MAURA HEALEY
ATTORNEY GENERAL

THE COMMONWEALTH OF MASSACHUSETTS
OFFICE OF THE ATTORNEY GENERAL
CENTRAL MASSACHUSETTS DIVISION
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February 23, 2015

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

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

Dear Ms. Bourbeau:

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

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

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

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

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

2. Section 7.5.2, Telecommunication Facilities - General Provisions

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

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

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

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

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

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

Very truly yours,

MAURA HEALEY
ATTORNEY GENERAL

Nicole B. Caprioli

By: Nicole B. Caprioli
Assistant Attorney General
Municipal Law Unit
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Worcester, MA 01608
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nicole.caprioli@state.ma.us

cc: Town Counsel Gregg J. Corbo

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

BZA APPLICATION FORM

Plan No: BZA-015484-2018

GENERAL INFORMATION

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

Special Permit : √ **Variance :** _____ **Appeal :** _____

PETITIONER : New Cingular Wireless PCS, LLC ("AT&T") - C/O Centerline Communications, Mic

PETITIONER'S ADDRESS : 95 Ryan Drive, Suite 1 Raynham, MA 02767

LOCATION OF PROPERTY : 52-70 Linnaean St Cambridge, MA

TYPE OF OCCUPANCY : Residential C-2 / Telecommunications **ZONING DISTRICT :** Residence C-2 Zone

REASON FOR PETITION :

Other: N/A

DESCRIPTION OF PETITIONER'S PROPOSAL :

AT&T proposes to remove 3 antennas, replace with 3 new antennas, add 3 RRH, add 2 ballast frames, 1 surge arrestor, 2 DC cables and 1 Fiber to be installed in line with the pre existing configuration.

SECTIONS OF ZONING ORDINANCE CITED :

Article 4.000 Section 4.32.G.1 (Telecommunication Facilities).

Article 4.000 Section 4.40 (Footnote 49) (Telecommunication Facilites).

Original Signature(s) : _____

(Petitioner(s) / Owner)

Michael Gentile

(Print Name)

Address : 95 Ryan Dr. #1
Raynham MA 02767

Tel. No. : 508-844-9813

E-Mail Address : mgentile@clinellc.com

Date : _____

BZA APPLICATION FORM - OWNERSHIP INFORMATION

To be completed by OWNER, signed before a notary and returned to The Secretary of the Board of Zoning Appeals.

I/We PRESIDENT & FELLOWS OF HARVARD COLLEGE C/O HARVARD REAL ESTATE, INC.
(OWNER)

Address: 1350 MASSACHUSETTS AVE, CAMBRIDGE, MA 02138-3895

State that I/We own the property located at 52-70 Linnaean Street,

which is the subject of this zoning application.

The record title of this property is in the name of
PRESIDENT & FELLOWS OF HARVARD COLLEGE C/O HARVARD REAL ESTATE. INC.

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

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

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

Commonwealth of Massachusetts, County of Middlesex

The above-name Nazneen Cooper personally appeared before me, this 28 of August 2017 and made oath that the above statement is true.

Denise Medeiros Notary

My commission expires May 10, 2024 (Notary Seal).

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

DENISE F. MEDEIROS NOTARY PUBLIC COMMONWEALTH OF MASSACHUSETTS MY COMMISSION EXPIRES MAY 10, 2024

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 52-70 Linnaean St 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:

AT&T's proposed use of the Facility as a transmission facility serving a mobile communications system is permitted by special permit in the C-2 zoning district (see the table at Section 4.32(g)(1)).

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:

N/A - pre-existing rooftop antenna installation, replacing antennas, adding ancillary equipment.

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:

No Change in Use

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:

Complies with FCC standards/ permitted per FCC regulations.

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:

No change to pre existing conditions, replacing antennas and adding small ancillary equipment within existing leased area.

BZA APPLICATION FORM

DIMENSIONAL INFORMATION

APPLICANT: Centerline Communications, LLC **PRESENT USE/OCCUPANCY:** Telecommunications

LOCATION: 52-70 Linnaean St Cambridge, MA **ZONE:** Residence C-2 Zone

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

		EXISTING CONDITIONS	*REQUESTED CONDITIONS*	*ORDINANCE REQUIREMENTS* [1]	
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	(max.)
LOT AREA FOR EACH DWELLING UNIT:		N/A	N/A	N/A	(min.)
SIZE OF LOT:	WIDTH	N/A	N/A	N/A	(min.)
	DEPTH	N/A	N/A	N/A	
SETBACKS IN FEET:	FRONT	N/A	N/A	N/A	(min.)
	REAR	N/A	N/A	N/A	(min.)
	LEFT SIDE	N/A	N/A	N/A	(min.)
	RIGHT SIDE	N/A	N/A	N/A	(min.)
SIZE OF BLDG.:	HEIGHT	N/A	N/A	N/A	(max.)
	LENGTH	N/A	N/A	N/A	
	WIDTH	N/A	N/A	N/A	
RATIO OF USABLE OPEN SPACE TO LOT AREA: [3]		N/A	N/A	N/A	(min.)
NO. OF DWELLING UNITS:		N/A	N/A	N/A	(max.)
NO. OF PARKING SPACES:		N/A	N/A	N/A	(min./max)
NO. OF LOADING AREAS:		N/A	N/A	N/A	(min.)
DISTANCE TO NEAREST BLDG. ON SAME LOT:		N/A	N/A	N/A	(min.)

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

College/University/Residential/Telecommunications

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'.

(REVISED)
STRUCTURAL ANALYSIS REPORT

For

MA2268 (3C)
CAMBRIDGE LINNAEAN GILBERT HALL
64 Linnaean Street
Cambridge, MA 02138

Antennas Mounted to Equipment Platform, Antennas Mounted to Penthouse Façade, Antennas on Ballast Mount, Equipment Platform on Roof

Prepared for:

EMPIRE telecom

at&t

Dated: May 10, 2017 (Rev. 1)
April 18, 2016

Prepared by:

Hudson Design Group LLC

1600 Osgood Street Building 20 North, Suite 3090
North Andover, MA 01845
Phone: (978) 557-5553
www.hudsondesigngroupllc.com

SCOPE OF WORK:

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

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

This office conducted an on-site visual survey of the above areas on November 20, 2015. Attendees included Robert Harris (HDG – Filed Technician).

CONCLUSION SUMMARY:

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

- Original construction drawings prepared by Dewberry dated April 2, 2010.

Based on our evaluation, we have determined that the existing structure **IS CAPABLE** of supporting the proposed equipment loading.

APPURTENANCE/EQUIPMENT CONFIGURATION:

(3) Kathrein 742-264 Antennas (51.8"x10.3"x5.5" - Wt. = 37 lbs. /each) (One per sector)

(6) OPA-65R-LCUU-H4 Antennas (48"x14.4"x7.3" - Wt. = 46 lbs. /each) (Two per sector)

(3) A2 Modules (16.4"x15.2"x3.4" - Wt. = 22 lbs. /each) (One per sector)

(3) RRH (RRUS-11) (19.69"x16.97"x7.17" - Wt. = 50.7 lbs. /each) (One per sector)

(3) RRH (RRUS-12) (20.4"x18.5"x7.5" - Wt. = 58 lbs. /each) (One per sector)

(3) RRH (RRUS-32) (26.7"x12.1"x6.7" - Wt. = 60 lbs. /each) (One per sector)

(6) TT19-08BP111-001 TMA's (9.9"x6.7"x5.4" - Wt. = 16 lbs. /each) (Two per sector)

(3) Surge Suppressors (24"x9.7"ø - Wt. = 33 lbs. / each) (One per sector)

(1) Power Plant (Wt. = 2100 lbs)

(1) Purcell Cabinet (Wt. = 300 lbs)

(1) 3106 Cabinet (Wt. = 1210 lbs)

(1) Tyco Cabinet (Wt. = 1200 lbs)

Referenced documents are attached.

Hudson Design Group LLC

DESIGN CRITERIA:

1. Massachusetts State Building code latest edition, International Building Code (IBC) 2009, and ASCE 7-05.

   Wind Analysis:

Reference Wind Speed:	105 mph	(780CMR 1604.10)
Category:	B	(ASCE 7-05 Section 6.5.6.3)
Approx. structure height:	49'-7"+/-	

   Roof:

Ground Snow, Pg:	45 psf	(780CMR 1604.10)
Occupancy Category:	II	(ASCE 7-05 Table 1-1)
Importance Factor, I:	1.0	(ASCE 7-05 Table 7-4)
Exposure Factor, Ce:	1.0	(Partially Exposed, Table 7-2)
Thermal Factor, Ct:	1.0	(ASCE 7-05 Table 7-3)

   Calculated Flat Roof Snow Load:

Pf=0.7*Ce*Ct*I*Pg:	31.5 psf	(ASCE 7-05 Equation 7-1)

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

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

3. Approximate height above grade to the center of the Antennas:

   54'-0"+/-

Hudson Design Group LLC

ANTENNA SUPPORT RECOMMENDATIONS:

- The new Alpha sector antennas are proposed to be mounted on new and existing pipe masts secured to the existing steel equipment platform.

- The new Beta sector antennas are proposed to be mounted on new and existing pipe masts secured to the existing steel equipment platform and within an existing ballasted FRP chimney.

- The new Gamma sector antennas are proposed to be mounted on new and existing pipe masts secured to the penthouse façade with epoxy anchors.

  The Alpha and Beta sector antennas are to be shielded within existing FRP enclosures, therefore, no increase in wind load will occur.

RRH SUPPORT RECOMMENDATIONS:

- The new Alpha sector RRH's are proposed to be mounted on new unistrut components secured to the existing FRP screenwall framing system.

- The new Beta and Gamma sector RRH's are proposed to be mounted on new unistrut components secured to new non-penetrating ballast mount located on the roof.

  HDG is under the assumption that the ballast mounts are to be located over structurally adequate roof supports (i.e. beams, columns, or bearing walls). Building plans were not available for our reference.

EQUIPMENT SUPPORT RECOMMENDATIONS:

The new equipment is proposed to be placed on the existing AT&T equipment platform located on the roof.

Note:
HDG could not verify the support attachments to the roof structure at the time of our site visit. HDG is under the assumption that the steel platform was constructed properly and adequately attached to the building structure. HDG recommends that the contractor verify that all ballast mounts have been located over existing beams and columns.

Hudson Design Group LLC

Limitations and assumptions:

1. Reference the latest HDG construction drawings for all the equipment locations details.

2. Mount all equipment per manufacturer's specifications.

3. All structural members and their connections are assumed to be in good condition and are free from defects with no deterioration to its member capacities.

4. All antennas, coax cables and waveguide cables are assumed to be properly installed and supported as per the manufacturer requirements.

5. HDG is not responsible for any modifications completed prior to and hereafter which HDG was not directly involved.

6. If field conditions differ from what is assumed in this report, then the engineer of record is to be notified as soon as possible.

EXISTING EQUIPMENT:

Photo 1: Sample photo illustrating the existing equipment.

Photo 2: Sample photo illustrating the existing equipment.

EXISTING ANTENNAS:

Photo 3: Sample photo illustrating the existing antennas.

Photo 4: Sample photo illustrating the existing antennas (within the chimney).

Photo 5: Sample photo illustrating the existing antennas.

Hudson Design Group LLC

Antenna/RRH Calculations

Date: 04-18-2016
Project Name: Cambridge Linnaean Gilbert Hall
Project Number: MA2268
Designed By: GH **Checked By:** MSC

Hudson Design Group LLC

2.6.5.2 Velocity Pressure Coeff:

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

z= 54 (ft)

z_g= 1200 (ft)

α= 7

K_z= 0.829

$Kzmin \leq Kz \leq 2.01$

Table 2-4

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

2.6.6.4 Topographic Factor:

Table 2-5

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

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

$K_h = e^{(f*z/H)}$

K_{zt}= #DIV/0!

K_h= #DIV/0!

K_e= 0 (from Table 2-4)

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

K_t= 0 (from Table 2-5)

f= 0 (from Table 2-5)

Category=	1

z= 54

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

K_{zt}= 1.00

Date: 04-18-2016
Project Name: Cambridge Linnaean Gilbert Hall
Project Number: MA2268
Designed By: GH **Checked By**: MSC

Hudson Design Group LLC

2.6.7 Gust Effect Factor

2.6.7.1 Self Supporting Lattice Structures

Gh = 1.0 Latticed Structures > 600 ft

Gh = 0.85 Latticed Structures 450 ft or less

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

h=	50	Gh=	0.85

2.6.7.2 Guyed Masts Gh= 0.85

2.6.7.3 Pole Structures Gh= 1.1

2.6.9 Appurtenances Gh= 1.0

2.6.7.4 Structures Supported on Other Structures
(Cantilivered tubular or latticed spines, pole, structures on buildings (ht. : width ratio > 5)

Gh=	1.35	Gh=	1.35

Date: 04-18-2016
Project Name: Cambridge Linnaean Gilbert Hall
Project Number: MA2268
Designed By: GH **Checked By:** MSC

Hudson Design Group LLC

2.6.9.2 Design Wind Force on Appurtenances

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

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

K_z=	0.829
K_{zt}=	1.0
K_d=	0.95
V_{max}=	105
I=	1.0

q_z= 22.22

Table 2-2

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

Determine Cf:

If lattice Structure See Manual

If Tubular Pole Structure, Use Corrected Value from Table 2.7 Below

C mph.ft	Round	18 Sided	16 Sided	12 Sided	8 Sided
< 32 (Subcritical)	1.2	1.2	1.2	1.2	1.2
32 to 64 (Transitional)	$38.4/C^{1.0}$	$25.8/C^{0.885}$	$12.6/C^{0.678}$	$2.99/C^{0.263}$	1.2
> 64 (Supercritical)	0.6	0.65	0.75	1	1.2

$$C = (I * K_{zt} * K_z)^{0.5} * V * D$$

D = Outside diameter for rounds: 0.25 feet

C= 23.90 **Cf=** 1.2

Date: 04-18-2016
Project Name: Cambridge Linnaean Gilbert Hall
Project Number: MA2268
Designed By: GH **Checked By**: MSC

Hudson Design Group LLC

Determine Ca:

Table 2-8

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

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

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

Appurtenances	Height	Width	Depth	Flat Area	Aspect Ratio	Ca	Force (lbs)
OPA-65R-LCUU-H4	48.0	14.4	7.3	4.80	3.33	1.24	**178**
742-264	51.8	10.3	5.5	3.71	5.03	1.31	**146**
RRUS-11	19.7	17.0	7.2	2.33	1.16	1.20	**84**
RRUS-12	20.4	18.5	7.5	2.62	1.10	1.20	**94**
RRUS-32	26.7	12.1	6.7	2.24	2.21	1.20	**81**
Squid	24.0	9.7	9.7	1.62	2.47	0.70	**34**

ICE WEIGHT CALCULATIONS

Project: MA2268 - Cambridge Linnaean Gilbert Hall

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

742-264 Antenna

Weight of ice based on total radial SF area:

Depth (in):	5.5	
height (in):	51.8	
Width (in):	10.3	
Total weight of ice on object:		53 lbs
Weight of object:	37	lbs
Combined weight of ice and object:		90 lbs

OPA-65R-LCUU-H4 Antenna

Weight of ice based on total radial SF area:

Depth (in):	7.3	
height (in):	48	
Width (in):	14.4	
Total weight of ice on object:		68 lbs
Weight of object:	63	lbs
Combined weight of ice and object:		131 lbs

2-3/8" Pipe

Per foot weight of ice:

diameter (in):	2.38	
Per foot weight of ice on object:		3 plf

Site Name: Cambridge Linnaean Gilbert Hall
Site No. MA2268
Done by: GH **Checked by:** MSC
Date: 4/18/2016

CHECK CONNECTION CAPACITY

Reference: Hilti Volume 2: Anchor Fastening Technical Guide

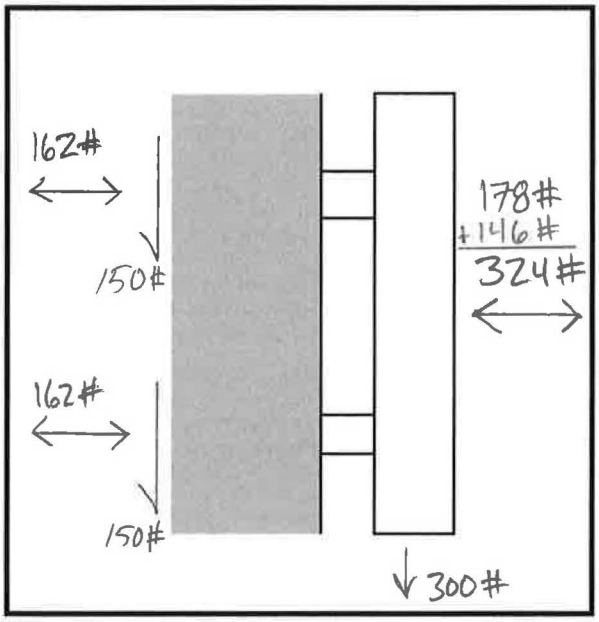
Epoxy Type =	HIT-HY20 (or approved equal)
Anchor Diameter =	1/2 in. (Min.)
Min. Embedment Depth =	2 in.

Allowable Tensile Load =

F_{Tall} = 525 lbs.

Allowable Shear Load =

F_{Vall} = 1230 lbs.



WIND FORCES

Reaction (Worst Case) **F =** 162 lbs.

GRAVITY LOADS

Ice and Equipment 300 lbs.

No. of Supports = 2
No. of Anchors / Support = 2

Tension Design Load / Anchor =

f_t = 81.00 lbs. < 525 lbs. **Therefore, OK !**

Shear Design Load / Anchor=

f_v = 75.00 lbs. < 1230 lbs. **Therefore, OK !**

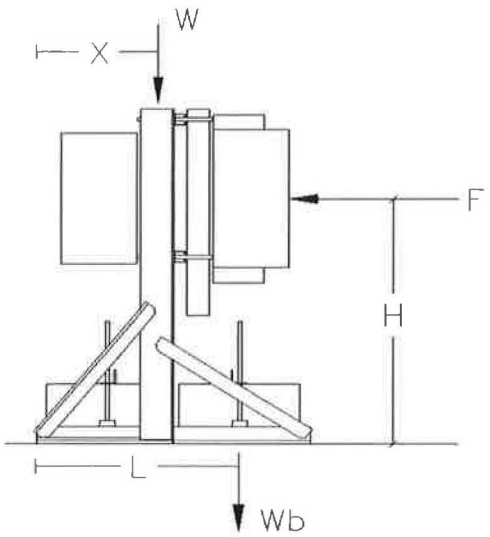
CHECK COMBINED TENSION AND SHEAR

f_t / F_T	+	f_v / F_V	≤	1.0			
0.154	+	0.061	=	0.215	<	1.0	**Therefore, OK !**

Date:	4/18/2016
Site Name:	Cambridge Linnaean Gilbert Hall
Site Number:	MA2268
Done by:	GH
Checked by:	MSC

Hudson Design Group LLC

Calculate Total Ballast Required for RRH Ballast Mount:



Force (F) = 178 lbs.

Height (H) = 2.75 ft

Weight (W) = 324 lbs.
(180 lb. frame)
(144 lb. RRH's)

Frame Width/2 (X) = 1.3 ft

Length (L) = 2.2 ft

Ballast (Wb) = TBD

SF = 1.5

Overturning at Ballast

$\Sigma M = 0 = (F * H) - (W * X) - (Wb * L) - (Wb*0.67)$ ---> $Wb = [((SF*F)*H-W*X)/(L+0.67)] =$ **109 lbs.**

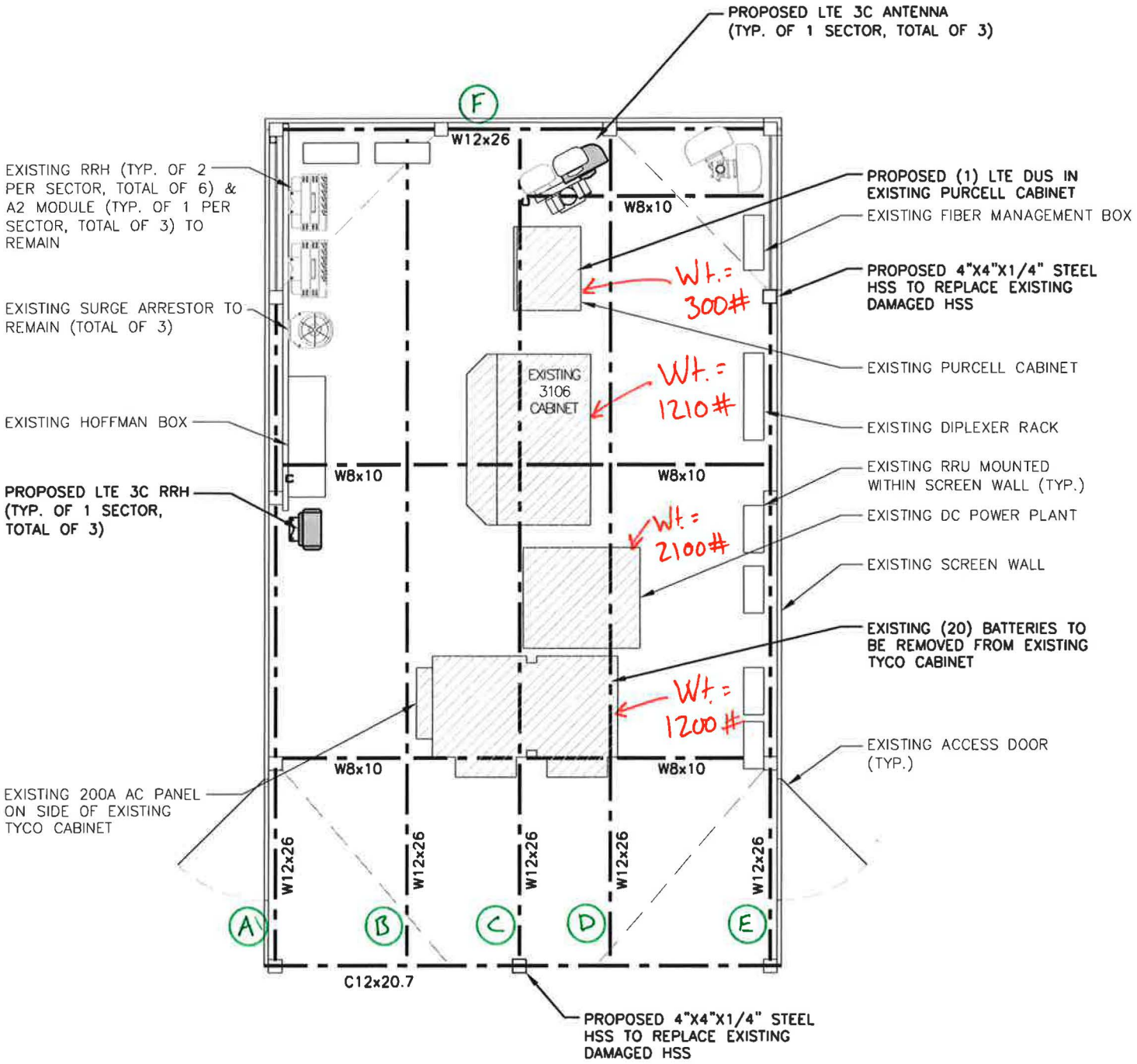
Determine Number of Blocks Required
(assume 4"x8"x16" solid blocks @ 38 lbs. each)

Number of Blocks Required = 109 lbs / 38 lbs = **3 BLOCKS PER SIDE**

-Total Weight of Fully Loaded Frame = 552 lbs.

Hudson Design Group LLC

Equipment Platform Calculations



PROPOSED EQUIPMENT PLAN 1 SK-1

Date: 05-10-2017
Project Name: Cambridge Linnaean Gilbert Hall
Project Number: MA2268
Designed By: GH Checked By: MSC

Hudson Design Group LLC

Steel Frame Design Calculations

Live Loads:

Service Load	25 psf

Dead Loads:

Grating	15 psf
FRP Wall	80 plf

Load Breakdown

- **Beam A** (Tributary Width = 1.71')

Live Load

→ Service 25 psf x 1.71 ft.
= **42.75 plf**

Dead Load

→ Grating 15 psf x 1.71 ft.
= **25.65 plf**

→ FRP Wall 80 plf

- **Beam B** (Tributary Width = 3.13')

Live Load

→ Service 25 psf x 3.13 ft.
= **78.25 plf**

Dead Load

→ Dead Load 15 psf x 3.13 ft.
= **46.95 plf**

Date: 05-10-2017
Project Name: Cambridge Linnaean Gilbert Hall
Project Number: MA2268
Designed By: GH Checked By: MSC

Hudson Design Group LLC

Load Breakdown (Cont.)

