 5/ 4/

Acct# 20131130 **Owner** IGOE III JAMES M

Assessment $125,400 **PID** 110221

Building Count 1

Current Value

Assessment			
Valuation Year	Improvements	Land	Total
2023	$125,400	$0	$125,400

Owner of Record

Owner IGOE III JAMES M
Co-Owner
Address 40 SKEHAN ST
SOMERVILLE, MA 02143

Sale Price $100,000
Certificate
Book & Page 56675/ 068
Sale Date 03/31/2011
Instrument 00

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
IGOE III JAMES M	$100,000		56675/ 068	00	03/31/2011
BEAUDET DOUGLAS S	$480,000		54931/ 211	1P	07/01/2010

Building Information

Building 1 : Section 1

Year Built: 2010
Living Area: 204
Replacement Cost: $137,333
Building Percent Good: 90
Replacement Cost Less Depreciation: $123,600

Building Attributes	
Field	Description
STYLE	Retail Condo

61 ROSELAND ST #5

Location	61 ROSELAND ST #5	**Mblu**	31/ B/ 5/ 5/
Acct#	20131140	**Owner**	BAILEY EMILY H TRUSTEE
Assessment	$117,500	**PID**	110222
Building Count	1		

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2023	$117,500	$0	$117,500

Owner of Record

Owner	BAILEY EMILY H TRUSTEE	**Sale Price**	$1
Co-Owner	EMILY H BAILEY REVOCABLE TRUST	**Certificate**	
Address	105 LEXINGTON AVE CAMBRIDGE, MA 02138	**Book & Page**	73014/ 355
		Sale Date	07/30/2019
		Instrument	1F

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
BAILEY EMILY H TRUSTEE	$1		73014/ 355	1F	07/30/2019
BAILEY EMILY H	$215,000		56813/ 351	1G	05/03/2011
BEAUDET DOUGLAS S	$480,000		54931/ 211	1P	07/01/2010

Building Information

Building 1 : Section 1

Year Built:	2010
Living Area:	192
Replacement Cost:	$129,255
Building Percent Good:	90
Replacement Cost Less Depreciation:	$116,300

Building Attributes	
Field	**Description**

61 ROSELAND ST #6

Location	61 ROSELAND ST #6	**Mblu**	31/ B/ 5/ 6/
Acct#	20131150	**Owner**	BAILEY EMILY H TRUSTEE
Assessment	$102,400	**PID**	110223
Building Count	1		

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2023	$102,400	$0	$102,400

Owner of Record

Owner	BAILEY EMILY H TRUSTEE	**Sale Price**	$1
Co-Owner	EMILY H BAILEY REVOCABLE TRUST	**Certificate**	
Address	61 ROSELAND ST 6 SOMERVILLE, MA 02143	**Book & Page**	73014/ 355
		Sale Date	07/30/2019
		Instrument	1F

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
BAILEY EMILY H TRUSTEE	$1		73014/ 355	1F	07/30/2019
BAILEY EMILY H	$215,000		56813/ 351	1G	05/03/2011
BEAUDET DOUGLAS S	$480,000		54931/ 211	1P	07/01/2010

Building Information

Building 1 : Section 1

Year Built:	2010
Living Area:	169
Replacement Cost:	$113,771
Building Percent Good:	90
Replacement Cost Less Depreciation:	$102,400

Building Attributes	
Field	**Description**

61 ROSELAND ST #7

Location 61 ROSELAND ST #7 **Mblu** 31/ B/ 5/ 7/

Acct# 20131160 **Owner** WASIK MD THEODORE P

Assessment $53,300 **PID** 110224

Building Count 1

Current Value

Assessment			
Valuation Year	Improvements	Land	Total
2023	$53,300	$0	$53,300

Owner of Record

Owner WASIK MD THEODORE P
Co-Owner DECHERT MD TRACEY A
Address 29 ALBION PL
CHARLESTOWN, MA 02129

Sale Price $150,000
Certificate
Book & Page 57090/ 481
Sale Date 07/01/2011
Instrument 1V

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
WASIK MD THEODORE P	$150,000		57090/ 481	1V	07/01/2011
BEAUDET DOUGLAS S	$480,000		54931/ 211	1P	07/01/2010

Building Information

Building 1 : Section 1

Year Built: 2010
Living Area: 88
Replacement Cost: $59,242
Building Percent Good: 90
Replacement Cost Less Depreciation: $53,300

