BZA-199523

BZA APPLICATION FORM

GENERAL INFORMATION

2022 NOV -7 PM 3:11
OFFICE OF THE CITY CLERK
CAMBRIDGE, MASSACHUSETTS

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

Special Permit: X **Variance:** _____ **Appeal:** _____

PETITIONER: Cellco Partnership d/b/a Verizon Wireless

PETITIONER'S ADDRESS: 20 Alexander Drive, Wallingford, CT 06492

LOCATION OF PROPERTY: 1654 Massachusetts Avenue, Cambridge, MA 02138

TYPE OF OCCUPANCY: Multi-Use Residential **ZONING DISTRICT:** Multi-Use Residence C-2

REASON FOR PETITION:

_____ Additions _____ New Structure

_____ Change in Use/Occupancy _____ Parking

_____ Conversion to Addi'l Dwelling Unit's _____ Sign

_____ Dormer _____ Subdivision

X Other: Replace existing wireless communication equipment

DESCRIPTION OF PETITIONER'S PROPOSAL:

See narrative.

SECTIONS OF ZONING ORDINANCE CITED:

Article 4.000 Section 4.32.G.1 and Footnote 49 (4.40.49)

Article 10.000 Section 10.40 - 10.46

Article 6409 Section Federal Middle class tax Relief 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)

Ellen W. Freyman
(Print Name)

Address: 1441 Main Street, Suite 1100
Springfield, MA 01103

Tel. No.: (413) 737-1131

E-Mail Address: efreyman@ssfpc.com

Date: November 2, 2022

Verizon Wireless 60-Day Eligible Facility Request Modification of Existing Wireless Base Station

Request Date: *September 15, 2022*

Jurisdiction: *City of Cambridge, Massachusetts*

Department: *Planning Board*

Site Address: *1654 Massachusetts Avenue, Cambridge, Massachusetts 02138*

Verizon Wireless Contact: *Rebecca Rafferty, SAI, (603) 475-0347*

This document serves as Verizon Wireless's eligible facilities request to modify an existing wireless rooftop facility at the above-referenced site address. This eligible facilities request must be approved administratively under Section 6409 of the Federal Spectrum Act and Federal Communications Commission ("FCC") rules (the "Spectrum Act"). Review by the City of Cambridge is limited to determining whether the proposed modification qualifies as an eligible facilities request that does not substantially change the physical dimensions of the wireless facility. All permits necessary to commence construction must be approved within 60 days of the request date set forth above, subject to tolling for incompleteness.

For this request, Verizon Wireless attaches the following documents for the permit required by the City of Cambridge to commence construction of the modification:

1. *Special Permit Application;*
2. *Plans prepared by Dewberry Engineers Inc. dated August 11, 2022 (the "Plans");*
3. *Letter of Authorization from property owner;*
4. *Certified List of Abutters within 300 feet*
5. *GIS Block Map*
6. *FCC Licenses*
7. *Power Density Calculation*
8. *Antenna Specifications*
9. *Engineering Necessity Case*
10. *Photo Simulations of proposed modifications*

Project Description

To accommodate new wireless technologies, Verizon Wireless proposes to remove (2) existing Beta and Gamma CDMA Antennas from existing mast pipes and install (3) new MT6407-77A Antennas on existing mounting pipes, (1) new combiner, as well as additional hardware for RFDS located inside of existing equipment room. All new equipment will be wrapped or painted to match all existing equipment. No additional changes are proposed for the modification.

FCC Rules for Eligible Facilities Requests

The Spectrum Act states that "a State or local government may not deny, and shall approve, any eligible facilities request for a modification of an existing wireless tower or base station that does not substantially change the physical dimensions of such tower or base station." An "eligible facilities request"[1] is defined to include any collocation, removal, or replacement of existing equipment.[2]

The FCC adopted rules providing legally binding guidance on key terms of the Spectrum Act, notably defining "substantial change" with the six thresholds described below.[3] The FCC requires that qualifying eligible facilities requests be approved within 60 days, subject to tolling for incompleteness.[4] The 60-day period begins when an applicant takes the first procedural step required by a local government, and submits written documentation.[5] The only submittal documents a local government can require are those relevant to determining if a proposed modification qualifies as an eligible facilities request.[6] If a local government does not render a decision within the 60-day period, an eligible facilities request can be deemed granted by operation of law.[7]

The Proposed Modification Does Not Constitute a "Substantial Change"

Below are the FCC's six "substantial change" thresholds for a wireless base station,[8] each followed by an explanation why the proposed modification does not exceed that threshold.

1) It increases the height of the structure by more than 10% or more than ten feet, whichever is greater.

   As shown on the Plans, there are no proposed height increases beyond any of the existing structures on the rooftop.

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[1] 47 U.S.C. § 1455(a)(1).
[2] 47 U.S.C. § 1455(a)(2).
[3] *See* Report and Order FCC 14-153, 29 FCC Rcd. 12865 (FCC October 17, 2014); *see also* Report and Order FCC 20-153, 2020 WL 6501650 (FCC October 27, 2020).
[4] *See* 47 C.F.R. § 1.6100(c)(2),(3).
[5] Declaratory Ruling 20-75, 35 FCC Rcd 5977, ¶ 16 (FCC June 9, 2020).
[6] *See* 47 C.F.R. § 1.6100(c)(1).
[7] *See* 47 C.F.R. § 1.6100(c)(4).
[8] *See* 47 C.F.R. § 1.6100(b)(7).

2) It involves adding an appurtenance to the body of the structure that would protrude from the edge of the structure by more than six feet.

   As shown on the Plans, none of the proposed equipment protrudes from the edge of the building by more than six feet.

3) For any eligible support structure, it involves the installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four; or, for base stations, it involves installation of any new equipment cabinets on the ground if there are no pre-existing ground cabinets associated with the structure, or else involves installation of ground cabinets that are more than 10% larger in height or overall volume than any other ground cabinets associated with the structure.

   As shown on the Plans, no new cabinets are proposed.

4) Entails any excavation or deployment outside the current site (as defined at 47 C.F.R. § 1.6100(b)(6)).

   As shown on the Plans, none of the modifications entail excavation or deployment outside the current site.

5) Would defeat any concealment elements of the existing facility.

   As shown on the Plans, the existing concealment elements of the base station will not change as the new equipment will all be wrapped or painted to match all existing concealment elements of existing equipment. Therefore, the modification does not defeat any concealment elements of the existing facility.

6) Does not comply with conditions associated with the prior approval of the existing facility, unless the non-compliance is due only to a change in height, width, etc., that does not exceed the first four thresholds.

   There are no prior conditions of approval that would render the modification to be non-compliant, aside from any conditions that would be preempted by the first four "substantial change" thresholds.

In sum, the modification clearly qualifies as an "eligible facilities request" under the Spectrum Act and FCC rules, because it does not exceed any of the thresholds such that it would "substantially change" the physical dimensions of the existing base station.

Failure to process this eligible facilities request and approve all necessary permits within 60 days may result in the request being deemed granted by operation of law.

Please execute and return

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 John Kurt Miller, Trustee
(OWNER)

Address: 1396 Beacon Street, Brookline, MA

State that I/We own the property located at 1654 Massachusetts Avenue,

which is the subject of this zoning application.

The record title of this property is in the name of Clifford V. Miller Trust

*Pursuant to a deed of duly recorded in the date 12/29/1972, Middlesex South County Registry of Deeds at Book 12356, Page 367; 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 Norfolk

The above-name John Kurt Miller personally appeared before me, this 9th of September, 2022, and made oath that the above statement is true.

Notary

My commission expires 02/24/2023 (Notary Seal).

ALEXANDER LIANG
Notary Public
COMMONWEALTH OF MASSACHUSETTS
My Commission Expires On
February 24, 2023

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

BZA Application Form

SUPPORTING STATEMENT FOR A SPECIAL PERMIT

Please describe in complete detail how you meet each of the following criteria referring to the property and proposed changes or uses which are requested in your application. Attach sheets with additional information for special permits which have additional criteria, e.g.; fast food permits, comprehensive permits, etc., which must be met.

Granting the Special Permit requested for 1654 Massachusetts Ave , Cambridge, MA (location) would not be a detriment to the public interest because:

A) Requirements of the Ordinance can or will be met for the following reasons:

As required by Verizon Wireless's license from the Federal Communications Commission ("FCC"), the upgraded facility will conform with requirements of the FCC. The tower has been designed in a manner which will minimize any visual impacts to the surrounding properties and community, and the proposed modification to the existing facility is not inconsistent with the character that prevails in the surrounding neighborhood.

B) Traffic generated or patterns of access or egress would not cause congestion hazard, or substantial change in established neighborhood character for the following reasons:

The upgraded facility will have no effect on existing traffic or patterns of ingress or egress. The facility only generates about one or two vehicle trips per month by a standard passenger vehicle during normal business hours for routine maintenance, which will remain the case after the modification is complete.

C) The continued operation of or the development of adjacent uses as permitted in the Zoning Ordinance would not be adversely affected by the nature of the proposed use for the following reasons:

The upgraded facility will not adversely effect any operations of adjacent uses. There will be no emission of light, odor, dust or glare and it will not generate any unusual noise or other adverse impacts. Instead, the facility will benefit the adjacent uses by enhancing wireless coverage in the area around the tower.

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

The upgraded facility will create no nuisance, hazard, or any other negative impacts on the people or properties within the City of Cambridge. There will be no traffic, noise, light, odor or any other potentially negative impact generated from the upgraded facility. The upgraded facility will only provide the community with increased wireless service and enhance the health, safety, and welfare of the residents of Cambridge.

E) For other reasons, the proposed use would not impair the integrity of the district or adjoining district or otherwise derogate from the intent or purpose of this ordinance for the following reasons:

The upgraded facility is designed to minimize any potential visual impact to the surrounding properties and in no way impairs, but rather aligns with the purpose and intent of the Zoning Ordinance as well as the previously issued Special Permit for this use.

***If you have any questions as to whether you can establish all of the applicable legal requirements, you should consult with an attorney.**

Date: _____

BZA Application Form

DIMENSIONAL INFORMATION

Applicant: John Kurt Miller, Trustee
Location: 1654 Massachusetts Ave , Cambridge, MA
Phone:

Present Use/Occupancy: Multiuse Residence
Zone: Residence C-2 Zone
Requested Use/Occupancy: Multiuse Residence

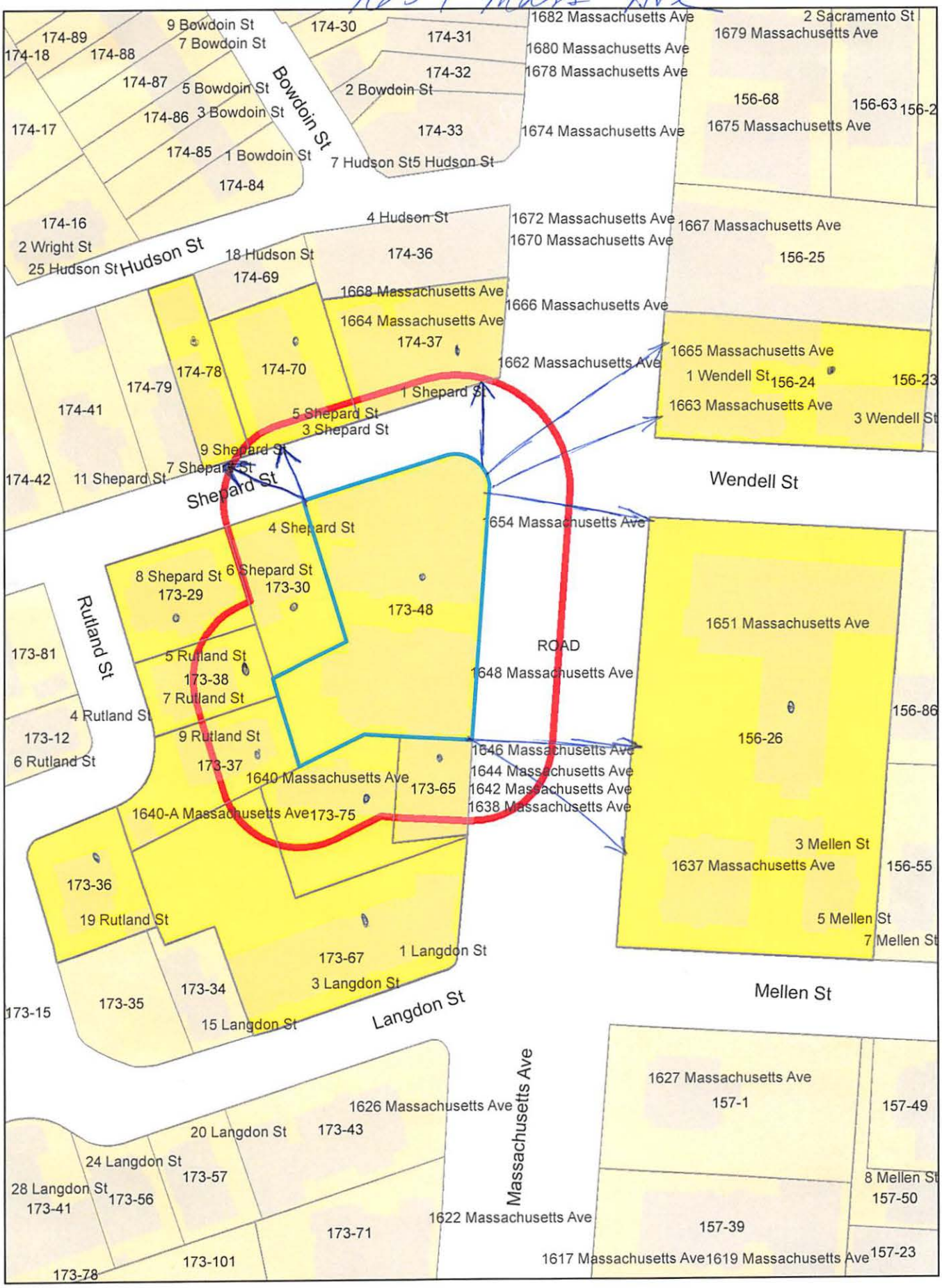
		Existing Conditions		Requested Conditions		Ordinance Requirements	
TOTAL GROSS FLOOR AREA:		N/A		N/A		N/A	(max.)
LOT AREA:		N/A		N/A		N/A	(min.)
RATIO OF GROSS FLOOR AREA TO LOT AREA: [2]		N/A		N/A		N/A	
LOT AREA OF EACH DWELLING UNIT		N/A		N/A		N/A	
SIZE OF LOT:	WIDTH	N/A		N/A		N/A	
	DEPTH	N/A		N/A		N/A	
SETBACKS IN FEET:	FRONT	N/A		N/A		N/A	
	REAR	N/A		N/A		N/A	
	LEFT SIDE	N/A		N/A		N/A	
	RIGHT SIDE	N/A		N/A		N/A	
SIZE OF BUILDING:	HEIGHT	71' - 0"		No Change		N/A	
	WIDTH	N/A		N/A		N/A	
	LENGTH	N/A		N/A		N/A	
RATIO OF USABLE OPEN SPACE TO LOT AREA:		N/A		N/A		N/A	
NO. OF DWELLING UNITS:		N/A		N/A		N/A	
NO. OF PARKING SPACES:		N/A		N/A		N/A	
NO. OF LOADING AREAS:		N/A		N/A		N/A	
DISTANCE TO NEAREST BLDG. ON SAME LOT		N/A		N/A		N/A	

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

N/A

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'.

1654 Mass Ave



1654 Mass Ave

Petitioner

156-24
LESLEY COLLEGE
29 EVERETT STREET
CAMBRIDGE, MA 02138

156-26
PRESIDENT & FELLOWS OF HARVARD COLLEGE
C/O HARVARD REAL ESTATE, INC.
HOLYOKE CENTER, ROOM 1017
1350 MASS. AVE.
CAMBRIDGE, MA 02138

SHATZ. SCHWARTZ AND FENTIN, P.C.
C/O ELLEN W. FREYMAN
1441 MAIN STREET – SUITE 1100
SPRINGFIELD, MA 01103

173-29
WHELAN, PATRICIA MARIE
6 SHEPARD ST #2
CAMBRIDGE, MA 02138-1712

173-30
OTIS, MELISSA W. & SAMUEL A. OTIS, JR.
TRUSTEES
4 SHEPARD ST
CAMBRIDGE, MA 02138

173-65
TABIT, SALIM, NANCY C TABIT& EDDY TABIT
TRUSTEES THE TABIT FAMILY 2010 IRREV TRU
1804 DOGWOOD CIRCLE
NORTH ANDOVER, MA 01845

173-29
WATKINS, JUSTIN J. & ANNE WATKINS
8 SHEPARD ST, #3
CAMBRIDGE, MA 02138

173-67
JOHN HARVARD LLC,
C/O CHESTNUT HILL REALTY CORP
P.O BX 396
CHESTNUT HILL, MA 02467

173-36
WESTHEIMER, ELLEN
19 RUTLAND ST
CAMBRIDGE, MA 02138

173-48
MILLER, TUCKER REED JOHN KURT MILLER
C/O CLIFFORD V MILLER INC
1396 BEACON ST
BROOKLINE, MA 02446

174-37
STONE INVESTMENT HOLDING LLC,
9 SHEPARD ST.
CAMBRIDGE, MA 02138

174-70
LEE, SHIRLEY Y. & FRANK S. LEE., TRUSTES
FRANK S. LEE & SHIRLEY Y. LEE FAMILY TR.
3 SHEPARD ST., UNIT #1
CAMBRIDGE, MA 02139

174-70
METTLER, BERNARD
2120 KEYWOOD PARKWAY
MINNEAPOLIS, MN 55405

174-70
KAUPPILA, ANDREA M.
TRUSTEE OF ST. GEORGE FAMILY TRUST
3 SHEPARD ST. UNIT 2
CAMBRIDGE, MA 02138-1501

173-29
BASS, STEEDMAN
6 SHEPARD ST., UNIT #4
CAMBRIDGE, MA 02139

173-29
MOULTON, MARGARET M. &
PETER F. MOULTON
6-8 SHEPARD ST #6
CAMBRIDGE, MA 02138

173-37
MOORE, GORDON T., CHARLOTTE B. MOORE
9 RUTLAND ST
CAMBRIDGE, MA 02138

173-75
HORST, ARCH WILLIAM, JR.
55 BREWSTER STREET
CAMBRIDGE, MA 02138

174-70
ZUCKER, DEBORAH
3 SHEPARD ST #3
CAMBRIDGE, MA 02138

174-78
KANTOR, DAVID,
TR. THE KANTOR SHEPARD STREET NOMINEE TR.
7 SHEPARD STREET
CAMBRIDGE, MA 02138-1711

173-29
SIMPSON, ANITA RAE
8 SHEPARD ST. UNIT #1
CAMBRIDGE, MA 02138

173-38
FEDAK, SCOTT M. & LAUREN ELIZABETH
5-7 RUTLAND ST UNIT #7/2
CAMBRIDGE, MA 02138

173-38
RUTTER, JOHN A. & KATHLEEN HUNTER RUTTER
5-7 RUTLAND ST. UNIT#5/1
CAMBRIDGE, MA 02139

173-38
PUTRIH, TOBIAS & MOJCA SKOBERNE
5-7 RUTLAND ST. UNIT#7/1
CAMBRIDGE, MA 02139

174-70
RAGER, CLARE SELDEN & KYLE M. RAGER
3 SHEPARD ST #4
CAMBRIDGE, MA 02138

173-29
BASS, STEEDMAN L.,
TRUSTEE STEEDMAN L. BASS 2008 TRUST
6-8 SHEPARD ST #5
CAMBRIDGE, MA 02138

City of Cambridge

MASSACHUSETTS

BOARD OF ZONING APPEAL

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

2 Bds

BZA

POSTING NOTICE – PICK UP SHEET

The undersigned picked up the notice board for the Board of Zoning Appeals Hearing.

Name: Rebecca Raffferty **Date:** 11/15/2022
(Print)

Address: 1654 Mass Ave.

Case No. BZA-199523

Hearing Date: 12/1/22

Thank you,
Bza Members

CITY OF CAMBRIDGE, MASSACHUSETTS

PLANNING BOARD

CITY HALL ANNEX, 344 BROADWAY, CAMBRIDGE, MA 02139

November 23, 2022

To: The Board of Zoning Appeal

From: The Planning Board

RE: BZA-199523 1654 Massachusetts Avenue

The Planning Board reviewed this BZA application to modify the existing wireless communications facility during a meeting on November 22, 2022 and decided to forward the following comments to BZA.

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

CITY OF CAMBRIDGE
Community Development Department

IRAM FAROOQ
Assistant City Manager for Community Development

SANDRA CLARKE
Deputy Director
Chief of Administration

KHALIL MOGASSABI
Deputy Director
Chief of Planning

To: Planning Board

From: Community Development Department (CDD) Staff

Date: November 17, 2022

Re: **Wireless Antenna Installations: 1654 Massachusetts Avenue and 575 Memorial Drive**

BZA-199523, 1654 Massachusetts Avenue

The proposal involves modification of an existing wireless antenna installation on the rooftop of 1654 Massachusetts Avenue. Two (2) panel antennas will be replaced with three (3) new panel antennas, and associated equipment will be installed within an enclosed equipment room. All antennas and supporting equipment will be wrapped or painted to match existing equipment.

Since the antennas are mounted to the chimney façades, the installation is quite visible from surrounding streets. Additionally, the new antennas are larger, have varying dimensions and appear to interrupt the chimney crown when viewed from grade, which draws further attention to the proposed modifications.

The following design improvements should be considered:

1. If feasible, the antennas should be moved down the chimney façade so that the antennas do not visually interrupt the chimney crown.
2. Since the new antennas all have varying sizes, if feasible, consider utilizing antenna covers/sheaths so that the new antennas have either similar dimensions, or are more symmetrically laid out.
3. Utilize the smallest mounting brackets available so that the antennas can be mounted as close as possible to the chimney surface.
4. Reduce the length of unused pipe mounts.
5. Ensure all exposed cables, mounts and wires are tightly fixed to the chimney surface.
6. All painted and wrapped materials, including cabling and mounts, should have a consistent matte finish. A slightly darker finish may be blend better with the existing brickwork than the color depicted in the renderings.
7. If possible, encourage changes to the antennas owned by other carriers to reflect the recommendations above.

344 Broadway
Cambridge, MA 02139
Voice: 617 349-4600
Fax: 617 349-4669
TTY: 617 349-4621
www.cambridgema.gov

BZA-200775, 575 Memorial Drive

The proposal involves modification of an existing wireless antenna installation at the Hyatt Regency, 575 Memoria Drive. Nine (9) panel antennas will be replaced with 9 new panel antennas, and three (3) remote radio units (RRUs) will be replaced with six (6) new RRUs. All antennas will be façade mounted in the same locations as the existing antennas and will be painted to match the color of the building façade.

Since some of the antennas are located on the penthouse façades facing Memorial Drive, parts of the installation are quite visible. Additionally, the new antennas are larger, have varying dimensions and appear to interrupt the parapet line when viewed from grade, which draws further attention to the modifications.

The following design improvements should be considered for the Gamma and Beta sector antennas:

1. If feasible and without interrupting windows, the antennas should be moved down the façade to achieve a 45-degree setback plane, so that the antennas do not visually interrupt the parapet line.
2. Since the new antennas all have varying sizes, if feasible, consider utilizing antenna covers/sheaths so that the new antennas have similar dimensions, or can be more symmetrically laid out.
3. Utilize the smallest mounting brackets available so that the antennas can be mounted as close as possible to the façade.
4. All painted materials, including cabling and mounts, should have a consistent matte finish. A slightly darker finish may be blend better with the existing building than the lighter colors depicted in the renderings.

To: The City of Cambridge, Board of Zoning Appeals
From: Attorney Ellen Freyman, Authorized Agent for Verizon Wireless
Date: November 30, 2022
RE: Wireless Antenna Installation at 1654 Massachusetts Avenue (BZA-199523)

Dear Board of Zoning Appeals,

On November 17th the Community Development Department distributed to the Planning a letter to the containing recommendations for further review pertaining to the proposed modification of an existing wireless communications facility located at 1654 Massachusetts Avenue (the "Project"). This letter is to address each of these seven (7) recommended design improvements set forth for further consideration by the Planning Board relative to this Project. Please see below, the recommendations provided by the Planning Board followed by Verizon Wireless's response to each in *italics*.

1) If feasible, the antennas should be moved down the chimney facade so that the antennas do not visually interrupt the chimney crown.

   Please see the attached existing photos in Exhibit A. As you can see from the photo taken from the roof, the top of the antennas/pipes do not extend above the crown of the chimney. From the ground level perspective, it may appear that the top of the antennas extend above the top of the chimneys due to the angle. In addition, we have included a note in the revised construction drawings that the tops of the antennas are not to extend above the top of the chimneys. See attached Exhibit B for updated construction drawings.

2) Since the new antennas all have varying sizes, if feasible, consider utilizing antenna covers/sheaths so that the new antennas have either similar dimensions, or are more symmetrically laid out.

   As specified in the notes included in the revised construction drawings, the antennas are to be placed so that they are all aligned at the tops of the antennas. The proposed antennas for this Project cannot have faux extensions on the bottoms of the antennas. The reason for this is that the shorter antennas have heat sinks at the bottom of each antenna and they cannot be blocked. Blocking those heat sinks would interfere with the operation of the Project.

3) Utilize the smallest mounting brackets available so that the antennas can be mounted as close as possible to the chimney surface.

   The construction drawings provided do call for using the smallest mounting brackets available, which will also be sufficiently effective for the needs of the antennas. Please see the attached photograph in Exhibit A for an accurate visual depiction.

4) Reduce the length of unused pipe mounts.

Verizon Wireless agrees to reduce the length of unused pipe mounts as much as reasonably possible. We have included a note in the revised construction drawings provided, to cut the tops of the pipes if they extend above the top of the upper mounting angle and are higher than the antenna.

5) Ensure all exposed cables, mounts and wires are tightly fixed to the chimney surface.

Verizon Wireless agrees to ensure that all exposed cables, mounts and wires are tightly fixed to the chimney surfaces.

6) All painted and wrapped materials, including cabling and mounts, should have a consistent matte finish. A slightly darker finish may blend better with the existing brickwork than the color depicted in the renderings.

Verizon Wireless agrees to paint all existing and proposed antennas on the rooftop which are owned by Verizon Wireless. All materials will have a consistent matte finish. Attached as Exhibit C, please see updated photosimulations reflecting this change.

7) If possible, encourage changes to the antennas owned by other carriers to reflect the recommendations above.

Verizon Wireless has no control over other carriers and their antenna installations. However, to the best of Verizon Wireless's knowledge, there are no other carriers on the rooftop at 1654 Massachusetts Avenue.