- **Beam C** (Tributary Width = 2.54')

Live Load

→ Service 25 psf x 2.54 ft.
= **63.50 plf**

Dead Load

→ Grating 15 psf x 2.54 ft.
= **38.10 plf**

- **Beam D** (Tributary Width = 3.13)

Live Load

→ Service 25 psf x 3.13 ft.
= **78.25 plf**

Dead Load

→ Grating 15 psf x 3.13 ft.
= **46.95 plf**

- **Beam E** (Tributary Width = 2.0')

Live Load

→ Service 25 psf x 2 ft.
= **50.00 plf**

Dead Load

→ Grating 15 psf x 2 ft.
= **30.00 plf**

→ FRP Wall 80 plf

- **Beam F**

Dead Load

→ FRP Wall 80 **plf**

Date: 05-10-2017
Project No.: MA2268
Project Name: Cambridge Linnaean Gilbert Hall
Designed By: GH Checked By: MSC

Hudson Design Group LLC

Wind Analysis → Antenna Enclosure

Reference Codes:

-Massachusetts State Building Code, 8th Edition

-International Building Code 2009 (IBC 2009)

-Minimum Design Loads for Buildings and Other Structures (ASCE 7-05)

Structure Classification		II		(ASCE 7-05 Table 1-1)
Basic Wind Speed, V		105	mph	(MSBS Table 1604.10)
Importance Factor, I		1		(ASCE 7-05 Table 6-1)
Exposure Category		B		(ASCE 7-05 Section 6.5.6.3)
Height Above Ground Level, z		59.6	ft	(Top of Enclosure)
Exposure Coeficient, K_z		0.85		(ASCE 7-05 Table 6-3)
Wind Directionality Coef., K_d		0.90		(ASCE 7-05 Table 6-4)
Topographic Facto, K_{zt}		1.00		(ASCE 7-05 Section 6.5.7.2)
Velocity Pressure, q_z	$= 0.00256K_zK_{zt}K_dV^2I$			(ASCE 7-05 Equation 6-15)
	= **21.59 psf**			
Gust Factor, G		0.85		(ASCE 7-05 Section 6.5.8)
Net Force Coeficient, C_f		1.30		(ASCE 7-05 Figure 6.21)
Projected Area Normal to Wind, A_f		189	ft^2	(21 ft. W x 9 ft. H)
Wind Force, F	= $q_zGC_fA_f$			(ASCE 7-05 Equation 6-28)
	= **4509.25 lbs**	/ 21 ft = **215 plf**		

Bentley

Current Date: 5/10/2017 2:17 PM
Units system: English
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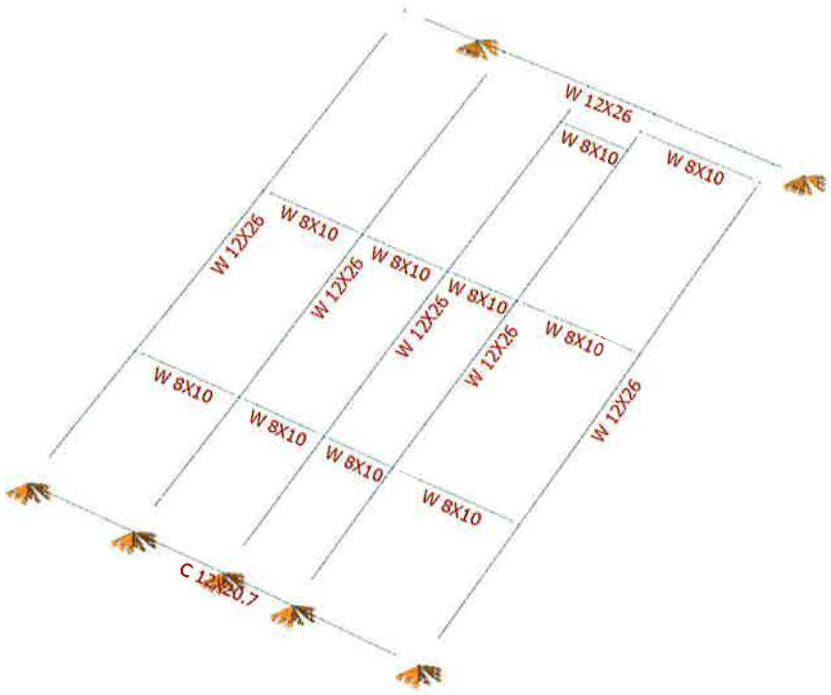
W 12X26
W 8X10
W 8X10
W 12X26
W 8X10
W 8X10
W 12X26
W 8X10
W 12X26
W 8X10
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W 8X10
W 8X10
W 8X10
W 8X10
W 8X10
C 12X20.7
Y
X
Z

Bentley

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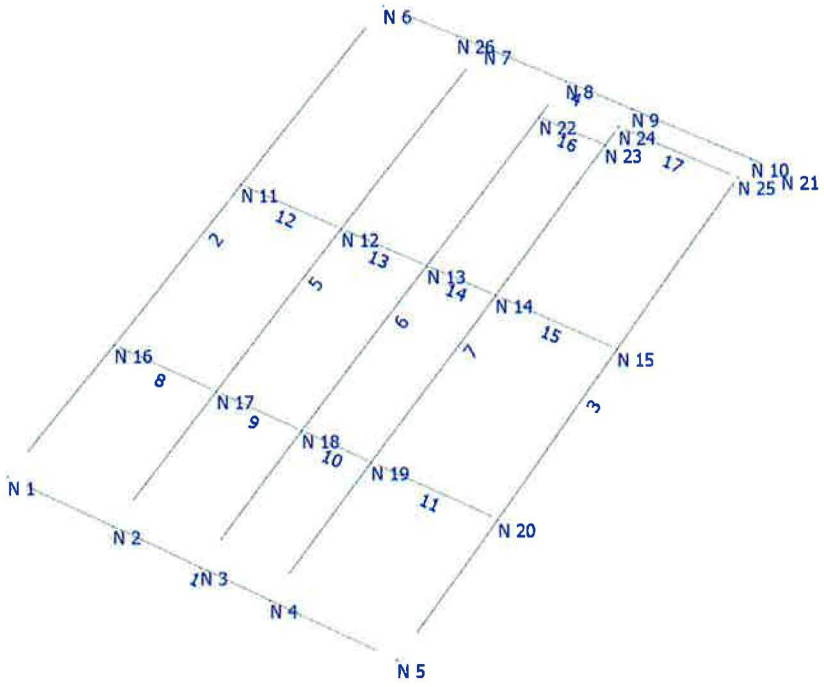

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Units system: English
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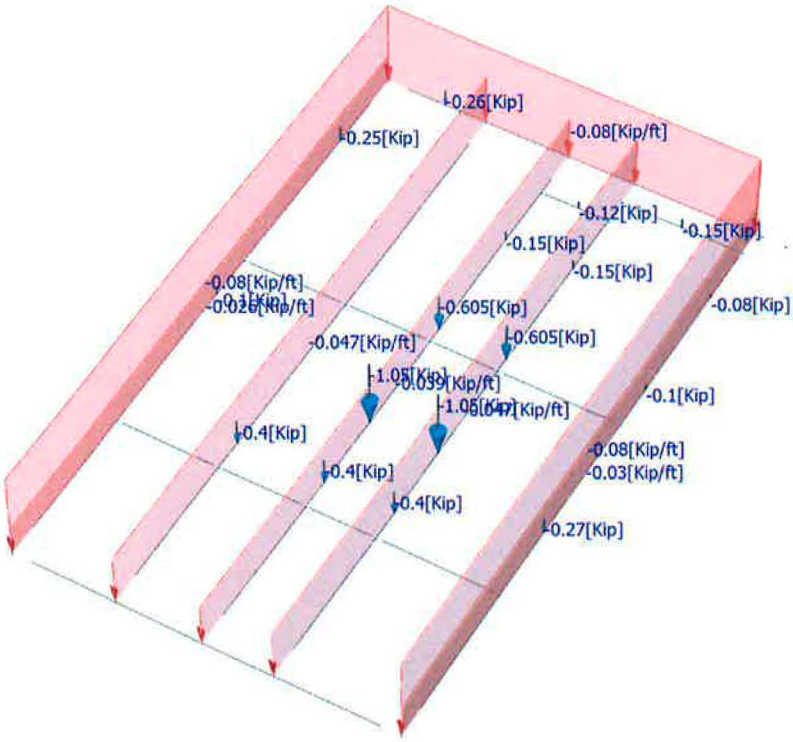
Load condition: DL=Dead Load

Loads

- Global distributed - Members
- Local distributed - Members
- Concentrated - Members



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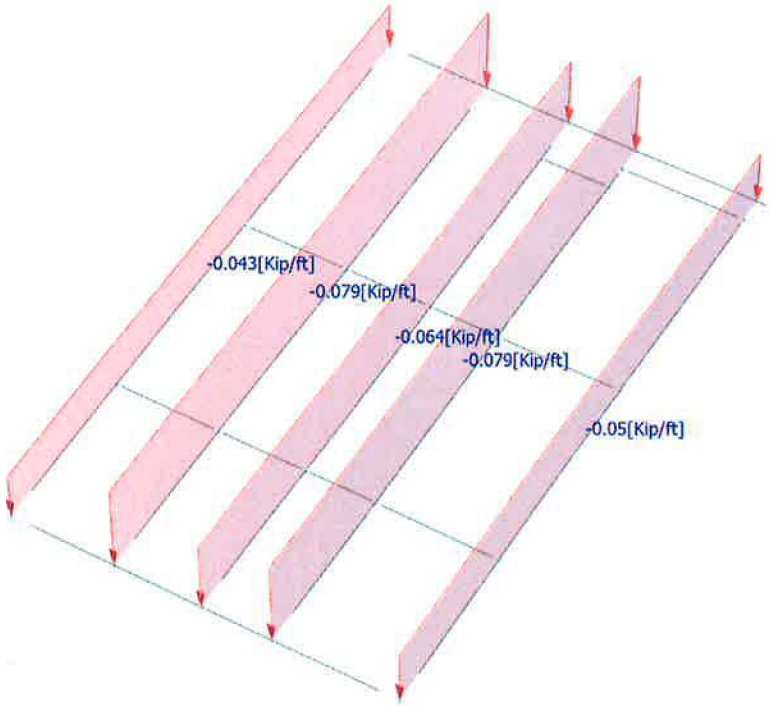
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\MA\MA2268\MA2268 (Rev1).etz\
Load condition: LL=Live Load

Loads

Global distributed - Members
Local distributed - Members



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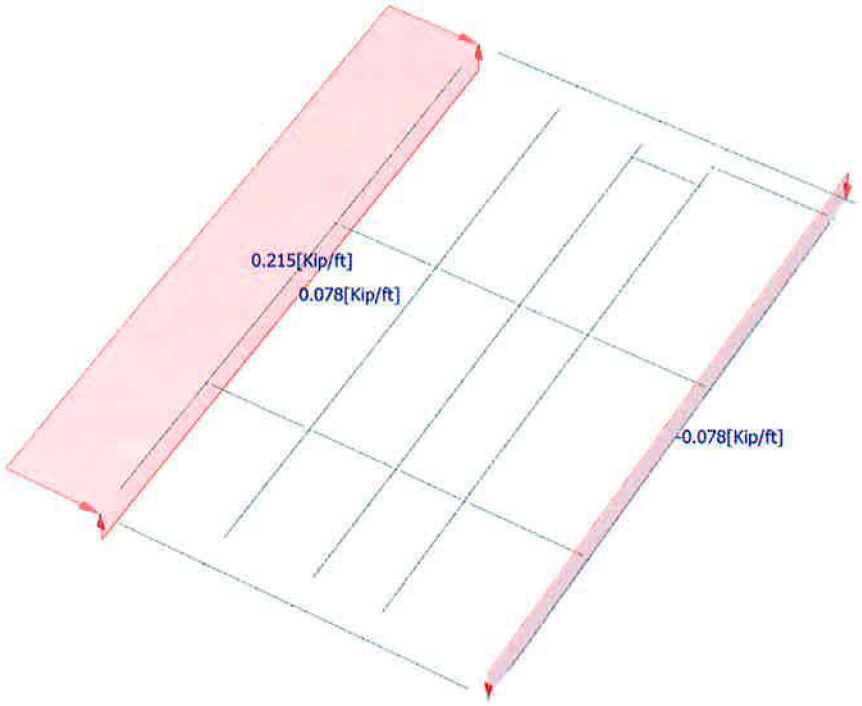
Units system: English
File name: W:\STRUCTURAL DEPARTMENT\ANALYSIS SOFTWARE\RAM Elements\RAM Projects\AT&T\MA\MA2268\MA2268 (Rev1).etz\
Load condition: W=Wind

Loads

Global distributed - Members
Local distributed - Members



Bentley

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Units system: English
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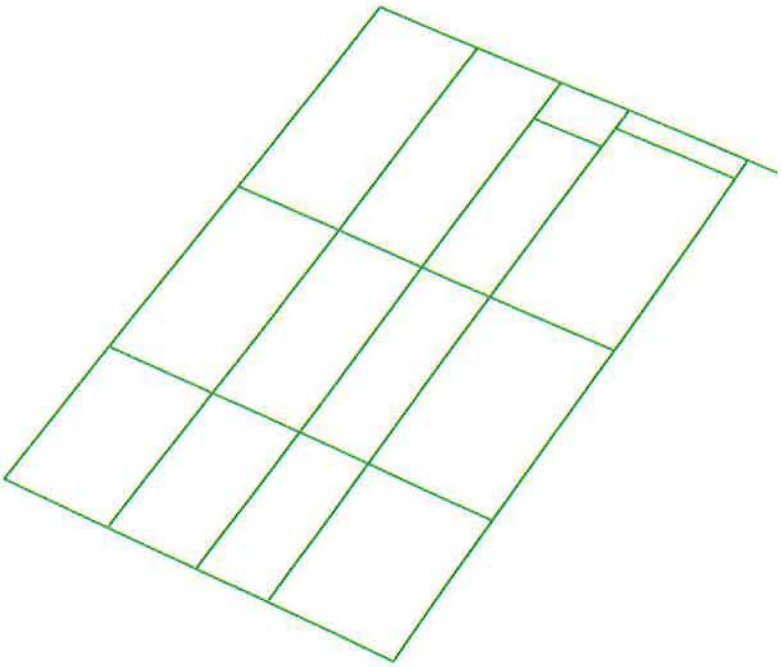
Design status

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



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Units system: English
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Steel Code Check

Report: Summary - For all selected load conditions

Load conditions to be included in design :

D1=DL
D2=DL+LL
D3=DL+0.75LL
D4=DL+W
D5=DL+0.75W+0.75LL
D6=0.6DL+W

Description	Section	Member	Ctrl Eq.	Ratio	Status	Reference
	C 12X20.7	**1**	D1 at 68.75%	0.00	OK	
			D2 at 68.75%	0.00	OK	
			D3 at 68.75%	0.00	OK	
			D4 at 0.00%	**0.17**	**OK**	Eq. H1-1b
			D5 at 0.00%	0.12	OK	Eq. H1-1b
			D6 at 0.00%	0.17	OK	Eq. H1-1b
	W 12X26	**2**	D1 at 52.08%	0.19	OK	Sec. F1
			D2 at 52.08%	**0.27**	**OK**	Sec. F1
			D3 at 52.08%	0.25	OK	Sec. F1
			D4 at 43.75%	0.17	OK	Eq. H1-1b
			D5 at 45.83%	0.23	OK	Eq. H1-1b
			D6 at 100.00%	0.14	OK	Eq. H1-1b
		3	D1 at 51.56%	0.27	OK	Sec. F1
			D2 at 51.56%	0.36	OK	Sec. F1
			D3 at 51.56%	0.33	OK	Sec. F1
			D4 at 60.94%	0.42	OK	Eq. H1-1b
			D5 at 60.94%	**0.44**	**OK**	Eq. H1-1b
			D6 at 60.94%	0.31	OK	Eq. H1-1b
		4	D1 at 62.50%	0.13	OK	Sec. F1
			D2 at 62.50%	0.17	OK	Sec. F1
			D3 at 62.50%	0.16	OK	Sec. F1
			D4 at 63.54%	0.18	OK	Eq. H1-1b
			D5 at 63.54%	**0.21**	**OK**	Eq. H1-1b
			D6 at 0.00%	0.14	OK	Eq. H1-1b
		5	D1 at 54.17%	0.22	OK	Sec. F1
			D2 at 52.08%	**0.31**	**OK**	Sec. F1
			D3 at 52.08%	0.29	OK	Sec. F1
			D4 at 60.42%	0.25	OK	Eq. H1-1b
			D5 at 60.42%	0.31	OK	Eq. H1-1b
			D6 at 60.42%	0.16	OK	Eq. H1-1b
		6	D1 at 43.75%	0.25	OK	Sec. F1
			D2 at 43.75%	0.34	OK	Sec. F1
			D3 at 43.75%	0.32	OK	Sec. F1
			D4 at 60.94%	0.29	OK	Eq. H1-1b
			D5 at 43.75%	**0.34**	**OK**	Eq. H1-1b
			D6 at 60.94%	0.21	OK	Eq. H1-1b
		7	D1 at 43.75%	0.26	OK	Sec. F1

		D2 at 43.75%	0.35	OK	Sec. F1
		D3 at 43.75%	0.33	OK	Sec. F1
		D4 at 61.25%	0.33	OK	Eq. H1-1b
		D5 at 43.75%	**0.37**	**OK**	Eq. H1-1b
		D6 at 61.25%	0.24	OK	Eq. H1-1b
W 8X10	**8**	D1 at 100.00%	0.01	OK	Sec. F1
		D2 at 100.00%	0.01	OK	Sec. F1
		D3 at 100.00%	0.01	OK	Sec. F1
		D4 at 100.00%	0.15	OK	Eq. H1-1b
		D5 at 100.00%	0.13	OK	Eq. H1-1b
		D6 at 100.00%	**0.16**	**OK**	Eq. H1-1b
	9	D1 at 100.00%	0.03	OK	Sec. F1
		D2 at 100.00%	0.05	OK	Sec. F1
		D3 at 100.00%	0.04	OK	Sec. F1
		D4 at 100.00%	**0.19**	**OK**	Eq. H1-1b
		D5 at 100.00%	0.16	OK	Eq. H1-1b
		D6 at 100.00%	0.17	OK	Eq. H1-1b
	10	D1 at 100.00%	0.04	OK	Sec. F1
		D2 at 100.00%	0.06	OK	Sec. F1
		D3 at 100.00%	0.05	OK	Sec. F1
		D4 at 0.00%	**0.22**	**OK**	Eq. H1-1b
		D5 at 0.00%	0.18	OK	Eq. H1-1b
		D6 at 0.00%	0.21	OK	Eq. H1-1b
	11	D1 at 0.00%	0.04	OK	Sec. F1
		D2 at 0.00%	0.06	OK	Sec. F1
		D3 at 0.00%	0.05	OK	Sec. F1
		D4 at 0.00%	**0.14**	**OK**	Eq. H1-1b
		D5 at 0.00%	0.13	OK	Eq. H1-1b
		D6 at 0.00%	0.12	OK	Eq. H1-1b
	12	D1 at 100.00%	0.03	OK	Sec. F1
		D2 at 100.00%	0.00	OK	Sec. F1
		D3 at 100.00%	0.01	OK	Sec. F1
		D4 at 100.00%	0.08	OK	Eq. H1-1b
		D5 at 100.00%	0.06	OK	Eq. H1-1b
		D6 at 100.00%	**0.09**	**OK**	Eq. H1-1b
	13	D1 at 100.00%	0.07	OK	Sec. F1
		D2 at 100.00%	0.09	OK	Sec. F1
		D3 at 100.00%	0.08	OK	Sec. F1
		D4 at 100.00%	**0.17**	**OK**	Eq. H1-1b
		D5 at 100.00%	0.16	OK	Eq. H1-1b
		D6 at 100.00%	0.14	OK	Eq. H1-1b
	14	D1 at 100.00%	0.08	OK	Sec. F1
		D2 at 100.00%	0.10	OK	Sec. F1
		D3 at 100.00%	0.10	OK	Sec. F1
		D4 at 0.00%	**0.17**	**OK**	Eq. H1-1b
		D5 at 100.00%	0.17	OK	Eq. H1-1b
		D6 at 0.00%	0.15	OK	Eq. H1-1b
	15	D1 at 0.00%	0.08	OK	Sec. F1
		D2 at 0.00%	0.10	OK	Sec. F1
		D3 at 0.00%	0.10	OK	Sec. F1
		D4 at 0.00%	0.14	OK	Eq. H1-1b
		D5 at 0.00%	**0.14**	**OK**	Eq. H1-1b
		D6 at 0.00%	0.11	OK	Eq. H1-1b
	16	D1 at 56.25%	0.01	OK	Sec. F1

	D2 at 56.25%	0.01	OK	Sec. F1
	D3 at 56.25%	0.01	OK	Sec. F1
	D4 at 100.00%	**0.15**	**OK**	Eq. H1-1b
	D5 at 100.00%	0.12	OK	Eq. H1-1b
	D6 at 100.00%	0.15	OK	Eq. H1-1b
17	D1 at 50.00%	0.01	OK	Sec. F1
	D2 at 50.00%	0.01	OK	Sec. F1
	D3 at 50.00%	0.01	OK	Sec. F1
	D4 at 0.00%	**0.07**	**OK**	Eq. H1-1b
	D5 at 0.00%	0.05	OK	Eq. H1-1b
	D6 at 100.00%	0.07	OK	Eq. H1-1b

Bentley

Current Date: 5/10/2017 2:18 PM
Units system: English
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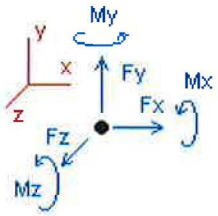
Analysis result

Reactions



Direction of positive forces and moments

	Forces [Kip]			Moments [Kip*ft]		
Node	**FX**	**FY**	**FZ**	**MX**	**MY**	**MZ**
Condition **D1=DL**						
1	0.00000	1.43868	0.00000	0.00000	0.00000	0.00000
2	0.00000	1.58550	0.00000	0.00000	0.00000	0.00000
3	0.00000	1.57542	0.00000	0.00000	0.00000	0.00000
4	0.00000	1.70224	0.00000	0.00000	0.00000	0.00000
5	0.00000	1.93249	0.00000	0.00000	0.00000	0.00000
21	0.00000	3.50330	0.00000	0.00000	0.00000	0.00000
26	0.00000	6.31515	0.00000	0.00000	0.00000	0.00000
SUM	0.00000	18.05278	0.00000	0.00000	0.00000	0.00000
Condition **D2=DL+LL**						
1	0.00000	1.98690	0.00000	0.00000	0.00000	0.00000
2	0.00000	2.29417	0.00000	0.00000	0.00000	0.00000
3	0.00000	2.27229	0.00000	0.00000	0.00000	0.00000
4	0.00000	2.42384	0.00000	0.00000	0.00000	0.00000
5	0.00000	2.53837	0.00000	0.00000	0.00000	0.00000
21	0.00000	4.61967	0.00000	0.00000	0.00000	0.00000
26	0.00000	8.48003	0.00000	0.00000	0.00000	0.00000
SUM	0.00000	24.61527	0.00000	0.00000	0.00000	0.00000
Condition **D3=DL+0.75LL**						
1	0.00000	1.84984	0.00000	0.00000	0.00000	0.00000
2	0.00000	2.11700	0.00000	0.00000	0.00000	0.00000
3	0.00000	2.09807	0.00000	0.00000	0.00000	0.00000
4	0.00000	2.24344	0.00000	0.00000	0.00000	0.00000
5	0.00000	2.38690	0.00000	0.00000	0.00000	0.00000
21	0.00000	4.34058	0.00000	0.00000	0.00000	0.00000
26	0.00000	7.93881	0.00000	0.00000	0.00000	0.00000
SUM	0.00000	22.97464	0.00000	0.00000	0.00000	0.00000

Condition **D4=DL+W**

1	-0.72769	0.73244	-0.37803	0.00000	0.00000	0.00000
2	-0.41218	1.36119	-0.14277	0.00000	0.00000	0.00000
3	-0.43563	1.57222	-0.06751	0.00000	0.00000	0.00000
4	-0.41165	1.88437	-0.07873	0.00000	0.00000	0.00000
5	-0.21391	2.68412	-0.54545	0.00000	0.00000	0.00000
21	-0.57593	4.42653	0.56077	0.00000	0.00000	0.00000
26	-1.70217	5.39193	0.65170	0.00000	0.00000	0.00000
SUM	-4.47916	18.05278	0.00000	0.00000	0.00000	0.00000

Condition **D5=DL+0.75W+0.75LL**

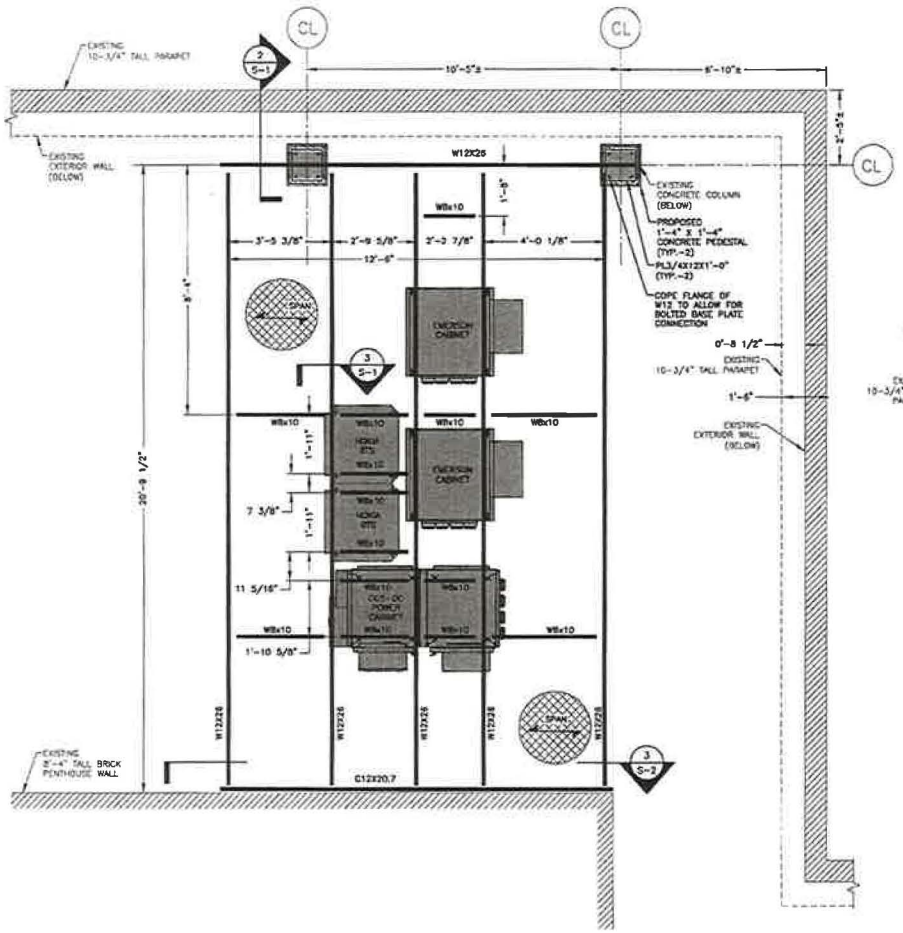
1	-0.54577	1.32016	-0.28352	0.00000	0.00000	0.00000
2	-0.30913	1.94877	-0.10708	0.00000	0.00000	0.00000
3	-0.32672	2.09567	-0.05063	0.00000	0.00000	0.00000
4	-0.30874	2.38003	-0.05904	0.00000	0.00000	0.00000
5	-0.16043	2.95062	-0.40909	0.00000	0.00000	0.00000
21	-0.43195	5.03299	0.42058	0.00000	0.00000	0.00000
26	-1.27663	7.24640	0.48878	0.00000	0.00000	0.00000
SUM	-3.35937	22.97464	0.00000	0.00000	0.00000	0.00000

Condition **D6=0.6DL+W**

1	-0.72769	0.15696	-0.37803	0.00000	0.00000	0.00000
2	-0.41218	0.72699	-0.14277	0.00000	0.00000	0.00000
3	-0.43563	0.94205	-0.06751	0.00000	0.00000	0.00000
4	-0.41165	1.20347	-0.07873	0.00000	0.00000	0.00000
5	-0.21391	1.91112	-0.54545	0.00000	0.00000	0.00000
21	-0.57593	3.02520	0.56077	0.00000	0.00000	0.00000
26	-1.70217	2.86587	0.65170	0.00000	0.00000	0.00000
SUM	-4.47916	10.83167	0.00000	0.00000	0.00000	0.00000

Hudson Design Group LLC

Referenced Documents



STEEL FRAMING PLAN 1
SCALE: 1/2"=1'-0"
0' 1' 2' 4'

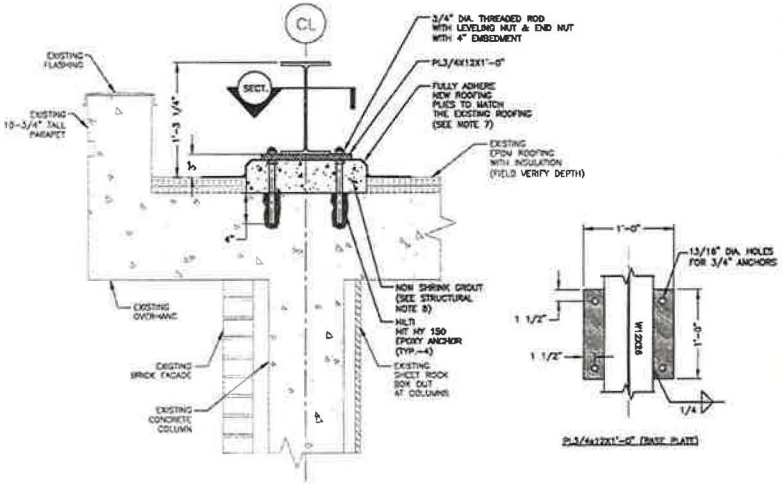
ROOF LOADING INFORMATION

DESCRIPTION	SIZE	WEIGHT #
(1) OCS-DC CABINET + 16 BATTERIES	60"Wx31"Dx77.4"H	3104 LBS
(2) NOKIA CABINETS	30.3"Wx29.5"Dx76.4"H	(2X) 750 LBS
(2) EMERSON CABINETS	34.71"Wx28.73"Dx97"H	(2X) 1500 LBS
TOTAL EQUIPMENT DEAD LOAD		7,604 LBS*

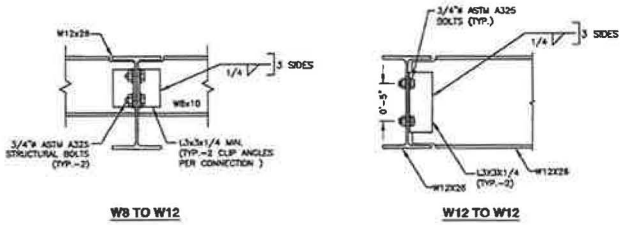
* STRUCTURAL ANALYSIS BASED ON ROOF LOADING SHOWN. NO ADDITIONAL EQUIPMENT SHALL BE ADDED WITHOUT ADDITIONAL ANALYSIS.