Building Attributes	
Field	Description
STYLE	Retail Condo

61 ROSELAND ST #8

Location 61 ROSELAND ST #8 **Mblu** 31/ B/ 5/ 8/

Acct# 20131170 **Owner** WASIK MD THEODORE P

Assessment $131,500 **PID** 110225

Building Count 1

Current Value

Assessment			
Valuation Year	Improvements	Land	Total
2023	$131,500	$0	$131,500

Owner of Record

Owner WASIK MD THEODORE P
Co-Owner DECHERT MD TRACEY A
Address 29 ALBION PL
CHARLESTOWN, MA 02129

Sale Price $150,000
Certificate
Book & Page 57090/ 481
Sale Date 07/01/2011
Instrument 1V

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
WASIK MD THEODORE P	$150,000		57090/ 481	1V	07/01/2011
BEAUDET DOUGLAS S	$480,000		54931/ 211	1P	07/01/2010

Building Information

Building 1 : Section 1

Year Built: 2010
Living Area: 217
Replacement Cost: $146,085
Building Percent Good: 90
Replacement Cost Less Depreciation: $131,500

Building Attributes	
Field	Description
STYLE	Retail Condo

61 ROSELAND ST #9

Location	61 ROSELAND ST #9	**Mblu**	31/ B/ 5/ 9/
Acct#	20131180	**Owner**	LANGOSY ZOE TRUSTEE
Assessment	$115,200	**PID**	110226
Building Count	1		

Current Value

Assessment			
Valuation Year	**Improvements**	**Land**	**Total**
2023	$115,200	$0	$115,200

Owner of Record

Owner	LANGOSY ZOE TRUSTEE	**Sale Price**	$100,000
Co-Owner	TN TRUST	**Certificate**	
Address	147 SHERMAN ST. APT 103 CAMBRIDGE, MA 02140	**Book & Page**	58147/ 509
		Sale Date	12/22/2011
		Instrument	00

Ownership History

Ownership History					
Owner	**Sale Price**	**Certificate**	**Book & Page**	**Instrument**	**Sale Date**
LANGOSY ZOE TRUSTEE	$100,000		58147/ 509	00	12/22/2011
BEAUDET DOUGLAS S	$480,000		54931/ 211	1P	07/01/2010

Building Information

Building 1 : Section 1

Year Built:	2010
Living Area:	186
Replacement Cost:	$125,216
Building Percent Good:	92
Replacement Cost Less Depreciation:	$115,200

Building Attributes	
Field	**Description**
STYLE	Retail Condo

61 ROSELAND ST #10

Location 61 ROSELAND ST #10 **Mblu** 31/ B/ 5/ 10/

Acct# 20131190 **Owner** GOTTLIEB JENNIFER & JOHN

Assessment $114,400 **PID** 110227

Building Count 1

Current Value

Assessment			
Valuation Year	Improvements	Land	Total
2023	$114,400	$0	$114,400

Owner of Record

Owner GOTTLIEB JENNIFER & JOHN
Co-Owner
Address 401 WASHINGTON ST
SOMERVILLE, MA 02143

Sale Price $80,000
Certificate
Book & Page 56525/ 015
Sale Date 02/25/2011
Instrument 00

Ownership History

Ownership History					
Owner	Sale Price	Certificate	Book & Page	Instrument	Sale Date
GOTTLIEB JENNIFER & JOHN	$80,000		56525/ 015	00	02/25/2011
BEAUDET DOUGLAS S	$480,000		54931/ 211	1P	07/01/2010

Building Information

Building 1 : Section 1

Year Built: 2010
Living Area: 124
Replacement Cost: $114,352
Building Percent Good: 100
Replacement Cost Less Depreciation: $114,400