As indicated above, Verizon Wireless has taken into consideration the Planning Board's recommendations and is willing to make the aforementioned alterations to the proposed modification of the existing wireless communications facility, to the extent that it is within their ability and without significantly hindering the effectiveness of the proposed modification in doing so.

Sincerely,

Ellen Freyman
Authorized Agent for Verizon Wireless

22\0398\Planning Board\Response Letter to BZA 16002

Exhibit A
Existing Rooftop Photo

Exhibit B
Updated Construction Drawings

HARVARD SQ 2 MA

1654 MASSACHUSETTS AVE.
CAMBRIDGE, MA 02138

FUZE PROJECT ID: 16271978
PSLC: 137823

VICINITY MAP NTS

ENGINEER
DEWBERRY ENGINEERS INC
99 SUMMER ST
SUITE 700
BOSTON, MA 02110

PHONE # (617) 531-0800

CONTACT: BENJAMIN REVETTE, PE

CONSTRUCTION
VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851

COORDINATES*:
LATITUDE: 42° 22' 53.7" N
LONGITUDE: 71° 07' 12.2" W
*PER RFDS

GROUND ELEVATION*:
25'±
*PER GOOGLE EARTH

PROJECT INFORMATION

PMI ACCESSED AT:	N/A
SMART TOOL VENDOR PROJECT NUMBER:	N/A
VZW LOCATION CODE (PSLC):	137823
FUZE NUMBER:	16271978
MOUNT MODIFICATION REQUIRED?	YES

CONTRACTOR PMI REQUIREMENTS

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER

A.D.A. COMPLIANCE:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION

- MODIFY EXISTING BETA SECTOR CHIMNEY MOUNT.
- REMOVE (2) EXISTING BETA & GAMMA CDMA ANTENNAS FROM EXISTING MAST PIPES
- RELOCATE (3) EXISTING NR ANTENNAS
- INSTALL (3) NEW MT6407-77A ANTENNA ON EXISTING MOUNTING PIPES
- INSTALL (1) NEW COMBINER.
- INSTALL ADDITIONAL HARDWARE PER RFDS INSIDE EXISTING EQUIPMENT ROOM
- 3M WRAP TO MATCH PROPOSED MT6407-77A ANTENNA & PAINT ALL EXISTING ANTENNAS TO MATCH CHIMNEY COLOR, HARDWARE & JUMPERS

NOTE:
1. SCOPE OF WORK BASED ON ANTENNA REC FOR HARVARD SQ 2 MA DATED 08/10/22. VERIFY SCOPE OF WORK WITH FINAL RFDS PRIOR TO CONSTRUCTION.

SCOPE OF WORK

SHT NO.	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES
C-1	ROOF PLAN
C-2	EXISTING & PROPOSED ANTENNA CONFIGURATIONS
C-3	EAST ELEVATION
C-4	CONSTRUCTION DETAILS-I
C-5	CONSTRUCTION DETAILS-II
C-6	FINAL EQUIPMENT CONFIGURATION
C-7	RF BARRIER PLAN

SHEET INDEX

verizon WIRELESS
VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851

HARVARD SQ 2 MA

CONSTRUCTION DRAWINGS		
6	11/29/22	FOR SUBMITTAL
5	11/01/22	FOR SUBMITTAL
4	09/30/22	FOR SUBMITTAL
3	08/11/22	FOR SUBMITTAL
2	08/05/22	FOR SUBMITTAL
1	05/10/22	FOR SUBMITTAL
0	04/08/22	FOR SUBMITTAL

Dewberry
Dewberry Engineers Inc.
99 SUMMER STREET
SUITE 700
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COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 40220

DRAWN BY:	JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143931
SITE NUMBER	137823
SITE ADDRESS	1654 MASSACHUSETTS AVE CAMBRIDGE, MA 02138
SHEET TITLE	TITLE SHEET
SHEET NUMBER	T-1

GENERAL CONSTRUCTION NOTES :

1. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, AND COMPLY WITH VERIZON WIRELESS SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT "DIG SAFE" (888-344-7233) FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
4. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
5. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
6. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
7. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
9. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
10. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING.
11. EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
12. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE VERIZON WIRELESS CONSTRUCTION MANAGER.
13. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
14. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR WILL NOTIFY ENGINEER, VERIZON WIRELESS PROJECT CONSTRUCTION MANAGER, AND LANDLORD IMMEDIATELY.
15. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
16. ALL ROOF WORK SHALL BE DONE BY A QUALIFIED AND EXPERIENCED ROOFING CONTRACTOR IN COORDINATION WITH ANY CONTRACTOR WARRANTING THE ROOF TO ENSURE THAT THE WARRANTY IS MAINTAINED.
17. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
18. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
19. CONTRACTOR SHALL FURNISH VERIZON WIRELESS WITH THREE AS-BUILT SETS OF DRAWINGS UPON COMPLETION OF WORK.
20. ANTENNAS AND CABLES ARE TYPICALLY PROVIDED BY VERIZON WIRELESS. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH PROJECT MANAGER TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED BY VERIZON WIRELESS. ALL ITEMS NOT PROVIDED BY VERIZON WIRELESS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED BY VERIZON WIRELESS.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR WILL COORDINATE WITH VERIZON WIRELESS PROJECT MANAGER TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY VERIZON WIRELESS. ALL REQUIRED PERMITS NOT OBTAINED BY VERIZON WIRELESS MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
22. GENERAL CONTRACTOR SHALL HAVE A LICENSED HVAC CONTRACTOR START THE HVAC UNITS, SYNCHRONIZE THE THERMOSTATS, ADJUST ALL SETTINGS ON EACH UNIT ACCORDING TO VERIZON WIRELESS CONSTRUCTION MANAGER'S SPECIFICATIONS, AND THOROUGHLY TEST AND BALANCE EACH UNIT TO ENSURE PROPER OPERATION PRIOR TO TURNING THE SITE OVER TO OWNER.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON WIRELESS SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. UNLESS OTHERWISE NOTED VERIZON WIRELESS SHALL PROVIDE ALL REQUIRED RF MATERIAL FOR CONTRACTOR TO INSTALL, INCLUDING ANTENNAS, TMA'S, BIAS-T'S, COMBINERS, POU, DC BLOCKS, SURGE ARRESTORS, GPS ANTENNA, GPS SURGE ARRESTOR, COAXIAL CABLE.
26. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL VERIFY ALL EQUIPMENT TO BE PROVIDED BY VERIZON WIRELESS FOR INSTALLATION BY CONTRACTOR.
27. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
28. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
29. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
30. CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 48 HOURS IN ADVANCE PRIOR TO CONSTRUCTION START, MORE SPECIFICALLY BEFORE, SEALING ANY FLOOR, WALL OR ROOF PENETRATION, FINAL UTILITY CONNECTIONS, POURING CONCRETE, BACKFILLING UTILITY TRENCHES AND STRUCTURAL POST OR MOUNTING CONNECTIONS, FOR ENGINEERING REVIEW AND INSPECTION.
31. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED & FIRE CODE APPROVED MATERIALS.
32. REPAIR ANY DAMAGE DURING CONSTRUCTION TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE CONSTRUCTION MANAGER AND LANDLORD.
33. ALL DISRUPTIVE WORK AND WORK WITHIN TENANT SPACES TO BE COORDINATED WITH BUILDING REPRESENTATIVE.

CODE SPECIFICATIONS:

1. ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:

   MASSACHUSETTS STATE BUILDING CODE, 9TH EDITION, CONSISTENT WITH THE FOLLOWING CODES:
   2015 INTERNATIONAL RESIDENTIAL CODE (IRC)
   2015 INTERNATIONAL BUILDING CODE (IBC)
   2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
   2020 NATIONAL ELECTRICAL CODE (NEC)

   IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.
2. ALL STRUCTURAL WORK TO BE DONE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL, 13TH EDITION (AISC 13TH ED.)
3. ALL CONCRETE WORK TO BE DONE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE (ACI 301) SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 318) AND BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
4. ALL REINFORCING STEEL WORK TO BE DONE IN ACCORDANCE WITH THE (ACI 315) MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.

GROUNDING NOTES:

1. GROUNDING SHALL COMPLY WITH NEC ART. 250.
2. GROUNDING CONDUCTORS SHALL BE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR INDOOR USE.
3. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
4. ROUTE GROUNDING CONNECTIONS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NOT BE BENT AT RIGHT ANGLE. ALWAYS MAKE 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY.
5. CONNECTIONS TO GROUNDING BAR SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
6. TEST COMPLETED GROUNDING SYSTEM AND RECORD RESISTANCE VALUES FOR PROJECT CLOSE-OUT DOCUMENTATION. GROUND RESISTANCE SHALL NOT EXCEED 5 OHMS.
7. GROUNDING CONDUCTORS BETWEEN MGB AND WATERMAIN SHALL BE #2/0. BONDING JUMPERS FROM METALLIC SURFACES SHALL BE #2 MINIMUM. ALL GROUND CONDUCTORS AND BONDING JUMPERS SHALL BE SOFT DRAWN ANNEALED, TINNED, BARE STRANDED COPPER WIRE. COAXIAL CABLES SHALL BE GROUNDED AT A MINIMUM OF TWO LOCATIONS USING VERIZON PROVIDED GROUNDING KITS. EXACT LOCATIONS SHALL BE FINALIZED IN THE FIELD BY THE CONSTRUCTION MANAGER.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES, AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:

ASTM A-992, GRADE 50	ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE
ASTM A-36	ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE
ASTM A-500, GRADE B	HSS SECTION (SQUARE, RECTANGULAR, ROUND)
ASTM A-325, TYPE 2, DH.N.	ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS
F1554, GRADE 36	ALL ANCHORS BOLTS, UNLESS NOTED OTHERWISE
ASTM A-53, GRADE B	STEEL PIPE

3. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1 WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 14TH EDITION. WHERE WELD LENGTH IS NOT INDICATED, USE FULL LENGTH WELD. AT THE COMPLETION OF ALL WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED.
4. BOLTED CONNECTIONS SHALL USE BEARING TYPE GALVANIZED ASTM A325 BOLTS (3/4" DIA.) SUPPLIED WITH A NUT AND WASHER UNDER TURNED END AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. GALVANIZED ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
7. USE PRECAUTIONS & PROCEDURES PER AWS D1.1 WHEN WELDING GALVANIZED METALS.
8. ALL EXISTING BEAM AND COLUMN DIMENSIONS SHALL BE FIELD VERIFY BY CONTRACTOR PRIOR TO FABRICATION. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THOSE SHOWN SHALL BE REPORTED TO DEWBERRY ENGINEER IMMEDIATELY.
9. CONNECTION DESIGN BY FABRICATOR WILL BE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER.
10. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH SPECIFICATION ASTM A123/A123M-00 HOT-DIP GALVANIZED FINISH UNLESS OTHERWISE NOTED. GALVANIZING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. ALL DINGS, SCRAPES, MARS, AND WELDS IN THE GALVANIZED AREAS SHALL BE REPAIRED. REPAIR DAMAGED GALVANIZED COATINGS ON GALVANIZED ITEMS WITH GALVANIZED REPAIR PAINT ACCORDING TO ASTM A780 AND MANUFACTURER'S WRITTEN INSTRUCTIONS, PRIOR TO COMPLETION OF WORK. TOUCHUP ALL DAMAGED GALVANIZED STEEL WITH APPROVED COLD ZINC, "GALVANOX", "DRY GALV", "ZINC-IT", OR APPROVED EQUIVALENT, IN ACCORDANCE WITH MANUFACTURERS GUIDELINES. TOUCHUP DAMAGED NON GALVANIZED STEEL WITH SAME PAINT APPLIED IN SHOP OR FIELD.
11. ALL WELDED COMPONENTS TO BE SHOP WELDED PRIOR TO INSTALLATION. NO WELDING ACTIVITIES IS PERMITTED DURING INSTALLATION OF PROPOSED EQUIPMENTS AND/OR HARDWARE ON SITE.

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TOWER 2 FLOOR 5
LOWELL, MA 01851

HARVARD SQ 2 MA

CONSTRUCTION DRAWINGS		
6	11/29/22	FOR SUBMITTAL
5	11/01/22	FOR SUBMITTAL
4	09/30/22	FOR SUBMITTAL
3	08/11/22	FOR SUBMITTAL
2	08/05/22	FOR SUBMITTAL
1	05/10/22	FOR SUBMITTAL
0	04/08/22	FOR SUBMITTAL

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COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 49220

DRAWN BY:	JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143931
SITE NUMBER	

137823

SITE ADDRESS

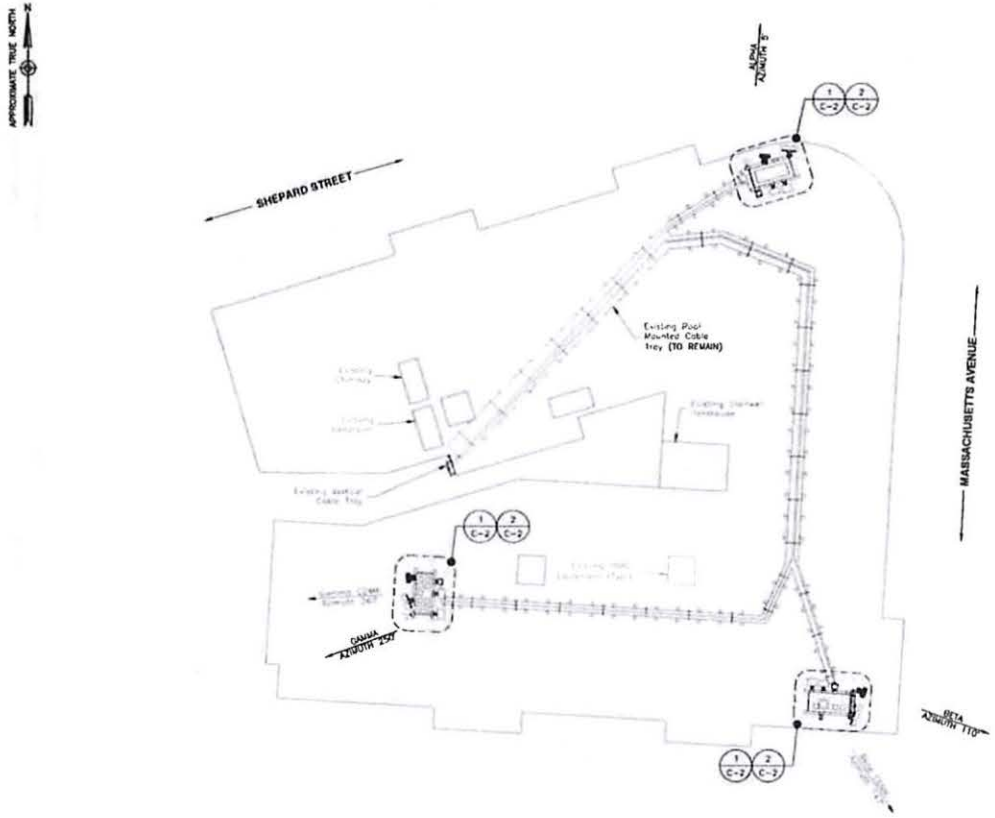
1654 MASSACHUSETTS AVE
CAMBRIDGE, MA 02138

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-1



ROOF PLAN (1)

SCALE: 1/16"=1' FOR 11"x17"
1/8"=1' FOR 22"x34"

0' 4' 8' 16'

TOP OF ANTENNAS OR ANTENNA PIPES NOT TO EXCEED TOP OF CHIMNEYS. ALL ANTENNA TIP HEIGHTS TO MATCH. ALL EXISTING AND PROPOSED ANTENNAS TO BE PAINTED OR WRAPPED TO MATCH CHIMNEY COLOR.

SITE NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. INSTALL ALL EQUIPMENT PER STRUCTURAL ASSESSMENT LETTER BY DEWBERRY ENGINEERS INC. DATED 08/04/22 & PER MANUFACTURER'S RECOMMENDATIONS.
3. CONTRACTOR TO INSPECT CONDITIONS OF ALL EXISTING ANCHORS/THREADED RODS FOR SIGNS OF RUST. WHERE RUST IS FOUND REMOVE WITH A WIRE BRUSH, APPLY COLD GALVANIZING COMPOUND TO PROTECT ANCHORS/THREADED RODS FROM CORROSION.

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CONSTRUCTION DRAWINGS		
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COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 49220

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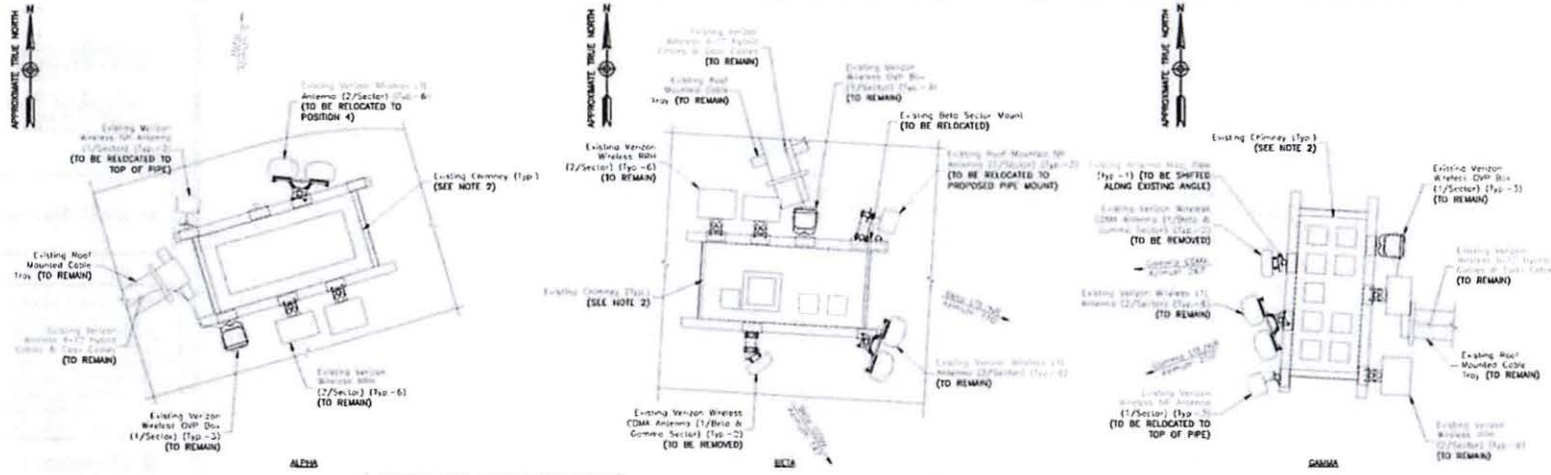
SHEET TITLE	ROOF PLAN
SHEET NUMBER	C-1

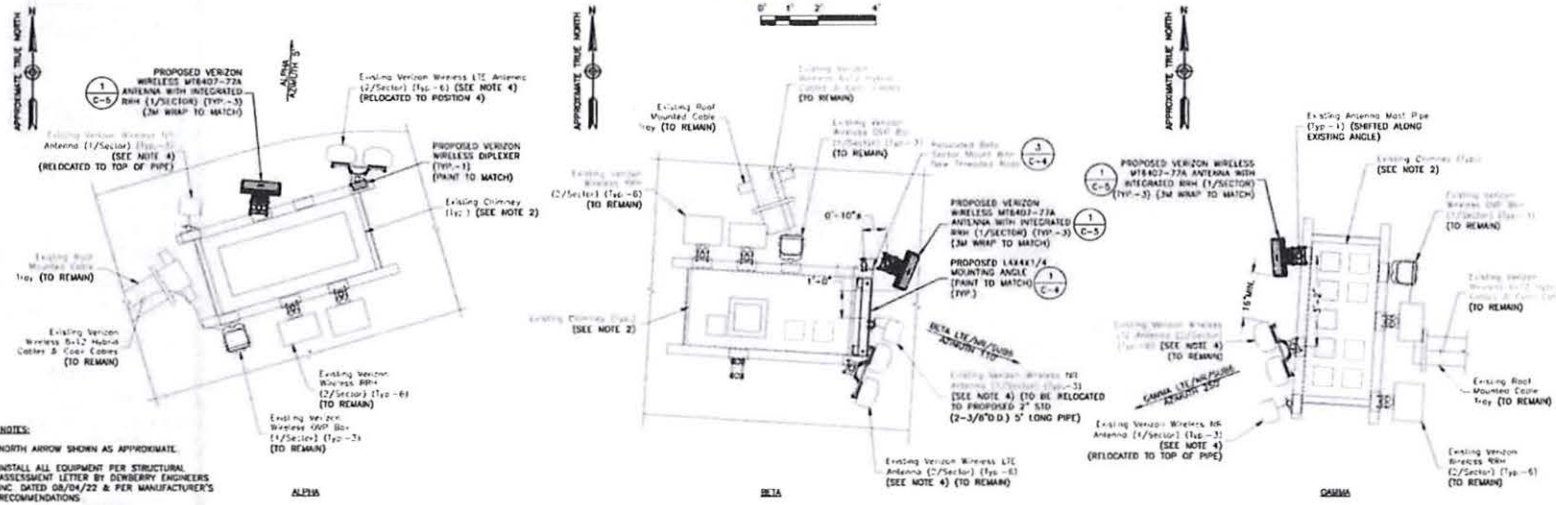


TOP OF ANTENNAS OR ANTENNA PIPES NOT TO EXCEED TOP OF CHIMNEYS. ALL ANTENNA TIP HEIGHTS TO MATCH. ALL EXISTING AND PROPOSED ANTENNAS TO BE PAINTED OR WRAPPED TO MATCH CHIMNEY COLOR.

EXISTING ANTENNA CONFIGURATION (1)

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

0' 1' 2' 4'



PROPOSED ANTENNA CONFIGURATION (2)

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

0' 1' 2' 4'

SITE NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. INSTALL ALL EQUIPMENT PER STRUCTURAL ASSESSMENT LETTER BY DEWBERRY ENGINEERS INC. DATED 08/04/22 & PER MANUFACTURER'S RECOMMENDATIONS.
3. CONTRACTOR TO INSPECT CONDITIONS OF ALL EXISTING ANCHORS/THREADED RODS FOR SIGNS OF RUST. WHERE RUST IS FOUND REMOVE WITH A WIRE BRUSH, APPLY COLD GALVANIZING COMPOUND TO PROTECT ANCHORS/THREADED RODS FROM CORROSION.
4. EXISTING & PROPOSED ANTENNAS TO BE PAINTED OR WRAPED TO MATCH EXISTING CHIMNEYS.

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CONSTRUCTION DRAWINGS		
6	11/29/22	FOR SUBMITTAL
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2	08/05/22	FOR SUBMITTAL
1	05/10/22	FOR SUBMITTAL
0	04/08/22	FOR SUBMITTAL

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BENJAMIN B. REVETTE
CIVIL
No. 49220
10/11/22

DRAWN BY:	JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143931
SITE NUMBER:	137823
SITE ADDRESS:	1654 MASSACHUSETTS AVE CAMBRIDGE, MA 02138
SHEET TITLE:	EXISTING & PROPOSED ANTENNA CONFIGURATIONS
SHEET NUMBER:	C-2

EAST ELEVATION (1)

SCALE: 3/32"=1' FOR 11"x17"
3/16"=1' FOR 22"x34"

0' 4' 8' 12'

SITE NOTES:

1. ELEVATION SHOWN AS APPROXIMATE.
2. INSTALL ALL EQUIPMENT PER STRUCTURAL ASSESSMENT LETTER BY DEWBERRY ENGINEERS INC. DATED 08/04/22 & PER MANUFACTURER'S RECOMMENDATIONS.
3. CONTRACTOR TO INSPECT CONDITIONS OF ALL EXISTING ANCHORS/THREADED RODS FOR SIGNS OF RUST. WHERE RUST IS FOUND REMOVE WITH A WIRE BRUSH, APPLY COLD GALVANIZING COMPOUND TO PROTECT ANCHORS/THREADED RODS FROM CORROSION.

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CONSTRUCTION DRAWINGS		
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COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
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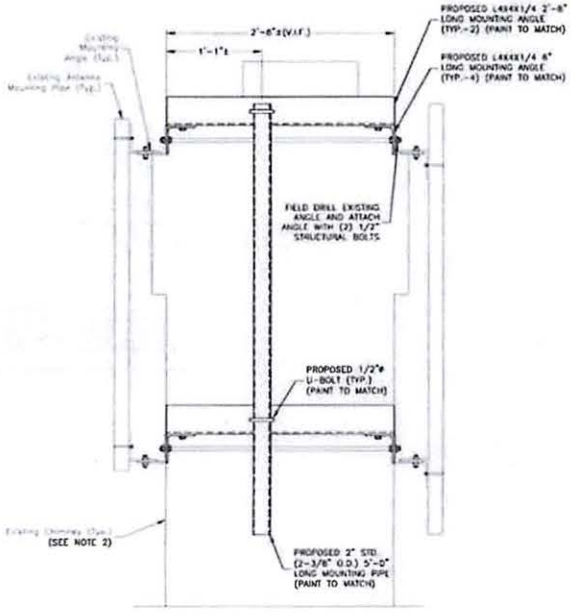
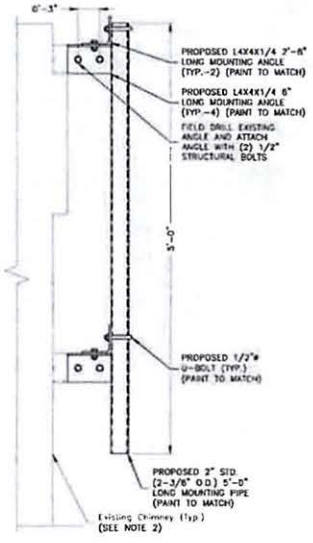
SHEET TITLE:	EAST ELEVATION
SHEET NUMBER:	C-3



BETA ELEVATION DETAIL (1)

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

0' 1/2' 1' 1 1/2'

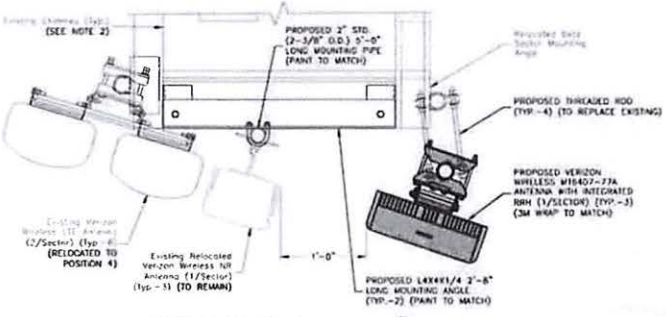


SECTION DETAIL (2)

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

0' 1/2' 1' 1 1/2'

TOP OF ANTENNAS OR ANTENNA PIPES MOT TO EXCEED TOP OF CHIMNEYS. ALL ANTENNA TIP HEIGHTS TO MATCH. ALL EXISTING AND PROPOSED ANTENNAS TO BE PAINTED OR WRAPPED TO MATCH CHIMNEY COLOR.