STRUCTURAL NOTES:

1. SOME INFORMATION NOT SHOWN FOR CLARITY. NORTH IS APPROXIMATE.
2. EXISTING BUILDING LOCATION, ORIENTATION & ASSOCIATED EQUIPMENT LOCATIONS ARE APPROXIMATE AND HAVE NOT BEEN VERIFIED THROUGH FIELD SURVEY. CONTRACTOR SHALL VERIFY ALL DIMENSIONS, EXISTING STRUCTURES, EQUIPMENT LOCATIONS AND SITE DETAILS PRIOR TO ALL FABRICATION & CONSTRUCTION.
3. SEE G-1 FOR STRUCTURAL STEEL NOTES.
4. ALL BOLTS SHALL BE 3/4" ASTM A325 BOLTS UNLESS OTHERWISE STATED.
5. CONTRACTOR VERIFY EQUIPMENT CABINET MANUFACTURER, MODEL # AND WEIGHT WITH AT&T CM PRIOR TO STEEL FABRICATION.
6. PLANS BASED ON DRAWINGS PROVIDED BY BUILDING OWNER TITLED "COURIER HOUSE" FROM SAPHYRE SPATIAL DATABASE AND BY FIELD MEASUREMENTS BY A DEWBERRY ENGINEER. CONTRACTOR TO FIELD VERIFY ALL CONNECTION POINTS PRIOR TO STEEL FABRICATION.
7. CONTRACTOR TO UTILIZE EXISTING BUILDING ROOFER AS REQUIRED BY BUILDING OWNER. ALL ROOFING WORK SHALL BE IN COMPLIANCE WITH ROOF WARRANTY REQUIREMENTS.
8. NON SHRINK GROUND SHALL BE INSTALLED AFTER THE ERECTION OF THE STEEL FRAMING BUT PRIOR TO CABINET AND SCREEN WALL INSTALLATION.



FRAME ATTACHMENT DETAILS 2
SCALE: 1-1/2"=1'-0"
0' 1/2" 1" 1 1/2"



CONNECTION DETAILS 3
SCALE: N.T.S.

HALF SIZE PRINT
THIS DRAWING IS SCALEABLE AT HALF THE NOTED SCALE.

at&t Mobility
550 COCHITUATE ROAD
SUITES 13 & 14
FRAMINGHAM, MA 01701

HARVARD UNIVERSITY
GILBERT HALL
SITE NO.: 2268

CONSTRUCTION DRAWINGS

0	04/02/10	FOR SUBMITTAL
A	02/23/10	FOR COMMENT

Dewberry
Dewberry-Goodkind, Inc.
200 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.695.3400
FAX: 617.695.3510

COMMONWEALTH OF MASSACHUSETTS
DENNIS W. REIP
STRUCTURAL
No. 36494
REGISTERED
PROFESSIONAL ENGINEER
4-2-10

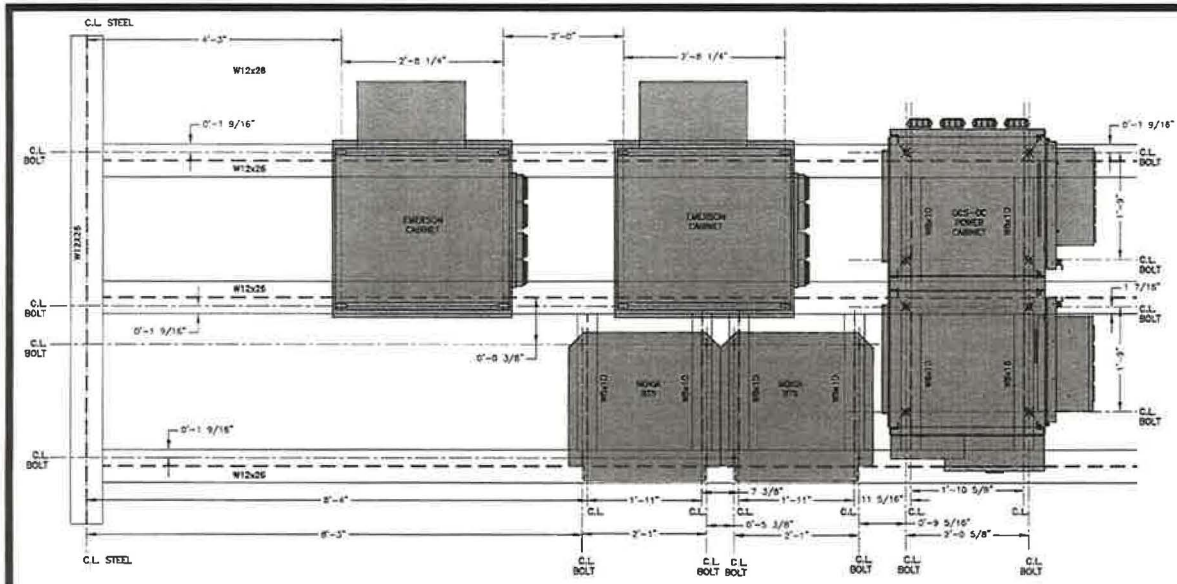
DRAWN BY:	BBR
REVIEWED BY:	DWR
CHECKED BY:	PPB
JOB NUMBER:	50012901
PROJECT NUMBER:	50003938
SITE ADDRESS	

64 LINNAEAN STREET
CAMBRIDGE, MA 02138

SHEET TITLE
STEEL FRAMING PLAN & DETAILS

SHEET NUMBER
S-1

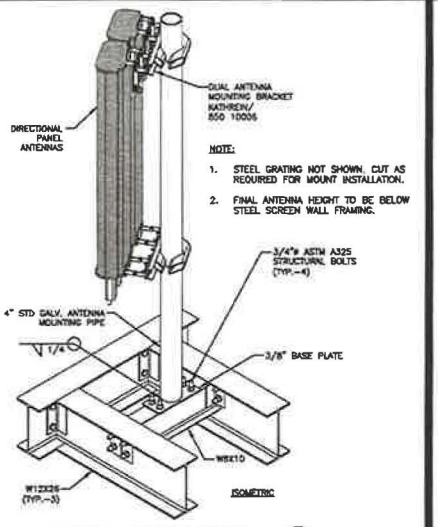
* REFERENCE ONLY



NOTES:

1. VERIFY ALL BOLT HOLE LAYOUTS WITH MANUFACTURER INSTALLATION TEMPLATES PRIOR TO STEEL FABRICATION.
2. SIZE & SLOT HOLES PER MANUFACTURERS SPECIFICATIONS.
3. NOT ALL STEEL FRAMING MEMBERS SHOWN FOR CLARITY.

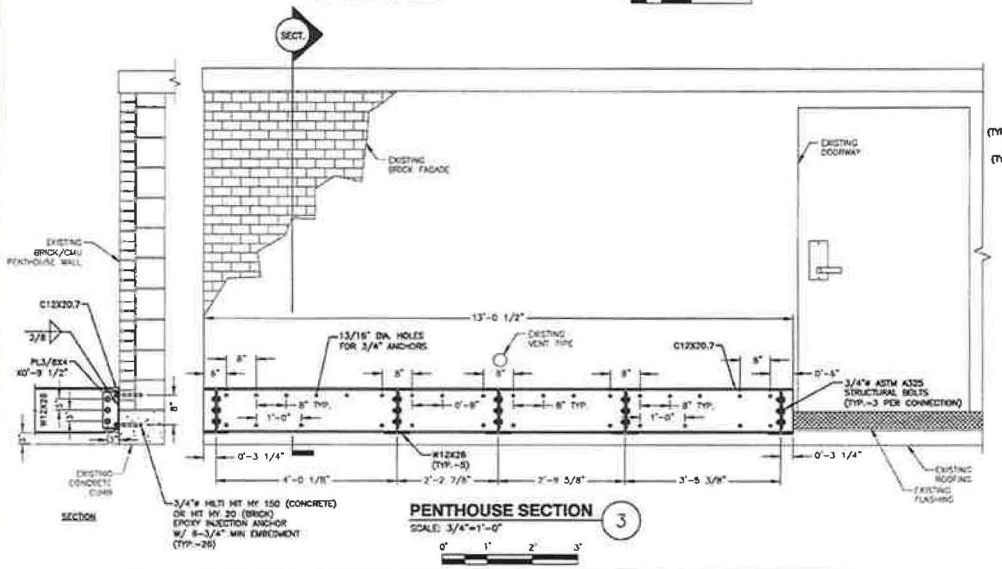
EQUIPMENT CABINET MOUNTING PLAN 1
SCALE: 1"=1'-0"



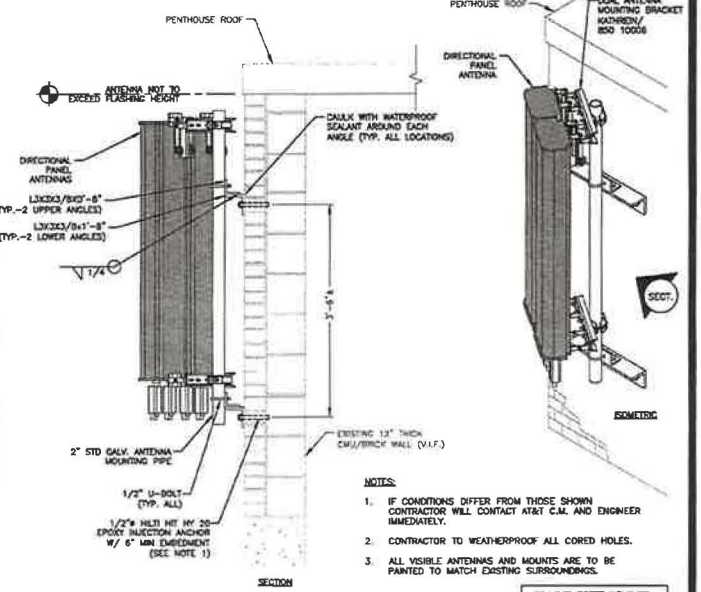
NOTE:

1. STEEL GRATING NOT SHOWN. CUT AS REQUIRED FOR MOUNT INSTALLATION.
2. FINAL ANTENNA HEIGHT TO BE BELOW STEEL SCREEN WALL FRAMING.

SECTOR A FRAME MOUNT 2
SCALE: N.T.S.



PENTHOUSE SECTION 3
SCALE: 3/4"=1'-0"



NOTES:

1. IF CONDITIONS DIFFER FROM THOSE SHOWN CONTRACTOR WILL CONTACT AT&T C.M. AND ENGINEER IMMEDIATELY.
2. CONTRACTOR TO WEATHERPROOF ALL CORED HOLES.
3. ALL VISIBLE ANTENNAS AND MOUNTS ARE TO BE PAINTED TO MATCH EXISTING SURROUNDINGS.

SECTOR C FACADE MOUNT 4
SCALE: N.T.S.

HALF SIZE PRINT
THIS DRAWING IS SCALEABLE AT HALF THE NOTED SCALE.

at&t Mobility
550 COCHITUATE ROAD
SUITES 13 & 14
FRAMINGHAM, MA 01701

HARVARD UNIVERSITY
GILBERT HALL
SITE NO.: 2268

CONSTRUCTION DRAWINGS		
0	04/02/10	FOR SUBMITTAL
A	02/23/10	FOR COMMENT

Dewberry
Dewberry-Goodkind, Inc.
281 SUMMER STREET
10TH FLOOR
BOSTON, MA 02210
PHONE: 617.856.3400
FAX: 617.856.3319

COMMONWEALTH OF MASSACHUSETTS
DENNIS W. REIP
STRUCTURAL
No. 36994
REGISTERED PROFESSIONAL ENGINEER

DRAWN BY:	BBR
REVIEWED BY:	BBR
CHECKED BY:	PPB
JOB NUMBER:	50012901
PROJECT NUMBER:	50003936
SITE ADDRESS	

64 LINNAEAN STREET
CAMBRIDGE, MA 02138

SHEET TITLE
STRUCTURAL DETAILS

SHEET NUMBER
S-2

REFERENCE ONLY

Prepared For:
EMPIRE TELECOM
Site Number:MA2268
Site Name:
CAMBRIDGE LINNAEAN STREET GILBERT HALL

64 LINNAEAN STREET
CAMBRIDGE, MA 02138

SITE NO: MA2268

SITE NAME: CAMBRIDGE LINNAEAN STREET GILBERT HALL

ADDRESS: 64 LINNAEAN STREET
CAMBRIDGE, MA 02138

at&t

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

PREPARED FOR:

EMPIRE telecom

16 ESQUIRE STREET
BILLERICA, MA 01862
TEL: (978) 608-8400

Hudson Design Group LLC

75 SUMMIT STREET
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1600 OSGOOD STREET
BUILDING 20 NORTH, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SITE TYPE: ROOFTOP

DATE: 06/14/2016 | REV: 0

DRAWN BY: FM

SCALE: N.T.S.

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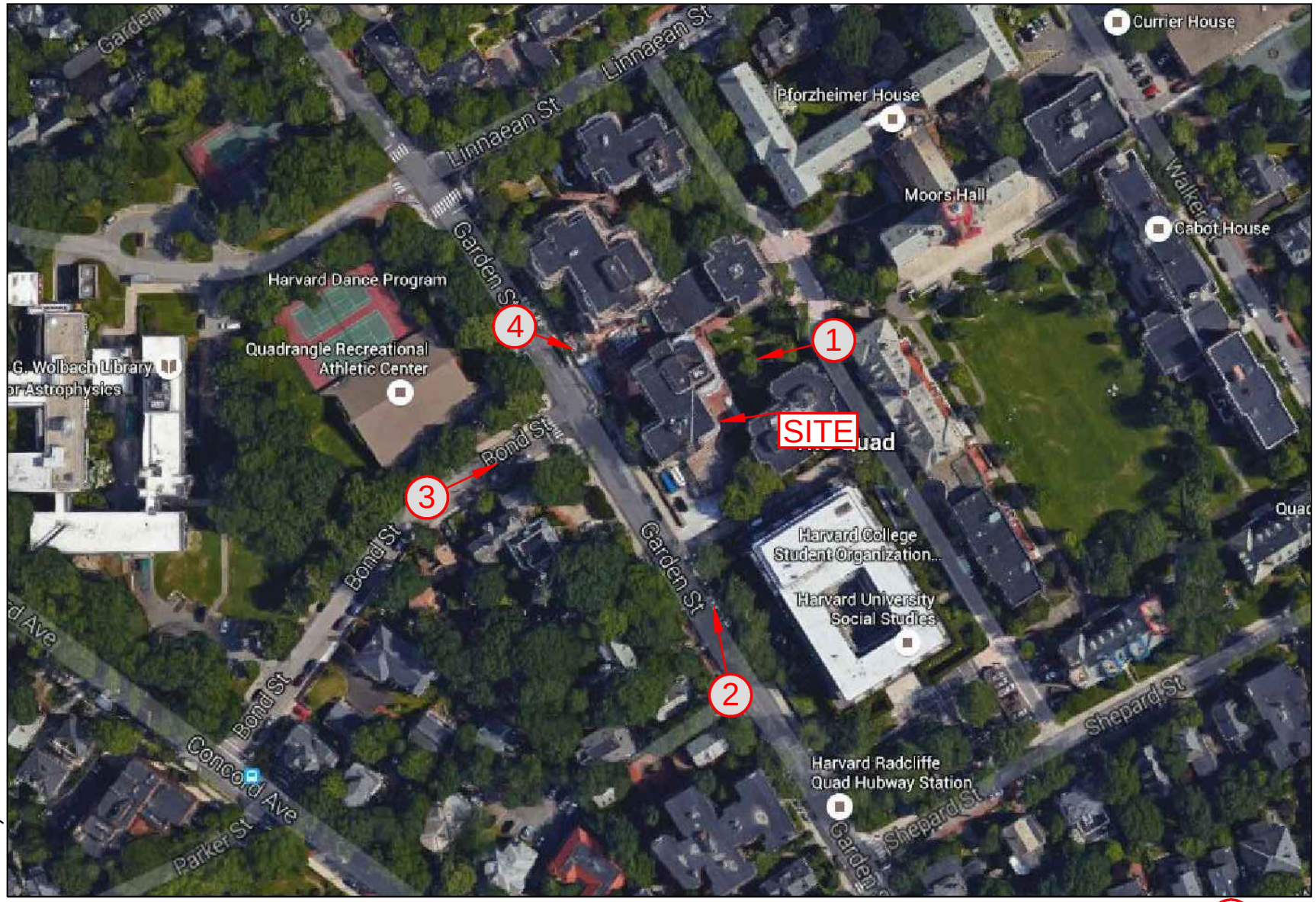
LOCUS MAP

TAKEN FROM GOOGLE.COM ON 06-13-16



14°44'

MAGNETIC NORTH

TRUE NORTH

(#) PHOTO LOCATION

SITE NO: MA2268

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EXISTING CONDITIONS

LOCATION # 1

DATE OF PHOTO: 06/09/2016

DETAIL OF EQUIPMENT

VIEW WEST FROM THE QUAD

SITE NO:	MA2268
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PROPOSED CONDITIONS

LOCATION # 1

DATE OF PHOTO: 06/09/2016

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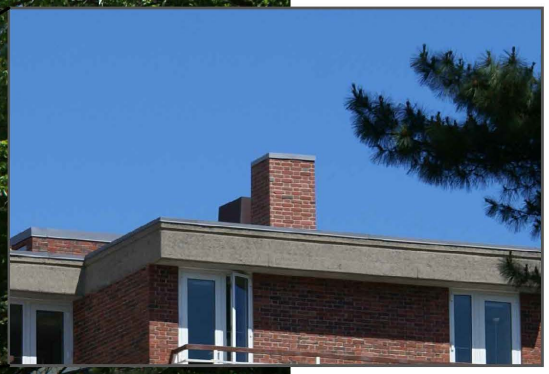
EXISTING CONDITIONS

LOCATION # 2

DATE OF PHOTO: 06/09/2016



DETAIL OF EQUIPMENT

VIEW NORTH FROM GARDEN

SITE NO:	MA2268
SITE NAME:	CAMBRIDGE LINNAEAN STREET GILBERT HALL
ADDRESS:	64 LINNAEAN STREET CAMBRIDGE, MA 02138

at&t

550 COCHITUATE ROAD
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PREPARED FOR:

EMPIRE telecom

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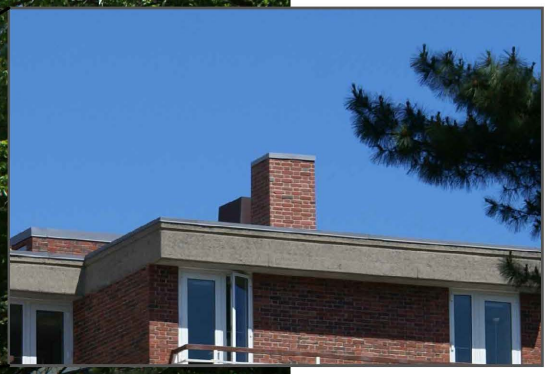

DETAIL OF EQUIPMENT

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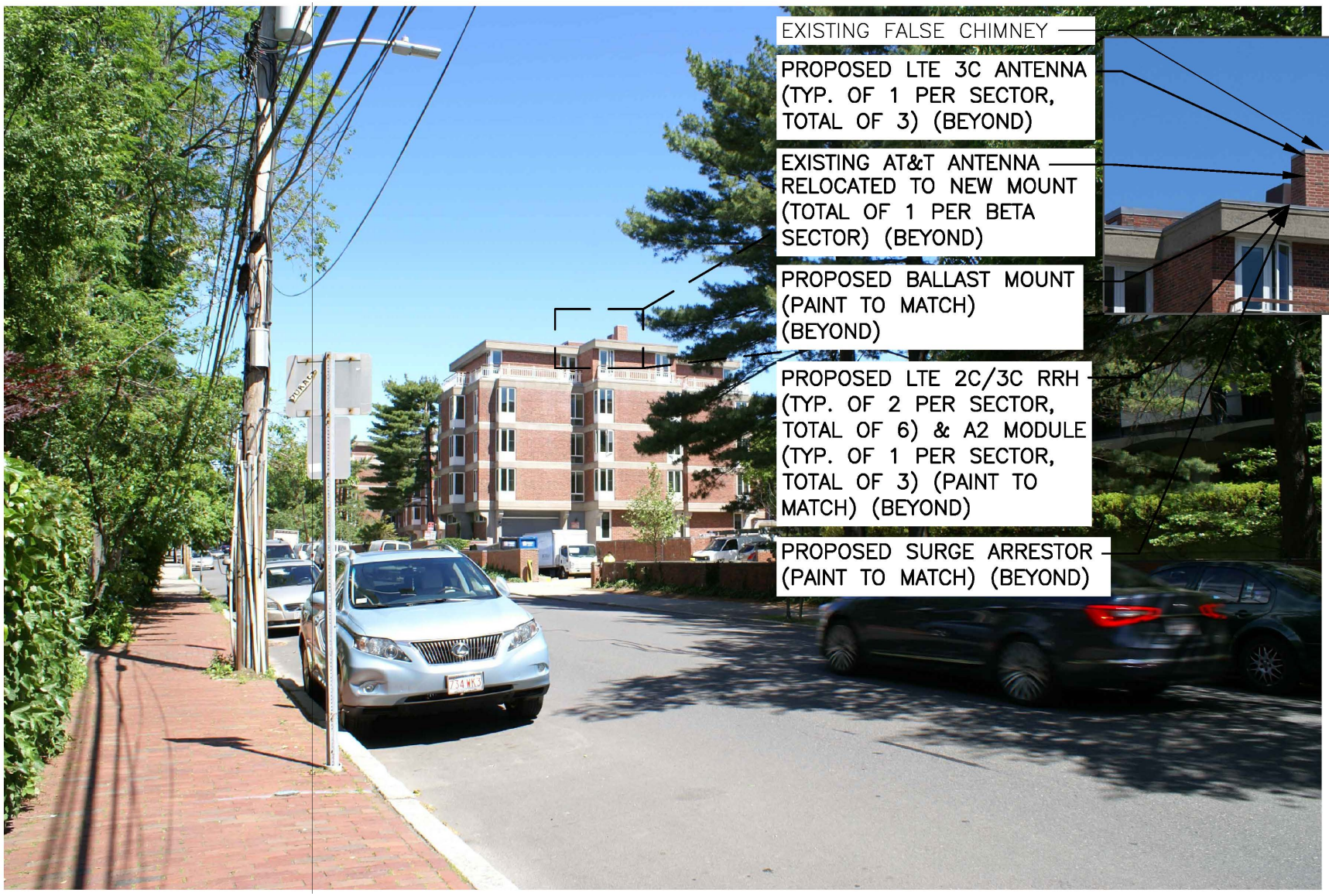

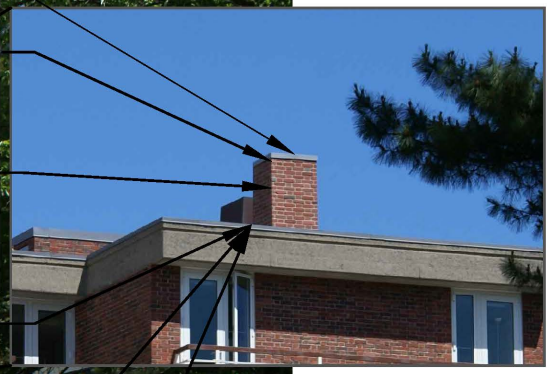

DETAIL OF EQUIPMENT

VIEW NORTH FROM GARDEN

SITE NO: MA2268 SITE NAME: CAMBRIDGE LINNAEAN STREET GILBERT HALL ADDRESS: 64 LINNAEAN STREET CAMBRIDGE, MA 02138	at&t 550 COCHITUATE ROAD FRAMINGHAM, MA 01701	PREPARED FOR: EMPIRE telecom 16 ESQUIRE STREET BILLERICA, MA 01862 TEL: (978) 608-8400	Hudson Design Group LLC 75 SUMMIT STREET PHILMONT, NY 12565 1600 OSGOOD STREET BUILDING 2D NORTH, SUITE 3090 N. ANDOVER, MA 01845 TEL: (978) 557-5553 FAX: (978) 336-5586	SITE TYPE: ROOFTOP DATE: 06/14/2016 REV: 0 DRAWN BY: FM SCALE: N.T.S.	THIS STUDY DOES NOT CLAIM IN ANY WAY TO SHOW THE ONLY AREAS OF VISIBILITY. IT IS MEANT TO SHOW A BROAD REPRESENTATION OF AREAS WHERE THE PROPOSED INSTALLATION MAY BE VISIBLE BASED UPON THE BEST INFORMATION FOR TOPOGRAPHY AND VEGETATION LOCATIONS AVAILABLE TO DATE.

EXISTING CONDITIONS

LOCATION # 3

DATE OF PHOTO: 06/09/2016

DETAIL OF EQUIPMENT

VIEW NORTHEAST FROM BOND STREET

SITE NO:	MA2268
SITE NAME:	CAMBRIDGE LINNAEAN STREET GILBERT HALL
ADDRESS:	64 LINNAEAN STREET CAMBRIDGE, MA 02138

at&t

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

PREPARED FOR:

EMPIRE telecom

16 ESQUIRE STREET
BILLERICA, MA 01862
TEL: (978) 608-8400

Hudson Design Group LLC

75 SUMMIT STREET
PHILMONT, NY 12565

1600 OSGOOD STREET
BUILDING 2D NORTH, SUITE 3090
N. ANDOVER, MA 01845
TEL: (978) 557-5553
FAX: (978) 336-5586

SITE TYPE: ROOFTOP	
DATE: 06/14/2016	REV: 0
DRAWN BY: FM	
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EXISTING CONDITIONS

LOCATION # 4

DATE OF PHOTO: 06/09/2016

DETAIL OF EQUIPMENT

VIEW SOUTHEAST FROM GARDEN STREET

SITE NO: MA2268

SITE NAME: CAMBRIDGE LINNAEAN STREET GILBERT HALL

ADDRESS: 64 LINNAEAN STREET
CAMBRIDGE, MA 02138

at&t

550 COCHITUATE ROAD
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PROPOSED CONDITIONS

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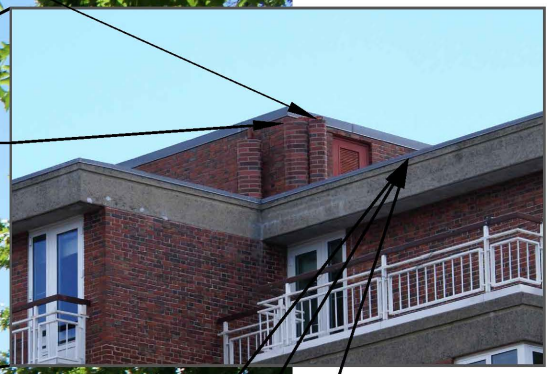

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RF Report

Proposed LTE Modification

(MA2268 – 64 Linnaen Street, Cambridge, MA)

November 6, 2017

TABLE OF CONTENTS

1. Overview

New Cingular Wireless PCS, LLC ("AT&T") is providing the following information in support of its application to the City of Cambridge to modify an existing rooftop communications facility located on Harvard University campus at 64 Linnaen Street, also known as Gilbert Hall ("Facility"). AT&T proposes to modify their existing Facility in order to increase both LTE coverage and capacity to the immediate Harvard University campus and surrounding areas. This report outlines AT&T's need for the proposed modification to the Facility due to ongoing improvements in both technology and equipment.

Included in this package are a brief summary of the proposed scope of work and the need for a modification to the Facility to allow for the continued service throughout Harvard University and the City of Cambridge.

2. AT&T's Proposed Facility

As shown on the plans submitted with the zoning application, AT&T proposes to modify their existing Facility in order to increase the LTE capabilities. The modification will involve removing (3) existing antennas and replacing with (3) new updated models, which are currently located within faux chimneys near the roof edge. These chimneys will continue to remain as existing.

Additionally, (3) new radios and associated cabling are proposed, to be mounted on the existing ballasts located behind the chimneys. This modification will not increase the height of the existing chimneys, nor move them closer to the roof edge, aesthetics will remain unchanged from the public right of way.

3. Coverage and Capacity Objectives

AT&T provides digital cellular communications service using UMTS (also referred as 3G) technology in the 850 MHz and 1900 MHz frequency bands as allocated by the Federal Communications Commission ("FCC"). In addition, AT&T is in the process of expanding and enhancing its network throughout Massachusetts and specifically in Cambridge to provide high speed data services commonly referred to as "long term evolution" ("LTE"). LTE operates in the 700, 850, 1900, and 2300 MHz frequencies under license from the FCC.