Building Attributes	
Field	Description
STYLE	Retail Condo

1815 Mass Ave Petitioner 1097

152-18-51-17
LESLEY COLLEGE
29 EVERETT STREET
CAMBRIDGE, MA 02138

152-19
RICCI, DOMENICK & JOSEPHINE RICCI
C/O MAREK JITKA
57 ROSELAND STREET #3
SOMERVILLE, MA 02143

CAROLYN SEELEY
85 RANGEWAY ROAD
BILLERICA, MA 01862

152-55
MASSACHUSETTS BAY TRANSPORTATION
AUTHORITY
10 PARK PLAZA
BOSTON, MA 02116

152-47
MAYER, EDWARD A. & LOUISE M. MAYER
14 TURNER RD
N. BILLERICA, MA 01862

153-3-4
FARRINGTON REALTY LLC,
28 ROSELAND ST., #1
CAMBRIDGE, MA 02140

176-13
ROQUERRE, TIESHUN
1446 CAMBRIDGE ST
CAMBRIDGE, MA 02139

176-13
CROWLEY, STEPHEN A.
11174 WESTPORT DRIVE
WEST DES MOINES, IA 50266

176-13
COLLINS, MARGARET R.
2-6 ARLINGTON ST., #2
CAMBRIDGE, MA 02140

176-13
THEALL, STEPHEN J. JR.
4 ARLINGTON ST., UNIT #2
CAMBRIDGE, MA 02140

176-13
LIGRESTI, LEONARDO & SILVA SPRINGOLO
VIA MILAZZO 7,
35139 PADOVA, _ _

176-13
WHITE, ROSEMARY D. & MARY H. WHITE
2 ARLINGTON ST. UNIT#23
CAMBRIDGE, MA 02140

176-13
BOARDMAN, RICHARD B. & LYNNE A. STANTON
2 ARLINGTON ST. UNIT#33
CAMBRIDGE, MA 02140

176-13
HOFFMAN, JANICE,
TR. THE JANICE HOFFMAN 2016LIV TRUST
28 GLEASON STREET
WATERTOWN, MA 02472

176-13
STUART, SEBASTIAN & STEPHEN D. MCCAULEY
4 ARLINGTON ST #21
CAMBRIDGE, MA 02140

176-13
DALTON, KATHY L.
6 ARLINGTON ST #12
CAMBRIDGE, MA 02140

176-13
POPE, WILLARD R. & SYLVIA C. POPE
6 ARLINGTON ST., #21
CAMBRIDGE, MA 02140

176-13
FREIDBERG, SUSANNE
6 ARLINGTON ST., UNIT #6/31
CAMBRIDGE, MA 02140

176-13
TSERLIN, ELINA
1800 MASS AVE. UNIT#4
CAMBRIDGE, MA 02140

176-13
LIN, ALEXANDER & CHUN PI LIN HUANG
1800 MASSACHUSETTS AVE. - UNIT 800/5
CAMBRIDGE, MA 02140

176-13
DANBERG, SEYMOUR A.
TR. DANBERG CAMBRIDGE REALTY TRUST
P.O. BOX 425091
CAMBRIDGE, MA 02140

176-13
AZABU, LLC
1-3-15 MINAMI
AZABU, MINATOKI, _ _

176-13
S.R.A. PARUCHURI
1060 OAKTREE LN
BLOOMFIELD HILLS, MI 48304

176-13
CHAO, HUNG-HSING
1800 MASSACHUSETTS AVE., #11
CAMBRIDGE, MA 02140

176-13
BOWDEN, KRISTEN M.
C/O ALEX STEINBERGH & R. STANLEY BOWDEN
17 IVALOO ST., SUITE#100
SOMERVILLE , MA 02143

176-13
LIU, HONG & TIEMAE ROQUERRE
89 CALFLIN ST
BELMONT, MA 02478

176-13
SCHILLER, LAUREN E.
5421 S. CORNELL AVE #9
CHICAGO, IL 60615

176-13
NEELY, CLAIRE G.
2 ARLINGTON ST #11
CAMBRIDGE, MA 02140

176-13
RABB, INTISAR
2 ARLINGTON ST. UNIT#32
CAMBRIDGE, MA 02140

176-13
PODBELSKI, JANA J.
334 PROVIDENCE RD
SO. GRAFTON, MA 01560

1815 Mass Ave

176-13
BOWDEN, SHAREN K. C/O R C G
17 IVALOO ST, STE 100
SOMERVILLE, MA 02143

176-13
WFB FUTURAMA RENTALS LLC.
C/O RESOURCE CAPITAL RENTALS LLC
17 IVALOO ST. SUITE #100
SOMERVILLE, MA 02143

176-13
HU, CHIA-LING & CINDY HU
6 ARLINGTON ST., #32
CAMBRIDGE, MA 02140

176-13
SHIUE, REN-JYE & CHIH-WEI CHANG
1800 MASSACHUSETTS AVE. - #80031
CAMBRIDGE, MA 02140

176-13
LIU, HONG,
TR. 1802 MASS AVENUE REALTY TRUST
1673 CAMBRIDGE ST.