BETA SECTOR PLAN DETAIL (3)

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

0' 1/2' 1' 1 1/2'

SITE NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. INSTALL ALL EQUIPMENT PER STRUCTURAL ASSESSMENT LETTER BY DEWBERRY ENGINEERS INC. DATED 08/04/22 & PER MANUFACTURER'S RECOMMENDATIONS.
3. CONTRACTOR TO INSPECT CONDITIONS OF ALL EXISTING ANCHORS/THREADED RODS FOR SIGNS OF RUST. WHERE RUST IS FOUND REMOVE WITH A WIRE BRUSH, APPLY COLD GALVANIZING COMPOUND TO PROTECT ANCHORS/THREADED RODS FROM CORROSION.

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COMMONWEALTH OF MASSACHUSETTS
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137823

SITE ADDRESS

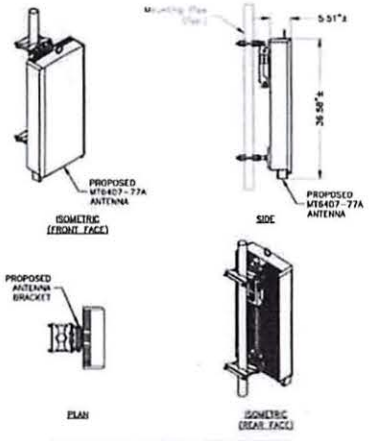
1654 MASSACHUSETTS AVE
CAMBRIDGE, MA 02138

SHEET TITLE

CONSTRUCTION DETAILS - I

SHEET NUMBER

C-4

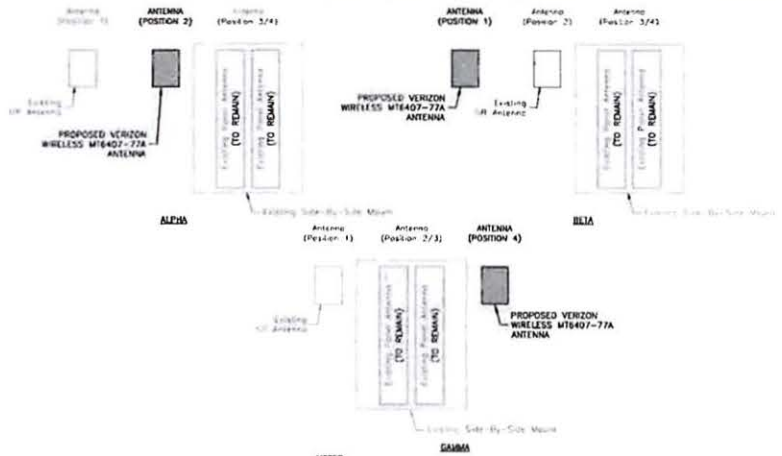


MODEL:	MT6407-77A
DIMENSIONS:	35.1"H X 16.1"W X 5.5"D (NOT TO EXCEED)
WEIGHT:	87.1 LBS (NOT TO EXCEED)

NOTES:

1. INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. USE APPROPRIATE MOUNTING HARDWARE FOR CONSTRUCTION TYPE.
2. CONTRACTOR TO UTILIZE 3M WRAP FOR ALL ANTENNAS TO MATCH SURROUNDING AREAS. INSTALL 3M WRAP ON ANTENNAS PER MANUFACTURER'S SPECIFICATION & RECOMMENDATIONS.

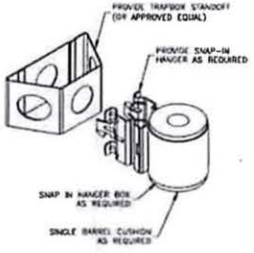
PIPE MOUNTED ANTENNA DETAIL (1)
SCALE: N.T.S.



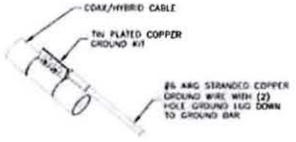
NOTES:

1. AS VIEWED BEHIND THE ANTENNAS.
2. TYPICAL FOR ALL (3) SECTORS.

ANTENNA CONFIGURATION (2)
SCALE: N.T.S.



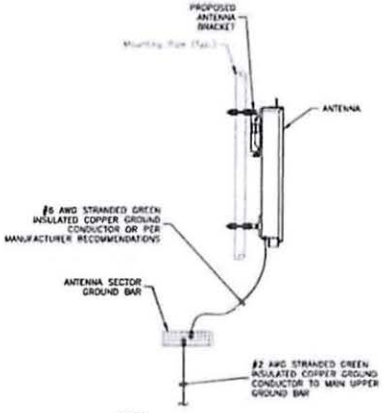
JUMPER MOUNT (3)
SCALE: N.T.S.



NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND. ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TIN PLATED COPPER WITH TWO-HOLE LUG, SIZE PER COAX DIAMETER.
3. WEATHER SEAL GROUND KIT PER CARRIER REQUIREMENTS.
4. COAX CABLE GROUND KIT LOCATION & QUANTITY SHALL BE PER CARRIER SPECIFICATIONS & STANDARDS.

COAX/HYBRID GROUNDING DETAIL (4)
SCALE: N.T.S.



NOTES:

1. VERIFY EXISTING GROUNDING SYSTEM IS INSTALLED PER VERIZON WIRELESS STANDARDS.
2. BOND NEW EQUIPMENT INTO EXISTING GROUND SYSTEM IN ACCORDANCE WITH VERIZON WIRELESS STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.

TYPICAL ANTENNA GROUNDING DETAIL (5)
SCALE: N.T.S.

verizon WIRELESS
VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851

HARVARD SQ 2 MA

CONSTRUCTION DRAWINGS		
6	11/29/22	FOR SUBMITTAL
5	11/01/22	FOR SUBMITTAL
4	09/30/22	FOR SUBMITTAL
3	08/11/22	FOR SUBMITTAL
2	08/05/22	FOR SUBMITTAL
1	05/10/22	FOR SUBMITTAL
0	04/08/22	FOR SUBMITTAL

Dewberry
Dewberry Engineers Inc.
55 SUMMER STREET
SUITE 700
BOSTON, MA 02110
PHONE: 617.695.2400
FAX: 617.695.3310

COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 49220

DRAWN BY:	JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143931
SITE NUMBER	

137823

SITE ADDRESS

1654 MASSACHUSETTS AVE
CAMBRIDGE, MA 02138

SHEET TITLE

CONSTRUCTION DETAILS – II

SHEET NUMBER

C-5

FINAL EQUIPMENT CONFIGURATION

SECTOR	POSITION	TECHNOLOGY	ANTENNA MODEL	VENDOR	RRH (QTY/MODEL)	COMBINER (QTY/MODEL)	CENTERLINE	AZIMUTH	OVP	HYBRID CABLE TYPE	FEED LINE LENGTH*
ALPHA	A1	5G	(E) VZ-AT1K01	SAMSUNG	-	-	68'-7"±	5°	(1) (E) OVP BOX TO REMAIN	(1) (E) 6X12 HYBRID CABLE TO REMAIN	225'±
	A2	5G	(P) MT6407-77A	SAMSUNG	-	-	67'-10"±	5°			
	A3	LTE 700/850	(E) NHH-65A-R2B	COMMSCOPE	(1) (E) B5/B13 RFV01U-D2A	(1) (P) TD-B506-L7(78-43	67'-0"±	5°			
	A4	LTE 1900/AWS	(E) NHH-65A-R2B	COMMSCOPE	(1) (E) B2/B66A RFV01U-D1A	-	67'-0"±	5°			
BETA	B1	5G	(P) MT6407-77A	SAMSUNG	-	-	67'-9"±	110°	(1) (E) OVP BOX TO REMAIN	(1) (E) 6X12 HYBRID CABLE TO REMAIN	295'±
	B2	5G	(E) VZ-AT1K01	SAMSUNG	-	-	68'-7"±	110°			
	B3	LTE 700/850	(E) NHH-65A-R2B	COMMSCOPE	(1) (E) B5/B13 RFV01U-D2A	-	67'-0"±	110°			
	B4	LTE 1900/AWS	(E) NHH-65A-R2B	COMMSCOPE	(1) (E) B2/B66A RFV01U-D1A	-	67'-0"±	110°			
GAMMA	G1	5G	(E) VZ-AT1K01	SAMSUNG	-	-	68'-7"±	250°	(1) (E) OVP BOX TO REMAIN	(1) (E) 6X12 HYBRID CABLE TO REMAIN	340'±
	G2	LTE 700/850	(E) NHH-65A-R2B	COMMSCOPE	(1) (E) B5/B13 RFV01U-D2A	-	67'-0"±	250°			
	G3	LTE 1900/AWS	(E) NHH-65A-R2B	COMMSCOPE	(1) (E) B2/B66A RFV01U-D1A	-	67'-0"±	250°			
	G4	5G	(P) MT6407-77A	SAMSUNG	-	-	67'-9"±	250°			

*CONTRACTOR TO FIELD VERIFY HYBRID CABLE LENGTHS PRIOR TO CONSTRUCTION. LENGTH IS ESTIMATED FROM THE BASE EQUIPMENT OVP TO SECTOR OVP WITH 15% BUFFER. THERE ARE NO PROPOSED HYBRID CABLES AS PART OF THIS SCOPE OF WORK.

(E) = Existing
(P) = PROPOSED

FINAL EQUIPMENT CONFIGURATION (1)
SCALE: N.T.S.

verizon WIRELESS
VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851

HARVARD SQ 2 MA

CONSTRUCTION DRAWINGS

6	11/29/22	FOR SUBMITTAL
5	11/01/22	FOR SUBMITTAL
4	09/30/22	FOR SUBMITTAL
3	08/11/22	FOR SUBMITTAL
2	08/05/22	FOR SUBMITTAL
1	05/10/22	FOR SUBMITTAL
0	04/08/22	FOR SUBMITTAL

Dewberry
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BOSTON MA 02110
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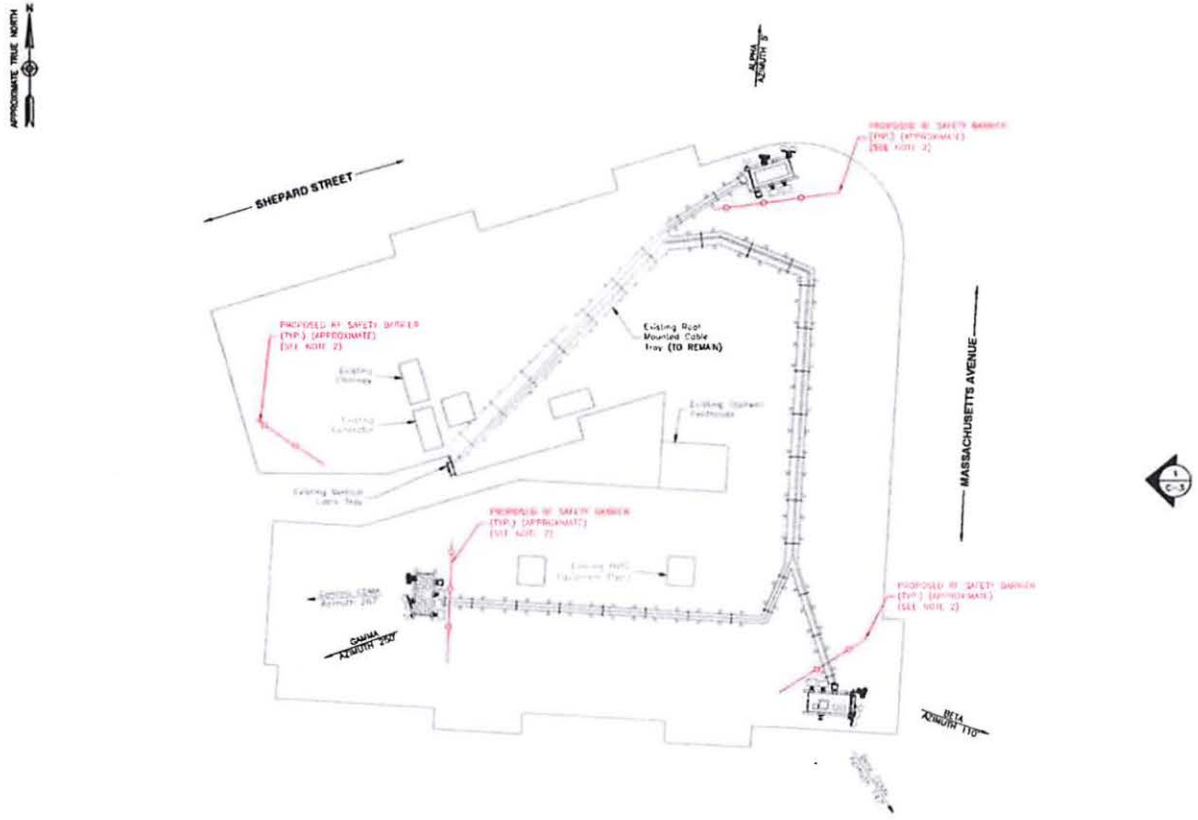
COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 49220

DRAWN BY:	JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143931
SITE NUMBER	137823
SITE ADDRESS	1654 MASSACHUSETTS AVE CAMBRIDGE, MA 02138
SHEET TITLE	FINAL EQUIPMENT CONFIGURATION
SHEET NUMBER	C-6



ROOF PLAN (1)

SCALE: 1/16"=1' FOR 11"x17"
1/8"=1' FOR 22"x34"

0' 4' 8' 16'

SITE NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. RF SAFETY BARRIERS SHOWN FOR REFERENCE. BARRIER DESIGN TO BE INSTALLED IN ACCORDANCE WITH REPORT PREPARED BY CENTERLINE COMMUNICATIONS, DATED 09/08/22

verizon WIRELESS

VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851

HARVARD SQ 2 MA

CONSTRUCTION DRAWINGS		
6	11/29/22	FOR SUBMITTAL
5	11/01/22	FOR SUBMITTAL
4	09/30/22	FOR SUBMITTAL
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2	08/05/22	FOR SUBMITTAL
1	05/10/22	FOR SUBMITTAL
0	04/08/22	FOR SUBMITTAL

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COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 49220

DRAWN BY:	JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143931
SITE NUMBER	

137823

SITE ADDRESS

1654 MASSACHUSETTS AVE
CAMBRIDGE, MA 02138

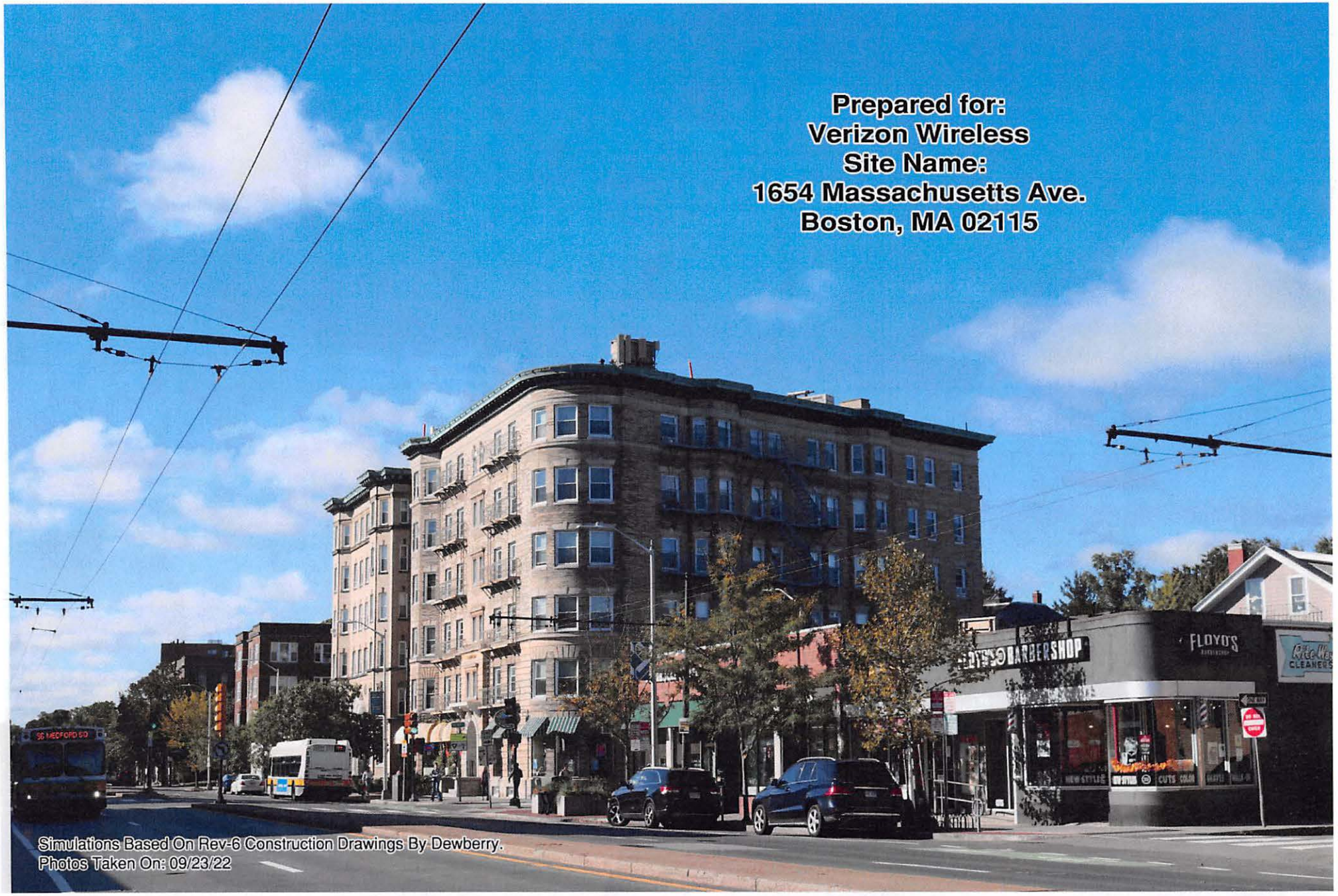
SHEET TITLE

RF SAFETY PLAN

SHEET NUMBER

C-7

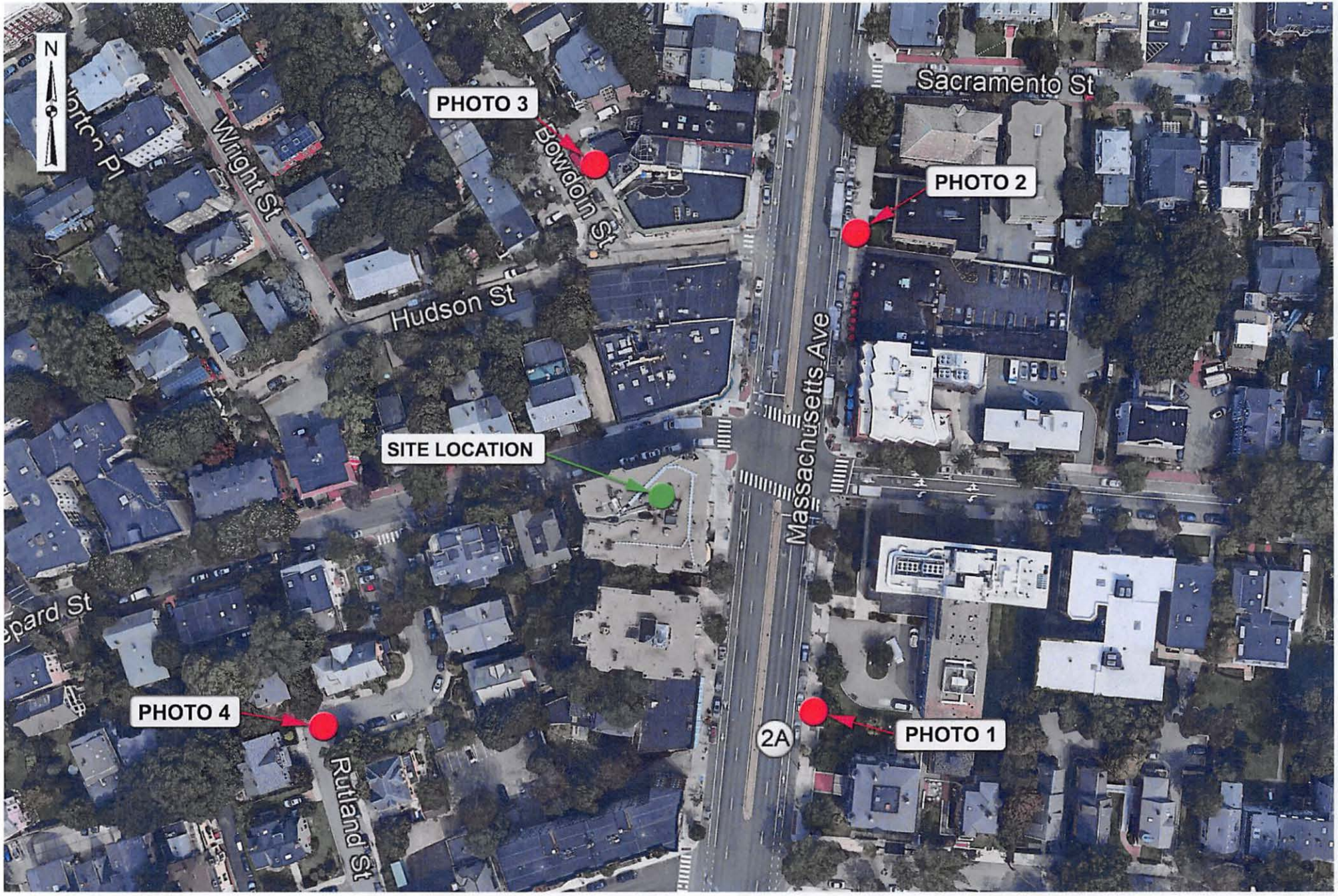
Exhibit C
Updated Photosims



verizon WIRELESS

Harvard SQ 2 MA
1654 Massachusetts Ave.
Cambridge, MA 02138
(Page 1 of 10)

Dewberry



verizon WIRELESS

Harvard SQ 2 MA
1654 Massachusetts Ave.
Cambridge, MA 02138
(Page 2 of 10)

Dewberry

verizon WIRELESS

Harvard SQ 2 MA

Photo 1A

View Facing Northwest From Massachusets Avenue

(Page 3 of 10)

Dewberry

verizon WIRELESS

Harvard SQ 2 MA

Photo 1B

View Facing Northwest From Massachusets Avenue

(Page 4 of 10)

Dewberry

verizon WIRELESS

Harvard SQ 2 MA
Photo 2A
View Facing Southwest From Massachusets Avenue
(Page 5 of 10)

Dewberry

verizon WIRELESS

Harvard SQ 2 MA

Photo 2B

View Facing Southwest From Massachusets Avenue

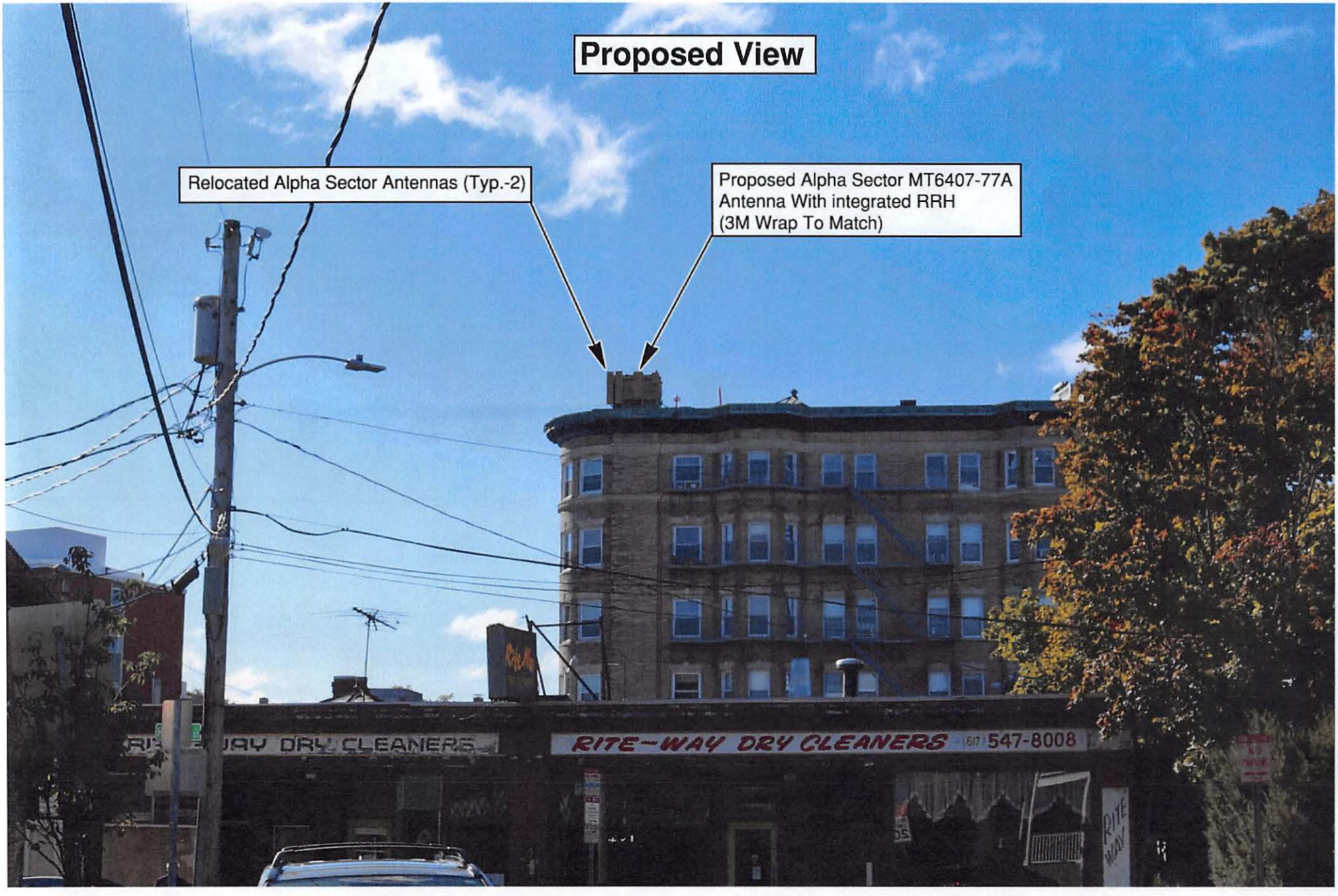
(Page 6 of 10)