Regarding the Gilbert Hall Facility, AT&T has determined that upgrading for the purposes of increased LTE coverage and capacity is necessary in order to deal with increasing demand on the network by users on Harvard campus and the surrounding area. Wireless communication services are no longer limited

to providing mobility for voice services. They have evolved to offer a wider range of advanced services to include wide-area voice, data, internet, video, and broadband wireless data, among others, all in a mobile environment. In order to offer these competitive services to more residents, businesses and commuters traveling in and through Harvard campus, AT&T needs to improve the quality of its coverage by filling in as many of the intended gaps as possible with signal strengths conducive to in-building and in-vehicle usage, and to provide the capacity and bandwidth requirements to meet the increasing demand on the network.

In summary, the key objective of the LTE modification is to provide improved in-building and in-vehicle coverage for both UMTS and LTE services in Cambridge.

4. Summary

The proposed modification to the existing Facility will be in accordance with the Cambridge Zoning Code and will not alter the height or aesthetics of the rooftop. It will also comply with all applicable FCC regulations regarding RF emissions and other matters. The proposed modification to the Facility is feasible and appropriate, and will improve wireless service within Harvard University campus and the surrounding vicinity in Cambridge.

5. Statement of Certification

I certify to the best of my knowledge that the statements in this report are true and accurate.

Jose Mariano, RF Engineer
AT&T Mobility

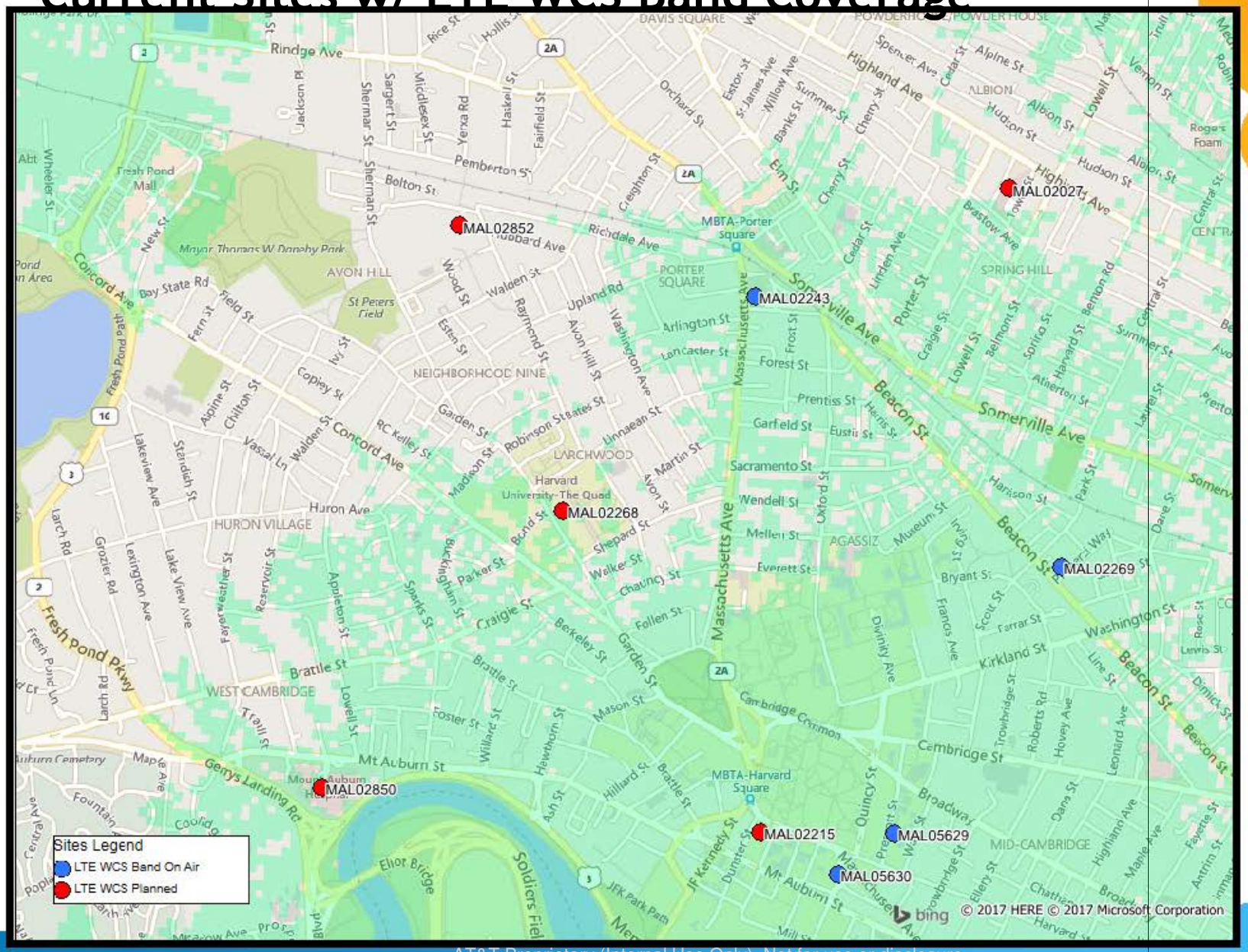
Date 11/06/17

Rethink Possible

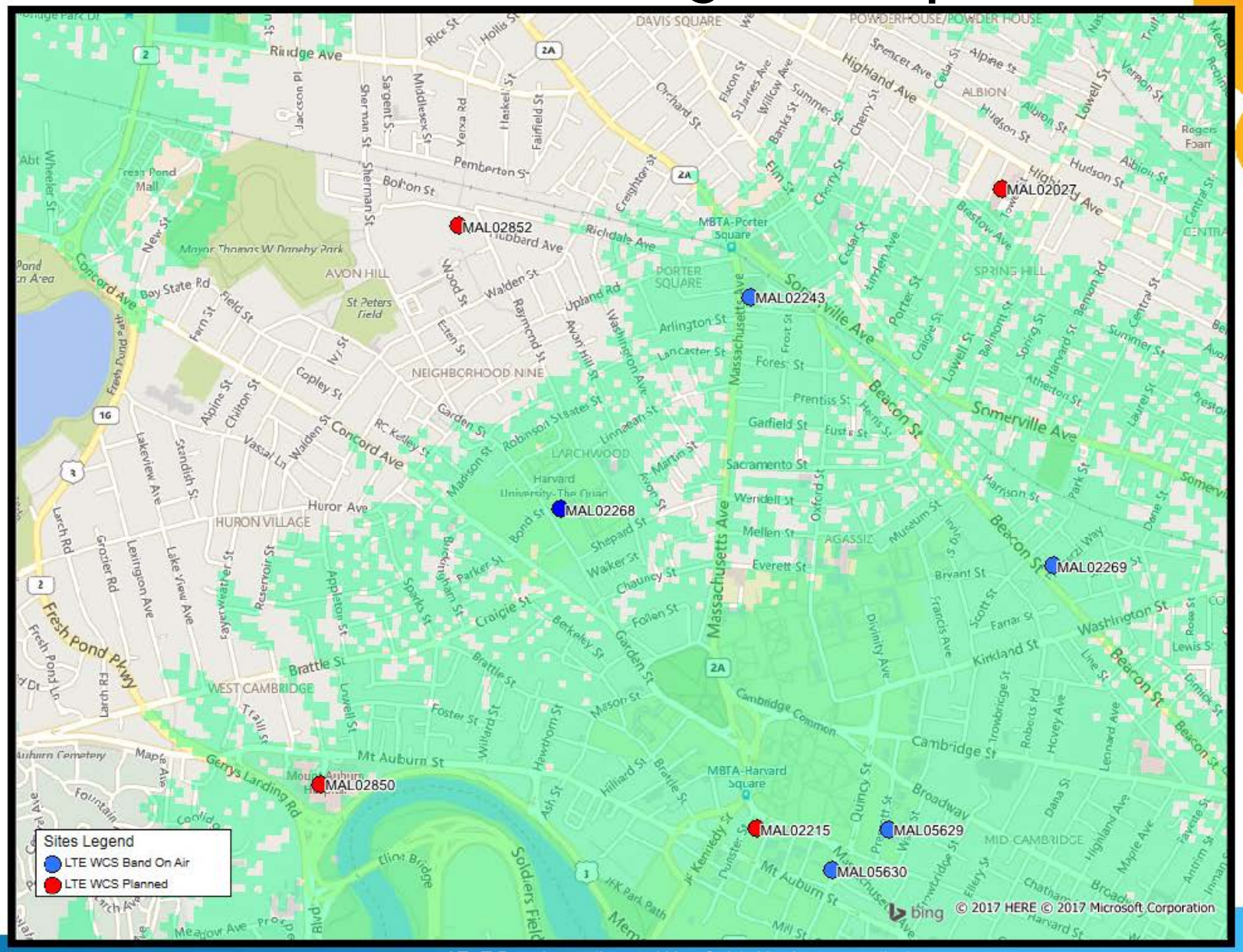
MAL02268 LTE WCS Plots

- Zoning Plots

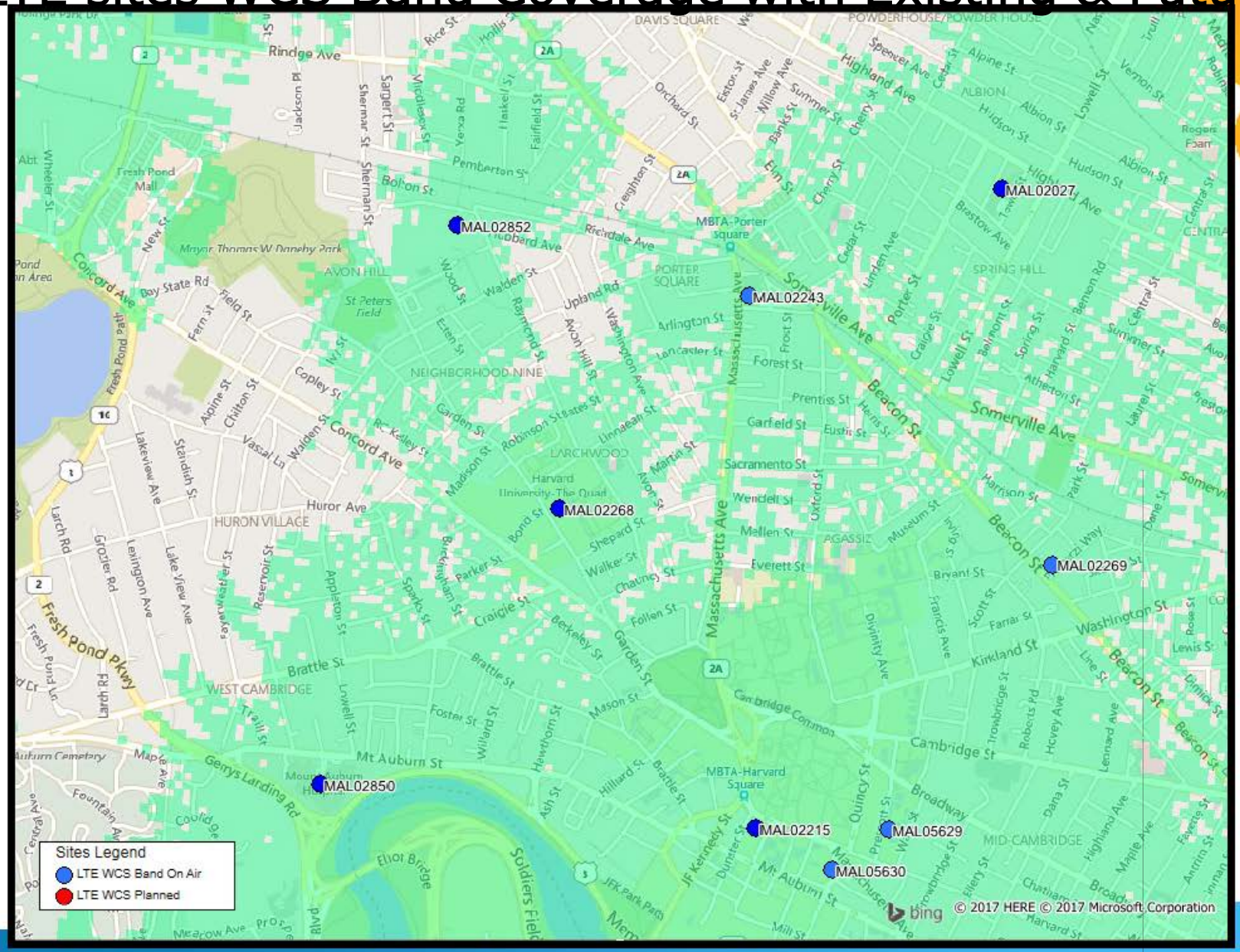
Current Sites w/ LTE WCS Band Coverage



LTE Sites WCS Band Coverage w/ Proposed MAL02268



LTE sites WCS Band Coverage with Existing & Future



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

2018 FEB -1 PM 3:36
OFFICE OF THE CITY CLERK
CAMBRIDGE, MASSACHUSETTS

BZA APPLICATION FORM

Plan No: BZA-015484-2018

GENERAL INFORMATION

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

Special Permit : √ **Variance :** _____ **Appeal :** _____

PETITIONER : New Cingular Wireless PCS, LLC ("AT&T") - C/O Centerline Communications, Mic

PETITIONER'S ADDRESS : 95 Ryan Drive, Suite 1 Raynham, MA 02767

LOCATION OF PROPERTY : 52-70 Linnaean St Cambridge, MA

TYPE OF OCCUPANCY : Residential C-2 / Telecommunications **ZONING DISTRICT :** Residence C-2 Zone

REASON FOR PETITION :

Other: N/A

DESCRIPTION OF PETITIONER'S PROPOSAL :

AT&T proposes to remove 3 antennas, replace with 3 new antennas, add 3 RRH, add 2 ballast frames, 1 surge arrestor, 2 DC cables and 1 Fiber to be installed in line with the pre existing configuration.

SECTIONS OF ZONING ORDINANCE CITED :

Article 4.000 Section 4.32.G.1 (Telecommunication Facilities).

Article 4.000 Section 4.40 (Footnote 49) (Telecommunication Facilites).

Original Signature(s) : _____
(Petitioner(s) / Owner)

Michael Gentile
(Print Name)

Address : 95 Ryan Dr. #1
Raynham MA 02767

Tel. No. : 508 844-9813

E-Mail Address : mgentile@clinellc.com

Date : _____

ULS License

Cellular License - KNKA226 - NEW CINGULAR WIRELESS PCS, LLC

HELP

New Search | Printable Page | Reference Copy | Map License

MAIN | ADMIN | LOCATIONS

This license has pending applications: 0004078789

Call Sign	KNKA226	Radio Service	CL - Cellular
Status	Active	Auth Type	Regular
Market			
Market	CMA006 - Boston-Lowell-Brockton-Lawrence-Haverhill, MA-NH	Channel Block	A (View Frequencies)
Submarket	0	Phase	2
Dates			
Grant	10/05/2004	Expiration	10/01/2014
Effective	02/08/2007	Cancellation	
Five Year Buildout Date			
06/28/1999			
Control Points			
2	100 LOWDER BROOK DR, NORFOLK, WESTWOOD, MA P: (617)462-7094		

Licensee			
FRN	0003291192 (View Ownership Filing)	Type	Limited Liability Company
Licensee			
NEW CINGULAR WIRELESS PCS, LLC 5601 LEGACY DRIVE, MS: A-3 PLANO, TX 75024 ATTN KELLYE E. ABERNATHY		P:(469)229-7422 F:(469)229-7297 E:KELLYE.E.ABERNATHY@CINGULAR.COM	

Contact	
AT&T MOBILITY LLC DAVID C JATLOW 11760 US HIGHWAY 1 NORTH PALM BEACH, FL 33408	P:(202)255-1679 F:(561)279-2097 E:DAVID.JATLOW@CINGULAR.COM

Ownership and Qualifications			
Radio Service Type	Mobile		
Regulatory Status	Common Carrier	Interconnected	Yes

Alien Ownership The Applicant answered "No" to each of the Alien Ownership questions.	
Basic Qualifications The Applicant answered "No" to each of the Basic Qualification questions.	
Demographics	
Race	
Ethnicity	Gender

ULS Help	ULS Glossary - FAQ - Online Help - Technical Support - Licensing Support
ULS Online Systems	CORES - ULS Online Filing - License Search - Application Search - Archive License Search
About ULS	Privacy Statement - About ULS - ULS Home
Basic Search	By Call Sign = SEARCH

FCC | Wireless | ULS | CORES

Help | Tech Support

Federal Communications Commission
445 12th Street SW
Washington, DC 20554

Phone: 1-877-480-3201
TTY: 1-717-338-2824
Submit Help Request

MARTHA COAKLEY
ATTORNEY GENERAL

THE COMMONWEALTH OF MASSACHUSETTS
OFFICE OF THE ATTORNEY GENERAL
CENTRAL MASSACHUSETTS DIVISION
10 MECHANIC STREET, SUITE 301
WORCESTER, MA 01608

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

June 10, 2014

Janet A. Vellante, Town Clerk
Town of Harvard
13 Ayer Road
Harvard, MA 01451-1458

RE: Harvard Annual Town Meeting of April 1, 2014 - Case # 7101
Warrant Articles # 40, 41, 42, 43, 44, 45 and 46 (Zoning)
Warrant Articles # 19 and 38 (General)

Dear Ms. Vellante:

Articles 19, 38, 40, 41, 42, 43, 44, and 45 - We approve these Articles, and the maps pertaining to Articles 42 and 44, from the Harvard Annual Town Meeting of April 1, 2014. We will return the approved maps to you by regular mail. Our comments on Article 41 are detailed below.

Article 46 - We retain Article 46 for further review and will issue our decision on it before our deadline of July 29, 2014.

Article 41 - Article 41 amends the Town's zoning by-laws Section 125-27, "Wireless Communications Towers Overlay District," by adding a new subsection D (3) to accommodate the Town's public safety department communication equipment. The new subsection D (3) provides as follows:

> For new towers, or modifications to existing towers that require grant of a special permit by the Planning Board, the tower owner shall allow the installation of municipal public safety communications equipment provided such equipment does not interfere with the service of other carriers on the tower. The Town shall bear the cost of the equipment and its installation.

The new subsection D (3) requires a wireless communications tower owner to provide space on the tower for municipal public safety equipment. Subsection D (3) expressly provides that the Town shall pay the cost of the equipment and its installation. However, subsection D (3) is silent on whether the space will be provided at no charge. Subsection D (3) cannot be interpreted and applied to mean that the Town must only pay the costs associated with the installation of its antennas and equipment and nothing else. Such interpretation and application would be a "taking" in violation of the Fifth Amendment as applied to the states via the

Fourteenth and Article 10 of the Massachusetts Declaration of Rights. *See* Loretto v. Teleprompter Manhattan CATV Corp., 458 U.S. 419, 426 (1982); Nollan v. California Coastal Comm'n., 483 U.S. 825, 831 (1987); and Dolan v. City of Tigard, 512 U.S. 374, 383 (1994). We strongly suggest that the Town discuss the proper application of subsection D (3) with Town Counsel.

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

Very truly yours,
MARTHA COAKLEY
ATTORNEY GENERAL

Margaret J. Hurley

by: Margaret J. Hurley, Assistant Attorney General
Chief, Central Massachusetts Division
Director, Municipal Law Unit
Ten Mechanic Street, Suite 301
Worcester, MA 01608
(508) 792-7600 x 4402

cc: Town Counsel Mark J. Lanza

December 14, 2017

Donna P. Lopez, City Clerk City of Cambridge City Hall 795 Massachusetts Avenue Cambridge, MA 02139	Constantine Alexander, Chair Board of Zoning Appeal City Hall 795 Massachusetts Avenue Cambridge, MA 02139

Applicant:	New Cingular Wireless PCS, LLC ("AT&T")
Property Address:	Gilbert Hall (owned by President & Fellows of Harvard College c/o Harvard Real Estate, Inc.), 52-70 Linnaean Street Assessor's Map 213, Lot 2A (the "Property")
Re:	Application for (i) Special Permit under Cambridge Zoning Ordinance Section 4.32(g)(1) and M.G.L. c. 40A, Section 9; and (ii) Any other zoning relief required. (All relief if and to the extent necessary, all rights reserved)

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

Pursuant to Section 6409 of the Middle Class Tax Relief and Job Creation Act of 2012 (a/k/a the "Spectrum Act" or "Section 6409"), 47 U.S.C. § 1455, as further implemented by the Federal Communications Commission's Report and Order *In re Acceleration of Broadband Deployment by Improving Wireless Facilities Siting Policies*, FCC Docket No. 13-238, Report and Order No. 14-153 (October 17, 2014) (the "FCC Order"), New Cingular Wireless PCS, LLC ("AT&T") hereby submits this Eligible Facilities Request ("Request"); and, in the alternative, applies for a special permit from the City of Cambridge Board of Zoning Appeal (the "Board") under Section 432(g)(1) of the Cambridge Zoning Ordinance (the "Ordinance") to modify a "Telephone Exchange including Transmission Facilities to serve a Mobile Communication System" (the "Facility") on the rooftop of Gilbert Hall owned by President & Fellows of Harvard College c/o Harvard Real Estate, Inc. the Cambridge Housing Authority ("Harvard") and located on the Property. [2] The Property is located in zoning district Residence C-2 .

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

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

In the alternative, as demonstrated in this application letter, the proposed modification to the existing Facility satisfies the requirements for the grant of a special permit pursuant to Section 10.43 of the Ordinance.

I. APPLICATION PACKAGE

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

1. The following completed and signed application forms:

   a. BZA Application Form – General Information;
   b. BZA Application Form – Ownership Information [Original Provided];
   c. BZA Application Form – Dimensional Requirements;
   d. BZA Application Form – Supporting Statement for a Special Permit; and
   e. BZA Application Form – Check List;

2. AT&T's relevant FCC License information;

3. The following Zoning Drawings by Hudson Design Group LLC:

SHEET	TITLE	REV. DATE
T-1	Title Page	8/14/17
GN-1	General Notes	8/14/17
C-1	Site Plan	8/14/17
A-1	Roof & Equipment Plan	8/14/17
A-2	Elevation	8/14/17
A-3	Antenna Layout	8/14/17
A-4	Details	8/14/17
RF-1	RF Plumbing Diagrams	8/14/17
G-1	Grounding Details	8/14/17

4. Manufacturer's specification sheets for AT&T's proposed antennas and other featured equipment;[3]

[3] AT&T reserves the right to change the manufacturer, make, model, type and operating characteristics of the antennas and any other equipment based on availability, price, performance and other considerations and in accordance with all applicable laws

5. Photographs of the existing building and photosimulations of the proposed Facility by Hudson Design Group LLC;

6. Radio Frequency Coverage Report, prepared by Jose Mariano, AT&T, dated November 06, 2017, demonstrating the public need for the Facility, radio frequency coverage maps showing (a) existing coverage; and (b) coverage with the proposed Facility;

7. Structural Analysis Report by Hudson Design Group LLC, dated May 5, 2017;

8. Maximum Permissible Exposure Study, Theoretical Report, by EBI Consulting, dated February 22, 2017;

9. Letter of Authorization from Owner of Subject Property;

10. Deed to subject property; and

11. Attorney General's letters to the Towns of Mount Washington, Lynnfield and Montague.

II. PROPOSED FACILITY DESIGN

AT&T seeks to upgrade its existing Facility on the roof of Gilbert Hall at the Property in order to increase the LTE capabilities. The modification will involve removing (3) existing antennas and replacing with (3) new updated models. The façade-mounted replacement antenna will be mounted to the existing antenna mount and consistent with the concealment elements of the existing Facility's design, the proposed replacement antenna will be painted to match the color and texture of the existing brick façade. Two of the replacement antennas will be mounted behind existing stealth features (screen wall and faux chimney) and will not be seen from public view. The existing screen wall and faux chimney will not be altered. Additionally, three (3) new remote radio heads (RRHs) and associated cabling are proposed to be added. One (1) RRH will be located behind the existing screen wall and one (1) RRH and one (1) surge arrestor will be located on the existing ballast frame located behind the existing faux chimney and out of view. One (1) RRH will be located on a frame near an existing RRH on the roof in a location that is out of public view.

The Facility's design is shown in detail in the Zoning Drawings attached as Exhibit 3 to this application letter and featured equipment is described in the manufacturers' specification sheets attached as Exhibit 4. The photographs and photosimulations (Exhibit 5) show the building rooftop and façade surfaces as currently existing from various locations in the neighborhood around the Property and as simulated with the Facility. The proposed replacement antenna is substantially similar to the existing antennas that appear in the photograph of the Facility and will painted and textured to match the existing façade. A structural analysis report for the Facility concluded that the building is capable of supporting AT&T's proposed equipment at or near the locations shown on the Zoning Drawings (Exhibit 7).

The Facility will continue to bring advanced wireless voice, text and data communications services to the surrounding areas. It will allow residents, professionals, government, businesses and

students to communicate locally, nationally and internationally from virtually any location within the coverage area. In the event of an emergency, the improved Facility will allow immediate contact with fire, rescue and other emergency personnel. The improved Facility will thus enhance public health, safety and welfare both in ordinary daily living and in the event of fire, accident, medical emergency, natural disaster or other dangers.

III. BACKGROUND

AT&T is licensed by the Federal Communications Commission to construct and operate a wireless telecommunications network in various markets throughout the country, including the Commonwealth of Massachusetts and the City of Cambridge. A copy of the AT&T's FCC license that covers the area of the proposed Facility is included with this application (*See*, Exhibit 2). AT&T is in the process of upgrading all existing wireless facilities to its telecommunications system to serve Massachusetts. One of the key design objectives of its systems is to provide adequate and reliable coverage. Such a system requires a grid of radio transmitting and receiving links located approximately .5 to 2 miles apart, depending on the location of existing and proposed installations in the surrounding area, the extent of use of AT&T's wireless services within the network, and the existing topography and obstructions. The radio transmitting and receiving facilities operate on a line-of-sight basis, requiring a clear path from the facility to the user on the ground. In urban settings, this dynamic requires the antennas to be located on buildings at heights and in locations where the signal is not obstructed or degraded by other buildings or by topographical features such as hills.

IV. RF COVERAGE DETERMINATION

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

Commented [BSG1]: Confirm - Prior submittals have stated 2100 not 2300.

Regarding the Gilbert Hall Facility, AT&T has determined that upgrading for the purposes of increased LTE coverage and capacity is necessary in order to deal with increasing demand on the network by users on Harvard campus and the surrounding area. Wireless communication services are no longer limited to providing mobility for voice services. They have evolved to offer a wider range of advanced services to include wide-area voice, data, internet, video, and broadband wireless data, among others, all in a mobile environment. In order to offer these competitive services to more residents, businesses and commuters traveling in and through Harvard campus, AT&T needs to

improve the quality of its coverage by filling in as many of the intended gaps as possible with signal strengths conducive to in-building and in-vehicle usage, and to provide the capacity and bandwidth requirements to meet the increasing demand on the network.

V. THE FEDERAL SPECTRUM ACT AND THE FCC ORDER

As set forth below, the proposed modifications constitute an Eligible Facilities Request pursuant to the federal Spectrum Act,[4] as further implemented by the FCC Order.[5]

Under the Spectrum Act, as further clarified by the FCC Order, the streamlined process for this Eligible Facilities Request is limited to non-discretionary review. Specifically, the FCC Order "adopt[s] an objective standard for determining when a proposed modification will 'substantially change the physical dimensions' of an existing tower or base station." *FCC Order*, ¶ 87. As stated in the FCC Order, Section 6409 "states without equivocation that the reviewing authority 'may not deny, and shall approve' any qualifying application. This directive leaves no room for a lengthy and discretionary approach to reviewing an application that meets the statutory criteria." *FCC Order*, ¶ 116.