CAMBRIDGE, MA 02138

177-55
FERNANDEZ, MERCEDES
3333 NE 34TH ST #1505
FT. LAUDERDALE, FL 33308

177-55
JAMES, WILLIAM D. & NANCY B. JAMES
14 COVE ROAD UNIT 3
ORLEANS, MA 02653

177-55
HUGHES, ELISABETH
3 ARLINGTON ST., UNIT #24
CAMBRIDGE, MA 02140

177-55
FRATTINI, WILLIAM
ABIGAIL H FRATTINI
3 WHEELER RD
LEXINGTON, MA 02420

176-13
SIMONS, REBECCA L.
1800 MASS AVE, #3
CAMBRIDGE, MA 02140

176-13
BERKELEY, JEROME
12 COUSENS CIRCLE
NEWTON, MA 02459

176-13
JI, XIAOAN & ZHAODIAN JI
4 ARLINGTON STUNIT 11A
CAMBRIDGE, MA 02140

176-13
PERDIKOLOGOS, CONSTANTINA
FOTINI PERDIKOLOGOS
1802 MASS AVE #11
CAMBRIDGE, MA 02139

153-85
LESLEY UNIVERSITY
39 EVERETT ST.
CAMBRIDGE, MA 02138

153-83
FARRINGTON, SARAH M., SAMUEL F. &
JOHN L. FARRINGTON
28 ROSELAND ST., #1
CAMBRIDGE, MA 02140

177-55
PLAYFAIR, SUSAN R.
10 ROGERS STREET #302
CAMBRIDGE, MA 02142

177-55
LAW, MICHAEL
3 ARLINGTON STREET UNIT #3-27
CAMBRIDGE, MA 02140

177-55
GOPINATH, DINESH
35 LANGDON STREET
NEWTON, MA 02458

176-13
LIFSEY, ANGELA
1800 MASS AVENUE, UNIT 80021
CAMBRIDGE, MA 02140

176-13
BROOKS, JAMES E.
364 SPRING ST
PORTLAND, ME 04102

176-13
BOWDEN, MILISSA L.
C/O RCG
17 IVALOO ST., SUITE #100
SOMERVILLE, MA 02143

176-13
WEISS, JUDITH
21 ORCHARD ST., #2
CAMBRIDGE, MA 02140

176-13
HUANG, CHUN PI LIN
1800 MASS AVE. UNIT 33
CAMBRIDGE, MA 02140

177-55
SORRENTINO, MARIE SANDY SORRENTINO
REAL ESTATE LLC
252 COLLAMER RD
HILTON, NY 14468

177-55
CARTAGINE, CARLOS
3 ARLINGTON ST. UNIT#3/4
CAMBRIDGE, MA 02139

177-55
MARENTES LUIS A. & NEGAR TARADJI,
TRS THE MARENTES TARADJI FAMILY TR
31 WILLOW ST
CONCORD, MA 01742

177-55
JI, XIAOAN & ZHAODIAN JI
4 ARLINGTON ST 11A
CAMBRIDGE, MA 02139

177-55
MCNULTY, JAMES P.
210 GARDEN ST
CAMBRIDGE, MA 02138

1815 Mass Ave

347

177-55
BENNETT, MONICA M. & MICHAEL F. BENNETT
TRUSTEE OF M.M.B. LIVING TRUST
5 ARLINGTON ST. UNIT5/21
CAMBRIDGE, MA 02140

177-55
RUBINSKY, MELISSA B.
5 ARLINGTON ST #44
CAMBRIDGE, MA 02140

177-55
FANTASIA, MEREDITH
5 ARLINGTON ST., #5/51
CAMBRIDGE, MA 02140

177-55
BANG, YOONSHIN
7 ARLINGTON ST. UNIT#24
CAMBRIDGE, MA 02138

177-55
KNAPP, MARY M
9 SHEFFIELD WAY
WESTBOROUGH, MA 01581

177-55
CARDELLICHIO, PETER A
7 ARLINGTON ST #44
CAMBRIDGE, MA 02140

177-55
GILES, RICHARD H. & SUZANNE E. LAKE,
TRS OF ARLINGTON OXFORD REALTY TRUST
12 DEER PATH APT 3
MAYNARD, MA 01754

177-34
1868 MASS AVE LLC
109 SCHOOL ST
WATERTOWN, MA 02472

177-55
FILENE, JACOB F.
5726 S.MACON STREET
ENGLEWOOD, CO 80111

177-55
ASHLEY, GISELA
7 ARLINGTON ST #7
CAMBRIDGE, MA 02140

177-55
TERWILLIGER,CYNTHIA J.
7 ARLINGTON ST #8
CAMBRIDGE, MA 02140

177-55
LU, CHENCHEN & QIHAN LIU
3 ARLINGTON ST UNIT 23
CAMBRIDGE, MA 02140

177-55
ORFALI,MERCEDES
3333 NE 34TH ST #1505
FT. LAUDERDALE, FL 33308

177-55
HOFMANN, ANDREAS G., TRUSTEE OF THE
ROSEMARIE HOFMANN IRREVOCABLE TRS
3 ARLINGTON ST., UNIT 3/51
CAMBRIDGE, MA 02140