Dewberry

verizon WIRELESS

Harvard SQ 2 MA
Photo 3A
View Facing South From Bowdoin Street
(Page 7 of 10)

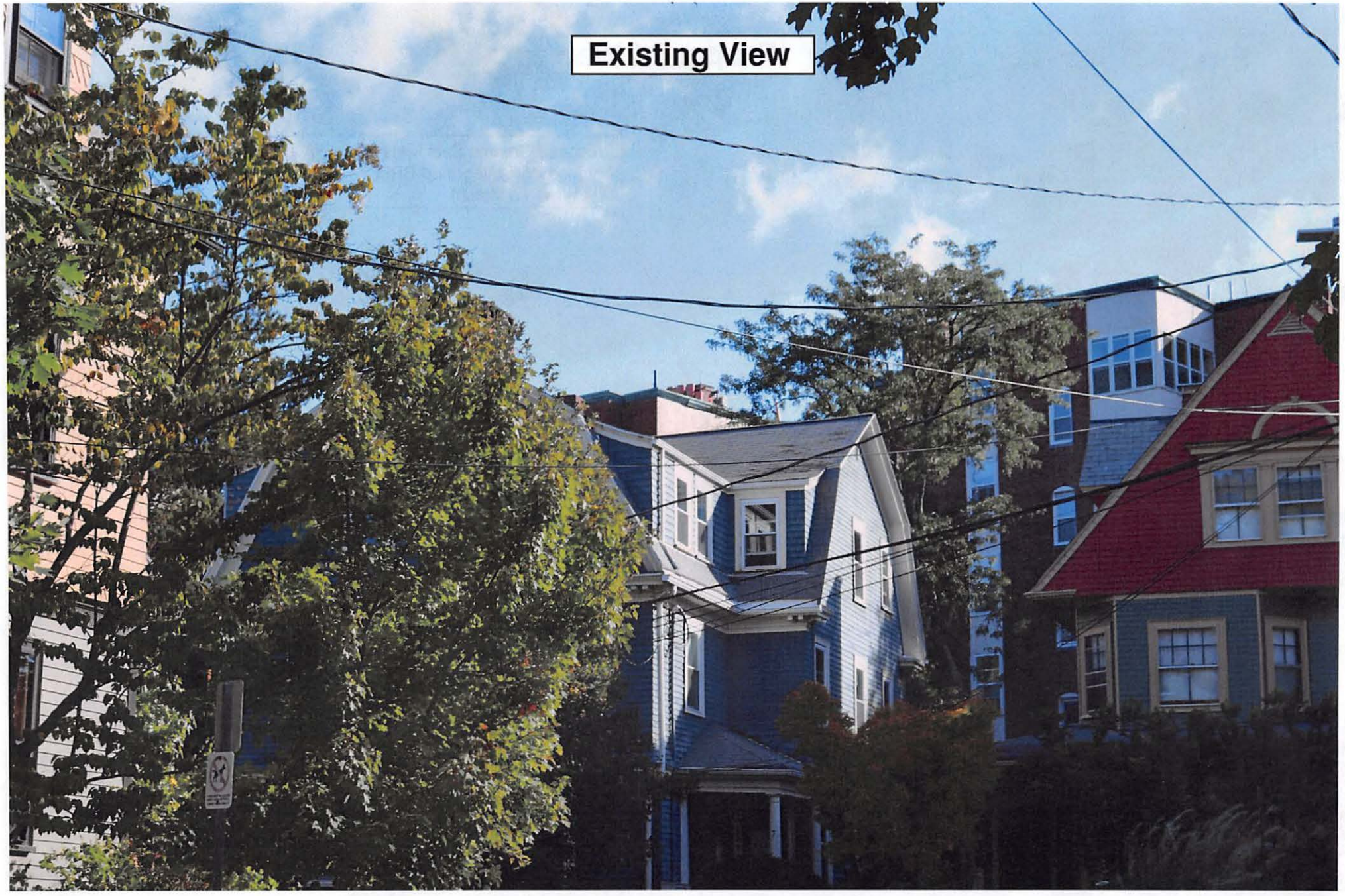
Dewberry



verizon WIRELESS

Harvard SQ 2 MA
Photo 3B
View Facing South From Bowdoin Street
(Page 8 of 10)

Dewberry



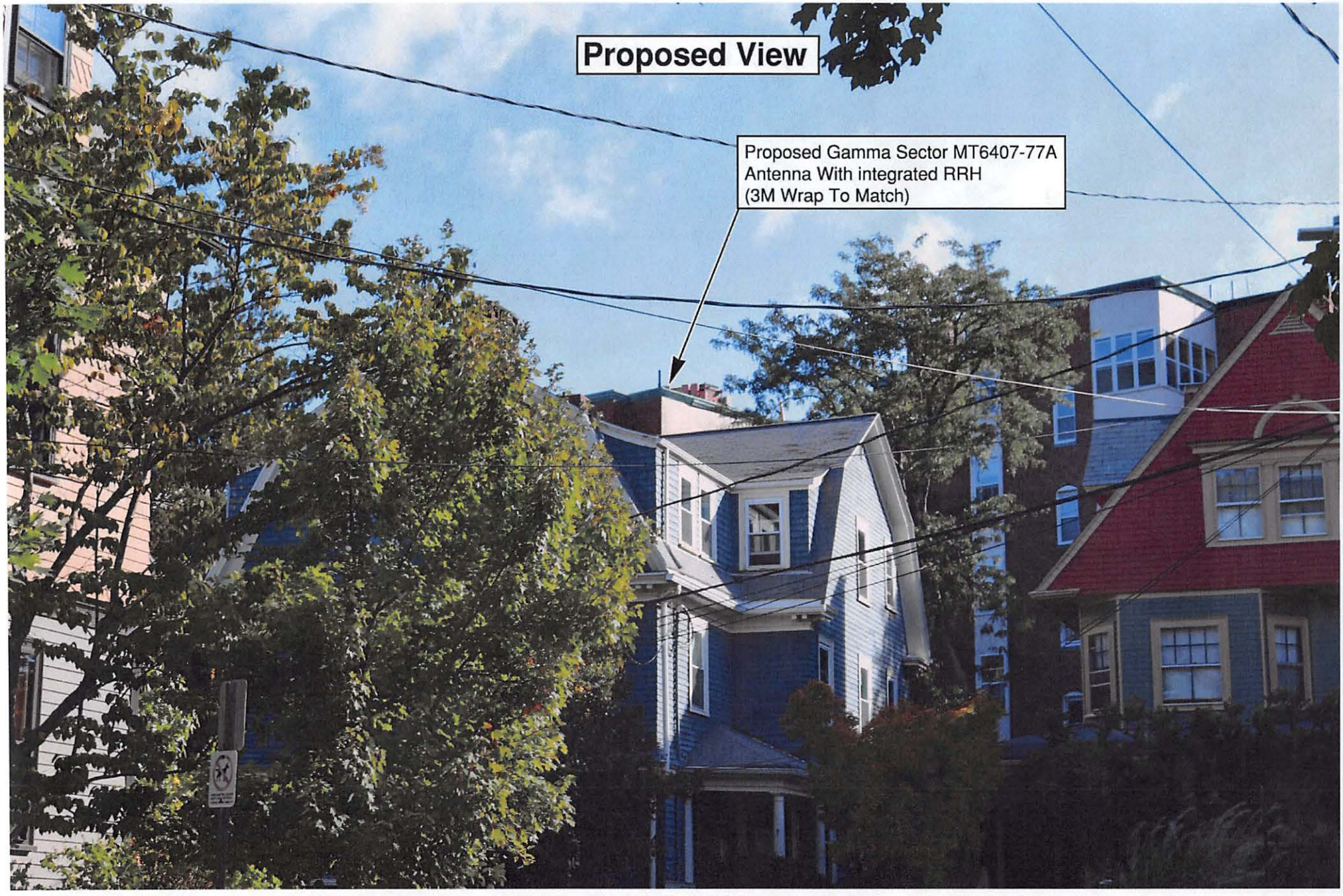
verizon WIRELESS

Harvard SQ 2 MA

Photo 4A

View Facing Northeast From Rutland Street

Dewberry



verizon WIRELESS

Harvard SQ 2 MA

Photo 4B

View Facing Northeast From Rutland Street

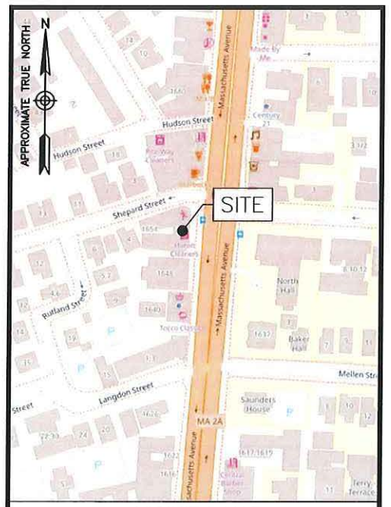
(Page 10 of 10)

Dewberry

HARVARD SQ 2 MA

1654 MASSACHUSETTS AVE.
CAMBRIDGE, MA 02138

FUZE PROJECT ID: 16271978
PSLC: 137823



VICINITY MAP N.T.S.

ENGINEER

DEWBERRY ENGINEERS INC.
99 SUMMER ST.
SUITE 700
BOSTON, MA 02110

PHONE # (617) 531-0800

CONTACT: BENJAMIN REVETTE, PE

CONSTRUCTION

VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851

COORDINATES*:

LATITUDE: 42° 22' 53.7" N
LONGITUDE: 71° 07' 12.2" W
*PER RFDS

GROUND ELEVATION*:

25'±
*PER GOOGLE EARTH

PROJECT INFORMATION

PMI ACCESSED AT:	N/A
SMART TOOL VENDOR PROJECT NUMBER:	N/A
VZW LOCATION CODE (PSLC):	137823
FUZE NUMBER:	16271978
MOUNT MODIFICATION REQUIRED?	YES

CONTRACTOR PMI REQUIREMENTS

THIS DOCUMENT WAS DEVELOPED TO REFLECT A SPECIFIC SITE AND ITS SITE CONDITIONS AND IS NOT TO BE USED FOR ANOTHER SITE OR WHEN OTHER CONDITIONS PERTAIN. REUSE OF THIS DOCUMENT IS AT THE SOLE RISK OF THE USER.

A.D.A. COMPLIANCE:
FACILITY IS UNMANNED AND NOT FOR HUMAN HABITATION.

- MODIFY EXISTING BETA SECTOR CHIMNEY MOUNT.
- REMOVE (2) EXISTING BETA & GAMMA CDMA ANTENNAS FROM EXISTING MAST PIPES.
- INSTALL (3) NEW MT6407-77A ANTENNA ON EXISTING MOUNTING PIPES.
- INSTALL (1) NEW COMBINER.
- INSTALL ADDITIONAL HARDWARE PER RFDS INSIDE EXISTING EQUIPMENT ROOM.
- 3M WRAP TO MATCH PROPOSED MT6407-77A ANTENNA & PAINT TO MATCH ALL OTHER EQUIPMENT, HARDWARE & JUMPERS.

NOTE:

1. SCOPE OF WORK BASED ON ANTENNA REC FOR HARVARD SQ 2 MA DATED 08/10/22. VERIFY SCOPE OF WORK WITH FINAL RFDS PRIOR TO CONSTRUCTION.

SCOPE OF WORK

SHT. NO.	DESCRIPTION
T-1	TITLE SHEET
GN-1	GENERAL NOTES
C-1	ROOF PLAN
C-2	EXISTING & PROPOSED ANTENNA CONFIGURATIONS
C-3	EAST ELEVATION
C-4	CONSTRUCTION DETAILS-I
C-5	CONSTRUCTION DETAILS-II
C-6	FINAL EQUIPMENT CONFIGURATION

SHEET INDEX

VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851

HARVARD SQ 2 MA

CONSTRUCTION DRAWINGS

3	08/11/22	FOR SUBMITTAL
2	08/05/22	FOR SUBMITTAL
1	05/10/22	FOR SUBMITTAL
0	04/08/22	FOR SUBMITTAL

Dewberry Engineers Inc.
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BOSTON, MA 02110
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COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 49220
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY:	JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143931

SITE NUMBER

137823

SITE ADDRESS

1654 MASSACHUSETTS AVE
CAMBRIDGE, MA 02138

SHEET TITLE

TITLE SHEET

SHEET NUMBER

T-1

GENERAL CONSTRUCTION NOTES :

1. ALL WORK SHALL CONFORM TO ALL CURRENT APPLICABLE FEDERAL, STATE, AND LOCAL CODES, AND COMPLY WITH VERIZON WIRELESS SPECIFICATIONS.
2. CONTRACTOR SHALL CONTACT "DIG SAFE" (888-344-7233) FOR IDENTIFICATION OF UNDERGROUND UTILITIES PRIOR TO START OF CONSTRUCTION.
3. CONTRACTOR IS RESPONSIBLE FOR COORDINATING ALL REQUIRED INSPECTIONS.
4. ALL DIMENSIONS TO, OF, AND ON EXISTING BUILDINGS, DRAINAGE STRUCTURES, AND SITE IMPROVEMENTS SHALL BE VERIFIED IN FIELD BY CONTRACTOR WITH ALL DISCREPANCIES REPORTED TO THE ENGINEER.
5. DO NOT CHANGE SIZE OR SPACING OF STRUCTURAL ELEMENTS.
6. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
7. THESE DRAWINGS DO NOT INCLUDE NECESSARY COMPONENTS FOR CONSTRUCTION SAFETY WHICH IS THE SOLE RESPONSIBILITY OF THE CONTRACTOR.
8. CONTRACTOR SHALL BRACE STRUCTURES UNTIL ALL STRUCTURAL ELEMENTS NEEDED FOR STABILITY ARE INSTALLED. THESE ELEMENTS ARE AS FOLLOWS: LATERAL BRACING, ANCHOR BOLTS, ETC.
9. CONTRACTOR SHALL DETERMINE EXACT LOCATION OF EXISTING UTILITIES, DRAIN PIPES, VENTS, ETC. BEFORE COMMENCING WORK.
10. INCORRECTLY FABRICATED, DAMAGED, OR OTHERWISE MISFITTING OR NONCONFORMING MATERIALS OR CONDITIONS SHALL BE REPORTED TO THE OWNER PRIOR TO REMEDIAL OR CORRECTIVE ACTION. ANY SUCH REMEDIAL ACTION SHALL REQUIRE WRITTEN APPROVAL BY THE OWNER'S REPRESENTATIVE PRIOR TO PROCEEDING.
11. EACH CONTRACTOR SHALL COOPERATE WITH THE OWNER'S REPRESENTATIVE, AND COORDINATE HIS WORK WITH THE WORK OF OTHERS.
12. CONTRACTOR SHALL REPAIR ANY DAMAGE CAUSED BY CONSTRUCTION OF THIS PROJECT TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE VERIZON WIRELESS CONSTRUCTION MANAGER.
13. ALL CABLE/CONDUIT ENTRY/EXIT PORTS SHALL BE WEATHERPROOFED DURING INSTALLATION USING A SILICONE SEALANT.
14. WHERE EXISTING CONDITIONS DO NOT MATCH THOSE SHOWN IN THIS PLAN SET, CONTRACTOR WILL NOTIFY ENGINEER, VERIZON WIRELESS PROJECT CONSTRUCTION MANAGER, AND LANDLORD IMMEDIATELY.
15. CONTRACTOR SHALL ENSURE ALL SUBCONTRACTORS ARE PROVIDED WITH A CURRENT SET OF DRAWINGS AND SPECIFICATIONS FOR THIS PROJECT.
16. ALL ROOF WORK SHALL BE DONE BY A QUALIFIED AND EXPERIENCED ROOFING CONTRACTOR IN COORDINATION WITH ANY CONTRACTOR WARRANTING THE ROOF TO ENSURE THAT THE WARRANTY IS MAINTAINED.
17. CONTRACTOR SHALL REMOVE ALL RUBBISH AND DEBRIS FROM THE SITE AT THE END OF EACH DAY.
18. CONTRACTOR SHALL COORDINATE WORK SCHEDULE WITH LANDLORD AND TAKE PRECAUTIONS TO MINIMIZE IMPACT AND DISRUPTION OF OTHER OCCUPANTS OF THE FACILITY.
19. CONTRACTOR SHALL FURNISH VERIZON WIRELESS WITH THREE AS-BUILT SETS OF DRAWINGS UPON COMPLETION OF WORK.
20. ANTENNAS AND CABLES ARE TYPICALLY PROVIDED BY VERIZON WIRELESS. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL COORDINATE WITH PROJECT MANAGER TO DETERMINE WHAT, IF ANY, ITEMS WILL BE PROVIDED BY VERIZON WIRELESS. ALL ITEMS NOT PROVIDED BY VERIZON WIRELESS SHALL BE PROVIDED AND INSTALLED BY THE CONTRACTOR. CONTRACTOR WILL INSTALL ALL ITEMS PROVIDED BY VERIZON WIRELESS.
21. PRIOR TO SUBMISSION OF BID, CONTRACTOR WILL COORDINATE WITH VERIZON WIRELESS PROJECT MANAGER TO DETERMINE IF ANY PERMITS WILL BE OBTAINED BY VERIZON WIRELESS. ALL REQUIRED PERMITS NOT OBTAINED BY VERIZON WIRELESS MUST BE OBTAINED, AND PAID FOR, BY THE CONTRACTOR.
22. GENERAL CONTRACTOR SHALL HAVE A LICENSED HVAC CONTRACTOR START THE HVAC UNITS, SYNCHRONIZE THE THERMOSTATS, ADJUST ALL SETTINGS ON EACH UNIT ACCORDING TO VERIZON WIRELESS CONSTRUCTION MANAGER'S SPECIFICATIONS, AND THOROUGHLY TEST AND BALANCE EACH UNIT TO ENSURE PROPER OPERATION PRIOR TO TURNING THE SITE OVER TO OWNER.
23. CONTRACTOR SHALL INSTALL ALL SITE SIGNAGE IN ACCORDANCE WITH VERIZON WIRELESS SPECIFICATIONS AND REQUIREMENTS.
24. CONTRACTOR SHALL SUBMIT ALL SHOP DRAWINGS TO ENGINEER FOR REVIEW AND APPROVAL PRIOR TO FABRICATION.
25. UNLESS OTHERWISE NOTED VERIZON WIRELESS SHALL PROVIDE ALL REQUIRED RF MATERIAL FOR CONTRACTOR TO INSTALL, INCLUDING ANTENNAS, TMA'S, BIAS-T'S, COMBINERS, PDU, DC BLOCKS, SURGE ARRESTORS, GPS ANTENNA, GPS SURGE ARRESTOR, COAXIAL CABLE.
26. PRIOR TO SUBMISSION OF BID, CONTRACTOR SHALL VERIFY ALL EQUIPMENT TO BE PROVIDED BY VERIZON WIRELESS FOR INSTALLATION BY CONTRACTOR.
27. ALL EQUIPMENT SHALL BE INSTALLED ACCORDING TO MANUFACTURER'S SPECIFICATIONS AND LOCATED ACCORDING TO VERIZON WIRELESS SPECIFICATIONS, AND AS SHOWN IN THESE PLANS.
28. DETAILS SHOWN ARE TYPICAL; SIMILAR DETAILS APPLY TO SIMILAR CONDITIONS UNLESS OTHERWISE NOTED.
29. THE CONTRACTOR SHALL SUPERVISE AND DIRECT THE PROJECT DESCRIBED HEREIN. THE CONTRACTOR SHALL BE SOLELY RESPONSIBLE FOR ALL THE CONSTRUCTION MEANS, METHODS, TECHNIQUES, SEQUENCES AND PROCEDURES AND FOR COORDINATING ALL PORTIONS OF THE WORK UNDER THE CONTRACT.
30. CONTRACTOR SHALL NOTIFY THE ENGINEER A MINIMUM OF 48 HOURS IN ADVANCE PRIOR TO CONSTRUCTION START, MORE SPECIFICALLY BEFORE; SEALING ANY FLOOR, WALL OR ROOF PENETRATION, FINAL UTILITY CONNECTIONS, POURING CONCRETE, BACKFILLING UTILITY TRENCHES AND STRUCTURAL POST OR MOUNTING CONNECTIONS, FOR ENGINEERING REVIEW AND INSPECTION.
31. SEAL PENETRATIONS THROUGH FIRE RATED AREAS WITH UL LISTED D FIRE CODE APPROVED MATERIALS.
32. REPAIR ANY DAMAGE DURING CONSTRUCTION TO MATCH EXISTING PRE-CONSTRUCTION CONDITIONS TO THE SATISFACTION OF THE CONSTRUCTION MANAGER AND LANDLORD.
33. ALL DISRUPTIVE WORK AND WORK WITHIN TENANT SPACES TO BE COORDINATED WITH BUILDING REPRESENTATIVE.

CODE SPECIFICATIONS:

1. ALL WORK SHALL COMPLY WITH THE FOLLOWING APPLICABLE CODES:

   MASSACHUSETTS STATE BUILDING CODE, 9TH EDITION, CONSISTENT WITH THE FOLLOWING CODES:
   2015 INTERNATIONAL RESIDENTIAL CODE (IRC)
   2015 INTERNATIONAL BUILDING CODE (IBC)
   2015 INTERNATIONAL EXISTING BUILDING CODE (IEBC)
   2020 NATIONAL ELECTRICAL CODE (NEC)

   IN THE EVENT OF CONFLICT, THE MOST RESTRICTIVE CODE SHALL PREVAIL.
2. ALL STRUCTURAL WORK TO BE DONE IN ACCORDANCE WITH THE AMERICAN INSTITUTE OF STEEL CONSTRUCTION MANUAL, 13TH EDITION (AISC 13TH ED.)
3. ALL CONCRETE WORK TO BE DONE IN ACCORDANCE WITH THE AMERICAN CONCRETE INSTITUTE (ACI 301) SPECIFICATIONS FOR STRUCTURAL CONCRETE FOR BUILDINGS (ACI 318) AND BUILDING CODE REQUIREMENTS FOR REINFORCED CONCRETE.
4. ALL REINFORCING STEEL WORK TO BE DONE IN ACCORDANCE WITH THE (ACI 315) MANUAL OF STANDARD PRACTICE FOR DETAILING REINFORCED CONCRETE STRUCTURES.

GROUNDING NOTES:

1. GROUNDING SHALL COMPLY WITH NEC ART. 250.
2. GROUNDING CONDUCTORS SHALL BE #6 COPPER STRANDED WIRE WITH GREEN COLOR INSULATION FOR INDOOR USE.
3. ALL GROUND CONNECTIONS TO BE BURNDY HYGROUND COMPRESSION TYPE CONNECTORS OR CADWELD EXOTHERMIC WELD DO NOT ALLOW BARE COPPER WIRE TO BE IN CONTACT WITH GALVANIZED STEEL.
4. ROUTE GROUNDING CONNECTORS ALONG THE SHORTEST AND STRAIGHTEST PATH POSSIBLE, EXCEPT AS OTHERWISE INDICATED. GROUNDING LEADS SHOULD NOT BE BENT AT RIGHT ANGLE. ALWAYS MAKE 12" RADIUS BENDS. #6 WIRE CAN BE BENT AT 6" RADIUS WHEN NECESSARY.
5. CONNECTIONS TO GROUNDING BAR SHALL BE MADE WITH TWO HOLE COMPRESSION TYPE COPPER LUGS. APPLY OXIDE INHIBITING COMPOUND TO ALL LOCATIONS.
6. TEST COMPLETED GROUNDING SYSTEM AND RECORD RESISTANCE VALUES FOR PROJECT CLOSE-OUT DOCUMENTATION. GROUND RESISTANCE SHALL NOT EXCEED 5 OHMS.
7. GROUNDING CONDUCTORS BETWEEN MGB AND WATERMAIN SHALL BE #2/0. BONDING JUMPERS FROM METALLIC SURFACES SHALL BE #2 MINIMUM. ALL GROUND CONDUCTORS AND BONDING JUMPERS SHALL BE SOFT DRAWN ANNEALED, TINNED, BARE STRANDED COPPER WIRE. COAXIAL CABLES SHALL BE GROUNDED AT A MINIMUM OF TWO LOCATIONS USING VERIZON PROVIDED GROUNDING KITS. EXACT LOCATIONS SHALL BE FINALIZED IN THE FIELD BY THE CONSTRUCTION MANAGER.