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

> While we acknowledge that the IAC approach would provide municipalities with maximum flexibility to consider potential effects, we are concerned that it would invite lengthy review processes that conflict with Congress's intent. Indeed, some municipal commenters anticipate their review of covered requests under a subjective, case-by-case approach could take even longer than their review of collocations absent Section 6409(a). We also anticipate that disputes arising from a subjective approach would tend to require longer and more costly litigation to resolve given the more fact-intensive nature of the IAC's open-ended and context-specific approach. We find that an objective definition, by contrast, will provide

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

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

47 U.S.C. § 1455(a)(2).

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

> an appropriate balance between municipal flexibility and the rapid deployment of covered facilities. We find further support for this approach in State statutes that have implemented Section 6409(a), all of which establish objective standards.

FCC Order, ¶ 88.

As a result, the FCC Order implementing Section 6409 establishes clear and objective criteria for determining eligibility, limits the types of information that a municipality may require when processing an application for an eligible facilities request, and imposes a "deemed granted" remedy for failure to timely process and eligible facilities request.[6] The FCC Order also establishes significant limits on the information that can be required to be provided with an eligible facilities request and limits it to only that information "reasonably related to determining whether the request meets the requirements of this section. A State or local government may not require an applicant to submit any other documentation". 47 CFR 1.40001(c)(1).

Both before and after the FCC Order was issued, the Massachusetts Attorney General's Office provided clear guidance that an eligible request cannot be subjected to a discretionary special permit process. *See* Attorney General's letters to (i) Town of Mount Washington, dated June 12, 2014, p. 3 (ii) Town of Lynnfield, dated February 10, 2015, p. 3 (the "AG Lynnfield Letter") and (iii) Town of Montague, dated February 23, 2015, p. 2 (all attached hereto). As set forth in each letter [t]he Act's requirement that a local government 'may not deny, and shall approve, any eligible facilities request' means that a request for modification to an existing facility that does not substantially change the physical dimensions of the tower or base station must be approved. ***Such qualifying requests also cannot be subject to a discretionary special permit***.")(Emphasis added). In providing these opinions, the Attorney General's Office specifically opined that provisions in zoning ordinances that specifically required a special permit for modifications to existing facilities could not be applied to eligible facilities requests. While approving the Town of Lynnfield's Zoning Bylaw, the Attorney General stated that "Section 8.7.5.1 requires that PWSF may only be erected upon the grant of a special permit. The Town cannot apply this requirement to eligible facilities requests for modification to existing facilities that qualify for required approval under Section 6409 of the Act." *AG Lynnfield Letter*, p. 3.

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

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

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

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

VI. THE PROPOSED MODIFICATIONS ARE AN ELIGIBLE FACILITIES REQUEST

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

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

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

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

(i) Result in an increase in "the height of the structure by more than 10% or more than ten feet, whichever is greater" because one of the proposed replacement antennas will be façade mounted on the existing antenna mount and located below the roofline, and the remaining two replacement antennas will be located behind and below the existing screen wall e and therefore will not exceed 10 feet above the existing building;

(ii) Protrude from the edge of the edge of the building by more than six feet because AT&T's one of the proposed antennas will not be installed on the existing antenna mount and that does not protrude more than six feet from building façade and the

remaining two replacement antennas will be located behind the existing screening and therefore will not protrude from the building;

(iii) Involve the installation of more than the standard number of new equipment cabinets for the technology involved, but not to exceed four cabinets as no changes to the existing equipment cabinets are proposed;

(iv) Require any excavation or deployment outside the current site of the tower or base station because all antennas, equipment cabinets and related equipment will be installed entirely on and within the existing building; or

(v) Otherwise defeat the existing concealment elements of the tower or base station because the proposed replacement antennas will either be located on the existing antenna mount and painted and textured to match the façade of the existing building on which the existing and proposed antennas will be located or concealed behind the existing screening. As a result, the proposed modifications will continue to integrate the Facility into the existing architecture of the building. Further, one RRH will be located on a frame next to an existing RRH on the roof in a location that is out of public view and the remaining two proposed RRHs will be mounted and hidden behind the existing screen wall or screened from view by the existing faux chimney. Therefore, AT&T's proposed Facility will remain aesthetically consistent with the exterior finish of the building as well as maintain the concealment elements of the original design.

See FCC Order, §1.40001(b)(7)(i)-(v).

VII. COMPLIANCE WITH THE CAMBRIDGE ZONING ORDINANCE

In the alternative, AT&T respectfully requests the Board to grant a special permit for the proposed modifications to the existing Facility.[7]

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

AT&T's proposed modifications comply with Section 4.32(g)(1), and Section 4.40, Footnote 49 of the Ordinance as follows:[8]

Section 4.32(g)(1): Section 4.32(g)(1) of the Ordinance allows for the use of a "*[t]elephone exchange (including switching, relay, and transmission facilities serving mobile communications systems) and any towers or antennas accessory thereto."* Under the

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

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

Table of Use Regulations beginning at Section 4.30, AT&T's proposed use of the Facility as a transmission facility serving a mobile communications system is permitted by special permit in the C-2 zoning district *(see* the table at Section 4.32(g)(1)).

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

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

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

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

AT&T's Response: The design of the overall Facility, including the choice and placement of the replacement antennas and associated equipment on the exterior façade of the existing penthouse and inside a proposed stealth enclosures that matches the penthouse, minimizes the visual impact of the proposed Facility. This is because the antenna equipment on the exterior façade of the penthouse will be painted to match the color and texture of the penthouse exterior and will be minimally visible, the stealth enclosure will match the existing penthouse color and texture so will be in character with the existing roofscape, and the replacement antennas inside the stealth enclosures will be hidden entirely from view. The minimal visual impact of the Facility is shown in the photographs of the existing building and the photosimulations that superimpose the proposed Facility (*see,* Exhibit 5).

3. **The Board of Zoning Appeal shall consider "[w]here it is proposed to erect such a facility in any residential zoning district, the extent to which there is a demonstrated public need for the facility at the proposed locations, the existence of alternative, functionally suitable sites in nonresidential locations, the character of the prevailing uses in the area, and the prevalence of other existing mechanical systems and equipment carried on or above the roof of nearby structures. The Board of Zoning Appeal shall grant a special permit to erect such a facility in a residential zoning district only upon finding that nonresidential uses predominate in the vicinity of the proposed facility's location and that the telecommunications facility is not inconsistent with the character that does prevail in the surrounding neighborhood.**

In granting a special permit the Board of Zoning Appeal shall set forth in its decision under which circumstances or procedures, if any, the permittee shall be

allowed to replace and upgrade its equipment without the necessity of seeking a new special permit."

AT&T's Response: As demonstrated by the Radio Frequency Report and the associated coverage maps, AT&T has demonstrated an immediate and compelling need for the existing Facility to be upgraded at the Property in order to provide substantially improved indoor coverage to residents, businesses, students and faculty, and the general public in that area.[9] AT&T also seeks to substantially improve its ability to satisfy the ever-increasing need of its customers for data accessibility, navigation and use. This is especially critical in and around the area of North Cambridge which includes schools, businesses and residences. AT&T proposes to satisfy its RF coverage needs in the area by adding to the existing Facility the antennas and equipment necessary to provide the latest LTE wireless communications service technology. By modifying its existing Facility, AT&T obviates the need to construct an entirely new facility within this area of Cambridge in order to meet its wireless network coverage needs.

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

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

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

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

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

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

AT&T's Response: The proposed modifications to AT&T's existing Facility will not result in any change to the existing traffic on or near the Property. The Facility will continue to be

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

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

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

AT&T's Response: As described above and illustrated on the attached photographs and photosimulations (*see,* Exhibit 5) the proposed modifications to the existing Facility will result in a *de minimis* change in the appearance of the building because the equipment will be located on the existing antenna mount on the façade or concealed behind existing stealth enclosures.

As a result, the Facility as a whole either will be hidden from view or will visually blend with existing characteristics of the building and the surrounding neighborhood. Because the proposed installation will not generate any traffic, smoke, dust, heat or glare, discharge noxious substances, nor pollute waterways or groundwater, it will not adversely affect residential uses on neighboring streets. Conversely, the surrounding properties and general public will benefit from the potential to enjoy improved wireless communications services. Granting the special permit would not be a detriment to the public interest and is consistent with the Board's obligations pursuant to the Spectrum Act and FCC Order.

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

AT&T's Response: Because the proposed modifications to the existing Facility will not generate any traffic, smoke, dust, heat or glare, discharge noxious substances, nor pollute waterways or groundwater, no nuisance or hazard will be created to the detriment of the health, safety, or welfare of the occupants of the building or the residents of the City of Cambridge. To the contrary, the proposed Facility will benefit the City and promote the safety and welfare of its residents, businesses and drivers by providing reliable state-of-the-art digital wireless voice and data services that will improve the reliability of emergency communications with the police and fire departments by eliminating dropped or blocked calls due to inadequate signal strength or insufficient network capacity to handle call volume, particularly important during emergency situations. The Facility, as modified, will continue to comply with all federal, state and local safety requirements including the standards established by the FCC and Federal Aviation Administration (FAA). (*See* Exhibit 8 Maximum Permissible Exposure Study, Theoretical Report). Granting the special permit would not be a detriment to the public interest and is consistent with the Board's obligations pursuant to the Spectrum Act and FCC Order.

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

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

As noted above, the proposed modifications to the existing Facility directly accord with the purposes of the Ordinance because it will not generate any traffic, smoke, dust, heat or glare, discharge noxious substances, nor pollute waterways or groundwater. As the modifications to the Facility will improve the ability of residents, businesses, travelers and drivers in the area to access state-of-the-art wireless technology, the City's ability to provide emergency services will be improved, as will the economic development of the City as more people will be able to conduct commerce by virtue of a mobile platform. Because the proposed modifications to the existing Facility will be installed on an existing building that includes the Facility, and the proposed modifications are consistent with the existing concealment elements, the proposed modifications to the existing Facility are in consistent with the building's character and will not affect the value of the building or the natural resources of the City. Because the proposed modifications to the existing Facility are designed to be consistent with the existing concealment elements of the Facility and characteristics of the Property, the visual impact on the underlying and adjacent zoning districts will be *de minimis*. As a result, the proposed modifications to the existing Facility are consistent with the Ordinance's purpose to allow for less intrusive wireless telecommunications facilities in all districts (other than Open Space) including the applicable overlay districts, and the underlying Residence C-2 district. Granting the special permit would not be a detriment to the public interest and is consistent with the Board's obligations pursuant to the Spectrum Act and FCC Order.

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

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

[emphasis added]. For the reasons stated in AT&T's response to this Section 10.43(f) of the Zoning Ordinance and in its application generally, "on balance, the objectives of the city are being served" by the installation of the Facility at the Property so that granting the special permit would not be a detriment to the public interest and is consistent with the Board's obligations pursuant to the Spectrum Act and FCC Order.

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

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

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

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

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

19.33 The building and site design should mitigate adverse environmental impacts of a development upon its neighbors. Indicators include[10]

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

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

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

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

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

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

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

AT&T's Response: As shown in the photosimulations (*see,* Exhibit 5), the existing Facility as proposed to be modified herein, will continue to be visually consistent with the color and texture of the building, the concealment elements of the design of the Facility. As a result, AT&T's Facility is in keeping with the building's existing features without adversely affecting the building's overall design, massing, scale or character and are consistent with the Spectrum Act and FCC Order.

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

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

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

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

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

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

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

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

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

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

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

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

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

AT&T's Response: The proposed modifications to the existing Facility will not change the building's scale because antennas and equipment will blend with the color and textures of the building or be located behind an existing stealth enclosures (*see* Exhibit 3 and Exhibit 5). The existing Facility and proposed modifications are consistent with characteristics of the existing building design, maintain the existing concealment elements of the Facility and therefore minimize any visual impact from the Facility.

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

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

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

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

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

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

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

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

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

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

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

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

VI. SUMMARY

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

Best Regards,

David Ford
Authorized Agent to New Cingular Wireless PCS, LLC ("AT&T")

cc: Brian S. Grossman, Esq.

ATT RF EME Monitoring Report

USID# 104969
Site No. MA2268
Cambridge Linnean Street Gilbert Hall
64 Linnean Street
Cambridge, MA 02138
Middlesex County
42.38181; -71.12569 NAD83

EBI Project No. 6216004906
February 22, 2017

Prepared for:

AT&T Mobility, LLC
c/o Empire Telecom
16 Esquire Road
Billerica, Massachusetts 01821

Prepared by:

EBI Consulting
environmental | engineering | due diligence

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EXECUTIVE SUMMARY

Purpose of Report

EnviroBusiness Inc. (dba EBI Consulting) has been contracted by AT&T Mobility, LLC to conduct ground-level and rooftop radio frequency electromagnetic (RF-EME) monitoring for AT&T Site MA2268 located at 64 Linnean Street in Cambridge, MA 02138 to determine RF-EME exposure levels from wireless communications equipment installed at this site. As described in greater detail in Section 2.0 of this report, the Federal Communications Commissions (FCC) has developed Maximum Permissible Exposure (MPE) Limits for general population exposures and occupational exposures. This report summarizes the results of RF-EME monitoring in relation to relevant FCC RF-EME compliance standards for limiting human exposure to RF-EME fields.

EBI field personnel visited this site on February 15, 2017. This report contains a summary of the RF EME analysis for the site, including the following:

- Antenna Inventory
- Site Photographs
- Site Plan with antenna locations
- Graphic representation of on-site monitoring results

This document addresses the compliance of AT&T's transmitting facilities independently and in relation to all collocated facilities at the site.

Statement of Compliance

An installation is considered out of compliance with FCC regulations if, in an area that exceeds the FCC limits, that installation's contribution is greater than 5% of the applicable MPE and there are no mitigation measures in place.

Based on the FCC criteria, there are no measured areas on any accessible rooftop or ground-level walking/working surface related to the existing site conditions that exceed the FCC's occupational and general population exposure limits at this site.

AT&T Recommended Signage/Compliance Plan

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated October 28, 2014, requires that:

1. All sites must be analyzed for RF exposure compliance;
2. All sites must have that analysis documented; and
3. All sites must have any necessary signage and barriers installed.

Site compliance recommendations have been developed based upon protocols presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated October 28, 2014, additional guidance provided by AT&T, EBI's understanding of FCC and OSHA requirements, and common industry practice. Barrier locations have been identified (when required) based on guidance presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated October 28, 2014. The following signage and barriers are existing at this site:

- Green INFO 1 sign posted on the two access doors, on the stealth enclosure at Sector B, the barrier on the right side of Sector B1 and both barriers at B2 and B3, the barrier on the left side of Sector A, and both barriers at Sector C.
- Yellow CAUTION sign posted on all barriers and at the antenna mount at Sector C.
- Blue NOTICE sign posted on the equipment enclosure.
- RF Barriers on the left and right of Sector B2/B3 enclosure, on the left and right of Sector A (left side broken) and left and right of Sector C.

The signage existing at this site complies with AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document and therefore complies with FCC and OSHA requirements. Barriers are recommended on this site. More detailed information concerning site compliance recommendations is presented in Section 5.0 of this report.

1.0 SITE DESCRIPTION

This project involves nine (9) wireless telecommunication antennas in a concealment structure on a rooftop in Cambridge, MA 02138. There are three Sectors (A, B, and C) at the site, with three (3) antennas installed per sector. In each sector, it was assumed that antennas are transmitting in all frequency bands (700, 850, 1900, and 2300). The Sector A antennas are oriented 30° from true north. The Sector B antennas are oriented 145° from true north. The Sector C antennas are oriented 270° from true north. The bottoms of the antennas were measured to be 3 ft above the main roof level.

Access to this site is accomplished via one stairwell penthouse located on the main roof. Both roof access doors are locked and as such, the general public is not able to access the rooftop.

EBI conducted a site visit on February 15, 2017. At the time of the site visit, there were no other carriers observed at this site. Measurements were taken on the rooftop as well as at ground level in the surrounding area. Appendix B contains site photos taken on February 15, 2017 during the on-site survey. Appendix C presents a site plan indicating monitoring and antenna locations. Appendix E contains climate and site observations recorded during the site visit.

2.0 FEDERAL COMMUNICATIONS COMMISSION (FCC) REQUIREMENTS

The FCC has established Maximum Permissible Exposure (MPE) limits for human exposure to Radiofrequency Electromagnetic (RF-EME) energy fields, based on exposure limits recommended by the National Council on Radiation Protection and Measurements (NCRP) and, over a wide range of frequencies, the exposure limits developed by the Institute of Electrical and Electronics Engineers, Inc. (IEEE) and adopted by the American National Standards Institute (ANSI) to replace the 1982 ANSI guidelines. Limits for localized absorption are based on recommendations of both ANSI/IEEE and NCRP.

The FCC guidelines incorporate two separate tiers of exposure limits that are based upon occupational/controlled exposure limits (for workers) and general population/uncontrolled exposure limits for members of the general public.

Occupational/controlled exposure limits apply to situations in which persons are exposed as a consequence of their employment and in which those persons who are exposed have been made fully aware of the potential for exposure and can exercise control over their exposure. Occupational/ controlled exposure limits also apply where exposure is of a transient nature as a result of incidental passage through a location where exposure levels may be above general population/uncontrolled limits (see below), as long as the exposed person has been made fully aware of the potential for exposure and can exercise control over his or her exposure by leaving the area or by some other appropriate means.

General population/uncontrolled exposure limits apply to situations in which the general public may be exposed or in which persons who are exposed as a consequence of their employment may not be made fully aware of the potential for exposure or cannot exercise control over their exposure. Therefore, members of the general public would always be considered under this category when exposure is not employment-related, for example, in the case of a telecommunications tower that exposes persons in a nearby residential area.

Table 1 and Figure 1 (below), which are included within the FCC's OET Bulletin 65, summarize the MPE limits for RF emissions. These limits are designed to provide a substantial margin of safety. They vary by frequency to take into account the different types of equipment that may be in operation at a particular facility and are "time-averaged" limits to reflect different durations resulting from controlled and uncontrolled exposures.

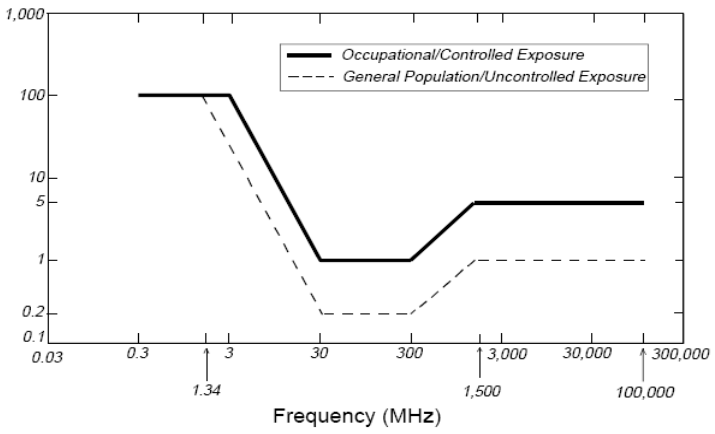
The FCC's MPEs are measured in terms of power (mW) over a unit surface area (cm^2). Known as the power density, the FCC has established an occupational MPE of 5 milliwatts per square centimeter (mW/cm^2) and an uncontrolled MPE of 1 mW/cm^2 for equipment operating in the 1900 MHz frequency range. For the AT&T equipment operating at 850 MHz, the FCC's occupational MPE is 2.83 mW/cm^2 and an uncontrolled MPE of 0.57 mW/cm^2. These limits are considered protective of these populations.

Table 1: Limits for Maximum Permissible Exposure (MPE)

(A) Limits for Occupational/Controlled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-3.0	614	1.63	(100)*	6
3.0-30	1842/f	4.89/f	($900/f^2$)*	6
30-300	61.4	0.163	1.0	6
300-1,500	--	--	f/300	6
1,500-100,000	--	--	5	6
(B) Limits for General Population/Uncontrolled Exposure				
Frequency Range (MHz)	**Electric Field Strength (E) (V/m)**	**Magnetic Field Strength (H) (A/m)**	**Power Density (S) (mW/cm^2)**	**Averaging Time $[E]^2$, $[H]^2$, or S (minutes)**
0.3-1.34	614	1.63	(100)*	30
1.34-30	824/f	2.19/f	($180/f^2$)*	30
30-300	27.5	0.073	0.2	30
300-1,500	--	--	f/1,500	30
1,500-100,000	--	--	1.0	30

f = Frequency in (MHz)
* Plane-wave equivalent power density

Figure 1. FCC Limits for Maximum Permissible Exposure (MPE)



Based on the above, the most restrictive thresholds for exposures of unlimited duration to RF energy for several personal wireless services are summarized below:

Personal Wireless Service	Approximate Frequency	Occupational MPE	Public MPE
Personal Communication (PCS)	1,950 MHz	5.00 mW/cm^2	1.00 mW/cm^2
Cellular Telephone	870 MHz	2.90 mW/cm^2	0.58 mW/cm^2
Specialized Mobile Radio	855 MHz	2.85 mW/cm^2	0.57 mW/cm^2
Most Restrictive Freq, Range	30-300 MHz	1.00 mW/cm^2	0.20 mW/cm^2

MPE limits are designed to provide a substantial margin of safety. These limits apply for continuous exposures and are intended to provide a prudent margin of safety for all persons, regardless of age, gender, size, or health.

Personal Communication (PCS) facilities used by AT&T in this area operate within a frequency range of 850-1900 MHz. Facilities typically consist of: 1) electronic transceivers (the radios or cabinets) connected to wired telephone lines; and 2) antennas that send the wireless signals created by the transceivers to be received by individual subscriber units (PCS telephones). Transceivers are typically connected to antennas by coaxial cables.

Because of the short wavelength of PCS services, the antennas require line-of-site paths for good propagation, and are typically installed above ground level. Antennas are constructed to concentrate energy towards the horizon, with as little energy as possible scattered towards the ground or the sky. This design, combined with the low power of PCS facilities, generally results in no possibility for exposure to approach Maximum Permissible Exposure (MPE) levels, with the exception of areas directly in front of the antennas.

3.0 AT&T RF EXPOSURE POLICY REQUIREMENTS

AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated October 28, 2014, requires that:

1. All sites must be analyzed for RF exposure compliance; and
2. All sites must have that analysis documented.

Pursuant to this guidance, an RF site survey has been completed for this site. The results of the site survey are summarized below in Section 4.0 and in Appendices A, B, and C.

4.0 SITE AND VICINITY SURVEY

EBI performed a ground and roof level RF-EME survey on February 15, 2017. The antenna inventory (based upon the site survey) and site photos taken from ground and roof level are presented in Appendices A and B, respectively.

Monitoring was performed using a Narda NBM 550 Electromagnetic Radiation Survey Meter, Serial #E-0564 with a Narda EA5091 Shaped Probe with a frequency range of 300 kHz - 50 GHz. The meter was last calibrated on October 4, 2016. This meter was programmed to measure the total power density for all electromagnetic radiation within the 300 kHz - 50 GHz frequency range and report the power density as a percent of the FCC's Controlled MPE. During this survey, no spatially averaged readings above 22.77% of the FCC's controlled MPE (113.85% of the uncontrolled MPE) were encountered on any roof surface. In addition, no spatially averaged readings greater than 0.7590% of the FCC's uncontrolled or general public MPE were encountered at ground level. A site plan depicting monitoring locations and measurements of power density can be found in Appendix C. Appendix E contains notes from the site survey.

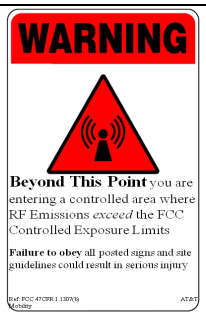
5.0 RECOMMENDED SIGNAGE/COMPLIANCE PLAN

Signs are the primary means for control of access to areas where RF exposure levels may potentially exceed the MPE. As presented in the AT&T guidance document, the signs must:

- Be posted at a conspicuous point;
- Be posted at the appropriate locations;
- Be readily visible; and
- Make the reader aware of the potential risks prior to entering the affected area.

The table below presents the signs that may be used for AT&T installations.

Informational Signs		Alerting Signs	
	**INFO 1**		**NOTICE**
	**INFO 2**		**CAUTION - ROOFTOP**
	**INFO 3**		**CAUTION - TOWER**

	**INFO 4**
	**WARNING**

Based upon protocols presented in AT&T's RF Exposure: Responsibilities, Procedures & Guidelines document, dated October 28, 2014, and additional guidance provided by AT&T, the following signage and barriers are existing at this site:

- Green INFO 1 sign posted on the two access doors, on the stealth enclosure at Sector B, the barrier on the right side of Sector B1 and both barriers at B2 and B3, the barrier on the left side of Sector A, and both barriers at Sector C.
- Yellow CAUTION sign posted on all barriers and at the antenna mount at Sector C.
- Blue NOTICE sign posted on the equipment enclosure.
- RF Barriers on the left and right of Sector B2/B3 enclosure, on the left and right of Sector A (left side broken) and left and right of Sector C.

Barriers should be installed to block access to the front of all AT&T antennas. Barriers should be constructed of weather-resistant plastic or wood fencing. Barriers may consist of railing, rope, chain, or weather-resistant plastic if no other types are permitted or are feasible. Painted stripes should only be used as a last resort and only in regions where there is little chance of snowfall. If painted stripes are selected as barriers, it is recommended that the stripes and signage be illuminated.

6.0 SUMMARY AND CONCLUSIONS

EBI has prepared this Radiofrequency Emissions Compliance Report for telecommunications equipment installed at the site located at 64 Linnean Street in Cambridge, MA 02138.

Based on the FCC criteria, there are no measured areas on any accessible rooftop or ground-level walking/working surface related to the existing site conditions that exceed the FCC's occupational and general population exposure limits at this site.

Signage and barriers are existing at the site as presented in Section 5.0. Posting of the signage and barriers brings the site into compliance with FCC rules and regulations and AT&T's corporate RF safety policies.

7.0 LIMITATIONS

This report was prepared for the use of AT&T Mobility, LLC. It was performed in accordance with generally accepted practices of other consultants undertaking similar studies at the same time and in the same locale under like circumstances. The conclusions provided by EBI are based solely on the information collected during the site visit and provided by the client. The observations in this report are valid on the date of the investigation. Any additional information that becomes available concerning the site should be provided to EBI so that our conclusions may be revised and modified, if necessary. This report has been prepared in accordance with Standard Conditions for Engagement and authorized proposal, both of which are integral parts of this report. No other warranty, expressed or implied, is made.

Appendix A

Antenna Inventory

Antenna Number	Operator	Antenna Type	TX Freq (MHz)	Model[1]	Azimuth (deg.)	Length (ft)	Horizontal Beamwidth (Deg.)	Z
ATT A1	AT&T	Panel	824-960/1710-2180	Kathrein/742264	30	5	N/A	3
ATT A2	AT&T	Panel	824-960/1710-2180	Kathrein/742264	30	5	N/A	3
ATT A3	AT&T	Panel	698-787/824-894/1710-2360	CCI/OPA-65R-LCUU-H4	30	5	N/A	3
ATT B1	AT&T	Panel	824-960/1710-2180	Kathrein/742264	145	5	N/A	3
ATT B2	AT&T	Panel	824-960/1710-2180	Kathrein/742264	145	5	N/A	3
ATT B3	AT&T	Panel	698-787/824-894/1710-2360	CCI/OPA-65R-LCUU-H4	145	5	N/A	3
ATT C1	AT&T	Panel	824-960/1710-2180	Kathrein/742264	270	5	N/A	3
ATT C2	AT&T	Panel	824-960/1710-2180	Kathrein/742264	270	5	N/A	3
ATT C3	AT&T	Panel	698-787/824-894/1710-2360	CCI/OPA-65R-LCUU-H4	270	5	N/A	3

1. The antenna model could not be verified in the field. Model numbers in this table are taken from the RF data sheet supplied by AT&T.