177-55
THAYER DOUGLAS G. & DONALD THAYER
ARLINGTON ST REAL ESTATE TRUST
C/O THAYER & ASSOCIATES
1812 MASSACHUSETTS AVE
CAMBRIDGE, MA 02140

177-55
MURPHY, KATHLEEN M.,
TRUSTEE THE MOLLY SOLOMON TRUST
P.O. BOX 427
MARBLEHEAD, MA 01945

177-55
WALSH, MICHAEL A. &
MAUREEN P. MANNING TRUSTEES
3 ARLINGTON ST., #3/57
CAMBRIDGE, MA 02140

177-55
YU, KONGJIAN
5 ARLINGTON ST UNIT 22
CAMBRIDGE, MA 02140

177-55
PETERS, ANNE C.,
TRUSTEE THE ANNE C. PETERS TRUST
5 ARLINGTON ST., #5/25
CAMBRIDGE, MA 02140

177-55
BISHKO, ADRIANE
5 ARLINGTON ST. UNIT#5/26
CAMBRIDGE, MA 02140

177-55
SCORDATO, CHRISTINE A.
1313 WASHINGTON ST
BOSTON, MA 02118

177-55
FLANNERY, SUSAN M. & STEPHEN A. COREN
5 ARLINGTON ST #45
CAMBRIDGE, MA 02140

177-55
LENIHAN, WINIFRED
5 ARLINGTON ST #55
CAMBRIDGE, MA 02140

177-55
JOYCE, MARYBETH M.
5 ARLINGTON ST #B1
CAMBRIDGE, MA 02140

177-55
DUONG, LOC
7 ARLINGTON ST., UNIT #7/21
CAMBRIDGE, MA 02140

177-55
BRAND, SUSAN F.
7 ARLINGTON ST #23
CAMBRIDGE, MA 02140

177-55
ROBERTS, KAY G.
7 ARLINGTON ST #42
CAMBRIDGE, MA 02140

177-55
MORSE, PHILIP
TRUSTEE OF PHILIP MORSE TRUST
7 ARLINGTON ST UNIT 7/57
CAMBRIDGE, MA 02140

177-55
KNOLL, VANESSA
3 ARLINGTON ST., #3/3
CAMBRIDGE, MA 02140

177-55
WU, FEI
3 ARLINGTON ST., #3/6
CAMBRIDGE, MA 02140

1815 Mass Ave

497

177-55
SHAO, MIN & YING CHEN
C/O PHILIP TSENG
63 WHEELOCK ROAD
WALTHAM, MA 02453

177-55
TOBIN, SUSANNAH BARTON
3 ARLINGTON ST. UNIT# 21
CAMBRIDGE, MA 02140

177-55
ROVINELLI, H. PAUL
3 ARLINGTON ST. UNIT#26
CAMBRIDGE, MA 02140

177-55
HUANG, IRENE C. & ANDREW WANG
166 WOODCLIFF ROAD
NEWTON, MA 02161

177-55
BORINS, LAWRENCE A.
5 ARLINGTON ST #36
CAMBRIDGE, MA 02140

176-13
CROWLEY, JR. , STEPHEN ANTHONY &
ANGELA MARIE BISANTI
11174 WESTPORT DRIVE
WEST DES MOINES, IA 50266

177-55
LICUANAN, ANA
5 ARLINGTON ST., #5/56
CAMBRIDGE, MA 02140

177-55
OLBERT, STANISLAW & NORMA L. OLBERT
TRUSTEE STANISLAW & NORMA L. OLBERT TR.
50 FOLLEN ST UNIT 36
CAMBRIDGE, MA 02140