STRUCTURAL STEEL NOTES:

1. STRUCTURAL STEEL SHALL CONFORM TO THE LATEST EDITION OF THE AISC "SPECIFICATION FOR THE DESIGN, FABRICATION AND ERECTION OF STRUCTURAL STEEL FOR BUILDINGS".
2. STRUCTURAL STEEL ROLLED SHAPES, PLATES, AND BARS SHALL CONFORM TO THE FOLLOWING ASTM DESIGNATIONS:

ASTM A-992, GRADE 50	ALL W SHAPES, UNLESS NOTED OR A992 OTHERWISE.
ASTM A-36	ALL OTHER ROLLED SHAPES, PLATES AND BARS UNLESS NOTED OTHERWISE.
ASTM A-500, GRADE B	HSS SECTION (SQUARE, RECTANGULAR, ROUND)
ASTM A-325, TYPE SC OR N	ALL BOLTS FOR CONNECTING STRUCTURAL MEMBERS.
F1554, GRADE 36	ALL ANCHORS BOLTS, UNLESS NOTED OTHERWISE.
ASTM A-53, GRADE B	STEEL PIPE

3. ALL WELDING SHALL BE DONE USING E70XX ELECTRODES AND WELDING SHALL CONFORM TO AISC AND AWS D1.1 WHERE FILLET WELD SIZES ARE NOT SHOWN, PROVIDE THE MINIMUM SIZE PER TABLE J2.4 IN THE AISC "MANUAL OF STEEL CONSTRUCTION", 14TH EDITION. WHERE WELD LENGTH IS NOT INDICATED, USE FULL LENGTH WELD. AT THE COMPLETION OF ALL WELDING, ALL DAMAGE TO GALVANIZED COATING SHALL BE REPAIRED.
4. BOLTED CONNECTIONS SHALL USE BEARING TYPE GALVANIZED ASTM A325 BOLTS (3/4" DIA.) SUPPLIED WITH A NUT AND WASHER UNDER TURNED END AND SHALL HAVE MINIMUM OF TWO BOLTS UNLESS NOTED OTHERWISE.
5. DO NOT DRILL HOLES THROUGH STRUCTURAL STEEL MEMBERS EXCEPT AS SHOWN AND DETAILED ON STRUCTURAL DRAWINGS.
6. NON-STRUCTURAL CONNECTIONS FOR STEEL GRATING MAY USE 5/8" DIA. GALVANIZED ASTM A 307 BOLTS UNLESS NOTED OTHERWISE.
7. USE PRECAUTIONS & PROCEDURES PER AWS D1.1 WHEN WELDING GALVANIZED METALS.
8. ALL EXISTING BEAM AND COLUMN DIMENSIONS SHALL BE FIELD VERIFY BY CONTRACTOR PRIOR TO FABRICATION. ANY DISCREPANCIES BETWEEN EXISTING CONDITIONS AND THOSE SHOWN SHALL BE REPORTED TO DEWBERRY ENGINEER IMMEDIATELY.
9. CONNECTION DESIGN BY FABRICATOR WILL BE SUBJECT TO REVIEW AND APPROVAL BY ENGINEER.
10. ALL EXTERIOR STEEL WORK SHALL BE GALVANIZED IN ACCORDANCE WITH SPECIFICATION ASTM A123/A123M-00 HOT-DIP GALVANIZED FINISH UNLESS OTHERWISE NOTED. GALVANIZING SHALL BE PERFORMED AFTER SHOP FABRICATION TO THE GREATEST EXTENT POSSIBLE. ALL DINGS, SCRAPES, MARS, AND WELDS IN THE GALVANIZED AREAS SHALL BE REPAIRED. REPAIR DAMAGED GALVANIZED COATINGS ON GALVANIZED ITEMS WITH GALVANIZED REPAIR PAINT ACCORDING TO ASTM A780 AND MANUFACTURER'S WRITTEN INSTRUCTIONS, PRIOR TO COMPLETION OF WORK. TOUCHUP ALL DAMAGED GALVANIZED STEEL WITH APPROVED COLD ZINC, "GALVANOX", "DRY GALV", "ZINC-IT", OR APPROVED EQUIVALENT, IN ACCORDANCE WITH MANUFACTURERS GUIDELINES. TOUCHUP DAMAGED NON GALVANIZED STEEL WITH SAME PAINT APPLIED IN SHOP OR FIELD.
11. ALL WELDED COMPONENTS TO BE SHOP WELDED PRIOR TO INSTALLATION. NO WELDING ACTIVITIES IS PERMITTED DURING INSTALLATION OF PROPOSED EQUIPMENT5 AND/OR HARDWARE ON SITE.

verizon WIRELESS
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900 CHELMSFORD STREET
TOWER 2 FLOOR 5
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HARVARD SQ 2 MA

CONSTRUCTION DRAWINGS		
3	08/11/22	FOR SUBMITTAL
2	08/05/22	FOR SUBMITTAL
1	05/10/22	FOR SUBMITTAL
0	04/08/22	FOR SUBMITTAL

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FAX: 617.695.3310

COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 49220

DRAWN BY:	JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143931

SITE NUMBER

137823

SITE ADDRESS

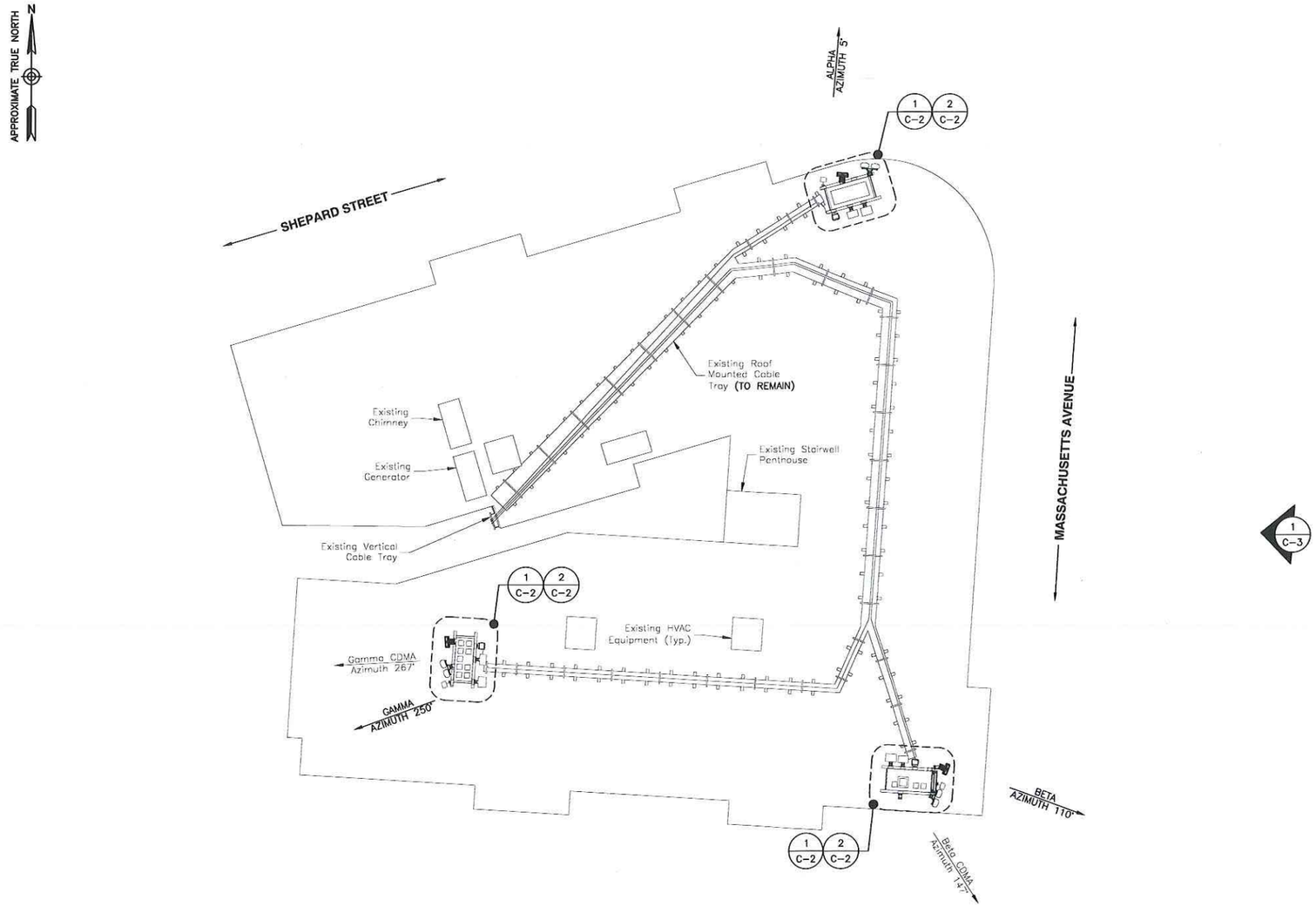
1654 MASSACHUSETTS AVE
CAMBRIDGE, MA 02138

SHEET TITLE

GENERAL NOTES

SHEET NUMBER

GN-1



ROOF PLAN

1

SCALE: 1/16"=1' FOR 11"x17"
1/8"=1' FOR 22"x34"

0' 4' 8' 16'

SITE NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. INSTALL ALL EQUIPMENT PER STRUCTURAL ASSESSMENT LETTER BY DEWBERRY ENGINEERS INC. DATED 08/04/22 & PER MANUFACTURER'S RECOMMENDATIONS.
3. CONTRACTOR TO INSPECT CONDITIONS OF ALL EXISTING ANCHORS/THREADED RODS FOR SIGNS OF RUST. WHERE RUST IS FOUND REMOVE WITH A WIRE BRUSH, APPLY COLD GALVANIZING COMPOUND TO PROTECT ANCHORS/THREADED RODS FROM CORROSION.

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CONSTRUCTION DRAWINGS

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0	04/08/22	FOR SUBMITTAL

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COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 40220
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY:	JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143931

SITE NUMBER

137823

SITE ADDRESS

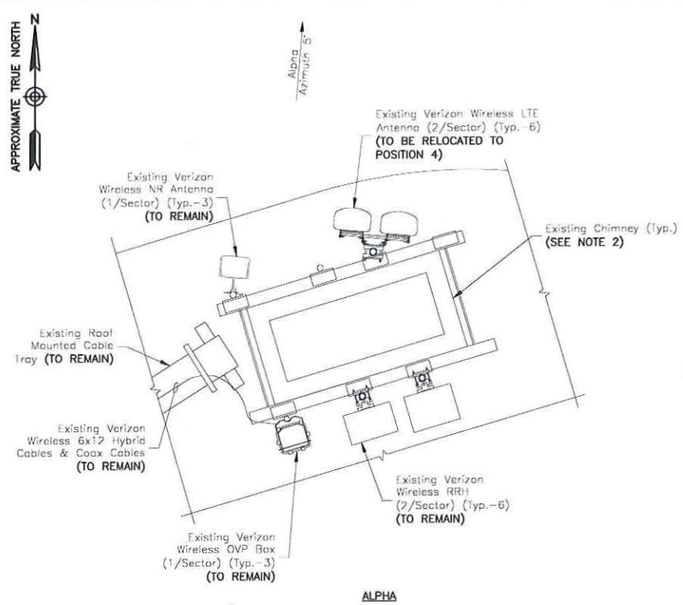
1654 MASSACHUSETTS AVE
CAMBRIDGE, MA 02138

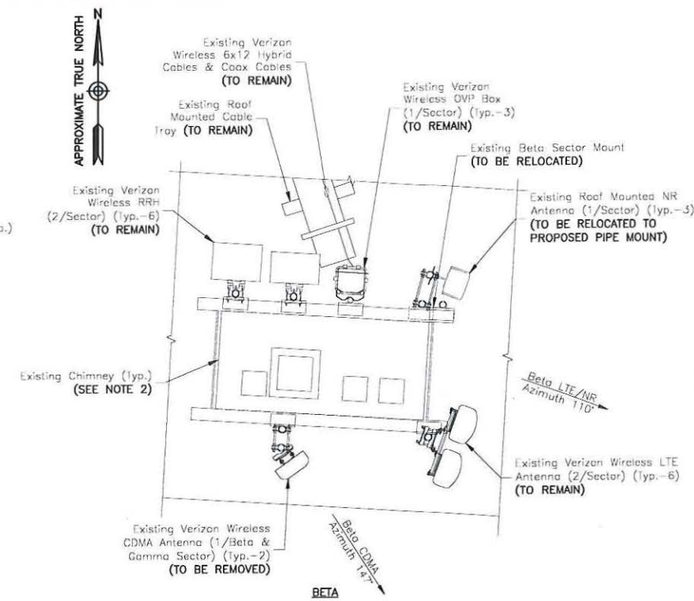
SHEET TITLE

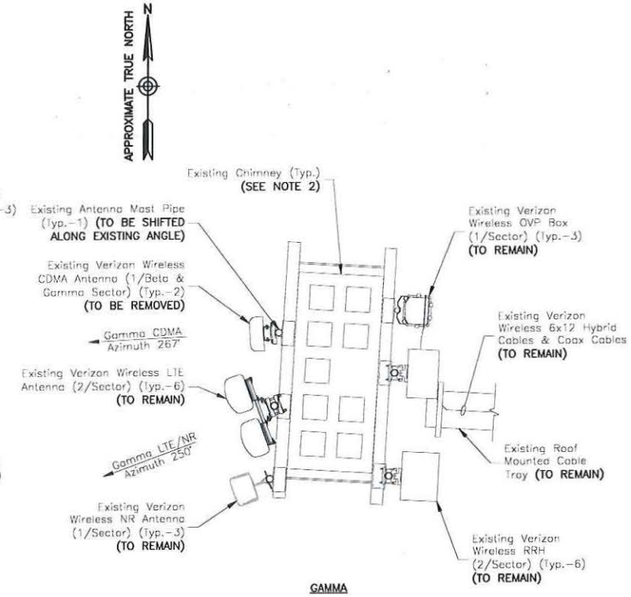
ROOF PLAN

SHEET NUMBER

C-1



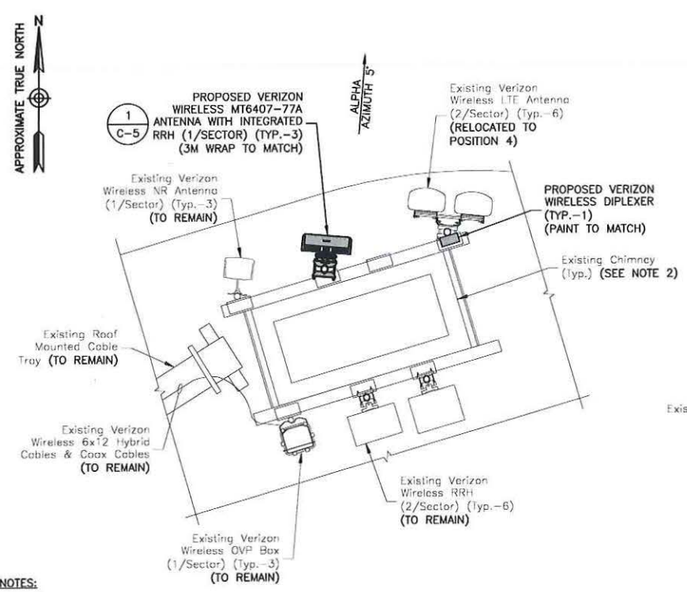


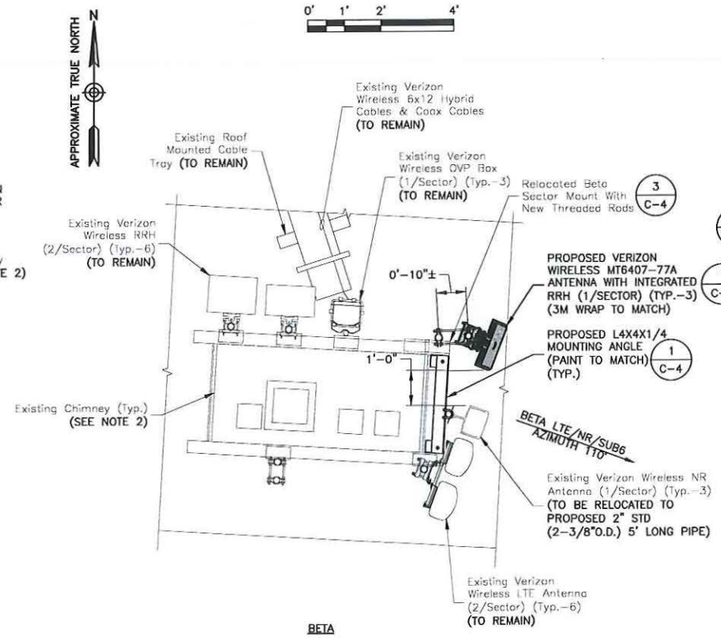


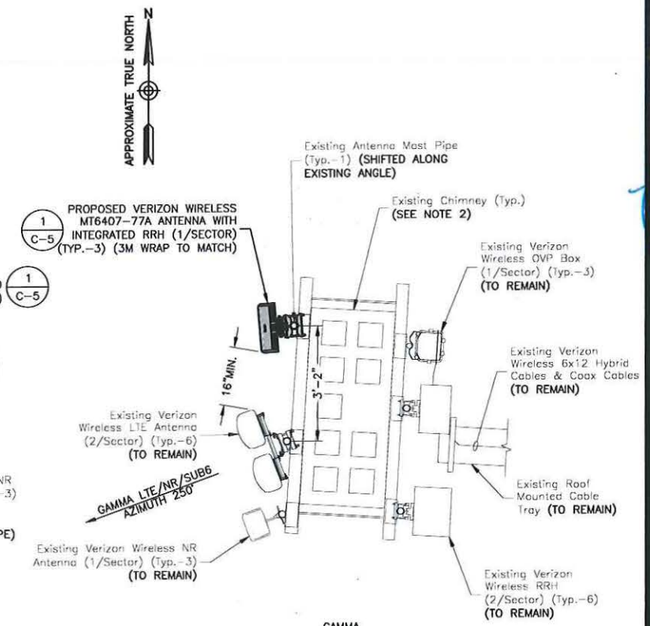
EXISTING ANTENNA CONFIGURATION (1)

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

0' 1' 2' 4'







PROPOSED ANTENNA CONFIGURATION (2)

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

0' 1' 2' 4'

SITE NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. INSTALL ALL EQUIPMENT PER STRUCTURAL ASSESSMENT LETTER BY DEWBERRY ENGINEERS INC. DATED 08/04/22 & PER MANUFACTURER'S RECOMMENDATIONS.
3. CONTRACTOR TO INSPECT CONDITIONS OF ALL EXISTING ANCHORS/THREADED RODS FOR SIGNS OF RUST. WHERE RUST IS FOUND REMOVE WITH A WIRE BRUSH, APPLY COLD GALVANIZING COMPOUND TO PROTECT ANCHORS/THREADED RODS FROM CORROSION.

verizon WIRELESS
VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851

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CONSTRUCTION DRAWINGS

3	08/11/22	FOR SUBMITTAL
2	08/05/22	FOR SUBMITTAL
1	05/10/22	FOR SUBMITTAL
0	04/08/22	FOR SUBMITTAL

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COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 49220
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY:	JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143931

SITE NUMBER

137823

SITE ADDRESS

1654 MASSACHUSETTS AVE
CAMBRIDGE, MA 02138

SHEET TITLE

EXISTING & PROPOSED ANTENNA CONFIGURATIONS

SHEET NUMBER

C-2

EAST ELEVATION (1)

SCALE: 3/32"=1' FOR 11"x17"
3/16"=1' FOR 22"x34"

0' 4' 8' 12'

SITE NOTES:

1. ELEVATION SHOWN AS APPROXIMATE.
2. INSTALL ALL EQUIPMENT PER STRUCTURAL ASSESSMENT LETTER BY DEWBERRY ENGINEERS INC. DATED 08/04/22 & PER MANUFACTURER'S RECOMMENDATIONS.
3. CONTRACTOR TO INSPECT CONDITIONS OF ALL EXISTING ANCHORS/THREADED RODS FOR SIGNS OF RUST. WHERE RUST IS FOUND REMOVE WITH A WIRE BRUSH, APPLY COLD GALVANIZING COMPOUND TO PROTECT ANCHORS/THREADED RODS FROM CORROSION.

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CONSTRUCTION DRAWINGS

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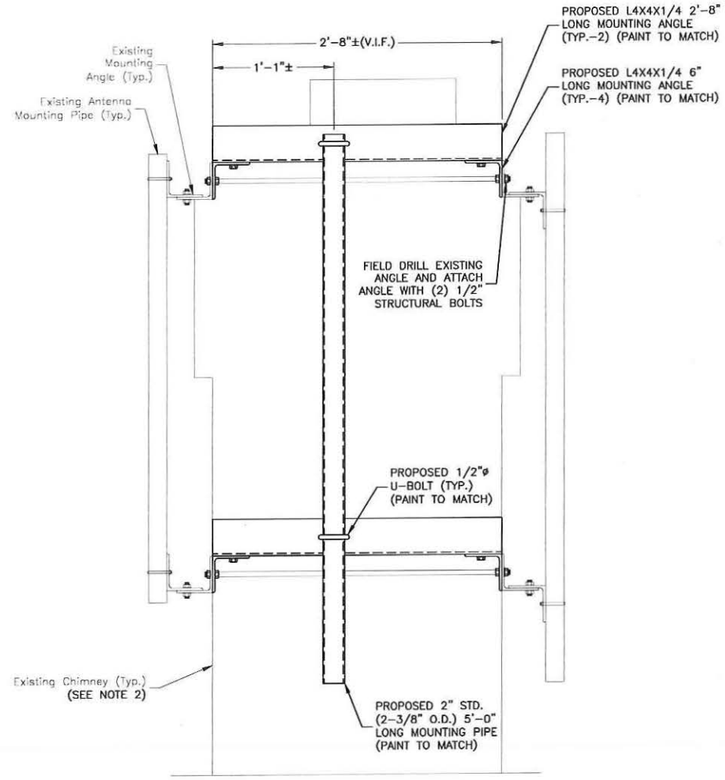
CAMBRIDGE, MA 02138

SHEET TITLE

EAST ELEVATION

SHEET NUMBER

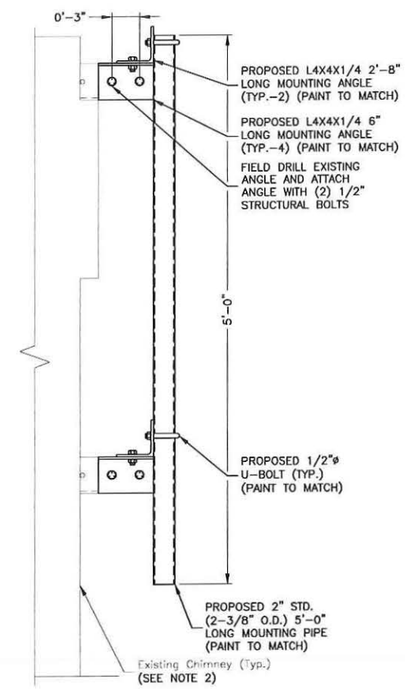
C-3



BETA ELEVATION DETAIL (1)

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

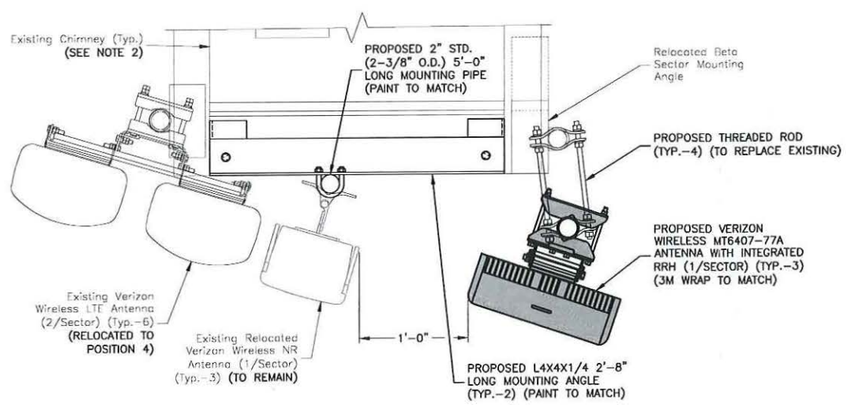
0' 1/2' 1' 1 1/2'



SECTION DETAIL (2)

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

0' 1/2' 1' 1 1/2'



BETA SECTOR PLAN DETAIL (3)

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

0' 1/2' 1' 1 1/2'

SITE NOTES:

1. NORTH ARROW SHOWN AS APPROXIMATE.
2. INSTALL ALL EQUIPMENT PER STRUCTURAL ASSESSMENT LETTER BY DEWBERRY ENGINEERS INC. DATED 08/04/22 & PER MANUFACTURER'S RECOMMENDATIONS.
3. CONTRACTOR TO INSPECT CONDITIONS OF ALL EXISTING ANCHORS/THREADED RODS FOR SIGNS OF RUST. WHERE RUST IS FOUND REMOVE WITH A WIRE BRUSH, APPLY COLD GALVANIZING COMPOUND TO PROTECT ANCHORS/THREADED RODS FROM CORROSION.

verizon WIRELESS

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CONSTRUCTION DRAWINGS

3	08/11/22	FOR SUBMITTAL
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COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 49220

DRAWN BY:	JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143931

SITE NUMBER

137823

SITE ADDRESS

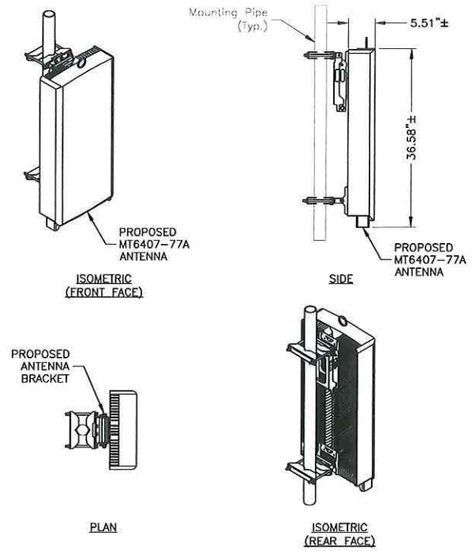
1654 MASSACHUSETTS AVE
CAMBRIDGE, MA 02138

SHEET TITLE

CONSTRUCTION DETAILS – 1

SHEET NUMBER

C-4



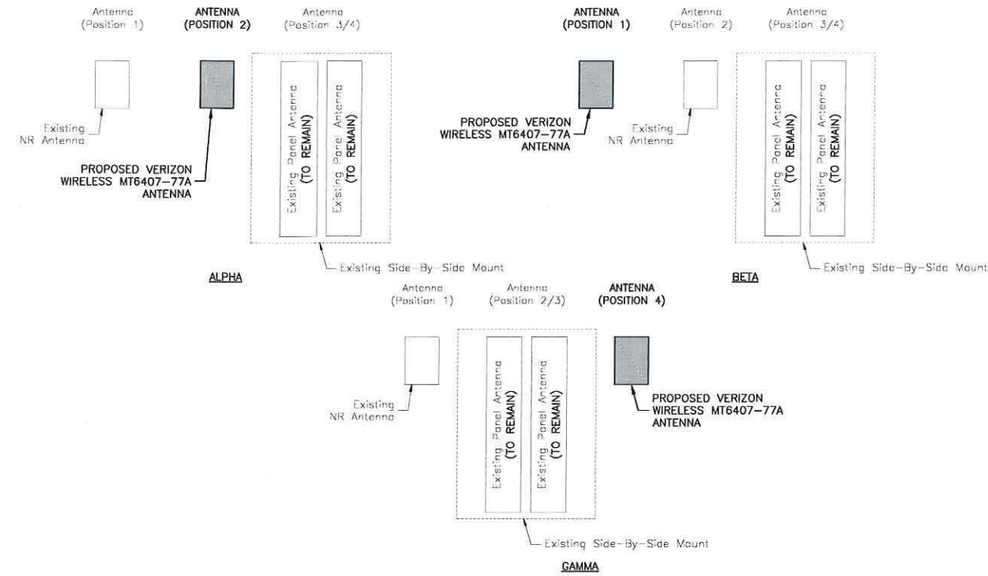
MODEL:	MT6407-77A
DIMENSIONS:	35.1"H X 16.1"W X 5.5"D (NOT TO EXCEED)
WEIGHT:	87.1 LBS (NOT TO EXCEED)

NOTES:

1. INSTALL ALL EQUIPMENT PER MANUFACTURER'S RECOMMENDATIONS. USE APPROPRIATE MOUNTING HARDWARE FOR CONSTRUCTION TYPE.
2. CONTRACTOR TO UTILIZE 3M WRAP FOR ALL ANTENNAS TO MATCH SURROUNDING AREAS. INSTALL 3M WRAP ON ANTENNAS PER MANUFACTURER'S SPECIFICATION & RECOMMENDATIONS.