Appendix B

Photographs

1.	Access Door 1 with Info1 to Gilbert Hall

2.	Access Door 2 with Info1 to Gilbert Hall

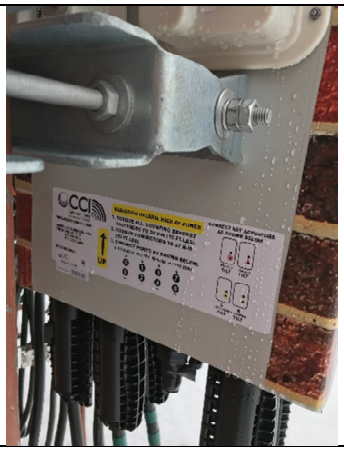
3.	Broken barrier at Sector C

4.	Fixed barrier at Sector C

5.	Roof overview looking east

6.	Barrier on right side of Sector C

7.	Barrier on right side of Sector B



8.	New antenna at Sector C

9.	Sector C, right view

10.	Roof overview, south penthouse elevation

11.	Barrier on left side of Sector B

12.	Barrier on right side of penthouse

13.	Broken barrier on left side of Sector A

14.	View of AT&T equipment, left side

15.	View of AT&T equipment and Sector A, right side

16.	Sector A antennas (left 3) and Sector B (right 1)

17.	Sector A and B LTE 2C antennas

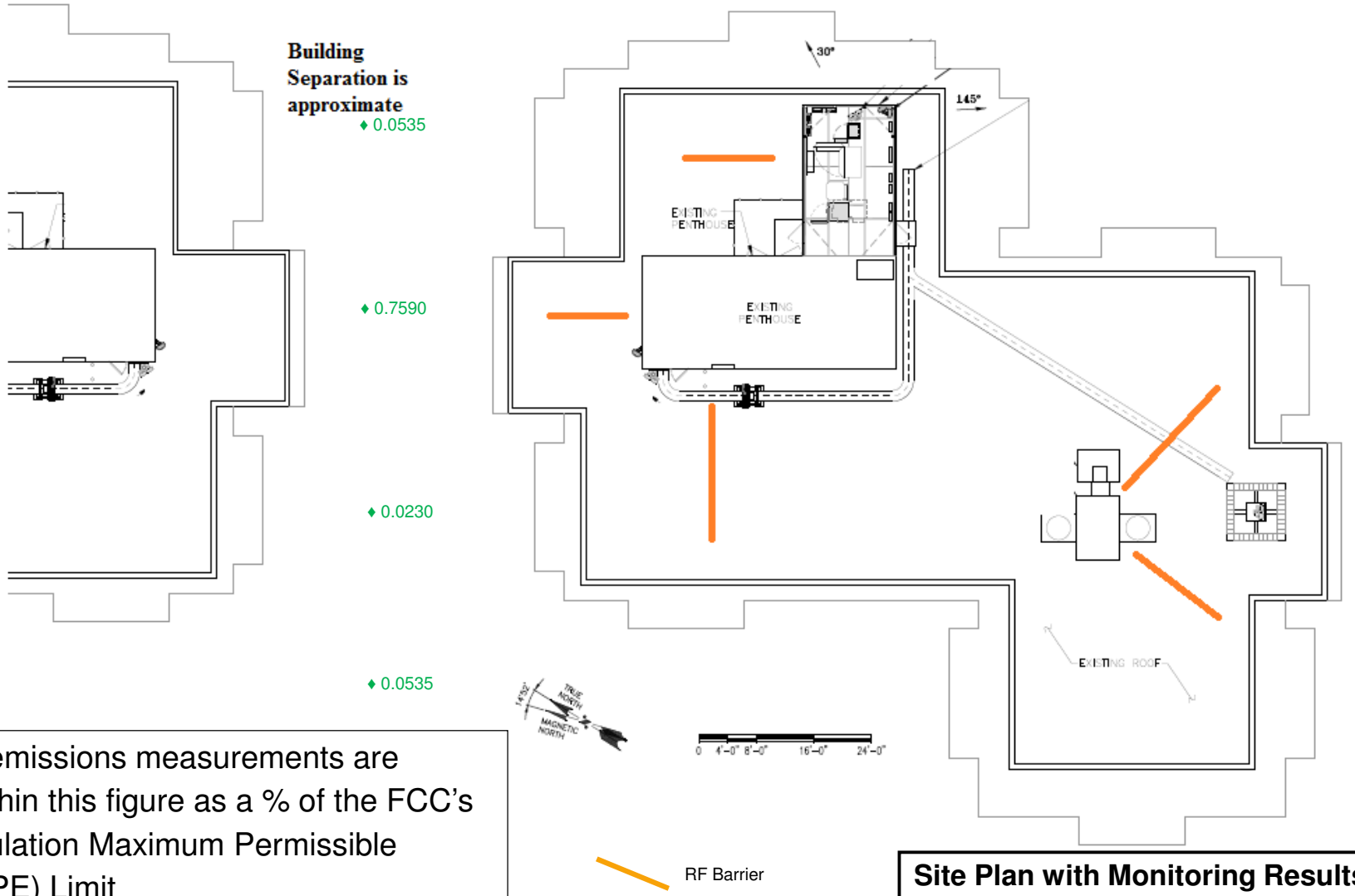
18.	Notice sign on entry to AT&T equipment enclosure

19.	View from Bingham Hall to Gilbert Hall. Building roofs at same elevation.

20.	Site as viewed from ground

Appendix C

Site Plan with Monitoring Locations



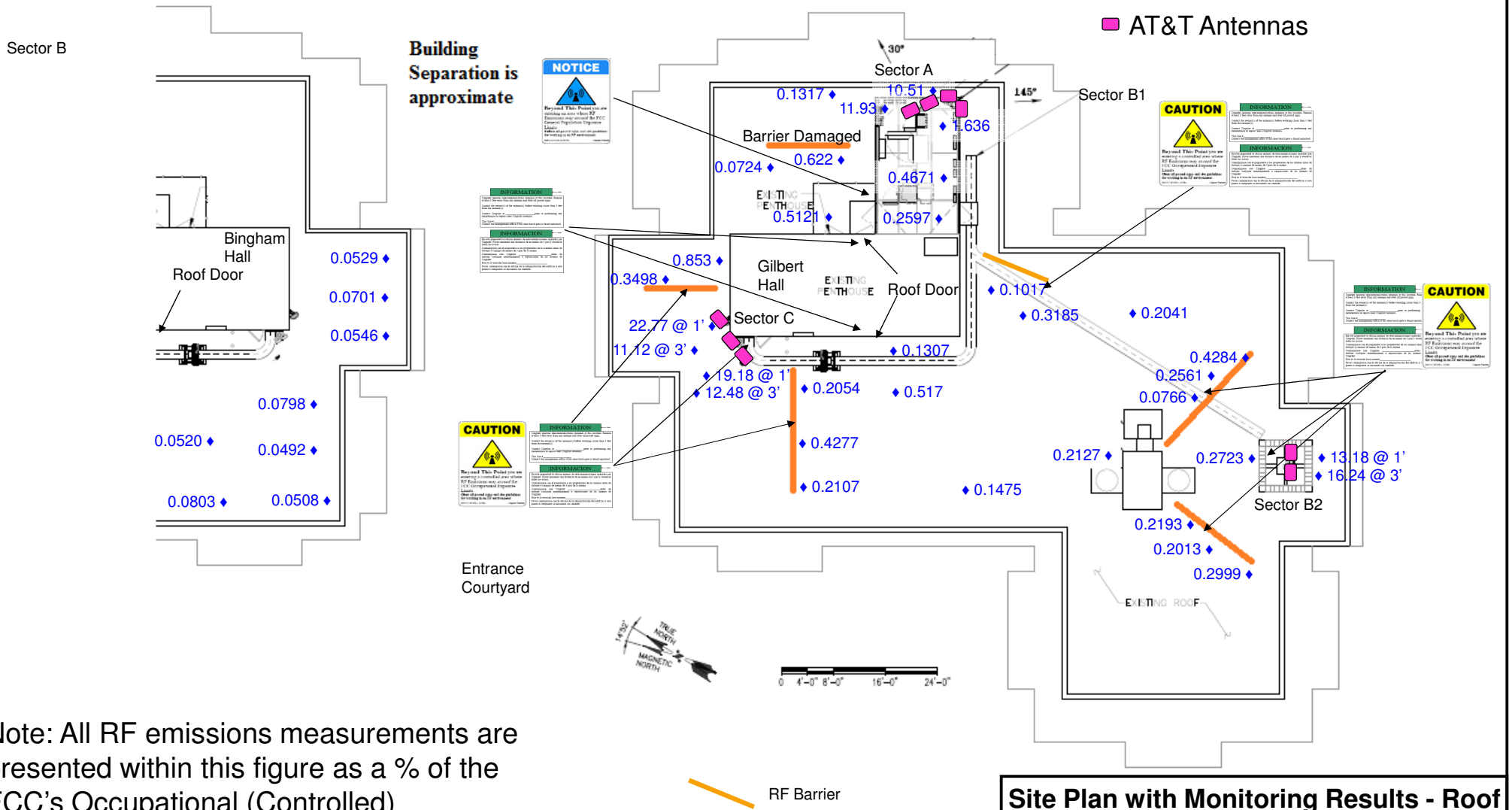
Note: All RF emissions measurements are presented within this figure as a % of the FCC's General Population Maximum Permissible Exposure (MPE) Limit

(Example: 1.0% measurement is 100x below the FCC's general population MPE limit)

Site Plan with Monitoring Results - Ground

Facility Operator: AT&T Mobility
AT&T Site Number: MA2268
USID Number: 104969
Site Name: Cambridge Linnaen Street
Site Visit Date: 02-15-17

EBI Consulting
environmental | engineering | due diligence



Note: All RF emissions measurements are presented within this figure as a % of the FCC's Occupational (Controlled) Maximum Permissible Exposure (MPE) Limit
(Example: 1.0% measurement is 100x below the FCC's occupational MPE limit)

Site Plan with Monitoring Results - Roof

Facility Operator: AT&T Mobility
AT&T Site Number: MA2268
USID Number: 104969
Site Name: Cambridge Linnaen Street
Site Visit Date: 02-15-17

EBI Consulting
environmental | engineering | due diligence

Appendix D

Certifications

Field Personnel Certification

I, Peter Smithy, state that:

- I am an employee of Envirobusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
- I am familiar with the FCC rules and regulations as well as OSHA regulations both in general and as they apply to RF-EME exposure.
- I have been trained in the proper use of the RF-EME measurement equipment, and have successfully completed EBI training in the policies and procedures for site survey protocols.
- All information collected during the site survey and contained in this report is true and accurate to the best of my knowledge and based on the data gathered.

Preparer Certification

I, Peter Smithy, state that:

- I am an employee of Envirobusiness Inc. (d/b/a EBI Consulting), which provides RF-EME safety and compliance services to the wireless communications industry.
- I have successfully completed RF-EME safety training, and I am aware of the potential hazards from RF-EME and would be classified "occupational" under the FCC regulations.
- I am familiar with the FCC rules and regulations as well as OSHA regulations both in general and as they apply to RF-EME exposure.
- I have been trained in on the procedures outlined in AT&T's RF Exposure Policy guidance (dated 3/31/09) and on RF-EME modeling using RoofView® modeling software.
- I have reviewed the data collected during the site survey and provided by the client and incorporated it into this Site Compliance Report such that the information contained in this report is true and accurate to the best of my knowledge.

Appendix E

Site Survey Data

Surveyor Name:	**Peter Smithy**	Site Visit Date	February 15, 2017

Site Information	
Cambridge Linnean Street Gilbert Hall 64 Linnean Street Cambridge, MA 02138	Middlesex County **Site Coordinates (NAD83):** 42.381771, -71.125990

MONITOR INFORMATION **PROBE INFORMATION**

Monitor Model #	NBM 550	Probe Model #	EA5091
Monitor Serial #	E-0564	Probe Serial #	1052
Calibration Date	10/04/16	Calibration Date	10/04/16
Next Recommended Calibration Date	10/04/18	Next Recommended Calibration Date	10/04/18

CLIMATE INFORMATION

Temperature (°F)	35
Sunny/Overcast/Cloudy	Overcast
Windy/Mild Breeze/No Wind	NA
Rainy/Drizzle/Foggy/Snowy	NA
Other Noteworthy weather factors that might influence readings	NA

ACCESS INFORMATION

Type of facility:	Apartment Building Rooftop
Contact Information:	Harvard University
Property Owner and Contact Number	Maintenance
M-RFSC Name	N/A
Who manages Access (e.g. security, landlord, no one)	Maintenance
How is access managed? (locks, sign-in, etc)	Lock
Ease of access, in general (e.g. ease of breaching any access physical controls)	Difficult

CAMBRIDGE HISTORICAL COMMISSION

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

Jurisdiction Advice

To the Owner of Property at **64 Linnaean Street (Gilbert Hall)**

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

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

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

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

CHC staff initials SLB Date February 1, 2018

Received by Uploaded to Energov Date February 1, 2018
Relationship to project BZA 15484-2018

cc: Applicant
Inspectional Services Commissioner

Demolition Delay Ordinance and Application Information

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

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

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

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

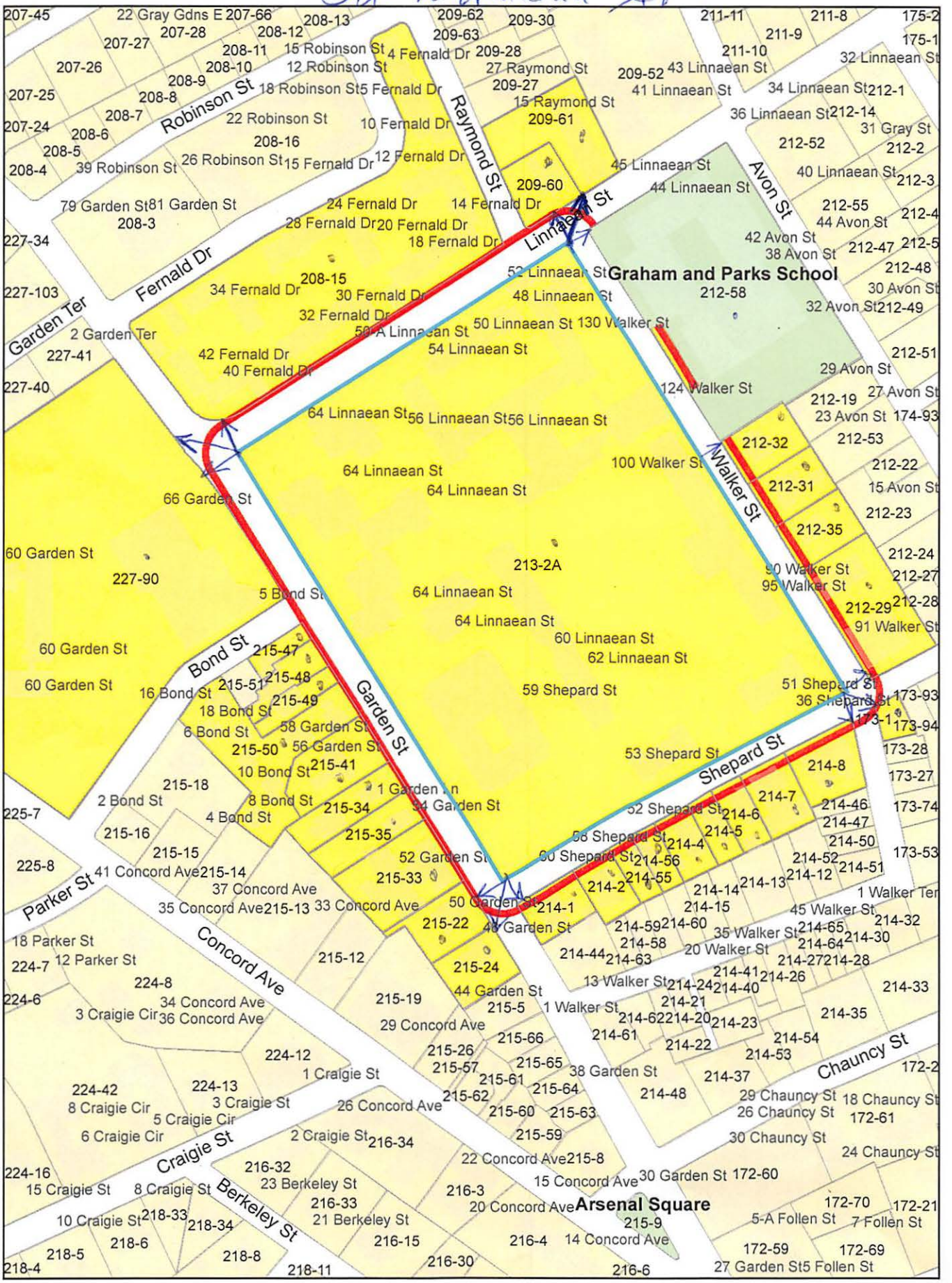
Demolition permit applications can be obtained from the Inspectional Services Department. The completed application should be submitted to the Historical Commission, where the staff will review the application. If the Executive Director of the Historical Commission makes an initial determination that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

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

July 2003

Cambridge Historical Commission
831 Massachusetts Ave., 2nd Fl.
Cambridge, MA 02139
Ph: 617/349-4683 or TTY: 617/349-6112
http://www.cambridgema.gov/Historic

52-70 Linnaean St.



52-70 Linnaean St

Petitioner

1054

173-1
OGDEN, VIRGINIA L.
TR. THE VIRGINIA L. OGDEN FAMILY TR.
36 SHEPARD ST
CAMBRIDGE, MA 02138

208-15 / 212-29-31
PRESIDENT & FELLOWS OF HARVARD COLLEGE
C/O HARVARD RESL ESTATE INC
HOLYOKE CENTER RM #1000
1350 MASSACHUSETTS AV
CAMBRIDGE, MA 02138

CENTERLINE COMMUNICATIONS
C/O MICHAEL GENTILE
95 RYAN DRIVE. SUITE 1
RAYNHAM, MA 02767

209-61
CAMBRIDGE HOUSING AUTHORITY
675 MASSACHUSETTS AVE
CAMBRIDGE, MA 02139

209-60
VALIMAHOMED, SALIM A. & MAURISSE T. GRAY
49 LINNAEAN ST
CAMBRIDGE, MA 02138

212-58
CITY OF CAMBRIDGE
C/O LOUIS DEPASQUALE
CITY MANAGER

212-32-35
PRESIDENT & FELLOWS OF HARVARD COLLEGE
C/O HARVARD REAL ESTATE SERVICES
1350 MASS AVENUE
HOLYOKE CTR., ROOM 1017
CAMBRIDGE, MA 02138

212-58
CITY OF CAMBRIDGE
C/O NANCY GLOWA
CITY SOLICITOR

212-58
CAMBRIDGE CITY OF SCHOOL DEPT.
159 THORNDIKE ST
CAMBRIDGE, MA 02141

213-2A /227-90
PRESIDENT & FELLOWS OF HARVARD COLLEGE
C/O HARVARD REAL ESTATE, INC.
HOLYOKE CENTER,ROOM 1000
1350 MASSACHUSETTS AVE
CAMBRIDGE, MA 02138

214-1
FIELD, SUSAN G.
47 GARDEN ST. UNIT#1
CAMBRIDGE, MA 02138

214-1
GRILICHES, EVE
182 BOLTON ROAD
HARVARD, MA 01451

214-2
POOL JEREMY D. & GAIL POOL
60 SHEPARD STREET
CAMBRIDGE, MA 02138

214-4
KABAWAT, SALIM & ANN O'CONNELL
52 SHEPARD ST.
CAMBRIDGE, MA 02138

214-5
PAVLO, ETHAN H.
50 SHEPARD ST
CAMBRIDGE, MA 02138

214-6
RADCLIFFE COLLEGE
C/O DANIEL B. GREEN & SUSAN C. SKELLEY
48 SHEPARD ST
CAMBRIDGE, MA 02138

214-7
ROSEN, DAVID & LAURA HARRINGTON
505 WASHINGTON ST.
GLOUCESTER, MA 01930

214-7
PILBEAM, DAVID R. & WILLIAM S. STRONG,
TRS. UNDER THE 46 SHEPARD STREET #2,ETAL
C/O HWEI CHANG
46 SHEPARD ST #4
CAMBRIDGE, MA 02138

214-7
ATASOYLU, AYSE A.
46 SHEPARD ST. UNIT#3
CAMBRIDGE, MA 02138

214-7
CHANG, HWEI LI
46 SHEPARD ST., #4
CAMBRIDGE, MA 02138

214-7
MUSIEK, JUSTIN P.
46 SHEPARD ST #B
CAMBRIDGE, MA 02138

214-7
SMITH, ELLEN ROSS
46 SHEPARD ST., UNIT #21
CAMBRIDGE, MA 02138

214-7
WALSH, ANDREW H. & CATHERINE B. WALSH
46 SHEPARD ST. UNIT#22
CAMBRIDGE, MA 02139

214-7
HOLMES, GREGORY L. & COLLEEN A. HOLMES
80 BROOKES AVENUE
BURLINGTON, VT 05401

214-7
YIP, CHI-MAN
46 SHEPARD ST 24-25
CAMBRIDGE, MA 02138

215-48
HOUGHTON, BRUCE E. & ABIGAIL J. HOUGHTON
C/O HOUGHTON CHEMICAL
52 CAMBRIDGE ST.
BOSTON, MA 02134

214-7
SHERMAN, MICHAEL
46 SHEPARD STREET UNIT #31
CAMBRIDGE, MA 02138

214-7
KANOFF, RONNI & JOE D. COHEN
C/O NADIA COHER
4 CHAUNCY TERRACE., #4
CAMBRIDGE, MA 02138

214-7
STEFANESCU, ADA & IRINA STEFANESCU
46 SHEPARD ST., #33
CAMBRIDGE, MA 02138

214-7
PULVER, DAVID,
TRUSTEE THE DAVID PULVER TRUST
2711 RHONE DR.
PALM BEACH GARDENS, FL 33410

52-70 Linnaean St

294

214-7
HOROWITZ, HELEN L.
C/O SCHOENLE, RAPHAEL
46 SHEPARD ST., #35
CAMBRIDGE, MA 02138

214-7
YU, WANLI
46 SHEPARD ST., #41
CAMBRIDGE, MA 02139

214-7
REDDY, POLAM S. & SHUKANTH M. REDDY
46 SHEPARD ST #42
CAMBRIDGE, MA 02138

214-7
UNTERBERG, THOMAS E.
46 SHEPARD ST., #43
CAMBRIDGE, MA 02138

214-7
SCHOENLE, RAPHAEL
46 SHEPARD ST. UNIT#44
CAMBRIDGE, MA 02138

214-7
WILSON, BRYAN P. & SYLVIA E. WILSON
TRUSTEE OF DAVIS D-A8 TR.
28 MUZZY ST
LEXINGTON, MA 02421

214-8
TOULOPOULOS, JOHN V. &
PAULINE TOULOPOULOS, TRS.
OF TOULOPOULOS REALTY TRUST
931 MASS AVE.
ARLINGTON, MA 02474

214-55
GRAY, NICHOLAS & GERALYN T. BURKE
TRS THE R&G REALTY TRUST
58 SHEPARD ST
CAMBRIDGE, MA 02138

214-56
WELCH, CHARLES A. & STEPHANIE BERK
56 SHEPARD ST.
CAMBRIDGE, MA 02138

215-22
PETERS, MARY LINTON & STEPHEN PETERS
50-1 GARDEN ST
CAMBRIDGE, MA 02138

215-22
TIRMAN, JOHN & NIKE Z. TIRMAN
50 GARDEN ST. UNIT#2
CAMBRIDGE, MA 02138

215-24
YIHE PATSY'S CORPORATION
122A E. FOOTHILL BLVD#4
ARCADIA , CA 91006

215-33
SOTO, OSCAR & TERESA GOMEZ-ISLA
52 GARDEN ST., # 1
CAMBRIDGE, MA 02138

215-33
TAM, JOHN CHI ON & ROXANA YU FUNG IO
5 PRESIDENTIAL DRIVE
SOUTHBOROUGH, MA 01772

215-33
CONDIT, WALTER L. & KATHLEEN CAPLE
52 GARDEN ST., UNIT #3
CAMBRIDGE, MA 02138

215-33
PITTMAN, ASHLEY G.
47 COGSWELL AVENUE, #19
CAMBRIDGE, MA 02140

215-33
PRESTON, IOANA
52 GARDEN ST. UNIT#5
CAMBRIDGE, MA 02138

215-33
COVELLO, TIMOTHY J. & DIANE F. COVELLO
52 GARDEN ST., #6
CAMBRIDGE, MA 02138

215-33
KOPESKY, ROBERT & DOMINICA L.KOPESKY
52 GARDEN ST.,UNIT #7
CAMBRIDGE, MA 02139

215-33
KARLS, ANDREA B.
52 GARDEN ST. UNIT#8
CAMBRIDGE, MA 02138

215-33
SCHOFIELD-BODT, DANIEL A.
52 GARDEN ST., #9
CAMBRIDGE, MA 02138

215-33
SAPP, CHRISTOPHER & KATHERINE SAPP &
CITY OF CAMBRIDGE TAX TITLE
52 GARDEN ST. UNIT 10
CAMBRIDGE, MA 02138

215-33
VAN DAM, STEVEN
97 BURLINGTON ST.
LEXINGTON, MA 02420

215-33
GETTELMAN, DEBRA L.
61 LARCHWOOD DR
CAMBRIDGE, MA 02138

215-33
FAGAN, ROBIN E.
P.O. BOX 1392
SACRAMENTO, CA 95812

215-33
MOLINA, LIZA D.
52 GARDEN ST.,UNIT #23
CAMBRIDGE, MA 02138

215-33
FARMER, ELIZABETH C.
81 QUEBEC ST. APT#5
PORTLAND, ME 04101

215-33
HE, PING & YUNYAN CHENG
26 CHATHAM ST., #3
CAMBRIDGE, MA 02139

215-33
CARRIGO, DANIELLE
52 GARDEN ST., UNIT #26
CAMBRIDGE, MA 02138

215-33
GRINMAN, VLADIMIR & YELENA FREYZON
20 KENSINGTON CIRCLE
CHESTNUT HILL, MA 02467

52-70 Linnaean St.