177-55
EKSTROM, GORAN A.
7 ARLINGTON ST #52
CAMBRIDGE, MA 02140

176-13
MO NEETA, LLC
18 WHITEHALL WAY
BELLINGHAM, MA 02019

177-55
DURSO, JAMES E & ELIZABETH L. FOSNIGHT
C/O OXFORD STREET REALTY
1644 MASS AVE
CAMBRIDGE, MA 02138

177-55
DONG, HUI,
TRUSTEE THE ARLINGTON PORTER TRUST
PO BOX 456
WINCHESTER, MA 01890

177-55
FU, BING & JING WANG
3 ARLINGTON ST #3/31
CAMBRIDGE, MA 02140

177-55
SIMMONS, ALFRED M.
3 ARLINGTON ST., UNIT #3
CAMBRIDGE, MA 02140

177-55
MATTHEWS, DAVID LEE & TERRI HUME OLIVER
5 ARLINGTON ST. UNIT#42
CAMBRIDGE, MA 02140

177-55
1812 MASSACHUSETTS AVENUE LLC,
C/O W.T. PHELAN INS. AGENCY
63 TRAPELO ROAD
BELMONT, MA 02478

177-55
MILBOUER, LANCE E.
7 ARLINGTON ST #26
CAMBRIDGE, MA 02140

177-55
ROBERTS, KAY GEORGE
7 ARLINGTON ST #43
CAMBRIDGE, MA 02140

177-55
BOLTER, HENRY
5 ARLINGTON ST - UNIT #1
CAMBRIDGE, MA 02140

176-13
CHU, ANDREW C. & MICHELLE I. LAI TRUSTEES
10849 N. STELLING RD
CUPERTINO, CA 95014

177-55
MYERS, ALAN G.
7 ARLINGTON ST #4
CAMBRIDGE, MA 02140

177-55
THORNE, NELL
3 ARLINGTON ST., UNIT #3/25
CAMBRIDGE, MA 02140

177-55
LOI, SALLY
59 TREMONT ST #1
CAMBRIDGE, MA 02139

177-55
MOORES, MARJORIE J.
5 ARLINGTON ST #31
CAMBRIDGE, MA 02140

176-13
SMITH, JULIA
4 ARLINGTON ST., UNIT #6
CAMBRIDGE, MA 02139

177-55
COLLINS, HALSEY B
3556 77TH ST. APT 32
JACKSON HEIGHTS , NY 11372

177-55
KIMBALL, WILLIAM S.
7 ARLINGTON ST #27
CAMBRIDGE, MA 02140

177-55
YANG, CHIANHWA
1461 26TH AVE NE
ISSAQUAH , WA 98029

176-13
PALMER, DOUGLAS J.,
C/O OXFORD STREET REALTY, INC.
1644 MASS AVE
CAMBRIDGE, MA 02138

176-13
CHANG, CHRISTINE Z. & PATRICK C. MCLEAN
66 ELIZABETH ROAD
BELMONT, MA 02478

1815 Mass Ave

597

176-13
LEE, HYEJIN
1 EARHART ST #506
CAMBRIDGE, MA 02141

176-13
LANDERS, DEBORAH D.
4 ARLINGTON ST., UNIT #22
CAMBRIDGE, MA 02140

176-13
GRAZIOSI, ANDREA
VIA ISOLA MADRE 3
00141
ROMA, - --

176-13
MARGULIS T. N.
C/O RCG LLC,
17 IVALOO ST., SUITE#100
SOMERVILLE, MA 02143

177-55
JALAL, AYESHA
92 ORCHARD ST.
SOMERVILLE, MA 02144

177-55
ERDOSY, DANIEL P.,
GABRIELLA ERDOSY MIKLOS ERDOSY
3 ARLINGTON ST., #3/2
CAMBRIDGE, MA 02140

177-55
ABID, ZEHRA & CITY OF CAMBRIDGE TAX TITLE
1-7 ARLINGTON ST.,UNIT #3/7
CAMBRIDGE, MA 02140

177-55
SCOTT, LAURIE A.
5 ARLINGTON ST #3
CAMBRIDGE, MA 02140

177-55
LOCSIN, JEAN LOUIS.
5 ARLINGTON ST. UNIT#22
CAMBRIDGE, MA 02140

177-55
ORFALI, MERCEDES
3333 NE 34TH ST #1505
FT. LAUDERDALE, FL 33308

177-55
RUBIN, NOOREEN T.
3 ARLINGTON ST., #3/33
CAMBRIDGE, MA 02140

177-55
SUTHERLAND, LUCY R. TR.THE SUTHERLAND