PIPE MOUNTED ANTENNA DETAIL (1)

SCALE: N.T.S.

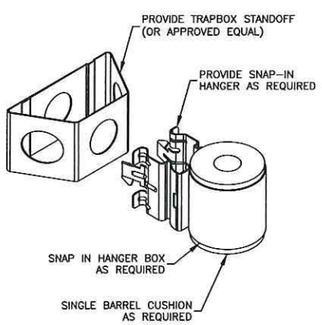


NOTES:

1. AS VIEWED BEHIND THE ANTENNAS.
2. TYPICAL FOR ALL (3) SECTORS.

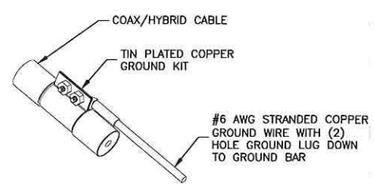
ANTENNA CONFIGURATION (2)

SCALE: N.T.S.



JUMPER MOUNT (3)

SCALE: N.T.S.

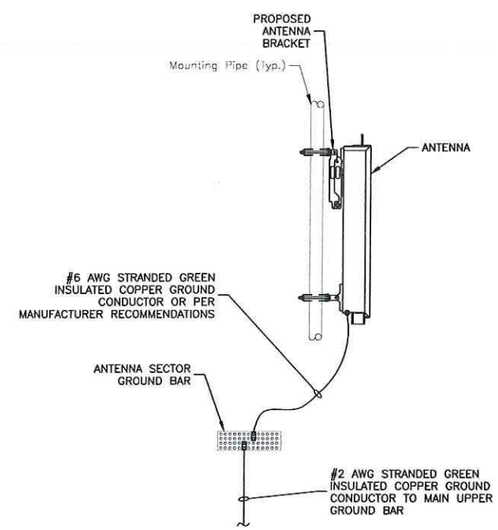


NOTES:

1. DO NOT INSTALL CABLE GROUND KIT AT A BEND. ALWAYS DIRECT GROUND WIRE DOWN TO GROUND BAR.
2. GROUNDING KIT SHALL BE TIN PLATED COPPER WITH TWO-HOLE LUG, SIZE PER COAX DIAMETER.
3. WEATHER SEAL GROUND KIT PER CARRIER REQUIREMENTS.
4. COAX CABLE GROUND KIT LOCATION & QUANTITY SHALL BE PER CARRIER SPECIFICATIONS & STANDARDS.

COAX/HYBRID GROUNDING DETAIL (4)

SCALE: N.T.S.



NOTES:

1. VERIFY EXISTING GROUNDING SYSTEM IS INSTALLED PER VERIZON WIRELESS STANDARDS.
2. BOND NEW EQUIPMENT INTO EXISTING GROUND SYSTEM IN ACCORDANCE WITH VERIZON WIRELESS STANDARDS AND MANUFACTURER'S RECOMMENDATIONS.

TYPICAL ANTENNA GROUNDING DETAIL (5)

SCALE: N.T.S

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CONSTRUCTION DRAWINGS

3	08/11/22	FOR SUBMITTAL
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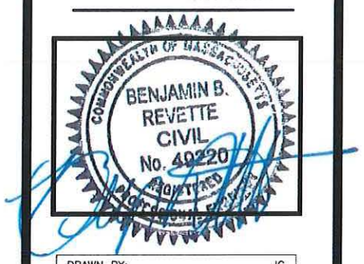


DRAWN BY:	JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143931
SITE NUMBER	

137823

SITE ADDRESS

1654 MASSACHUSETTS AVE
CAMBRIDGE, MA 02138

SHEET TITLE

CONSTRUCTION DETAILS – II

SHEET NUMBER

C–5

FINAL EQUIPMENT CONFIGURATION

SECTOR	POSITION	TECHNOLOGY	ANTENNA MODEL	VENDOR	RRH (QTY./MODEL)	COMBINER (QTY./MODEL)	CENTERLINE	AZIMUTH	OVP	HYBRID CABLE TYPE	FEED LINE LENGTH*
ALPHA	A1	5G	(E) VZ-AT1K01	SAMSUNG	–	–	68'-7"±	5°	(1) (E) OVP BOX TO REMAIN	(1) (E) 6X12 HYBRID CABLE TO REMAIN	225'±
	A2	5G	(P) MT6407-77A	SAMSUNG	–	–	67'-10"±	5°			
	A3	LTE 700/850	(E) NHH-65A-R2B	COMMSCOPE	(1) (E) B5/B13 RFV01U-D2A	(1) (P) TD-850B-LTE78-43	67'-0"±	5°			
	A4	LTE 1900/AWS	(E) NHH-65A-R2B	COMMSCOPE	(1) (E) B2/B66A RFV01U-D1A	–	67'-0"±	5°			
BETA	B1	5G	(P) MT6407-77A	SAMSUNG	–	–	67'-9"±	110°	(1) (E) OVP BOX TO REMAIN	(1) (E) 6X12 HYBRID CABLE TO REMAIN	295'±
	B2	5G	(E) VZ-AT1K01	SAMSUNG	–	–	68'-7"±	110°			
	B3	LTE 700/850	(E) NHH-65A-R2B	COMMSCOPE	(1) (E) B5/B13 RFV01U-D2A	–	67'-0"±	110°			
	B4	LTE 1900/AWS	(E) NHH-65A-R2B	COMMSCOPE	(1) (E) B2/B66A RFV01U-D1A	–	67'-0"±	110°			
GAMMA	G1	5G	(E) VZ-AT1K01	SAMSUNG	–	–	68'-7"±	250°	(1) (E) OVP BOX TO REMAIN	(1) (E) 6X12 HYBRID CABLE TO REMAIN	340'±
	G2	LTE 700/850	(E) NHH-65A-R2B	COMMSCOPE	(1) (E) B5/B13 RFV01U-D2A	–	67'-0"±	250°			
	G3	LTE 1900/AWS	(E) NHH-65A-R2B	COMMSCOPE	(1) (E) B2/B66A RFV01U-D1A	–	67'-0"±	250°			
	G4	5G	(P) MT6407-77A	SAMSUNG	–	–	67'-9"±	250°			

*CONTRACTOR TO FIELD VERIFY HYBRID CABLE LENGTHS PRIOR TO CONSTRUCTION. LENGTH IS ESTIMATED FROM THE BASE EQUIPMENT OVP TO SECTOR OVP WITH 15% BUFFER. THERE ARE NO PROPOSED HYBRID CABLES AS PART OF THIS SCOPE OF WORK.

(E) = Existing
(P) = PROPOSED

FINAL EQUIPMENT CONFIGURATION (1)
SCALE: N.T.S.

verizon WIRELESS
VERIZON WIRELESS
900 CHELMSFORD STREET
TOWER 2 FLOOR 5
LOWELL, MA 01851

HARVARD SQ 2 MA

CONSTRUCTION DRAWINGS

3	08/11/22	FOR SUBMITTAL
2	08/05/22	FOR SUBMITTAL
1	05/10/22	FOR SUBMITTAL
0	04/08/22	FOR SUBMITTAL

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

COMMONWEALTH OF MASSACHUSETTS
BENJAMIN B. REVETTE
CIVIL
No. 49220
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY:	JG
REVIEWED BY:	CDH
CHECKED BY:	BBR
PROJECT NUMBER:	50121487
JOB NUMBER:	50143931

SITE NUMBER
137823

SITE ADDRESS
1654 MASSACHUSETTS AVE
CAMBRIDGE, MA 02138

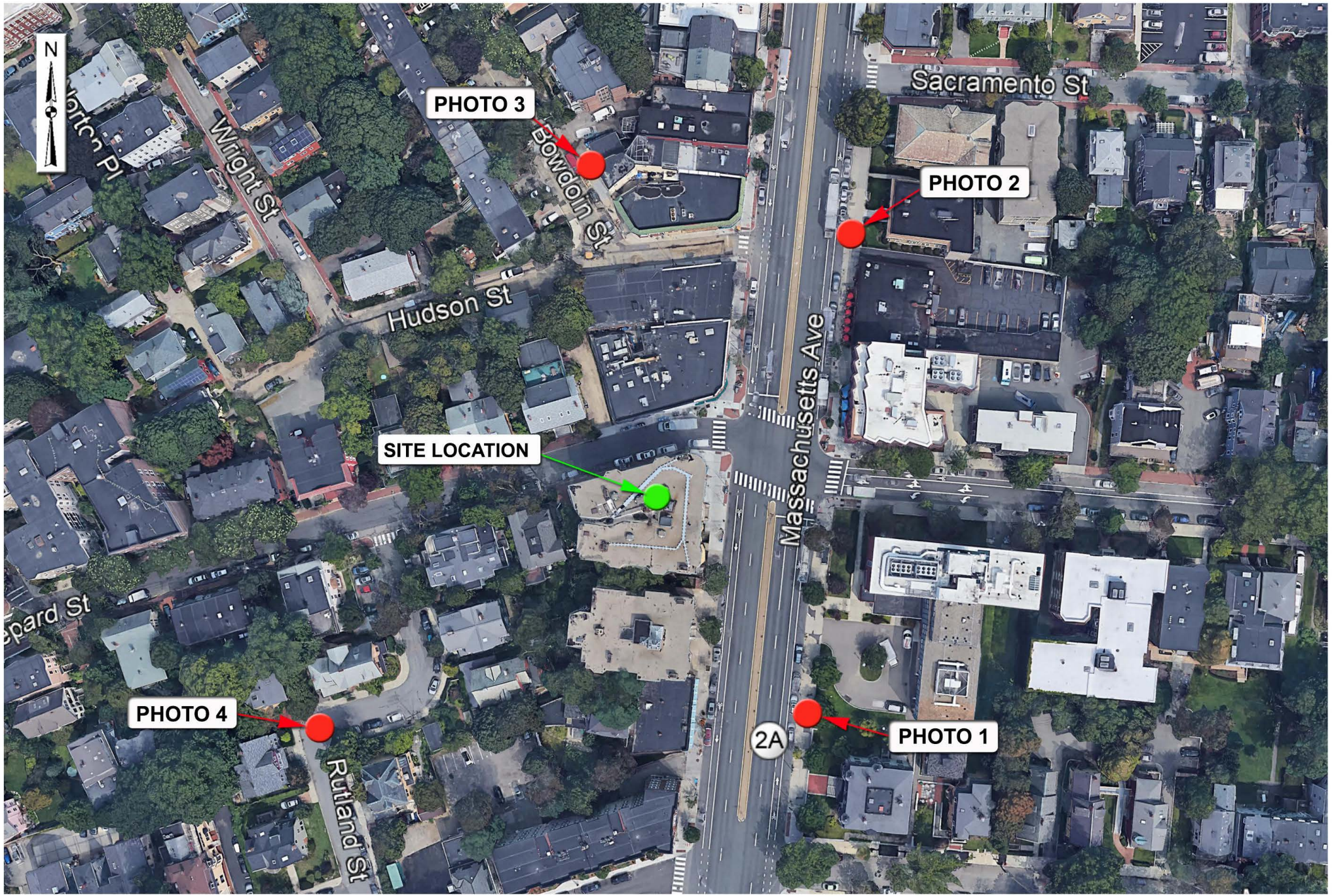
SHEET TITLE
FINAL EQUIPMENT CONFIGURATION

SHEET NUMBER
C-6

verizon WIRELESS

Harvard SQ 2 MA
1654 Massachusetts Ave.
Cambridge, MA 02138
(Page 1 of 10)

Dewberry



verizon WIRELESS

Harvard SQ 2 MA
1654 Massachusetts Ave.
Cambridge, MA 02138
(Page 2 of 10)

Dewberry

verizon WIRELESS

Harvard SQ 2 MA

Photo 1A

View Facing Northwest From Massachusets Avenue

(Page 3 of 10)

Dewberry

verizon WIRELESS

Harvard SQ 2 MA

Photo 1B

View Facing Northwest From Massachusets Avenue

(Page 4 of 10)

Dewberry

verizon WIRELESS

Harvard SQ 2 MA

Photo 2A

View Facing Southwest From Massachusets Avenue

(Page 5 of 10)

Dewberry

verizon WIRELESS

Harvard SQ 2 MA

Photo 2B

View Facing Southwest From Massachusets Avenue

(Page 6 of 10)

Dewberry

verizon WIRELESS

Harvard SQ 2 MA

Photo 3A

View Facing South From Bowdoin Street

(Page 7 of 10)

Dewberry

verizon WIRELESS

Harvard SQ 2 MA

Photo 3B

View Facing South From Bowdoin Street

(Page 8 of 10)

Dewberry

verizon WIRELESS

Harvard SQ 2 MA

Photo 4A

View Facing Northeast From Rutland Street

Dewberry

verizon WIRELESS

Harvard SQ 2 MA

Photo 4B

View Facing Northeast From Rutland Street

Dewberry

BLOCK 173

City of Cambridge
Assessing Department

795 Massachusetts Ave.
Cambridge, MA 02139

Buildings	Water	10 Lot Number	100 Parcel size in Sq. Ft.
Lot Line	Sub-Parcel Line	173 Block Number	44.0LC Land Court Dimension
Block Line	Easement	10 Cam Street Number	65.0 Survey Dimensions
City Boundary	Railway	(125.0) Deed Dimension	

DISCLAIMER:
All Real Property shown on this map was compiled from existing Assessor's Tax Maps dated 1920 to 2021 and maintained by the City Assessor's Office and the Department of Public Works. Subsequent maintenance has been completed using the City of Cambridge Geographic Information System (GIS). Parcels have not been created from survey, and map is suitable for assessing purposes only.

The City of Cambridge assumes no legal responsibility for information shown on this map.

N

0 15 30 60 Feet

1 inch = 35 feet

Parcel Block Map

173

NUS:mem 10/16/72

[redacted]

F 19—

K N O W A L L M E N B Y T H E S E P R E S E N T S

That CHARLES JACKSON, JR., EARLE W. CARR and TUCKER REED MILLER, as Executors of the will of Clifford V. Miller, late of Newton in the County of Middlesex and Commonwealth of Massachusetts (Middlesex Probate No. 438335), for a nominal consideration paid, grant to EARLE W. CARR, TUCKER REED MILLER and JOHN KURT MILLER, of Clifford V. Miller, Inc., 1394 Beacon Street, Brookline, Massachusetts, as they are Trustees under Article 5, Paragraph B of the will of Clifford V. Miller, a one-half undivided interest in a certain parcel of land with the buildings thereon situated in Cambridge, Middlesex County, Massachusetts, now known as and numbered 1648 and 1654 Massachusetts Avenue, comprising Lots A and B on W. A. Mason & Son's Plan dated July, 1920, recorded with Middlesex South District Deeds in Plan Book 286, Plan 40, bounded and described as follows:

NORTHERLY by Shepard Street, ninety-nine and 52/100 (99.52) feet;

NORTHEASTERLY by the curved corner of Shepard Street and Massachusetts Avenue thirty-three and 32/100 (33.32) feet;

EASTERLY by Massachusetts Avenue, one hundred fifty-eight and 10/100 (158.10) feet;

SOUTHERLY by land now or late of Elizabeth P. Huntington by two lines measuring sixty-five and 33/100 (65.33) feet and forty-six (46) feet respectively;

WESTERLY by land now or late of Caroline E. Wyeth and now or late of Alexander F. Lalond fifty-six and 47/100 (56.47) feet;

NORTHERLY by land now or late of Alta M. Erickson fifty and 57/100 (50.57) feet; and

WESTERLY again by the same by a slightly broken line, in all ninety-one and 14/100 (91.14) feet.

Containing 17,579 square feet, all as shown on said plan, be all

or any of said measurements more or less or however otherwise said premises may be bounded, measured or described, and being the same premises conveyed to the grantors by deed of Dunvegan Corporation dated August 28, 1970 and recorded with said Deeds, Book 11883, Page 26.

The consideration for this conveyance being less than One Hundred Dollars ($100.00), no revenue stamps are required by law to be affixed hereto.

Executed under seal this 29th day of December 1972.

Charles Jackson Jr.
(Charles Jackson, Jr.

Executors as Aforesaid

Earle W. Carr
(Earle W. Carr

Tucker Reed Miller
(Tucker Reed Miller

COMMONWEALTH OF MASSACHUSETTS

Suffolk, ss. Dec. 29, 1972

Then personally appeared the above-named Charles Jackson, Jr., and acknowledged the foregoing instrument to be his free act and deed as Executor as aforesaid, before me

Nicholas U. Sommerfeld
Notary Public
My Commission expires

NICHOLAS U. SOMMERFELD
MY COMMISSION EXPIRES APRIL 6, 2000

NICHOLAS U. SOMMERFELD NOTARY PUBLIC

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Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRBA936	
Radio Service	
UU - Upper Microwave Flexible Use Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
09-11-2018	02-27-2019	10-06-2028	

Market Number	Channel Block	Sub-Market Designator
BTA051	L1	1

Market Name
Boston, MA

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-01-2024			

Waivers/Conditions:

Special Condition for AU/name change (6/4/2016): Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station is licensed under the prior name.

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

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

FCC 601-MB
August 2021

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRBA936 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

REFERENCE COPY
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Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRBA937	
Radio Service	
UU - Upper Microwave Flexible Use Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
09-11-2018	02-27-2019	10-06-2028	

Market Number	Channel Block	Sub-Market Designator
BTA051	L2	1

Market Name
Boston, MA

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-01-2024			

Waivers/Conditions:

Special Condition for AU/name change (6/4/2016): Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station is licensed under the prior name.

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

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Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRBA937 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

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Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQJQ689	
Radio Service	
WU - 700 MHz Upper Band (Block C)	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
09-11-2019	07-15-2020	06-13-2029	

Market Number	Channel Block	Sub-Market Designator
REA001	C	0

Market Name
Northeast

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-13-2013	06-13-2019		

Waivers/Conditions:

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

This authorization is conditioned upon compliance with section 27.16 of the Commission's rules

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

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Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQJQ689 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

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Federal Communications Commission
Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
KNKA201	
Radio Service CL - Cellular	
Market Numer CMA006	**Channel Block** B
Sub-Market Designator 0	

FCC Registration Number (FRN): 0003290673

Market Name
Boston-Lowell-Brockton-Lawrenc

Grant Date	Effective Date	Expiration Date	Five Yr Build-Out Date	Print Date
08-26-2014	11-01-2016	10-01-2024		

Site Information:

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
1	42-38-26.3 N	070-36-25.2 W	36.3	35.7	

Address: (Rockport) Thatcher Road
City: Rockport **County:** ESSEX **State:** MA **Construction Deadline:**

Antenna: 5
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	70.400	34.100	34.100	34.100	70.400	67.800	55.200	61.300
Transmitting ERP (watts)	246.920	325.500	33.310	0.940	0.820	0.820	1.210	20.070

Antenna: 6
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	70.400	34.100	34.100	34.100	70.400	67.800	55.200	61.300
Transmitting ERP (watts)	0.820	3.330	54.020	373.730	191.670	10.780	0.820	0.820

Antenna: 7
Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	70.400	34.100	34.100	34.100	70.400	67.800	55.200	61.300
Transmitting ERP (watts)	3.330	0.820	0.820	0.820	7.810	126.630	409.780	89.650

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

FCC 601-C
March 2018

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** **Print Date:**

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
4	42-08-56.4 N	071-24-55.2 W	75.6	44.2	

Address: 113 Main Street

City: Medway **County:** NORFOLK **State:** MA **Construction Deadline:**

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	59.500	66.700	61.200	46.900	23.900	39.300	13.900	12.300
Transmitting ERP (watts)	81.280	89.130	24.550	1.120	0.200	0.200	0.420	16.600

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	59.500	66.700	61.200	46.900	23.900	39.300	13.900	12.300
Transmitting ERP (watts)	0.200	2.000	33.800	95.500	67.610	10.700	0.200	0.200

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	59.500	66.700	61.200	46.900	23.900	39.300	13.900	12.300
Transmitting ERP (watts)	3.890	0.200	0.200	0.200	6.760	57.540	100.000	44.670

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
9	42-11-42.4 N	070-49-10.2 W	57.9	56.1	

Address: (Scituate) OFF CLAPP RD

City: SCITUATE **County:** PLYMOUTH **State:** MA **Construction Deadline:**

Antenna: 7

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	105.300	106.100	93.800	85.900	95.600	76.500	81.800	104.300
Transmitting ERP (watts)	172.400	167.230	26.990	1.190	0.960	0.960	1.720	28.870

Antenna: 8

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	105.300	106.100	93.800	85.900	95.600	76.500	81.800	104.300
Transmitting ERP (watts)	0.980	3.910	54.020	409.780	200.700	15.220	0.980	0.980

Antenna: 9

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	105.300	106.100	93.800	85.900	95.600	76.500	81.800	104.300
Transmitting ERP (watts)	4.490	0.980	0.980	1.300	10.060	123.750	449.320	96.060

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** **Print Date:**

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
10	42-52-57.3 N	071-16-28.2 W	163.0	58.2	

Address: (Derry) 46 FLOYD ROAD

City: DERRY **County:** ROCKINGHAM **State:** NH **Construction Deadline:**

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.200	129.400	144.500	155.100	136.800	127.900	126.200	118.100
Transmitting ERP (watts)	31.810	146.820	102.310	15.410	1.000	1.000	1.000	1.130

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	82.200	129.400	144.500	155.100	136.800	127.900	126.200	118.100
Transmitting ERP (watts)	1.000	1.000	4.660	82.110	250.350	80.300	3.790	1.000

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	80.200	129.400	144.500	155.100	136.800	127.900	126.200	118.100
Transmitting ERP (watts)	32.480	1.680	1.000	1.000	1.000	13.740	107.220	143.470

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
12	41-52-08.3 N	070-52-56.1 W	29.6	58.2	

Address: (Middleboro) E. GROVE ST.

City: MIDDLESBORO **County:** PLYMOUTH **State:** MA **Construction Deadline:**

Antenna: 7

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	57.600	32.400	40.200	47.600	44.900	41.300	50.300	52.600
Transmitting ERP (watts)	277.330	364.730	40.890	2.250	0.960	0.960	2.410	20.640

Antenna: 8

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	57.600	32.400	40.200	47.600	44.900	41.300	50.300	52.600
Transmitting ERP (watts)	0.960	3.730	61.620	418.280	215.780	13.090	1.700	0.960

Antenna: 9

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	57.600	32.400	40.200	47.600	44.900	41.300	50.300	52.600
Transmitting ERP (watts)	5.070	1.130	0.610	1.600	5.050	89.040	278.490	66.210

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** **Print Date:**

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
14	42-28-06.3 N	071-27-16.2 W	102.1	54.0	

Address: Main Street

City: South Acton **County:** MIDDLESEX **State:** MA **Construction Deadline:**

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.000	79.000	105.500	96.200	72.600	76.300	47.400	58.700
Transmitting ERP (watts)	65.200	77.960	20.970	2.400	0.200	0.200	2.000	13.720

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	69.000	79.900	105.500	96.200	72.600	76.300	47.400	58.700
Transmitting ERP (watts)	0.200	3.880	23.800	59.780	43.360	10.290	0.830	0.200

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	76.400	65.500	105.500	96.200	72.600	76.300	47.400	58.700
Transmitting ERP (watts)	5.010	0.420	0.200	0.740	6.570	43.660	91.210	34.920

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
15	42-30-08.4 N	070-55-02.2 W	39.6	46.3	

Address: 12 First Street

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

Antenna: 7

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	63.400	62.100	62.800	77.900	77.500	70.500	40.900	50.900
Transmitting ERP (watts)	49.150	56.730	19.190	2.360	0.200	0.200	1.930	12.920

Antenna: 8

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	63.400	62.100	62.800	77.900	77.500	70.500	40.900	50.900
Transmitting ERP (watts)	0.100	1.550	9.520	23.920	17.350	4.120	0.330	0.100

Antenna: 9

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	63.400	62.100	62.800	77.900	77.500	70.500	40.900	50.900
Transmitting ERP (watts)	5.010	0.380	0.200	0.680	6.510	35.500	64.630	29.380

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** **Print Date:**

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
16	42-16-51.4 N	071-02-04.2 W	5.2	53.0	

Address: 100 HANCOCK STREET

City: QUINCY **County:** NORFOLK **State:** MA **Construction Deadline:**

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	43.000	44.100	42.200	29.000	8.300	14.800	12.100	31.500
Transmitting ERP (watts)	7.170	6.480	6.790	0.320	0.100	0.100	0.160	5.630

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	40.900	41.900	40.000	26.800	6.200	12.600	9.900	29.300
Transmitting ERP (watts)	0.100	0.340	3.140	2.480	2.970	1.500	0.100	0.100

Antenna: 7

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	43.000	44.100	42.200	29.000	8.300	14.800	12.100	31.500
Transmitting ERP (watts)	0.100	0.100	0.100	0.120	2.640	2.770	2.720	2.360

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
21	42-30-36.4 N	070-51-21.2 W	23.2	47.2	

Address: Tioga Way

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

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	44.200	46.700	37.200	60.400	60.400	54.600	28.000	43.700
Transmitting ERP (watts)	0.100	0.130	3.130	7.860	6.600	1.220	0.100	0.100

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	44.200	46.700	37.200	60.400	60.400	54.600	28.000	43.700
Transmitting ERP (watts)	0.410	0.100	0.100	0.100	0.530	5.070	8.210	4.870

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	44.200	46.700	37.200	60.400	60.400	54.600	28.000	43.700
Transmitting ERP (watts)	6.780	7.760	2.800	0.100	0.100	0.100	0.100	1.540

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** **Print Date:**

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
22	42-51-55.4 N	070-56-13.2 W	94.5	50.9	

Address: (Amesbury) 10 DENNET WAY

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

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	117.000	123.800	125.500	137.800	126.100	109.800	94.200	100.300
Transmitting ERP (watts)	178.880	225.190	34.880	0.860	0.860	0.860	0.860	10.780

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	117.000	123.800	125.500	137.800	126.100	109.800	94.200	100.300
Transmitting ERP (watts)	0.860	1.240	35.690	258.560	148.780	12.380	0.860	0.860

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	117.000	123.800	125.500	137.800	126.100	109.800	94.200	100.300
Transmitting ERP (watts)	3.110	0.830	0.860	0.860	3.110	89.650	270.740	81.760

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
24	42-03-31.4 N	071-17-29.2 W	105.5	59.1	

Address: (Wrentham) 415 Washington St. - Route 1

City: WRENTHAM **County:** NORFOLK **State:** MA **Construction Deadline:**

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	99.900	78.700	94.600	120.300	114.800	77.800	71.700	95.700
Transmitting ERP (watts)	2.580	85.500	401.990	363.280	54.920	1.060	0.850	0.850