394

215-33
ROBERTS, JOHN C. & CARLA MATTOS ROBERTS
52 GARDEN ST. UNIT#28
CAMBRIDGE, MA 02138

215-33
BRIGHT, JOHN D. & JUDITH A. COPPOLA
52 GARDEN ST. UNIT#29
CAMBRIDGE, MA 02139

215-33
MAURER, VIRGINIA M. & SZEZESNY J. KAMINSKI
52 GARDEN ST., UNIT #30
CAMBRIDGE, MA 02138

215-33
MEEK, THOMAS B. III & CATHERINE YOON
28 HURLBUT ST., #4
CAMBRIDGE, MA 02138

215-33
PRAGER, ELLIOT & PHYLLIS PRAGER
TRUSTEE OF PRAGER FAMILY TRUST.
52 GARDEN ST. UNIT#32
CAMBRIDGE, MA 02138

215-33
KUSHELL, DESIREE & ELLIOT KUSHELL,
TRS THE KUSHELL FAM REV TRUST
52 GARDEN ST., #33
CAMBRIDGE, MA 02138

215-33
ALLEYNE, BRIAN D. & SMITA BAKSHI
24652 HUTCHINSON RD
LOS GOTOS, CA 95033

215-33
ERULKAR, ANNABEL
C/O THE POPULATION COUNCIL
1 DAG HAMMARSKJOLD PLAZA
NEW YORK, NY 10017

215-33
GUO, XIALING
52 GARDEN ST.M UNIT #36
CAMBRIDGE, MA 02138

215-33
DEMARTINO, PATRICIA OSMOND
52 GARDEN ST., UNIT #37
CAMBRIDGE, MA 02138

215-33
NAKHOSTEEN, JOSEPH B.
52 GARDEN ST. UNIT#38
CAMBRIDGE, MA 02138

215-33
JOHNSTON, CAROLYN
52 GARDEN ST., UNIT#39
CAMBRIDGE, MA 02138

215-33
BREW, JUDY
10 WALNUT PARK
NEWTON, MA 02458

215-33
HEMOND, BRIAN D.T.
52 GARDEN ST., #41
CAMBRIDGE, MA 02138

215-33
REED, SUSAN E.
52 GARDEN ST., UNIT #42
CAMBRIDGE, MA 02138

215-33
MANCUSO, BRIAN
52 GARDEN ST. UNIT#43
CAMBRIDGE, MA 02138

215-33
KANDA, SHUN , KEIKO KANDA & MISAO KANDA
146 UPLAND RD
CAMBRIDGE, MA 02139

215-33
MILLSTEIN, CHARLES B.
52 GARDEN ST., UNIT #45
CAMBRIDGE, MA 02138

215-33
AHERN, MAUREEN E.,
TRS. MAUREEN E. AHERN REV TRUST
97 WALDEN ST.
CAMBRIDGE, MA 02140

215-33
SUNFLOWER X., LLC
54 ELLERY ST., #2
CAMBRIDGE, MA 02138

215-33
MAUZY, MARTHA H.
52 GARDEN ST. UNIT#48
CAMBRIDGE, MA 02138

215-33
GREWAL, DAVID S. & DANIELA L. CAMMACK
52 GARDEN STREET #49
CAMBRIDGE, MA 02138

215-33
ROBINSON, ARTHUR L. &
MARY ANN B. ROBINSON
52 GARDEN ST. UNIT#B1
CAMBRIDGE, MA 02138

215-33
YAMASHIRO, JASON LUSTIG &
MIYOSHI YAMASHIRO
52 GARDEN ST., UNIT #B2
CAMBRIDGE, MA 02138

215-34
MELVOIN, RICHARD I. &
BARBARA GLASS MELVOIN
1 GARDEN LN., #1
CAMBRIDGE, MA 02138

215-34
NEVILLE, JAMES P.,
TR.THE JAMES P. NEVILLE 2016 FAM TR
2 GARDEN LN., #2
CAMBRIDGE, MA 02138

215-34
COLEMAN, VIRGINIA & EDWARD P. LAWRENCE
TRS OF THE FATEMEH KHOSROSHAHI TRUST
3 GARDEN LN
CAMBRIDGE, MA 02138

215-35
MCCANNON, CHARLES F. JR &
CAROLYN MCCANNON
54 GARDEN ST
CAMBRIDGE, MA 02138

215-41
LITTLE, HOWARD FORBES &
JANE SNEDDON LITTLE
56 GARDEN ST
CAMBRIDGE, MA 02138

215-47
ROTHSCHILD, JACQUELINE D.
20D BOND ST
CAMBRIDGE, MA 02138

52-70 Linnaean St

4 of 4

215-49
LADJEVARDI, GOLNAZ A,
TRS THE ALPHA-ALPHA TRUST RESTATEMENT
58A GARDEN ST
CAMBRIDGE, MA 02139

215-50
FINKE, JAMES H.E., T
RUSTEE THE H.E. JAMES FINKE REV TRUST
58 GARDEN ST., #H2
CAMBRIDGE, MA 02138

215-50
VIRGINIA F. COLEMAN & WAYNE DAVIS
TRUSTEE OF THE ANNE M. GLOVER TR
C/O ROPES & GRAY
800 BOYLSTON STREET
BOSTON, MA 02199

215-50
CARTER, SHIRLEY CHALMERS
58 G GARDEN ST
CAMBRIDGE, MA 02138

215-50
HANSEN, THEODORE L. &
SALLY HOWES HANSEN
14 BOND ST., UNIT I
CAMBRIDGE, MA 02138

215-50
HINARD, JOSEPHINE M.
55 RAYMOND ST.
CAMBRIDGE, MA 02140

215-50
QUINN, THOMAS M.
10 BOND STREET, UNIT K
CAMBRIDGE, MA 02138

215-50
TRAVERS, JEFFREY R. & EVA F. TRAVERS
8 BOND ST
CAMBRIDGE, MA 02138

215-50
MCCLENNEN, PERSIS
16 BOND ST., #M
CAMBRIDGE, MA 02139

215-50
PORCIELLO, VALERIE J., &
JENNIFER A. MUSUMANO
18 BOND ST
CAMBRIDGE, MA 02138

215-50
ROWELL, ALLISON E.
58 GARDEN ST #H-1
CAMBRIDGE, MA 02138

PROJECT INFORMATION

SCOPE OF WORK:	TELECOMMUNICATIONS FACILITY UPGRADE (LTE 3C): BASED OFF OF RFDS DATED: 8/28/15 PTN: 2101850232 ROOFTOP: REMOVE: (3) GSM/UMTS ANTENNAS INSTALL: (3) LTE 3C ANTENNAS, (3) RRH'S, (2) BALLAST FRAMES, (1) SURGE ARRESTOR, (2) DC POWER CABLES & (1) FIBER RUN EXISTING TO REMAIN: (6) ANTENNAS, (6) RRH'S, (3) A2 MODULES, (6) TWIN TMA'S, (3) SURGE ARRESTORS, (6) DC POWER CABLES & (3) FIBER RUNS EQUIPMENT AREA: INSTALL: (1) LTE DUS REMOVE: (20) BATTERIES
PROPERTY OWNER:	PRESIDENT AND FELLOWS OF HARVARD COLLEGE C/O HARVARD REALESTATE, INC. HOLYOKE CENTER, ROOM 1000 1350 MASSACHUSETTS AVE CAMBRIDGE, MA 02138
SITE ADDRESS:	64 LINNAEAN STREET CAMBRIDGE, MA 02138
LATITUDE: LONGITUDE:	42.38181° N 42° 22' 54.5" N 71.12569° W 71° 07' 32.4" W
TYPE OF SITE:	ROOF TOP/ INDOOR EQUIPMENT
OVERALL BUILDING HEIGHT: RAD CENTER:	58'-0"± 54'-0"±

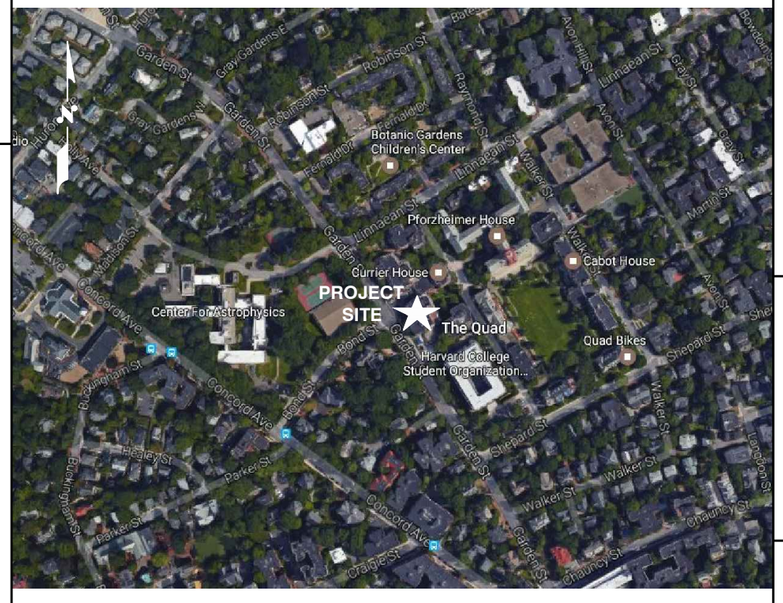
SITE NUMBER: MA2268
SITE NAME: CAMBRIDGE LINNAEAN STREET GILBERT HALL
PROJECT: LTE 3C UPGRADE

DRAWING INDEX

VICINITY MAP

DIRECTIONS TO SITE:

FROM 550 COCHITUATE RD. FRAMINGHAM, HEAD WEST ON COCHITUATE RD TOWARD BURR ST. TAKE THE 1ST RIGHT ONTO BURR ST. MAKE A U-TURN AT LEGGAT MCCALL CONN. TURN LEFT AT COCHITUATE ROAD. TAKE THE RAMP TO I-90 E/MASSPIKE W/SPRINGFIELD/BOSTON. TOLL ROAD. KEEP RIGHT AT THE FORK TO CONTINUE TOWARD I-90 E AND MERGE ONTO I-90 E. PARTIAL TOLL ROAD. TAKE EXIT 18 ON THE LEFT TOWARD BRIGHTON/CAMBRIDGE. TOLL ROAD. KEEP RIGHT AT THE FORK TO CONTINUE TOWARD CAMBRIDGE ST AND MERGE ONTO CAMBRIDGE ST. PARTIAL TOLL ROAD. TURN LEFT AT MASSACHUSETTS 3A N. TURN RIGHT AT MEMORIAL DR. TAKE THE 1ST RIGHT ONTO MT AUBURN ST. TAKE THE 1ST LEFT ONTO ASH ST. CONTINUE ONTO MASON ST. TURN LEFT AT GARDEN ST. ARRIVE AT 64 LINNAEAN ST (GILBERT HALL) ON THE RIGHT.



GENERAL NOTES

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

72 HOURS

BEFORE YOU DIG

CALL TOLL FREE 888-DIG-SAFE OR DIAL 811

UNDERGROUND SERVICE ALERT

Hudson Design Group LLC
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SITE NUMBER: MA2268
SITE NAME: CAMBRIDGE LINNAEAN ST GILBERT HALL
64 LINNAEAN STREET
CAMBRIDGE, MA 02138
MIDDLESEX COUNTY

550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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SCALE: AS SHOWN DESIGNED BY: HC DRAWN BY: JR

COMMONWEALTH OF MASSACHUSETTS
DEREK J. GREASER
No. 29195
REGISTERED PROFESSIONAL ENGINEER

AT&T

TITLE SHEET
(LTE 3C)

JOB NUMBER	DRAWING NUMBER	REV
MA2268	T-1	2

GROUNDING NOTES

1. THE SUBCONTRACTOR SHALL REVIEW AND INSPECT THE EXISTING FACILITY GROUNDING SYSTEM AND LIGHTNING PROTECTION SYSTEM (AS DESIGNED AND INSTALLED) FOR STRICT COMPLIANCE WITH THE NEC (AS ADOPTED BY THE AHJ), THE SITE-SPECIFIC (UL, LPI, OR NFPA) LIGHTING PROTECTION CODE, AND GENERAL COMPLIANCE WITH TELCORDIA AND TIA GROUNDING STANDARDS. THE SUBCONTRACTOR SHALL REPORT ANY VIOLATIONS OR ADVERSE FINDINGS TO THE CONTRACTOR FOR RESOLUTION.

2. ALL GROUND ELECTRODE SYSTEMS (INCLUDING TELECOMMUNICATION, RADIO, LIGHTNING PROTECTION, AND AC POWER GES'S) SHALL BE BONDED TOGETHER, AT OR BELOW GRADE, BY TWO OR MORE COPPER BONDING CONDUCTORS IN ACCORDANCE WITH THE NEC.

3. THE SUBCONTRACTOR SHALL PERFORM IEEE FALL-OF-POTENTIAL RESISTANCE TO EARTH TESTING (PER IEEE 1100 AND 81) FOR NEW GROUND ELECTRODE SYSTEMS. THE SUBCONTRACTOR SHALL FURNISH AND INSTALL SUPPLEMENTAL GROUND ELECTRODES AS NEEDED TO ACHIEVE A TEST RESULT OF 5 OHMS OR LESS.

4. METAL RACEWAY SHALL NOT BE USED AS THE NEC REQUIRED EQUIPMENT GROUND CONDUCTOR. STRANDED COPPER CONDUCTORS WITH GREEN INSULATION, SIZED IN ACCORDANCE WITH THE NEC, SHALL BE FURNISHED AND INSTALLED WITH THE POWER CIRCUITS TO BTS EQUIPMENT.

5. EACH BTS CABINET FRAME SHALL BE DIRECTLY CONNECTED TO THE MASTER GROUND BAR WITH GREEN INSULATED SUPPLEMENTAL EQUIPMENT GROUND WIRES, 6 AWG STRANDED COPPER OR LARGER FOR INDOOR BTS 2 AWG STRANDED COPPER FOR OUTDOOR BTS.

6. EXOTHERMIC WELDS SHALL BE USED FOR ALL GROUNDING CONNECTIONS BELOW GRADE.

7. APPROVED ANTIOXIDANT COATINGS (I.E., CONDUCTIVE GEL OR PASTE) SHALL BE USED ON ALL COMPRESSION AND BOLTED GROUND CONNECTIONS.

8. ICE BRIDGE BONDING CONDUCTORS SHALL BE EXOTHERMICALLY BONDED OR BOLTED TO GROUND BAR.

9. ALUMINUM CONDUCTOR OR COPPER CLAD STEEL CONDUCTOR SHALL NOT BE USED FOR GROUNDING CONNECTIONS.

10. MISCELLANEOUS ELECTRICAL AND NON-ELECTRICAL METAL BOXES, FRAMES AND SUPPORTS SHALL BE BONDED TO THE GROUND RING, IN ACCORDANCE WITH THE NEC.

11. METAL CONDUIT SHALL BE MADE ELECTRICALLY CONTINUOUS WITH LISTED BONDING FITTINGS OR BY BONDING ACROSS THE DISCONTINUITY WITH 6 AWS COPPER WIRE UL APPROVED GROUNDING TYPE CONDUIT CLAMPS.

12. ALL NEW STRUCTURES WITH A FOUNDATION AND/OR FOOTING HAVING 20 FT. OR MORE OF 1/2 IN. OR GREATER ELECTRICALLY CONDUCTIVE REINFORCING STEEL MUST HAVE IT BONDED TO THE GROUND RING USING AN EXOTHERMIC WELD CONNECTION USING #2 AWG SOLID BARE TINNED COPPER GROUND WIRE, PER NEC 250.50

GENERAL NOTES

1. FOR THE PURPOSE OF CONSTRUCTION DRAWING, THE FOLLOWING DEFINITIONS SHALL APPLY:

   CONTRACTOR – EMPIRE
   SUBCONTRACTOR – GENERAL CONTRACTOR (CONSTRUCTION)
   OWNER – AT&T MOBILITY

2. PRIOR TO THE SUBMISSION OF BIDS, THE BIDDING SUBCONTRACTOR SHALL VISIT THE CELL SITE TO FAMILIARIZE WITH THE EXISTING CONDITIONS AND TO CONFIRM THAT THE WORK CAN BE ACCOMPLISHED AS SHOWN ON THE CONSTRUCTION DRAWINGS. ANY DISCREPANCY FOUND SHALL BE BROUGHT TO THE ATTENTION OF CONTRACTOR.

3. ALL MATERIALS FURNISHED AND INSTALLED SHALL BE IN STRICT ACCORDANCE WITH ALL APPLICABLE CODES, REGULATIONS, AND ORDINANCES. SUBCONTRACTOR SHALL ISSUE ALL APPROPRIATE NOTICES AND COMPLY WITH ALL LAWS, ORDINANCES, RULES, REGULATIONS, AND LAWFUL ORDERS OF ANY PUBLIC AUTHORITY REGARDING THE PERFORMANCE OF THE WORK. ALL WORK CARRIED OUT SHALL COMPLY WITH ALL APPLICABLE MUNICIPAL AND UTILITY COMPANY SPECIFICATIONS AND LOCAL JURISDICTIONAL CODES, ORDINANCES AND APPLICABLE REGULATIONS.

4. DRAWINGS PROVIDED HERE ARE NOT TO BE SCALED AND ARE INTENDED TO SHOW OUTLINE ONLY.

5. UNLESS NOTED OTHERWISE, THE WORK SHALL INCLUDE FURNISHING MATERIALS, EQUIPMENT, APPURTENANCES, AND LABOR NECESSARY TO COMPLETE ALL INSTALLATIONS AS INDICATED ON THE DRAWINGS.

6. "KITTING LIST" SUPPLIED WITH THE BID PACKAGE IDENTIFIES ITEMS THAT WILL BE SUPPLIED BY CONTRACTOR. ITEMS NOT INCLUDED IN THE BILL OF MATERIALS AND KITTING LIST SHALL BE SUPPLIED BY THE SUBCONTRACTOR.

7. THE SUBCONTRACTOR SHALL INSTALL ALL EQUIPMENT AND MATERIALS IN ACCORDANCE WITH MANUFACTURER'S RECOMMENDATIONS UNLESS SPECIFICALLY STATED OTHERWISE.

8. IF THE SPECIFIED EQUIPMENT CANNOT BE INSTALLED AS SHOWN ON THESE DRAWINGS, THE SUBCONTRACTOR SHALL PROPOSE AN ALTERNATIVE INSTALLATION SPACE FOR APPROVAL BY THE CONTRACTOR.

9. SUBCONTRACTOR SHALL DETERMINE ACTUAL ROUTING OF CONDUIT, POWER AND T1 CABLES, GROUNDING CABLES AS SHOWN ON THE POWER, GROUNDING AND TELCO PLAN DRAWING. SUBCONTRACTOR SHALL UTILIZE EXISTING TRAYS AND/OR SHALL ADD NEW TRAYS AS NECESSARY. SUBCONTRACTOR SHALL CONFIRM THE ACTUAL ROUTING WITH THE CONTRACTOR.

10. THE SUBCONTRACTOR SHALL PROTECT EXISTING IMPROVEMENTS, PAVEMENTS, CURBS, LANDSCAPING AND STRUCTURES. ANY DAMAGED PART SHALL BE REPAIRED AT SUBCONTRACTOR'S EXPENSE TO THE SATISFACTION OF OWNER.

11. SUBCONTRACTOR SHALL LEGALLY AND PROPERLY DISPOSE OF ALL SCRAP MATERIALS SUCH AS COAXIAL CABLES AND OTHER ITEMS REMOVED FROM THE EXISTING FACILITY. ANTENNAS REMOVED SHALL BE RETURNED TO THE OWNER'S DESIGNATED LOCATION.

12. SUBCONTRACTOR SHALL LEAVE PREMISES IN CLEAN CONDITION.

13. ALL CONCRETE REPAIR WORK SHALL BE DONE IN ACCORDANCE WITH AMERICAN CONCRETE INSTITUTE (ACI) 301.

14. ANY NEW CONCRETE NEEDED FOR THE CONSTRUCTION SHALL BE AIR-ENTRAINED AND SHALL HAVE 4000 PSI STRENGTH AT 28 DAYS. ALL CONCRETE WORK SHALL BE DONE IN ACCORDANCE WITH ACI 318 CODE REQUIREMENTS.

15. ALL STRUCTURAL STEEL WORK SHALL BE DETAILED, FABRICATED AND ERECTED IN ACCORDANCE WITH AISC SPECIFICATIONS. ALL STRUCTURAL STEEL SHALL BE ASTM A36 (Fy = 36 ksi) UNLESS OTHERWISE NOTED. PIPES SHALL BE ASTM A53 TYPE E (Fy = 36 ksi). ALL STEEL EXPOSED TO WEATHER SHALL BE HOT DIPPED GALVANIZED. TOUCHUP ALL SCRATCHES AND OTHER MARKS IN THE FIELD AFTER STEEL IS ERECTED USING A COMPATIBLE ZINC RICH PAINT.

16. CONSTRUCTION SHALL COMPLY WITH SPECIFICATIONS AND "GENERAL CONSTRUCTION SERVICES FOR CONSTRUCTION OF AT&T SITES."

17. SUBCONTRACTOR SHALL VERIFY ALL EXISTING DIMENSIONS AND CONDITIONS PRIOR TO COMMENCING ANY WORK. ALL DIMENSIONS OF EXISTING CONSTRUCTION SHOWN ON THE DRAWINGS MUST BE VERIFIED. SUBCONTRACTOR SHALL NOTIFY THE CONTRACTOR OF ANY DISCREPANCIES PRIOR TO ORDERING MATERIAL OR PROCEEDING WITH CONSTRUCTION.

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

19. SINCE THE CELL SITE IS ACTIVE, ALL SAFETY PRECAUTIONS MUST BE TAKEN WHEN WORKING AROUND HIGH LEVELS OF ELECTROMAGNETIC RADIATION. EQUIPMENT SHOULD BE SHUTDOWN PRIOR TO PERFORMING ANY WORK THAT COULD EXPOSE THE WORKERS TO DANGER. PERSONAL RF EXPOSURE MONITORS ARE ADVISED TO BE WORN TO ALERT OF ANY DANGEROUS EXPOSURE LEVELS.

20. APPLICABLE BUILDING CODES:
    SUBCONTRACTOR'S WORK SHALL COMPLY WITH ALL APPLICABLE NATIONAL, STATE, AND LOCAL CODES AS ADOPTED BY THE LOCAL AUTHORITY HAVING JURISDICTION (AHJ) FOR THE LOCATION. THE EDITION OF THE AHJ ADOPTED CODES AND STANDARDS IN EFFECT ON THE DATE OF CONTRACT AWARD SHALL GOVERN THE DESIGN.
    BUILDING CODE: IBC 2009 & MA STATE BUILDING CODE 780 CMR 8TH EDITION AMENDMENTS
    ELECTRICAL CODE: REFER TO ELECTRICAL DRAWINGS
    LIGHTENING CODE: REFER TO ELECTRICAL DRAWINGS

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

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

    AMERICAN INSTITUTE OF STEEL CONSTRUCTION (AISC)

    MANUAL OF STEEL CONSTRUCTION, ASD, FOURTEENTH EDITION;

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

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

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

ABBREVIATIONS

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

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TEL: (978) 608-8400

SITE NUMBER: MA2268
SITE NAME: CAMBRIDGE LINNAEAN
ST GILBERT HALL
64 LINNAEAN STREET
CAMBRIDGE, MA 02138
MIDDLESEX COUNTY

at&t
550 COCHITUATE ROAD
FRAMINGHAM, MA 01701

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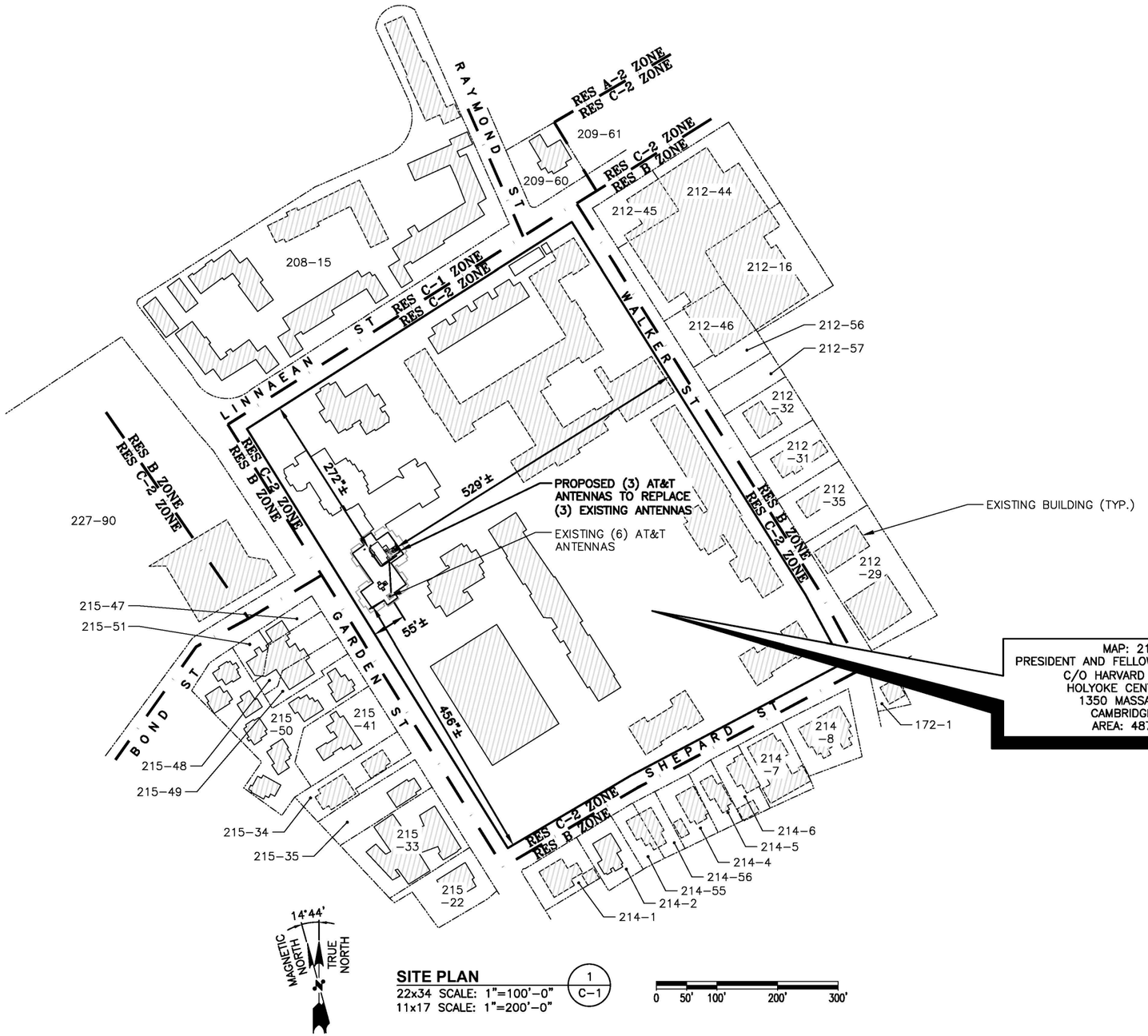
SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: JR

COMMONWEALTH OF MASSACHUSETTS
DEREK CREASER
CIVIL
No. 49195
REGISTERED PROFESSIONAL ENGINEER

AT&T

GENERAL NOTES
(LTE 3C)

JOB NUMBER	DRAWING NUMBER	REV
MA2268	GN-1	2



SITE PLAN (1 / C-1)
22x34 SCALE: 1"=100'-0"
11x17 SCALE: 1"=200'-0"

NOTES:

1. PLOT PLAN IS NOT THE RESULT OF A SURVEY. IT IS BASED ON EXISTING PARCEL MAPS AVAILABLE FROM THE TOWN GIS DATABASE. ALL INFORMATION SHOWN IS APPROXIMATE ONLY AND SUBJECT TO ANY CONDITION THAT A SURVEY MAY REVEAL.
2. ALL SETBACKS SHOWN ARE FROM PROPOSED ANTENNAS & EQUIPMENT TO EXISTING PROPERTY LINES.

SITE SPECIFIC NOTES:

1. SITE SURVEY HAS NOT BEEN CONDUCTED BY HUDSON DESIGN GROUP, LLC FOR THIS PROJECT. ALL SETBACKS SHOWN ON THIS PLAN IS BASED ON ABOVE.

ZONING INFORMATION

DIMENSION REQUIREMENTS:	REQUIRED	PROPOSED±
SETBACKS:		
FRONT YARD SETBACK:	15'	55'±
SIDE YARD SETBACK:	10'	272'± & 456±
REAR YARD SETBACK:	15'	529'±

APPLICANT:	AT&T MOBILITY 550 COCHITUATE ROAD FRAMINGHAM, MA 01701
OWNER:	PRESIDENT AND FELLOWS OF HARVARD COLLEGE C/O HARVARD REALESTATE, INC. HOLYOKE CENTER, ROOM 1000 1350 MASSACHUSETTS AVE CAMBRIDGE, MA 02138
ZONING DISTRICT:	RESIDENTIAL C-2
JURISDICTION:	CITY OF CAMBRIDGE, MA
TAX ID:	213-2A

LEGEND

- PROPERTY LINE – SUBJECT PARCEL
- PROPERTY LINE – ABUTTERS
- ROAD
- ZONING DISTRICT
- EXISTING BUILDINGS
- XXX-XXX ASSESSORS PARCEL I.D. NO.