ARLINGTON STREET REALTY TRUST
3 ARLINGTON ST., UNIT #43
CAMBRIDGE, MA 02140

177-55
PAOLINI, ELENA L.
3 ARLINGTON ST. UNIT#45
CAMBRIDGE, MA 02140

177-55
CHANG, NANCY T.
TRUSTEE OF NANCY T. CHANG REVOCABLE TRST
REVOCABLE TRUST
1644 MASS AVE
CAMBRIDGE, MA 02138

177-55
WALSH, MICHAEL A. &
MAUREEN P. MANNING TRUSTEES
3 ARLINGTON ST., #3/56
CAMBRIDGE, MA 02140

177-55
COLLINS, JOHN A. C/O ANDY ZWICK
4779 COLLINS AVE APT#4102
MIAMI BEACH, FL 33140

177-55
BANKLER, BETH A.
5 ARLINGTON ST #34
CAMBRIDGE, MA 02140

177-55
BUFFUM, TIMOTHY A.
5 ARLINGTON ST. UNIT#41
CAMBRIDGE, MA 02140

177-55
LICUANAN, FRANCISCO & VICTORIA LICUANAN
5 ARLINGTON ST., UNIT #54
CAMBRIDGE, MA 02140

177-55
BRAND, SUSAN F.
7 ARLINGTON ST #22
CAMBRIDGE, MA 02140

177-55
MCNULTY JAMES P. & SIRI C. STEINLE
210 GARDEN ST
CAMBRIDGE, MA 02138

177-71-79
LESLEY COLLEGE
29 EVERETT STREET
CAMBRIDGE, MA 02138

177-55
VU, LIM DINH & NGA HONG LY
7 ARLINGTON ST UNIT 45
CAMBRIDGE, MA 02140

177-55
EKSTROM, GORAN A.
7 ARLINGTON ST #52
CAMBRIDGE, MA 02140

177-55
CHAN, SZE HAM
C/O REAL PROPERTY MGMT COMMONWEALTH
245 FIRST ST, 18TH FL
CAMBRIDGE, MA 02142

177-55
OXFORD COURTS REALTY INC. ARLINGTON STREET
REAL ESTATE TRUST
C/O THAYER & ASSOCIATES
1812 MASSACHUSETTS AVE
CAMBRIDGE, MA 02140

177-55
MCDONAGH, JOHN P
4 BALDWIN LANE
AMHERST, MA 01002

177-55
ARONSTEIN, JUDITH RICE SUSAN
5 ARLINGTON ST - UNIT 5-52
CAMBRIDGE, MA 02140

177-55
SARANDOPOLIS MICHAEL MARY A
SARANDOPOLIS
75 GLEZEN LAND
WAYLAND, MA 01778

177-55
NOVICH, COREY
3 ARLINGTON ST - UNIT 3-35
CAMBRIDGE, MA 02140

1815 Mass Ave

6 of 7

177-55
ASCH, REBECCA S.
5 ARLINGTON ST UNIT 33
CAMBRIDGE, MA 02140

177-55
JIANG, YANKANG
7 ARLINGTON ST UNIT 7/55
CAMBRIDGE, MA 02140

177-55
SOLOMON JONATHAN
5 ARLINGTON ST UNIT 5-46
CAMBRIDGE, MA 02140

176-13
SUN VISTA TR
8716 RIDGE RD
BETHESDA, MD 20817

176-13
WILLOW STRONG LLC
145 PINCKNEY ST - APT #210
BOSTON, MA 02114

176-13
VEGGIE FAMILY REALTY LLC
22 SHEAN RD
BELMONT, MA 02478

176-13
SPILKER HAROLD D III KIRSTEN O SPILKER
937 HUNAKAI ST
HONOLULU, HI 96816

177-55
CURRIER, NICOLAS, SUZANNE PARK
ELLEN S. HENDRIKSEN
7 ARLINGTON ST UNIT 46
CAMBRIDGE, MA 02140

177-55
LEINBACH, KENNETH & MARION P HOGAN
7 ARLINGTON ST - UNITS 31 32 & 33
CAMBRIDGE, MA 02140

176-13
EJS PRIVATE EQUITY LLC
50 NEWTON ST
BOSTON, MA 02135

177-55
TANG, DANNI & JEFFREY A. SHNEIDMAN
3 ARLINGTON ST #3/34
CAMBRIDGE, MA 02140

176-13
HARRIS, RICHARD A., PATRICIA HARRIS ALYSON
A. POWERS & BRENDON HARRIS
1800 MASSACHUSETTS AVE UNIT 14
CAMBRIDGE, MA 02140