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	99.900	78.700	94.600	120.300	114.800	77.800	71.700	95.700
Transmitting ERP (watts)	0.850	0.850	0.850	8.930	146.240	311.250	197.740	18.980

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	99.900	78.700	94.600	120.300	114.800	77.800	71.700	95.700
Transmitting ERP (watts)	352.500	136.390	5.560	0.980	0.980	0.980	39.210	263.760

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Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** **Print Date:**

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
25	43-10-34.3 N	071-12-24.2 W	335.3	31.4	

Address: (Northwood) SADDLEBACK MOUNTAIN

City: NORTHWOOD **County:** ROCKINGHAM **State:** NH **Construction Deadline:**

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	152.900	213.700	260.100	268.500	234.000	215.400	150.700	173.600
Transmitting ERP (watts)	45.240	219.790	199.540	31.860	1.550	1.000	1.000	2.360

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	152.900	213.700	260.100	268.500	234.000	215.400	150.700	173.600
Transmitting ERP (watts)	1.000	1.000	6.160	105.350	236.610	142.220	7.190	1.780

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	152.900	213.700	260.100	268.500	234.000	215.400	150.700	173.600
Transmitting ERP (watts)	55.630	1.980	1.000	1.000	2.260	8.170	110.540	141.320

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
27	41-41-13.4 N	070-48-25.1 W	22.9	59.4	

Address: (Mattapoisett) Industrial Drive

City: Mattapoisett **County:** PLYMOUTH **State:** MA **Construction Deadline:**

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	61.700	76.400	79.200	79.900	80.600	75.400	56.100	60.600
Transmitting ERP (watts)	217.540	281.390	29.930	2.050	0.980	0.980	2.340	21.270

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	61.700	76.400	79.300	79.900	80.600	75.400	56.100	60.600
Transmitting ERP (watts)	0.980	10.610	118.800	349.190	74.510	4.550	0.980	0.980

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	61.700	76.400	79.200	79.900	80.600	75.400	56.100	60.600
Transmitting ERP (watts)	2.220	0.980	0.980	2.540	27.640	252.570	253.110	22.510

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** **Print Date:**

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
29	41-55-21.0 N	070-39-05.0 W	39.6	77.4	1021869

Address: (Plymouth) CALEB ST

City: Plymouth **County:** PLYMOUTH **State:** MA **Construction Deadline:**

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.600	84.200	79.500	67.900	61.400	63.600	52.500	63.200
Transmitting ERP (watts)	252.450	246.240	37.800	1.470	0.940	0.940	2.080	39.370

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.600	84.200	79.500	67.900	61.400	63.600	52.500	63.200
Transmitting ERP (watts)	1.000	3.000	53.330	346.500	184.150	15.870	1.000	1.000

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	94.600	84.200	79.500	67.900	61.400	63.600	52.500	63.200
Transmitting ERP (watts)	4.660	1.000	1.000	1.000	5.610	128.480	425.450	99.740

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
31	42-14-40.0 N	071-30-38.0 W	142.6	102.0	1009024

Address: 1.25 MI NNE

City: HOPKINTON **County:** MIDDLESEX **State:** MA **Construction Deadline:**

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.800	138.000	130.800	126.800	101.200	85.900	73.000	97.500
Transmitting ERP (watts)	23.200	21.890	16.370	2.550	0.130	0.100	1.640	13.250

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.800	138.000	130.800	126.800	101.200	85.900	73.000	97.500
Transmitting ERP (watts)	0.940	9.100	53.990	96.320	78.580	26.320	3.730	0.460

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	107.800	138.000	130.800	126.800	101.200	85.900	73.000	97.500
Transmitting ERP (watts)	13.400	1.700	0.620	2.340	18.300	72.460	95.170	63.740

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** **Print Date:**

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
34	42-23-29.5 N	071-07-22.9 W	7.9	26.8	

Address: 2067 MASSACHUSETTS AVENUE

City: CAMBRIDGE **County:** SUFFOLK **State:** MA **Construction Deadline:**

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	-3.400	5.800	21.700	28.600	13.000	-2.600	-14.400	-21.300
Transmitting ERP (watts)	6.780	7.760	2.800	0.100	0.100	0.100	0.100	1.540

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	-3.400	5.800	21.700	28.600	13.000	-2.600	-14.400	-21.300
Transmitting ERP (watts)	0.100	0.130	3.130	7.860	6.600	1.220	0.100	0.100

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	-3.400	5.800	21.700	28.300	13.000	-2.600	-14.400	-21.300
Transmitting ERP (watts)	0.410	0.100	0.100	0.100	0.530	5.070	8.210	4.870

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
35	42-39-16.7 N	071-44-12.3 W	192.6	51.2	

Address: 84 Bayberry Hill Road

City: Townsend **County:** MIDDLESEX **State:** MA **Construction Deadline:**

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	57.900	139.500	149.200	136.100	102.200	42.700	-79.000	-25.700
Transmitting ERP (watts)	0.580	7.080	42.660	95.500	77.620	22.390	2.820	0.460

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	51.300	146.600	148.900	136.600	101.300	25.000	-79.700	-22.300
Transmitting ERP (watts)	35.060	35.620	17.670	2.660	0.200	0.150	1.860	13.500

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	51.300	146.600	148.900	136.600	101.300	25.000	-79.700	-22.300
Transmitting ERP (watts)	5.360	0.690	0.250	0.930	7.320	28.980	38.070	25.500

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Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** **Print Date:**

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
38	42-38-45.8 N	071-05-37.7 W	117.3	52.4	

Address: 5 Boston Hill Road

City: North Andover **County:** ESSEX **State:** MA **Construction Deadline:**

Antenna: 4

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	96.900	98.200	110.000	111.300	110.000	101.700	90.300	106.200
Transmitting ERP (watts)	83.180	87.100	23.990	2.290	0.200	0.200	1.820	20.420

Antenna: 5

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	96.900	98.100	110.000	111.300	110.000	101.700	90.200	106.200
Transmitting ERP (watts)	0.240	4.170	38.020	97.720	66.070	11.750	1.050	0.200

Antenna: 6

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	96.900	98.200	110.000	111.300	110.000	101.700	90.200	106.200
Transmitting ERP (watts)	5.250	0.340	0.200	0.830	9.770	60.262	100.000	42.660

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
39	42-18-13.0 N	071-13-05.0 W	44.8	96.0	1018331

Address: 140 CABOT ST

City: NEEDHAM **County:** NORFOLK **State:** MA **Construction Deadline:**

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	44.200	68.400	58.900	48.800	36.300	40.300	44.100	41.600
Transmitting ERP (watts)	30.340	35.650	9.380	0.920	0.100	0.100	0.610	6.050

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	44.200	68.400	58.900	48.800	36.300	40.300	44.100	41.600
Transmitting ERP (watts)	0.100	1.230	10.440	23.990	19.000	4.420	0.370	0.100

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	44.200	68.400	58.900	48.800	36.300	40.300	44.100	41.600
Transmitting ERP (watts)	2.200	0.190	0.100	0.300	2.700	19.270	35.660	16.260

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Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNKA201 **File Number:** **Print Date:**

Location	Latitude	Longitude	Ground Elevation (meters)	Structure Hgt to Tip (meters)	Antenna Structure Registration No.
41	42-22-16.6 N	071-05-49.6 W	6.3	18.6	

Address: (Cambridge Donnelly Field site) 284 Norfolk Street

City: Cambridge **County:** MIDDLESEX **State:** MA **Construction Deadline:** 07-03-2014

Antenna: 1

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	-11.600	16.500	20.700	21.000	2.200	-20.400	2.300	-16.900
Transmitting ERP (watts)	48.150	197.980	63.920	1.080	0.680	0.680	0.680	0.850

Antenna: 2

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	-11.600	16.500	20.700	21.000	2.200	-20.400	2.300	-16.900
Transmitting ERP (watts)	0.670	0.670	18.990	128.120	74.750	3.300	0.670	0.670

Antenna: 3

Maximum Transmitting ERP in Watts: 140.820

Azimuth(from true north)	0	45	90	135	180	225	270	315
Antenna Height AAT (meters)	-10.600	17.600	21.700	22.000	3.200	-19.400	3.400	-15.900
Transmitting ERP (watts)	28.690	0.650	0.650	0.650	0.650	5.700	114.450	208.740

Control Points:

Control Pt. No. 3

Address: 500 W. Dove Rd.

City: Southlake **County:** TARRANT **State:** TX **Telephone Number:** (800)264-6620

Waivers/Conditions:

THE FOLLOWING CELLULAR GEOGRAPHIC SERVICE AREAS HAVE BEEN COMBINED (LISTED BY CALL SIGN, MARKET NUMBER AND BLOCK, AND MARKET NAME): KNKA201 6B BOSTON, MASSACHUSETTS KNKA251 76B

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Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQGB266	0009783855
Radio Service	
AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
02-10-2022	02-10-2022	11-29-2036	02-11-2022

Market Number	Channel Block	Sub-Market Designator
CMA006	A	0

Market Name
Boston-Lowell-Brockton-Lawrenc

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations. See, e.g., FCC and NTIA Coordination Procedures in the 1710-1755 MHz Band, Public Notice, FCC 06-50, WTB Docket No. 02-353, rel. April 20, 2006.

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

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

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQGB266 **File Number:** 0009783855 **Print Date:** 02-11-2022

The license is subject to compliance with the provisions of the January 12, 2001 Agreement between Deutsche Telekom AG, VoiceStream Wireless Corporation, VoiceStream Wireless Holding Corporation and the Department of Justice (DOJ) and the Federal Bureau of Investigation (FBI), which addresses national security, law enforcement, and public safety issues of the FBI and the DOJ regarding the authority granted by this license. Nothing in the Agreement is intended to limit any obligation imposed by Federal lawor regulation including, but not limited to, 47 U.S.C. Section 222(a) and (c)(1) and the FCC's implementing regulations. The Agreement is published at VoiceStream-DT Order, IB Docket No. 00-187, FCC 01-142, 16 FCC Rcd 9779, 9853 (2001).

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Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQGB266 **File Number:** 0009783855 **Print Date:** 02-11-2022

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

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Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WQGA900	0009773233
Radio Service	
AW - AWS (1710-1755 MHz and 2110-2155 MHz)	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
01-11-2022	01-11-2022	11-29-2036	01-12-2022

Market Number	Channel Block	Sub-Market Designator
BEA003	B	1

Market Name
Boston-Worcester-Lawrence-Lowe

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date

Waivers/Conditions:

This authorization is conditioned upon the licensee, prior to initiating operations from any base or fixed station, making reasonable efforts to coordinate frequency usage with known co-channel and adjacent channel incumbent federal users operating in the 1710-1755 MHz band whose facilities could be affected by the proposed operations. See, e.g., FCC and NTIA Coordination Procedures in the 1710-1755 MHz Band, Public Notice, FCC 06-50, WTB Docket No. 02-353, rel. April 20, 2006.

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

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

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

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WQGA900 **File Number:** 0009773233 **Print Date:** 01-12-2022

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

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Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRNE629	
Radio Service	
PM - 3.7 GHz Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
07-23-2021	07-23-2021	07-23-2036	

Market Number	Channel Block	Sub-Market Designator
PEA007	A3	0

Market Name
Boston, MA

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
07-23-2029	07-23-2033		

Waivers/Conditions:

Operation for this combination license grants both interim and final rights for this PEA and is not impacted by the relocation process pursuant to 47 CFR ? 27.1412(g).

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

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

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

Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRNE629 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

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Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRNE628	
Radio Service	
PM - 3.7 GHz Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
07-23-2021	07-23-2021	07-23-2036	

Market Number	Channel Block	Sub-Market Designator
PEA007	A2	0

Market Name
Boston, MA

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
07-23-2029	07-23-2033		

Waivers/Conditions:

Operation for this combination license grants both interim and final rights for this PEA and is not impacted by the relocation process pursuant to 47 CFR ? 27.1412(g).

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

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

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Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRNE628 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

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Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
WRNE627	
Radio Service	
PM - 3.7 GHz Service	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
07-23-2021	07-23-2021	07-23-2036	

Market Number	Channel Block	Sub-Market Designator
PEA007	A1	0

Market Name
Boston, MA

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
07-23-2029	07-23-2033		

Waivers/Conditions:

Operation for this combination license grants both interim and final rights for this PEA and is not impacted by the relocation process pursuant to 47 CFR ? 27.1412(g).

License is conditioned on compliance with all applicable FCC rules and regulations, including licensee making payments required by 47 C.F.R. §§ 27.1401- 27.1424 as described in FCC 20-22. See FCC 20-22, paras. 178-331.

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

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Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: WRNE627 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

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Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AIRTOUCH CELLULAR

ATTN: REGULATORY
AIRTOUCH CELLULAR
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
KNLF646	
Radio Service CW - PCS Broadband	

FCC Registration Number (FRN): 0006146468

Grant Date	Effective Date	Expiration Date	Print Date
12-02-2016	11-30-2017	01-03-2027	

Market Number	Channel Block	Sub-Market Designator
BTA051	C	3

Market Name
Boston, MA

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
12-07-2003	01-03-2007		

Waivers/Conditions:

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

Special Condition for AU/name change (6/4/2016): Grant of the request to update licensee name is conditioned on it not reflecting an assignment or transfer of control (see Rule 1.948); if an assignment or transfer occurred without proper notification or FCC approval, the grant is void and the station is licensed under the prior name.

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

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

Reference Copy

Licensee Name: AIRTOUCH CELLULAR

Call Sign: KNLF646 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

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Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: AIRTOUCH CELLULAR

ATTN: REGULATORY
AIRTOUCH CELLULAR
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
KNLH310	
Radio Service	
CW - PCS Broadband	

FCC Registration Number (FRN): 0006146468

Grant Date	Effective Date	Expiration Date	Print Date
06-08-2017	11-30-2017	06-27-2027	

Market Number	Channel Block	Sub-Market Designator
BTA051	E	0

Market Name
Boston, MA

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-27-2002			

Waivers/Conditions:

NONE

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

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Reference Copy

Licensee Name: AIRTOUCH CELLULAR

Call Sign: KNLH310 **File Number:** **Print Date:**

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

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Federal Communications Commission

Wireless Telecommunications Bureau

RADIO STATION AUTHORIZATION

LICENSEE: CELLCO PARTNERSHIP

ATTN: REGULATORY
CELLCO PARTNERSHIP
5055 NORTH POINT PKWY, NP2NE NETWORK ENGINEERING
ALPHARETTA, GA 30022

Call Sign	File Number
KNLH242	0007716969
Radio Service	
CW - PCS Broadband	

FCC Registration Number (FRN): 0003290673

Grant Date	Effective Date	Expiration Date	Print Date
06-02-2017	06-02-2017	06-27-2027	06-06-2017

Market Number	Channel Block	Sub-Market Designator
BTA051	F	0

Market Name
Boston, MA

1st Build-out Date	2nd Build-out Date	3rd Build-out Date	4th Build-out Date
06-27-2002			

Waivers/Conditions:

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

This authorization is conditioned upon the full and timely payment of all monies due pursuant to Sections 1.2110 and 24.716 of the Commission's Rules and the terms of the Commission's installment plan as set forth in the Note and Security Agreement executed by the licensee. Failure to comply with this condition will result in the automatic cancellation of this authorization.

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

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Reference Copy

Licensee Name: CELLCO PARTNERSHIP

Call Sign: KNLH242 **File Number:** 0007716969 **Print Date:** 06-06-2017

700 MHz Relicensed Area Information:

Market	Market Name	Buildout Deadline	Buildout Notification	Status

Reference Copy

SAMSUNG

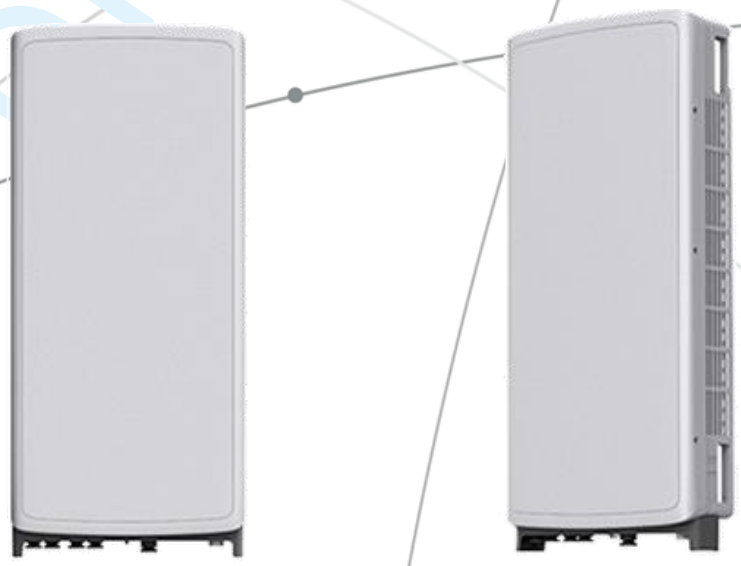
SAMSUNG C-Band 64T64R Massive MIMO

C-Band 64T64R Massive MIMO Radio for High Capacity and Wide Coverage

Samsung C-Band 64T64R Massive MIMO Radio enables mobile operators to increase coverage range, boost data speeds and ultimately offer enriched 5G experiences to users in the U.S..

Model Code : MT6407-77A

DRAFT

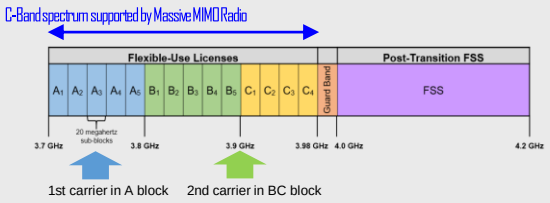


Points of Differentiation

Wide Bandwidth

Being able to support up to 2 CC carrier configuration, Samsung C-Band massive MIMO Radio supports 200 MHz bandwidth in the C-Band spectrum.

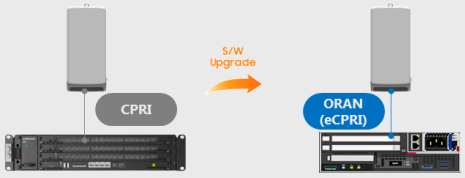
Samsung C-Band massive MIMO Radio uses C-Band 280 MHz spectrum at the same time, so it can cover all the bands the operator can be auctioned.



Future Proof Product

Samsung C-Band Massive MIMO radio supports eCPRI interface, thus, it can be used as O-RAN Massive MIMO Radio in the future. To provide O-RAN service, operators only need to update software since the hardware is already ready.

With the support of O-RAN, operators can reduce OPEX/CAPEX by increasing compatibility between equipment and get opportunity to design and develop their network with best –in-class solution that interoperate.



Enhanced Performance

C-Band massive MIMO Radio creates sharp beams and extends networks' coverage on the critical mid-band spectrum using a large number of antenna elements and high output power to boost data speeds.

This helps operators reduce their CAPEX as they now need less products to cover the same area than before.

Furthermore, as C-Band massive MIMO Radio supports MU-MIMO(Multi-user MIMO) , it enables increased user throughput by minimizing interference.

Well Matched Design

Samsung's C-Band Massive MIMO radio utilizes 64 antennas, supports up to 280MHz bandwidth, and delivers a 200W output power. despite the above advanced performance, the Radio has a compact size of 48L and 87.1lbs. This makes it easy to install the Radio.

It is designed to look solid and small, and in particular, the design with wrap around has a thinly looking effect so that it can be harmonized with the surrounding environment when installed.

Technical Specifications

Item	Specification
Tech	NR
Brand	n77
Frequency Band	3700 - 3980 MHz
EIRP	78.5dBm (53.0 dBm+25.5 dBi)
IBW/OBW	280 MHz / 200 MHz
Installation	Pole/Wall
Size/ Weight	16.06 x 35.12 x 5.51 inch (50.95L)/ 87.1lbs

DRAFT

SAMSUNG

DRAFT

About Samsung Electronics Co., Ltd.

Samsung inspires the world and shapes the future with transformative ideas and technologies. The company is redefining the worlds of TVs, smartphones, wearable devices, tablets, digital appliances, network systems and memory, system LSI foundry and LED solutions.

129 Samsung-ro, Yeongtong-gu, Suwon-si Gyeonggi-do, Korea

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verizon fuze | RFDS

EAST > North East > New England > New England East > HARVARD_SQ_2_MA

RF Submit by: Flanagan, Jason - jason.flanagan@verizonwireless.com - 8/10/2022, 6:08:36 AM

EE Submit by: Diiorio, Gerardo - gerardo.diiorio@verizonwireless.com - 6/24/2022, 3:36:13 AM

Project Details

FUZE Project ID:	16271978
Project Name:	5G L-Sub6 - Carrier Add
Project Alt Name:	HARVARD_SQ_2_MA - 850NR, LSub6 add
Project Type:	Modification
Modification Type:	RF
Designed Sector Carrier 4G:	15
Designed Sector Carrier 5G:	21
Additional Sector Carrier 4G:	N/A
Additional Sector Carrier 5G:	N/A
FP Solution Type & Tech Type:	MODIFICATION;5G_850,5G_L-Sub6,5G_Radio Swap
Carrier Aggregation:	false
MPT Id:	
eCIP-0:	false
Suffix:	Rev0:09.22.2021

Location Information

Site ID:	674519
E-NodeB ID:	0569029,0560074,0569001,056029
PSLC:	137823
Switch Name:	W Roxbury 1
Tower Owner:	
Tower Type:	Building Side-Mounted
Site Type:	MACRO
Site Sub Type:	CRAN
Street Address:	1654 Mass Ave
City:	Cambridge
State:	MA
Zip Code:	02138
County:	Middlesex
Latitude:	42.381597 / 42° 22' 53.7492" N
Longitude:	-71.12005 / 71° 7' 12.18" W

RFDS Project Scope: Rev0:09.22.2021
850NR, LSub6 add
1. Retain (3) Samsung B5/B13 RRH-BR04C (RFV01U-D2A) and (3)Samsung B2/B66A RRH-BR049 (RFV01U-D1A) on Rooftop
2. Install L-Sub6 antennas in Alpha/Beta & Gamma at POS4 (Empty Position). Match the tip to that of the LTE Antennas.
3. Install (1) Commscope TD-850B-LTE78-43 combiner in Alpha for CDMA & LTE.
4. Daisy chain AISG cables between RET capable antennas and connect via RRH
5. Cap and weatherproof unused ports/connectors

Proprietary and Confidential. Not for disclosure outside of Verizon.

Antenna Summary

Added

700	850	1900	AWS	28 GHz	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID
					5G	Samsung	MT6407-77A	67.8	69.3	5(0115) 110(0116) 250(0117)	false	false	PHYSICAL	3	

Removed

700	850	1900	AWS	28 GHz	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID
	CDMA						BXA-80063-4CF	67		110 250	false	false	PHYSICAL	2	

Retained

700	850	1900	AWS	28 GHz	L-Sub6	Make	Model	Centerline	Tip Height	Azimuth	RET	4xRx	Inst. Type	Quantity	Item ID
LTE	LTE 5G	LTE	LTE			COMMSCOPE	NHH-65A-R2B	67	69.3	5(01) 110(02) 250(03) 5(0115) 110(0116) 250(0117)	false	false	PHYSICAL	6	NHH-65A-R2B
				5G		SAMSUNG	VZ-AT1K01	67	67.6	5(0175) 110(0176) 250(0177)	false	false	PHYSICAL	3	

Added: 3	**Removed:** 2	**Retained:** 9

Equipment Summary

Added

Equipment Type	Location	700	850	1900	AWS	28 GHz	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID
Combiner	Tower	LTE	CDMA LTE					Commscope	TD-850B-LTE78-43			PHYSICAL	1	
RRU	Tower						5G	Samsung	MT6407-77A			PHYSICAL	3	
Upconverter	Shelter							COMMSCOPE	RS485-CARD			PHYSICAL	1	RS485-CARD
Upconverter	Shelter							COMMSCOPE	PS-1600-73-VZ			PHYSICAL	6	PS-1600-73-VZ
Upconverter	Shelter							COMMSCOPE	PS-BYPASS-1-VZ			PHYSICAL	6	PS-BYPASS-1-VZ
Upconverter	Shelter							COMMSCOPE	PS-R-1600-VZ			PHYSICAL	1	PS-R-1600-VZ
Upconverter	Shelter							COMMSCOPE	PULSAR-EDGE-CNTRL			PHYSICAL	1	PULSAR-EDGE-CNTRL
Power Plants	Shelter							GEMINIPOWE-001	109163473			PHYSICAL	3	109163473
OVP Box	Shelter							RAYCAPINC-001	2260-ALM-RS485			PHYSICAL	3	2260-ALM-RS485
LCC4	Shelter							SAMSUNGELE-001	SLS-BB1150EDEX			PHYSICAL	2	SLS-BB1150EDEX

Removed

Equipment Type	Location	700	850	1900	AWS	28 GHz	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID

No data available.

Retained

Equipment Type	Location	700	850	1900	AWS	28 GHz	L-Sub6	Make	Model	Cable Length	Cable Size	Install Type	Quantity	Item ID
Coaxial Cables	Tower							N/A	1-5/8" Coax			PHYSICAL	12	
Hybrid Cable	Tower							N/A	1x1 Hybrid Jumper			PHYSICAL	9	
Hybrid Cable	Tower							N/A	6x12 Hybriflex			PHYSICAL	3	
OVP Box	Tower							N/A	Lg Junction Box			PHYSICAL	3	
RRU	Tower					5G		Samsung	AT1K01 DC			PHYSICAL	3	
RRU	Tower			LTE	LTE			Samsung	B2/B66A RRH-BR049 (RFV01U-D1A)			PHYSICAL	3	
RRU	Tower	LTE	LTE					Samsung	B5/B13 RRH-BR04C (RFV01U-D2A)			PHYSICAL	3	
OVP Box	Shelter							N/A	Lg Junction Box			PHYSICAL	3	

Service Info

28 GHz 5GNR	0000			5GLS		
Sector	**0175**	**0176**	**0177**	**0175**	**0176**	**0177**
Azimuth	5	110	250	5	110	250
Cell / ENode B ID	0560074	0560074	0560074	0560074	0560074	0560074
Antenna Model	VZ-AT1K01	VZ-AT1K01	VZ-AT1K01	VZ-AT1K01	VZ-AT1K01	VZ-AT1K01
Antenna Make	SAMSUNG	SAMSUNG	SAMSUNG	SAMSUNG	SAMSUNG	SAMSUNG
Antenna Centerline(Ft)	67	67	67	67	67	67
Mechanical Down-Tilt(Deg.)	0	0	0	0	0	0
Electrical Down-Tilt	0	0	0	0	0	0
Tip Height	67.6	67.6	67.6	67.6	67.6	67.6
Regulatory Power	1.86	1.86	1.86	1.86	1.86	1.86
DLEARFCN	2074999, 2080833, 2073333, 2076665, 2082499, 2084165	2082499, 2084165, 2080833, 2074999, 2073333, 2076665	2084165, 2080833, 2076665, 2074999, 2082499, 2073333	2082499, 2076665, 2073333, 2084165, 2080833, 2074999	2073333, 2080833, 2084165, 2074999, 2076665, 2082499	2084165, 2082499, 2080833, 2073333, 2074999, 2076665
Channel Bandwidth(MHz)	100	100	100	100	100	100
Total ERP (W)	153.04	153.04	153.04	153.04	153.04	153.04
TMA Make						
TMA Model						
RRU Make	Samsung	Samsung	Samsung	Samsung	Samsung	Samsung
RRU Model	AT1K01 DC	AT1K01 DC	AT1K01 DC	AT1K01 DC	AT1K01 DC	AT1K01 DC
Number of Tx, Rx Lines	4,4	4,4	4,4	4,4	4,4	4,4
Position						
Transmitter Id	4640177	4640178	4640179	9031120	9031122	9031125
Source	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API

700 MHz LTE	0000			5GLS		
Sector	**01**	**02**	**03**	**01**	**02**	**03**
Azimuth	5	110	250	5	110	250
Cell / ENode B ID	056029	056029	056029	056029	056029	056029
Antenna Model	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B
Antenna Make	COMMSCOPE	COMMSCOPE	COMMSCOPE	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)	67	67	67	67	67	67
Mechanical Down-Tilt(Deg.)	0	0	0	0	0	0
Electrical Down-Tilt	12	12	12	12	12	12
Tip Height	69.3	69.3	69.3	69.3	69.3	69.3
Regulatory Power	56.29	47.22	44.17	61.98	54.11	50.61
DLEARFCN	5230	5230	5230	5230	5230	5230
Channel Bandwidth(MHz)	10	10	10	10	10	10
Total ERP (W)	506.59	424.95	397.5	557.83	486.97	455.51
TMA Make						
TMA Model						
RRU Make	Samsung	Samsung	Samsung	Samsung	Samsung	Samsung
RRU Model	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)
Number of Tx, Rx Lines	2,4	2,4	2,4	4,4	4,4	4,4
Position						
Transmitter Id	4640126	4640129	4640132	9031105	9031130	9031140
Source	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API

850 MHz LTE

	0000			5GLS		
Sector	**01**	**02**	**03**	**01**	**02**	**03**
Azimuth	5	110	250	5	110	250
Cell / ENode B ID	056029	056029	056029	056029	056029	056029
Antenna Model	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B
Antenna Make	COMMSCOPE	COMMSCOPE	COMMSCOPE	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)	67	67	67	67	67	67
Mechanical Down-Tilt(Deg.)	0	0	0	0	0	0
Electrical Down-Tilt	12	12	12	12	12	12
Tip Height	69.3	69.3	69.3	69.3	69.3	69.3
Regulatory Power	100.29	83.83	78.41	171.32	149.56	139.9
DLEARFCN	2560	2560	2560	2560	2560	2560
Channel Bandwidth(MHz)	10	10	10	10	10	10
Total ERP (W)	451.28	377.22	352.85	385.48	336.51	314.77
TMA Make						
TMA Model						
RRU Make	Samsung	Samsung	Samsung	Samsung	Samsung	Samsung
RRU Model	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)
Number of Tx, Rx Lines	2,4	2,4	2,4	4,4	4,4	4,4
Position						
Transmitter Id	4640255	4640256	4640257	9031111	9031114	9031117
Source	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API

850 MHz 5GNR

				5GLS		
Sector				**0115**	**0116**	**0117**
Azimuth				5	110	250
Cell / ENode B ID				0569029	0569029	0569029
Antenna Model				NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B
Antenna Make				COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)				67	67	67
Mechanical Down-Tilt(Deg.)				0	0	0
Electrical Down-Tilt				12	12	12
Tip Height				69.3	69.3	69.3
Regulatory Power				171.32	149.56	139.9
DLEARFCN				2560	2560	2560
Channel Bandwidth(MHz)				10	10	10
Total ERP (W)				385.48	336.51	314.77
TMA Make						
TMA Model						
RRU Make				Samsung	Samsung	Samsung
RRU Model				B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)	B5/B13 RRH-BR04C (RFV01U-D2A)
Number of Tx, Rx Lines				4,4	4,4	4,4
Position						
Transmitter Id				9031111	9031114	9031117
Source				ATOLL_API	ATOLL_API	ATOLL_API

1900 MHz LTE

	0000			5GLS		
Sector	**01**	**02**	**03**	**01**	**02**	**03**
Azimuth	5	110	250	5	110	250
Cell / ENode B ID	056029	056029	056029	056029	056029	056029
Antenna Model	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B
Antenna Make	COMMSCOPE	COMMSCOPE	COMMSCOPE	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)	67	67	67	67	67	67
Mechanical Down-Tilt(Deg.)	0	0	0	0	0	0
Electrical Down-Tilt	5	5	5	5	5	5
Tip Height	69.3	69.3	69.3	69.3	69.3	69.3
Regulatory Power	0.01	0.01	0.01	120.97	126.38	123.22
DLEARFCN	1025	1025	1025	1025	1025	1025
Channel Bandwidth(MHz)	15	15	15	15	15	15
Total ERP (W)	0.06	0.07	0.07	995.41	1039.92	1013.91
TMA Make						
TMA Model						
RRU Make	Samsung	Samsung	Samsung	Samsung	Samsung	Samsung
RRU Model	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)
Number of Tx, Rx Lines	2,4	2,4	2,4	4,4	4,4	4,4
Position						
Transmitter Id	4640127	4640130	4640133	9031108	9031133	9031144
Source	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API

2100 MHz LTE

	0000			5GLS		
Sector	**01**	**02**	**03**	**01**	**02**	**03**
Azimuth	5	110	250	5	110	250
Cell / ENode B ID	056029	056029	056029	056029	056029	056029
Antenna Model	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B	NHH-65A-R2B
Antenna Make	COMMSCOPE	COMMSCOPE	COMMSCOPE	COMMSCOPE	COMMSCOPE	COMMSCOPE
Antenna Centerline(Ft)	67	67	67	67	67	67
Mechanical Down-Tilt(Deg.)	0	0	0	0	0	0
Electrical Down-Tilt	5	5	5	5	5	5
Tip Height	69.3	69.3	69.3	69.3	69.3	69.3
Regulatory Power	89.79	87.74	93.31	100.17	97.89	104.17
DLEARFCN	2050	2050	2050	2050	2050	2050
Channel Bandwidth(MHz)	20	20	20	20	20	20
Total ERP (W)	985.13	962.7	1023.74	1099.01	1073.99	1142.88
TMA Make						
TMA Model						
RRU Make	Samsung	Samsung	Samsung	Samsung	Samsung	Samsung
RRU Model	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)	B2/B66A RRH-BR049 (RFV01U-D1A)
Number of Tx, Rx Lines	2,4	2,4	2,4	4,4	4,4	4,4
Position						
Transmitter Id	4640128	4640131	4640134	9031127	9031136	9031146
Source	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API	ATOLL_API

nL-Sub6

	5GLS		
Sector	**0115**	**0116**	**0117**
Azimuth	5	110	250
Cell / ENode B ID	0569001	0569001	0569001
Antenna Model	MT6407-77A	MT6407-77A	MT6407-77A
Antenna Make	Samsung	Samsung	Samsung
Antenna Centerline(Ft)	67.8	67.8	67.8
Mechanical Down-Tilt(Deg.)	0	0	0
Electrical Down-Tilt	6	6	6
Tip Height	69.3	69.3	69.3
Regulatory Power	767.64	767.64	767.64
DLEARFCN	648672	648672	648672
Channel Bandwidth(MHz)	60	60	60
Total ERP (W)	13335.21	13335.21	13335.21
TMA Make			
TMA Model			
RRU Make	Samsung	Samsung	Samsung
RRU Model	MT6407-77A	MT6407-77A	MT6407-77A
Number of Tx, Rx Lines	2,2	2,2	2,2
Position			
Transmitter Id	9031161	9031162	9031163
Source	ATOLL_API	ATOLL_API	ATOLL_API

Service Comments

Callsigns Per Antenna

Sector	Antenna Make	Antenna Model	Ant CL Height AGL	Tip Height	Azimuth (TN)	Elec Tilt	Mech Tilt	Gain	Beam Width	Regulatory Power	Callsigns						
											700	850	1900	2100	28 GHz	31 GHz	39 GHz
0116	COMMSCOPE	NHH-65A-R2B	67	69.3	110	12	0	10.56	60.75	149.56		KNKA201					
02	COMMSCOPE	NHH-65A-R2B	67	69.3	110	12	0	10.56	60.75	149.56		KNKA201					
03	COMMSCOPE	NHH-65A-R2B	67	69.3	250	5	0	14.51	66	123.22			KNLF646 KNLH242 KNLH310				
03	COMMSCOPE	NHH-65A-R2B	67	69.3	250	12	0	11.051	67.75	50.61	WQJQ689						
0116	Samsung	MT6407-77A	67.8	69.3	110	6	0	23.35	100	767.64							
02	COMMSCOPE	NHH-65A-R2B	67	69.3	110	5	0	14.51	66	126.38			KNLF646 KNLH242 KNLH310				
01	COMMSCOPE	NHH-65A-R2B	67	69.3	5	5	0	14.51	66	120.97			KNLF646 KNLH242 KNLH310				
01	COMMSCOPE	NHH-65A-R2B	67	69.3	5	5	0	15	57.75	100.17				WQGA900 WQGB266			
02	COMMSCOPE	NHH-65A-R2B	67	69.3	110	5	0	15	57.75	97.89				WQGA900 WQGB266			
01	COMMSCOPE	NHH-65A-R2B	67	69.3	5	12	0	11.051	67.75	61.98	WQJQ689						
02	COMMSCOPE	NHH-65A-R2B	67	69.3	110	12	0	11.051	67.75	54.11	WQJQ689						
0175	SAMSUNG	VZ-AT1K01	67	67.6	5	0	0	25.848	52	1.86					WRBA936 WRBA937		
0176	SAMSUNG	VZ-AT1K01	67	67.6	110	0	0	25.848	52	1.86					WRBA936 WRBA937		
0115	Samsung	MT6407-77A	67.8	69.3	5	6	0	23.35	100	767.64							
0177	SAMSUNG	VZ-AT1K01	67	67.6	250	0	0	25.848	52	1.86					WRBA936 WRBA937		
01	COMMSCOPE	NHH-65A-R2B	67	69.3	5	12	0	10.56	60.75	171.32		KNKA201					
0117	COMMSCOPE	NHH-65A-R2B	67	69.3	250	12	0	10.56	60.75	139.9		KNKA201					
03	COMMSCOPE	NHH-65A-R2B	67	69.3	250	12	0	10.56	60.75	139.9		KNKA201					
0117	Samsung	MT6407-77A	67.8	69.3	250	6	0	23.35	100	767.64							
0115	COMMSCOPE	NHH-65A-R2B	67	69.3	5	12	0	10.56	60.75	171.32		KNKA201					
03	COMMSCOPE	NHH-65A-R2B	67	69.3	250	5	0	15	57.75	104.17				WQGA900 WQGB266			

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Callsigns

Callsign	Market	Radio Code	Market Number	Block	State	County	Licensee Name	Wholly Owned	Total MHZ	Freq Range 1	Freq Range 2	Freq Range 3	Freq Range 4	Regulatory Power	Threshold (W)	POPs /Sq Mi	Status	Action	Approved for Insvc
WQJQ689	Northeast	WU	REA001	C	MA	Middlese	Cellco Partnership	Yes	22.000	746.000-757.000	776.000-787.000	.000-.000	.000-.000	61.98	1000	1995.55	Active	added	Yes
KNKA201	Boston-Lowell-Brockton-Lawrence-Haverhill, MA-NH	CL	CMA006	B	MA	Middlese	Cellco Partnership	Yes	25.000	835.000-845.000	880.000-890.000	846.500-849.000	891.500-894.000	171.32	400	1995.55	Active	added	Yes
KNLF646	Boston, MA	CW	BTA051	C	MA	Middlese	AirTouch Cellular	Yes	10.000	1895.000-1900.000	1975.000-1980.000	.000-.000	.000-.000	126.38	1640	1995.55	Active	added	Yes
KNLH310	Boston, MA	CW	BTA051	E	MA	Middlese	AirTouch Cellular	Yes	10.000	1885.000-1890.000	1965.000-1970.000	.000-.000	.000-.000	126.38	1640	1995.55	Active	added	Yes
KNLH242	Boston, MA	CW	BTA051	F	MA	Middlese	Cellco Partnership	Yes	10.000	1890.000-1895.000	1970.000-1975.000	.000-.000	.000-.000	126.38	1640	1995.55	Active	added	Yes
WRBA936	Boston, MA	UU	BTA051	L1	MA	Middlese	Cellco Partnership	Yes	325.000	27600.000-27925.000	.000-.000	.000-.000	.000-.000	1.86		1995.55	Active	retained	Yes
WRBA937	Boston, MA	UU	BTA051	L2	MA	Middlese	Cellco Partnership	Yes	325.000	27925.000-27950.000	28050.000-28350.000	.000-.000	.000-.000	1.86		1995.55	Active	retained	Yes
WQGB266	Boston-Lowell-Brockton-Lawrence-Haverhill, MA-NH	AW	CMA006	A	MA	Middlese	Cellco Partnership	Yes	20.000	1710.000-1720.000	2110.000-2120.000	.000-.000	.000-.000	104.17	1640	1995.55	Active	added	Yes
WRNE627	Boston, MA	PM	PEA007	A1	MA	Middlese	Cellco Partnership	Yes	20.000	3700.000-3720.000	.000-.000	.000-.000	.000-.000	767.64	1640	1995.55	Active	added	Yes
WRNE628	Boston, MA	PM	PEA007	A2	MA	Middlese	Cellco Partnership	Yes	20.000	3720.000-3740.000	.000-.000	.000-.000	.000-.000	767.64	1640	1995.55	Active	added	Yes
WRNE629	Boston, MA	PM	PEA007	A3	MA	Middlese	Cellco Partnership	Yes	20.000	3740.000-3760.000	.000-.000	.000-.000	.000-.000	767.64	1640	1995.55	Active	added	Yes
WQGA900	Boston-Worcester-Lawrence-Lowell-Brockton, MA-NH-R	AW	BEA003	B	MA	Middlese	Cellco Partnership	Yes	20.000	1720.000-1730.000	2120.000-2130.000	.000-.000	.000-.000	104.17	1640	1995.55	Active	added	Yes
WRHD671	Boston, MA	UU	PEA007	M1	MA	Middlese	Straight Path Spectrum, LLC	Yes	100.000	37600.000-37700.000	.000-.000	.000-.000	.000-.000			1995.55	Active		Yes
WRHD672	Boston, MA	UU	PEA007	M10	MA	Middlese	Straight Path Spectrum, LLC	Yes	100.000	38500.000-38600.000	.000-.000	.000-.000	.000-.000			1995.55	Active	N/A	No
WRHD673	Boston, MA	UU	PEA007	M2	MA	Middlese	Straight Path Spectrum, LLC	Yes	100.000	37700.000-37800.000	.000-.000	.000-.000	.000-.000			1995.55	Active		Yes
WRHD674	Boston, MA	UU	PEA007	M3	MA	Middlese	Straight Path Spectrum, LLC	Yes	100.000	37800.000-37900.000	.000-.000	.000-.000	.000-.000			1995.55	Active		Yes
WRHD675	Boston, MA	UU	PEA007	M4	MA	Middlese	Straight Path Spectrum, LLC	Yes	100.000	37900.000-38000.000	.000-.000	.000-.000	.000-.000			1995.55	Active		Yes
WRHD676	Boston, MA	UU	PEA007	M5	MA	Middlese	Straight Path Spectrum, LLC	Yes	100.000	38000.000-38100.000	.000-.000	.000-.000	.000-.000			1995.55	Active		Yes
WRHD677	Boston, MA	UU	PEA007	M6	MA	Middlese	Straight Path Spectrum, LLC	Yes	100.000	38100.000-38200.000	.000-.000	.000-.000	.000-.000			1995.55	Active		Yes
WRHD678	Boston, MA	UU	PEA007	M7	MA	Middlese	Straight Path Spectrum, LLC	Yes	100.000	38200.000-38300.000	.000-.000	.000-.000	.000-.000			1995.55	Active		Yes

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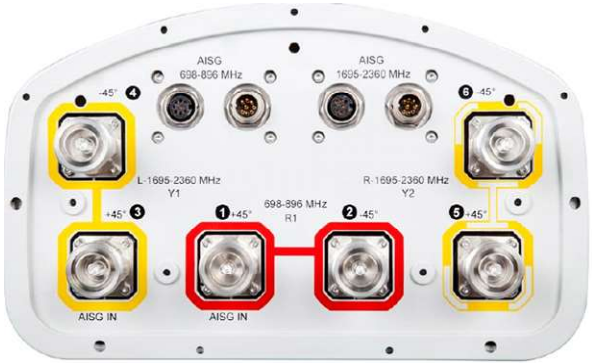
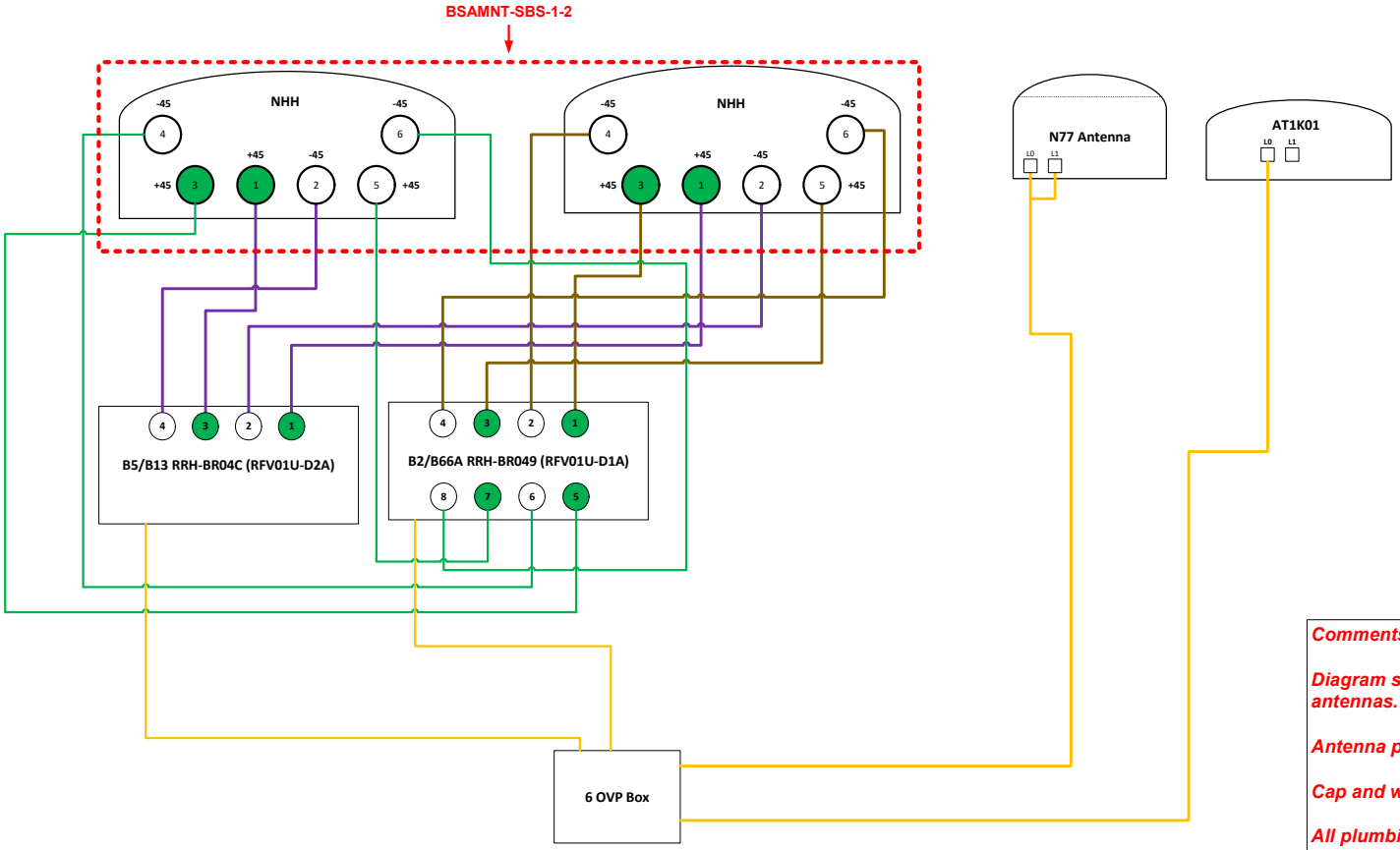
WRHD679	Boston, MA	UU	PEA007	M8	MA	Middlese	Straight Path Spectrum, LLC	Yes	100.000	38300.000-38400.000	.000-.000	.000-.000	.000-.000			1995.55	Active		Yes
WRHD680	Boston, MA	UU	PEA007	M9	MA	Middlese	Straight Path Spectrum, LLC	Yes	100.000	38400.000-38500.000	.000-.000	.000-.000	.000-.000			1995.55	Active		Yes
WRHD681	Boston, MA	UU	PEA007	N1	MA	Middlese	Straight Path Spectrum, LLC	Yes	100.000	38600.000-38700.000	.000-.000	.000-.000	.000-.000			1995.55	Active	N/A	No
WRLD615	D25017 - Middlesex, MA	PL	D25017	0	MA	Middlese	Verizon Wireless Network Procurement LP	Yes	100.000	3550.000-3650.000	.000-.000	.000-.000	.000-.000		501	1995.55	Active		Yes
WRLD617	D25017 - Middlesex, MA	PL	D25017	0	MA	Middlese	Verizon Wireless Network Procurement LP	Yes	100.000	3550.000-3650.000	.000-.000	.000-.000	.000-.000		501	1995.55	Active		Yes
WRLD616	D25017 - Middlesex, MA	PL	D25017	0	MA	Middlese	Verizon Wireless Network Procurement LP	Yes	100.000	3550.000-3650.000	.000-.000	.000-.000	.000-.000		501	1995.55	Active		Yes
WRNE630	Boston, MA	PM	PEA007	A4	MA	Middlese	Cellco Partnership	Yes	20.000	3760.000-3780.000	.000-.000	.000-.000	.000-.000		1640	1995.55	Active		No
WRNE631	Boston, MA	PM	PEA007	A5	MA	Middlese	Cellco Partnership	Yes	20.000	3780.000-3800.000	.000-.000	.000-.000	.000-.000		1640	1995.55	Active		No
WRNE632	Boston, MA	PM	PEA007	B1	MA	Middlese	Cellco Partnership	Yes	20.000	3800.000-3820.000	.000-.000	.000-.000	.000-.000		1640	1995.55	Active		No
WRNE633	Boston, MA	PM	PEA007	B2	MA	Middlese	Cellco Partnership	Yes	20.000	3820.000-3840.000	.000-.000	.000-.000	.000-.000		1640	1995.55	Active		No
WRNE634	Boston, MA	PM	PEA007	B3	MA	Middlese	Cellco Partnership	Yes	20.000	3840.000-3860.000	.000-.000	.000-.000	.000-.000		1640	1995.55	Active		No



- Port 1 & 2 are for low band (698-896 MHz).
- Port 3,4,5, & 6 are for high band (1695-2360 MHz).
- Smart Bias Tee (SBT) is through antenna ports 1 & 3 (1 for low band & 3 for high band).
- AISG cable is only needed when drawn in the diagrams below, if it is not drawn then SBT is enough to control all RET motors.
- Not all SBT ports are needed to control RET, only green port connection to green port will control RET.

RET DC signal pass for RET
(Port that will control RET)



DC signal capable Port

AISG Cable

RET DC signal pass for RET
(Port that will control RET)

Hybriflex cables

Tower/
Watertank/
Rooftop

Equipment
Pad

Comments:

Diagram shows antenna port configuration as viewed from below antennas.

Antenna positions are indicated as viewed from IN FRONT of antennas.

Cap and weatherproof unused antenna ports.

All plumbing diagram colors are irrelevant except for AISG & Hybriflex cable. (For the coax colors follow Coax Colors guide above)

Dewberry Engineers Inc.
99 Summer Street, Suite 700
Boston, MA 02110-1200

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Dewberry

August 4, 2022

Andrew Leone
Verizon Wireless
900 Chelmsford Street
Tower 2 Floor 5
Lowell, MA 01851

Re: Harvard SQ 2 MA (Rev. 1)
PSLC: 137823
Fuze #: 16271978
1654 Mass Ave
Cambridge, MA 02138

Dear Mr. Leone:

Verizon Wireless has proposed to replace (2) existing antennas with (3) new MT6407-77A antennas w/ integrated RRHs, and (1) CommScope TD-850B-LTE78-43 combiner, in Alpha sector only, on the rooftop at the above referenced site. Verizon also has (6) existing NHH-65A-R2B antennas on (3) BSAMNT-SBS-1-2, (3) VZ-AT1k01 5G antennas w/ integrated AT1K01 DC RRHs, (3) Samsung B2/B66a RRHs, (3) Samsung B5/B13 RRHs, and (3) 12-OVPs that are to remain. The proposed equipment will be mounted to existing steel mast pipes mounted to the building chimneys.

Dewberry Engineers Inc. (Dewberry) has reviewed the antenna design sheets (dated 07/19/22) provided by Verizon Wireless and has determined, based on an ultimate wind speed of 128 mph and a minimum flat roof snow load of 30 psf per the Massachusetts State Building Code – 780 CMR 9th Edition, that the existing antenna mounts and building have adequate capacity to support the proposed equipment configuration. Dewberry assumes that the new antennas, RRHs, and associated equipment are installed per the latest Construction Drawings by Dewberry.

Our assessment is based on our visual inspection that the existing antenna mounts and building structure are in good condition and were constructed in accordance with all applicable state and local building codes. If, during construction, any damage, deterioration, and/or discrepancies are noticed, Dewberry is to be notified to assess any deviation from the assumed condition. Any alteration in equipment loading described above and on the associated plans will void any conclusions expressed herein and will require further analysis and design. No structural qualification is made or implied by this structural letter for existing structural members not supporting the proposed installation.

If you have any questions, please do not hesitate to call me at 617-531-0744.

Sincerely,
Dewberry Engineers Inc.

COMMONWEALTH OF MASSACHUSETTS
BRANDON G KELSEY
CIVIL
NO. 54565
REGISTERED PROFESSIONAL ENGINEER

Brandon Kelsey, P.E.
Structural Project Engineer