176-13
SRA PARUCHURI
TR SRA PARUCHURI LIVING TRUST
1060 OAK TREE LN
ROCHESTER HILLS, MI 48309

176-13
PARUCHURI S.R.A TRUSTEE
1060 OAK TREE LN
ROCHESTER HILLS, MI 48309

177-55
SPITZER, FRANKLIN
7 ARLINGTON ST #7/37
CAMBRIDGE, MA

176-13
MINOTTI, TOD ROBERT TOSI,
LINDA TOSI KEVIN LUKACEK, TRS
253 NORFOLK ST
CAMBRIDGE, MA 02139

176-13
TAZAWA KAYOKO
22 CASS ST
EXETER, NH 03833

177-55
KHOSLA MARK D
7 ARLINGTON ST - UNIT 35
CAMBRIDGE, MA 02140

177-55
LARSON, RICHARD
40 CHURCHILLS LANE - UNIT 41
MILTON, MA 02186

176-13
SHEN, KE & HUI LIU TRS HUI LIU 2018
REVOCABLE TRUST
4 ARLINGTON ST - UNIT 1
CAMBRIDGE, MA 02140

177-55
WILLIAMS, BROOKE S. &
TERRY TEMPEST WILLIAMS
HC 64 BOX 3601
CASTLE VALLEY, UT 84532

176-13
GONG, ZHENG YUGE XIAO
76 TUDOR RD
NEEDHAM , MA 02492

176-13
URBAN RENEWAL 13 LLC
C/O RCG LLC
17 IVALOO ST, UNIT 4-10
SOMERVILLE , MA 02143

177-55
STONEWELL CAROLYN
7 ARLINGTON ST - UNIT 56
CAMBRIDGE, MA 02140

176-13
CHUANG KEVIN SHUN-CHIEH & CHIHSIN YU
106 SHAW RD
BELMONT, MA 02478

176-13
GOSSELIN, JOHN T.
TR. OF THE CHRISTINE M. CANNAVA REVOC TRT
4 ARLINGTON ST 31
CAMBRIDGE, MA 02140

176-13
BI WENWEN & WENLONG TU
11 HOLDEN ST - UNIT A
BROOKLINE, MA 02445

176-13
BROMBERGER ALLEN & DANIEL BROMBERGER
30 PHILLIPS RD
SOUTH PORTLAND, ME 04106

176-13
ROQUERRE TIEQUIN
12 SEAGRAVE RD
CAMBRIDGE, MA 02140

177-55
GIANI, LUCA
5 ARLINGTON ST - UNIT 5-53
CAMBRIDGE, MA 02140

1815 Mass Ave

SOMERVILLE ABUTTERS:

31-B-1
LESLEY COLLEGE
29 EVERETT STREET
CAMBRIDGE, MA 02138

31-B-2
LESLEY REALTY CORP.
C/O LESLEY COLLEGE
29 EVERETT STREET
CAMBRIDGE, MA 02138

31-B-3 & B-4
MAREK JITKA LIFE ESTATE
57 ROSELAND STREET TRUST
57 ROSELAND STREET
SOMERVILLE, MA 02143

31-B-5-A
MBTA
C/O MARK DOYLE R E DIRECTOR
10 PARK PLAZA – SUITE 5720
BOSTON, MA 02116

31-B-5-1
ANTHONY DANGERFIELD
5 JOHNSON ROAD
MEDFORD, MA 02155

31-B-5-2
JEFFREY L. BROWN
TR. SPRING MOUNTAIN REALTY TRUST
61 ROSELAND STREET #2
SOMERVILLE, MA 02143

31-B-5-3
JEFFREY L. BROWN
TR. SPRING MOUNTAIN AVE – SUITE 3
ARLINGTON, MA 02476

31-B-5-4
JAMES M. IGOE, III
40 SKEHAN STREET
SOMERVILLE, MA 02143

31-B-5-5
EMILY H. BAILEY,
TRS. EMILY H. BAILEY REVOCABLE TRUST
105 LEXINGTON AVENUE
CAMBRIDGE, MA 02138

31-B-5-6
EMILY H. BAILEY
TR. EMILY H. BAILEY REVOCABLE TRUST
61 ROSELAND STREET #6
SOMERVILLE, MA 02143

31-B-5-7 & 5-8
THEODORE P. WASIK, MD.
TRACEY A. DECHERT, MD.
29 ALBION PLACE
CHARLESTOWN, MA 02129

31-B-5-9
ZOE LANGOSY
TR. OF TN TRUST
147 SHERMAN STREET #103
CAMBRIDGE, MA 02140

31-B-5-10
JOHN & JENNIFER GOTTLIEB
401 WASHINGTON STREET
SOMERVILLE, MA 02143