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COMMONWEALTH OF MASSACHUSETTS
DEREK J. GREASER
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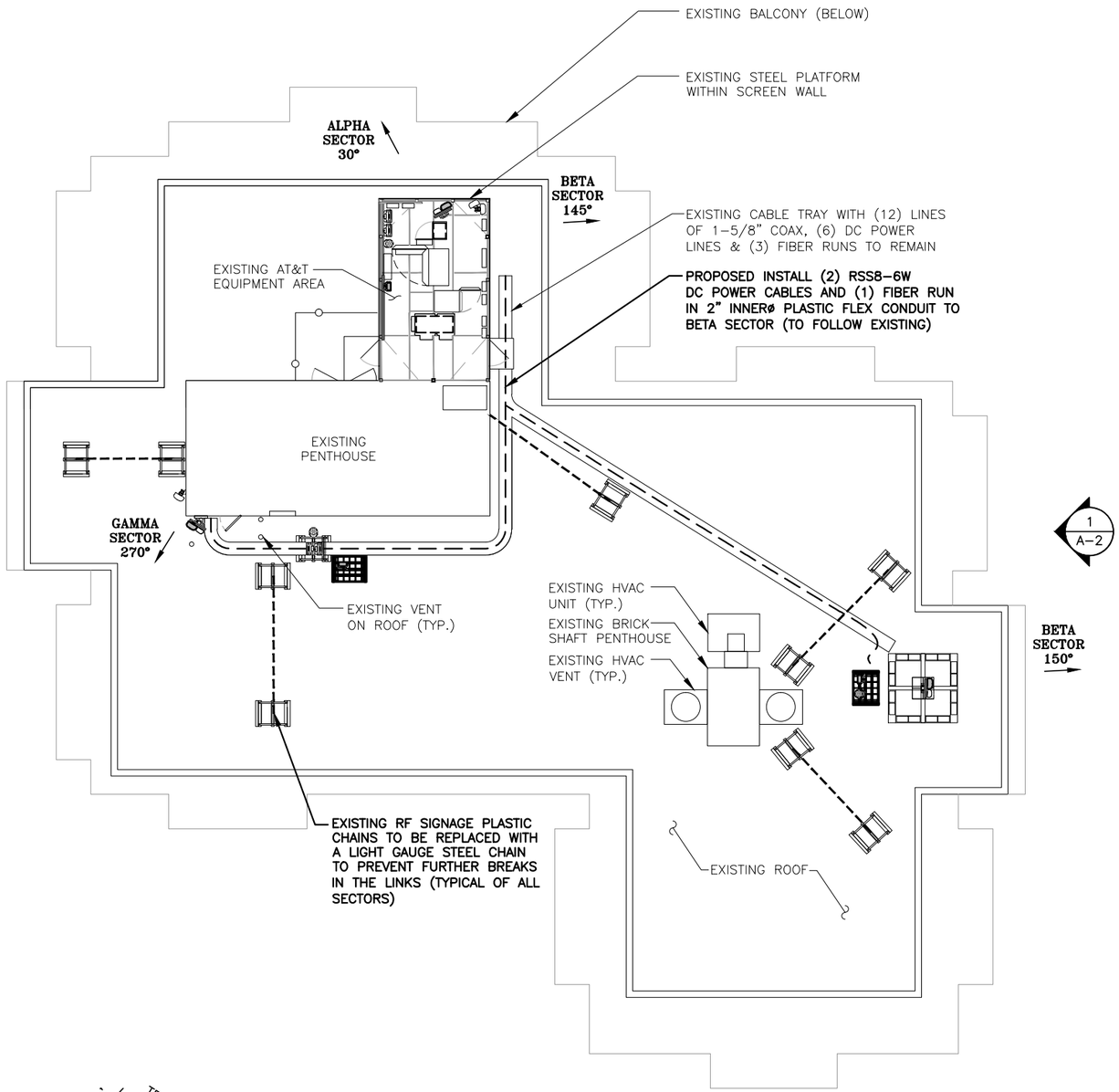
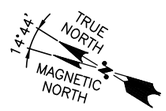
AT&T

SITE PLAN
(LTE 3C)

JOB NUMBER	DRAWING NUMBER	REV
MA2268	C-1	2



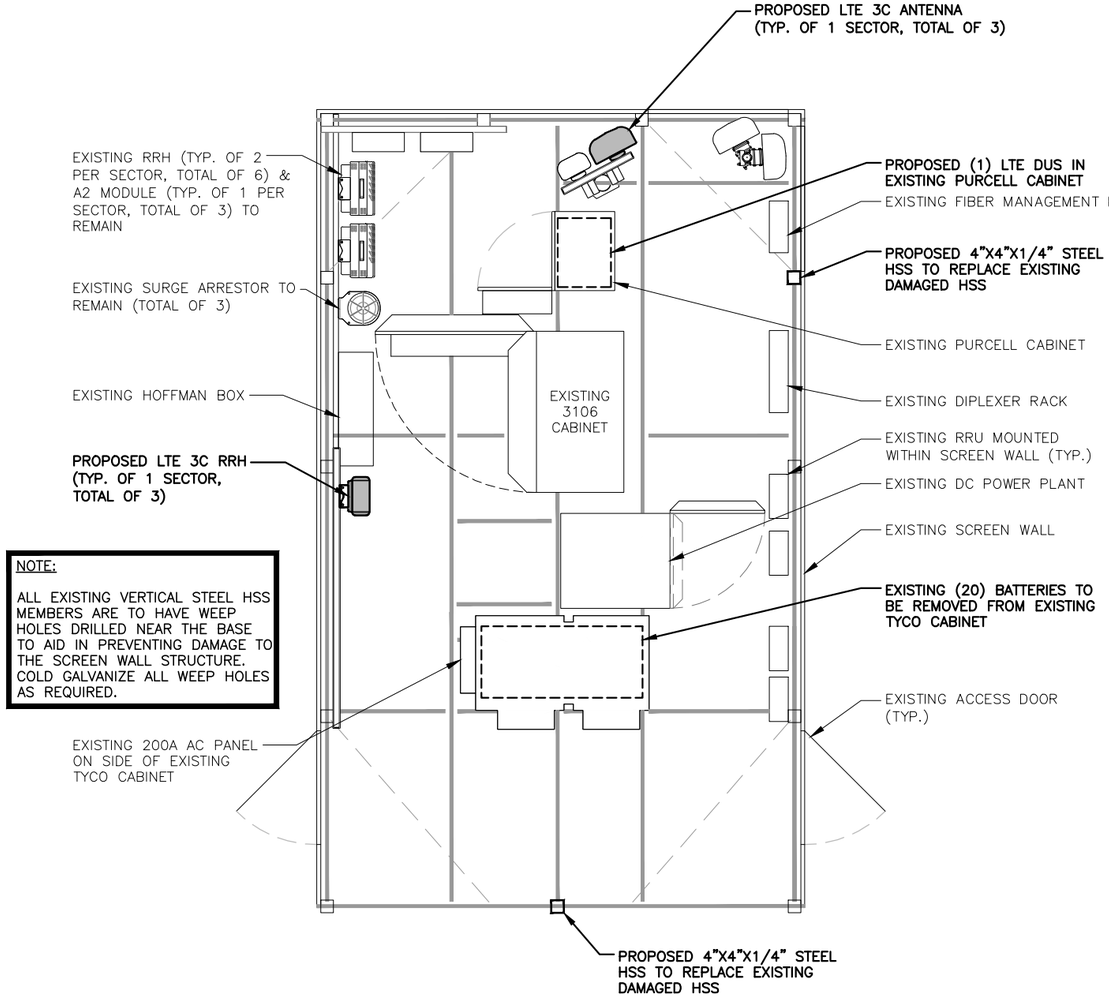


ROOF PLAN (1 / A-1)
22x34 SCALE: 1/8"=1'-0"
11x17 SCALE: 1/16"=1'-0"

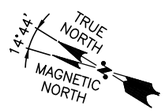
0 4'-0" 8'-0" 16'-0" 24'-0"

NOTE:
ALL EXISTING & PROPOSED ANTENNAS & RRH'S THAT HAVE NOT YET BEEN PAINTED SHALL BE PAINTED TO MATCH THE EXISTING EQUIPMENT.

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: MAY 10, 2017 FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.



NOTE:
ALL EXISTING VERTICAL STEEL HSS MEMBERS ARE TO HAVE WEEP HOLES DRILLED NEAR THE BASE TO AID IN PREVENTING DAMAGE TO THE SCREEN WALL STRUCTURE. COLD GALVANIZE ALL WEEP HOLES AS REQUIRED.



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

0 1'-0" 2'-0" 4'-0" 6'-0"

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ROOF & EQUIPMENT PLAN
(LTE 3C)

JOB NUMBER	DRAWING NUMBER	REV
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NOTE:

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NOTE:

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

NOTE:

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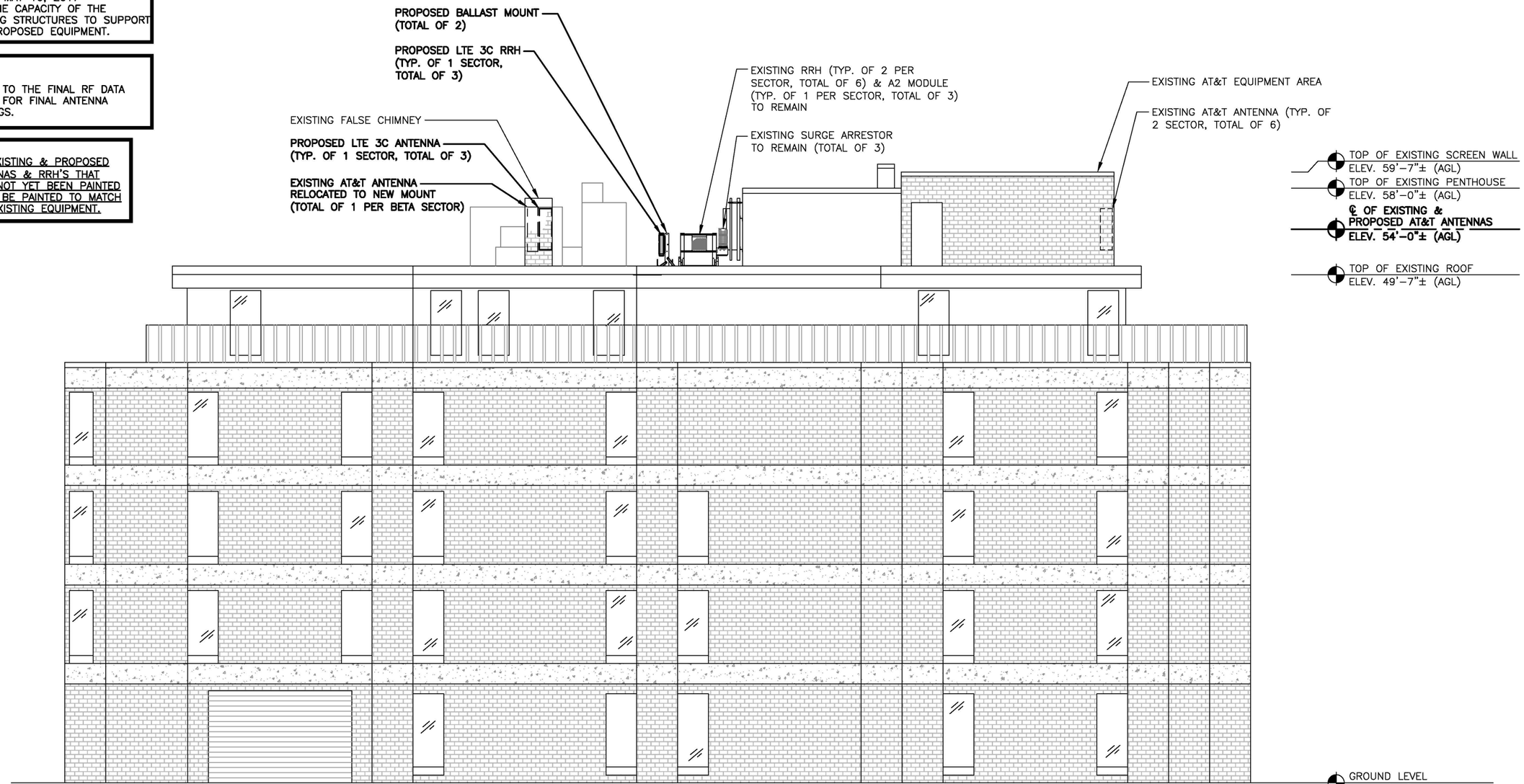

NORTH EAST ELEVATION (1 / A-2)
22x34 SCALE: 3/16"=1'-0"
11x17 SCALE: 3/32"=1'-0"

0 2'-8" 5'-4" 10'-8" 16'-0"

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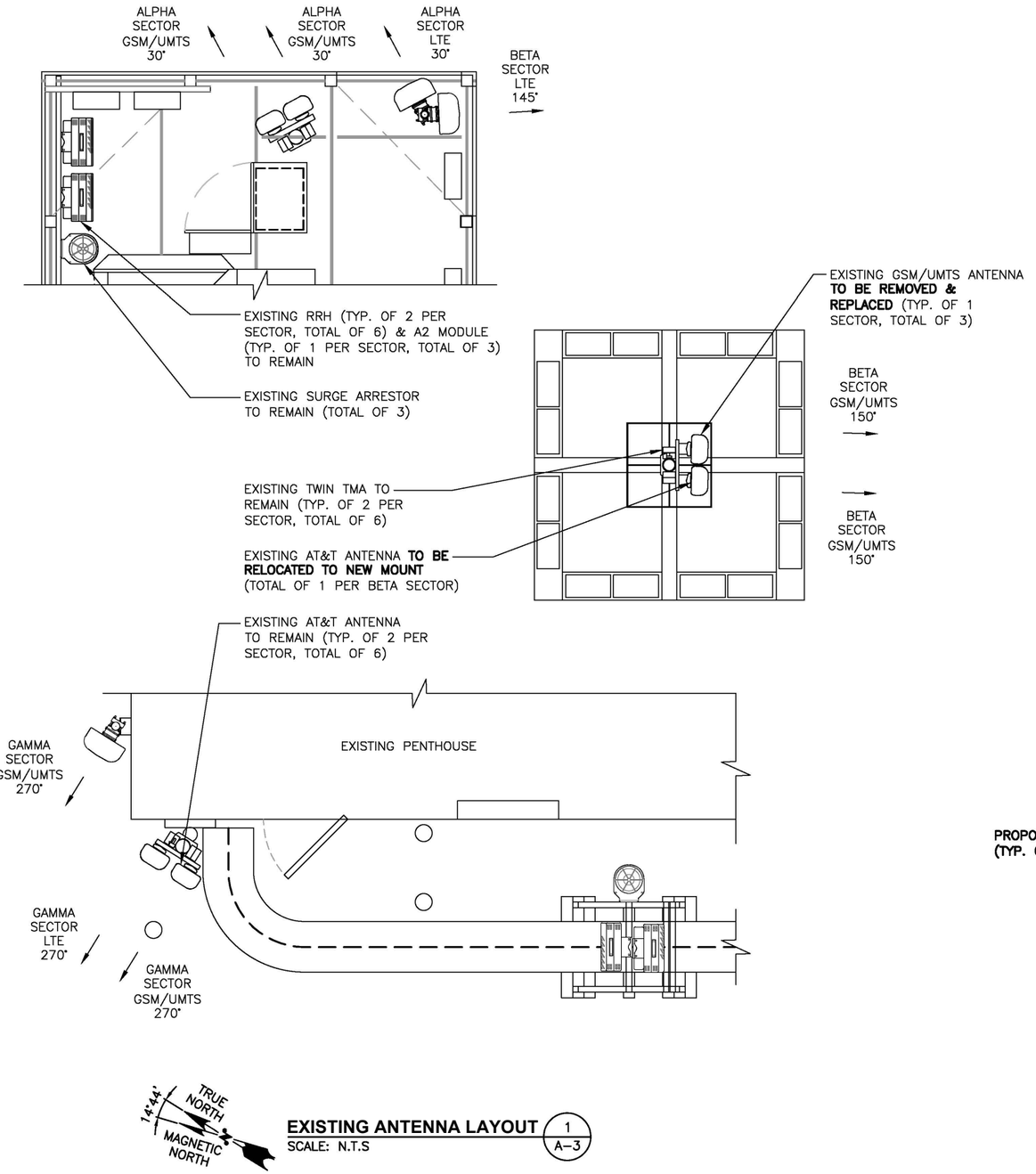
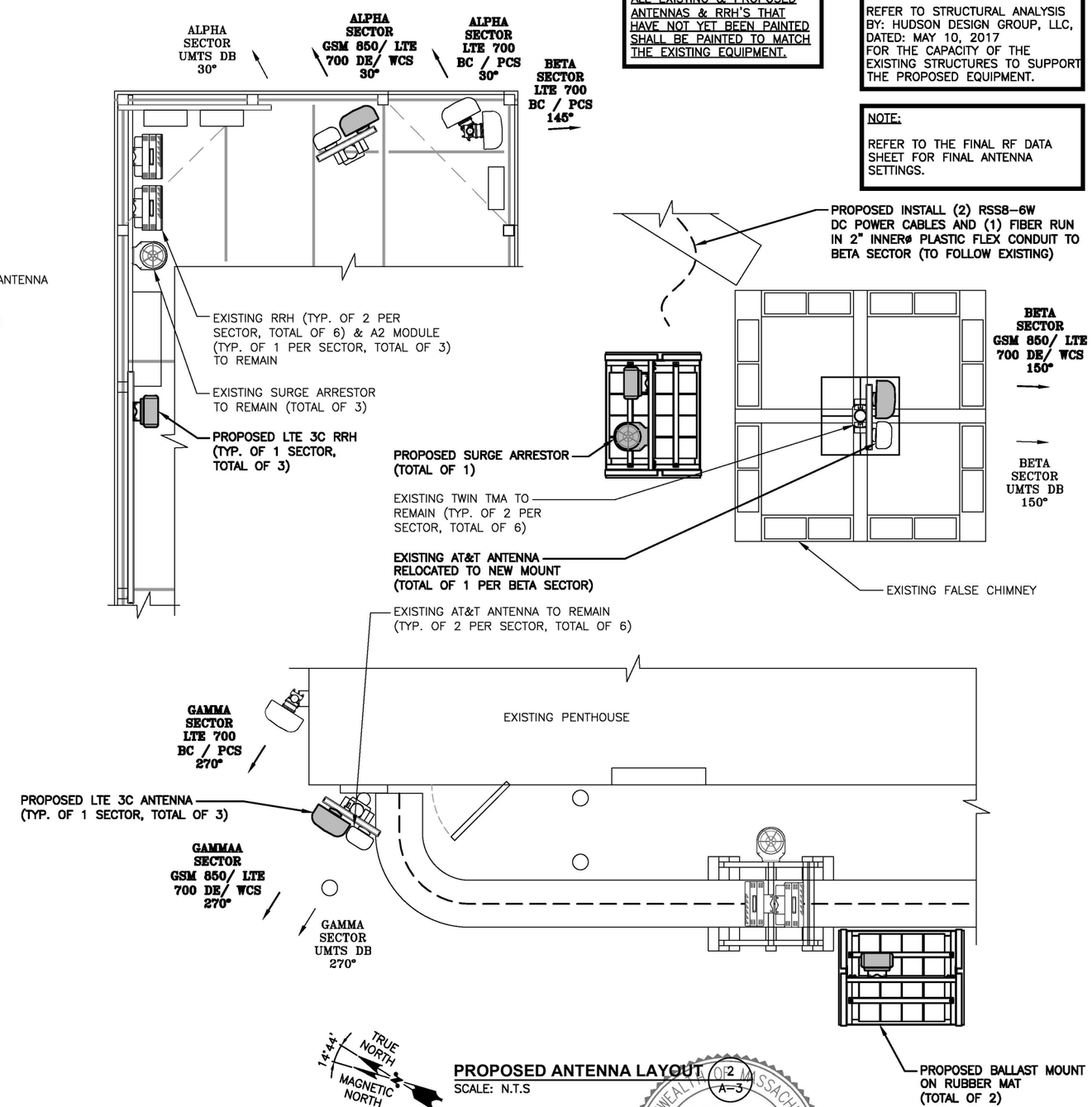
ELEVATION (LTE 3C)

JOB NUMBER	DRAWING NUMBER	REV
MA2268	A-2	2



EXISTING ANTENNA LAYOUT (1 / A–3)
SCALE: N.T.S



PROPOSED ANTENNA LAYOUT (2 / A–3)
SCALE: N.T.S

NOTE:
ALL EXISTING & PROPOSED ANTENNAS & RRH'S THAT HAVE NOT YET BEEN PAINTED SHALL BE PAINTED TO MATCH THE EXISTING EQUIPMENT.

NOTE:
REFER TO STRUCTURAL ANALYSIS BY: HUDSON DESIGN GROUP, LLC, DATED: MAY 10, 2017 FOR THE CAPACITY OF THE EXISTING STRUCTURES TO SUPPORT THE PROPOSED EQUIPMENT.

NOTE:
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0	04/01/16	ISSUED FOR REVIEW	JR	HC	DC

SCALE: AS SHOWN | DESIGNED BY: HC | DRAWN BY: JR

COMMONWEALTH OF MASSACHUSETTS
DEREK J. GREASER
CIVIL
No. 49195
REGISTERED PROFESSIONAL ENGINEER

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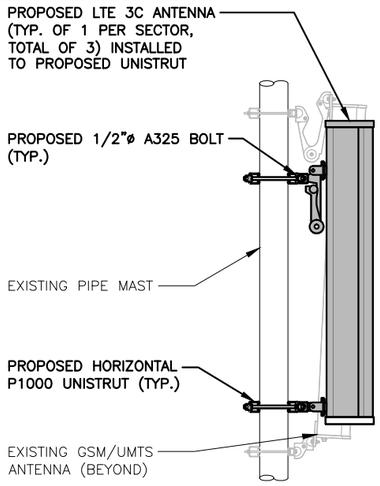
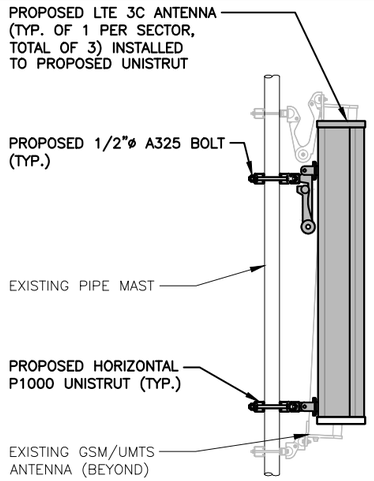
ANTENNA LAYOUT (LTE 3C)

JOB NUMBER	DRAWING NUMBER	REV
MA2268	A–3	2



PROPOSED LTE 3C ANTENNA MOUNTING DETAIL @ ALPHA & BETA (1 / A-4)

SCALE: N.T.S

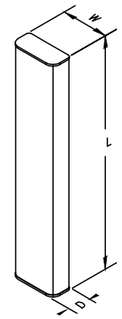


PROPOSED LTE 3C ANTENNA MOUNTING DETAIL @ GAMMA (2 / A-4)

SCALE: N.T.S

NOTES:

1. REFER TO RF CONFIG & SECTOR SCHEMATICS FOR MODEL, TYPE & QUANTITY REQUIRED PER SECTOR



PROPOSED/ EXISTING ANTENNA

TECHNOLOGY	ANTENNA MODEL	L	W	D
UMTS DB	742-264	51.8"	10.3"	5.5"
GSM 850/ LTE 700 DE/ WCS	**OPA-65R-LCUU-H4**	**48.0"**	**14.4"**	**7.3"**
LTE 700 BC/ PCS	OPA-65R-LCUU-H4	48.0"	14.4"	7.3"
UMTS DB	742-264	51.8"	10.3"	5.5"

ANTENNA DETAIL (3 / A-4)

SCALE: N.T.S

NOTE:

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NOTE:

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NOTE:

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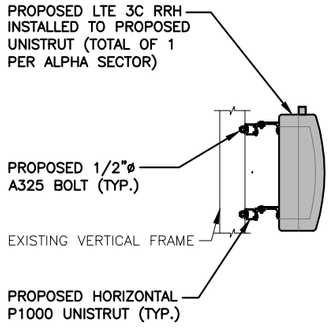
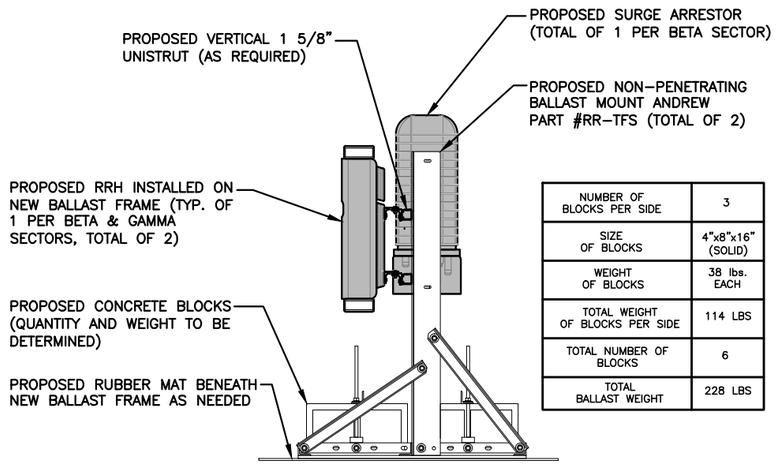


PROPOSED RRH MOUNTING DETAIL (ALPHA) (5 / A-4)

SCALE: N.T.S



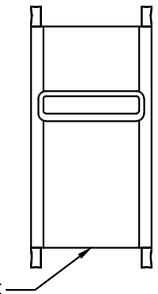
NUMBER OF BLOCKS PER SIDE	3
SIZE OF BLOCKS	4"x8"x16" (SOLID)
WEIGHT OF BLOCKS	38 lbs. EACH
TOTAL WEIGHT OF BLOCKS PER SIDE	114 LBS
TOTAL NUMBER OF BLOCKS	6
TOTAL BALLAST WEIGHT	228 LBS

PROPOSED RRH & SURGE ARRESTOR MOUNTING DETAIL (6 / A-4)

SCALE: N.T.S

NOTE:

SEE RFDS FOR RRH FREQUENCY AND MODEL NUMBER



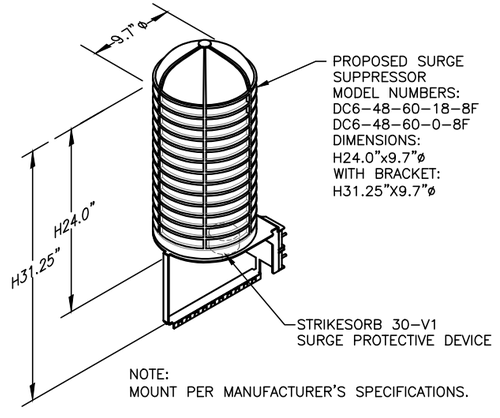
PROPOSED RRU REFER TO THE FINAL RFDS AND CHART FOR QUANTITY, MODEL AND DIMENSIONS

	L	W	D
RRUS - 32	27.2"	12.1"	7.0"

NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

RRH DETAIL (7 / A-4)

SCALE: N.T.S



NOTE:
MOUNT PER MANUFACTURER'S SPECIFICATIONS.

DC SURGE SUPPRESSOR DETAIL (8 / A-4)

SCALE: N.T.S

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DETAILS
(LTE 3C)

JOB NUMBER	DRAWING NUMBER	REV
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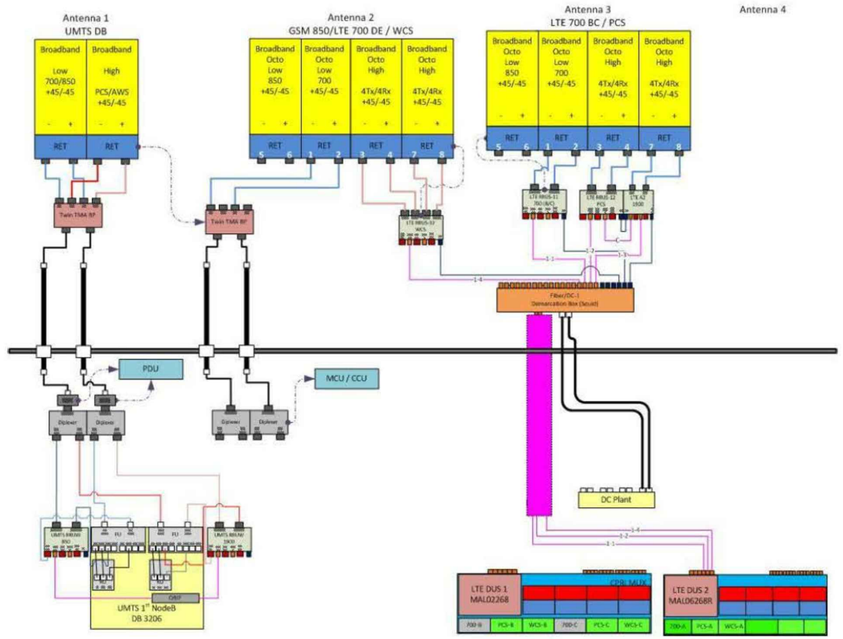
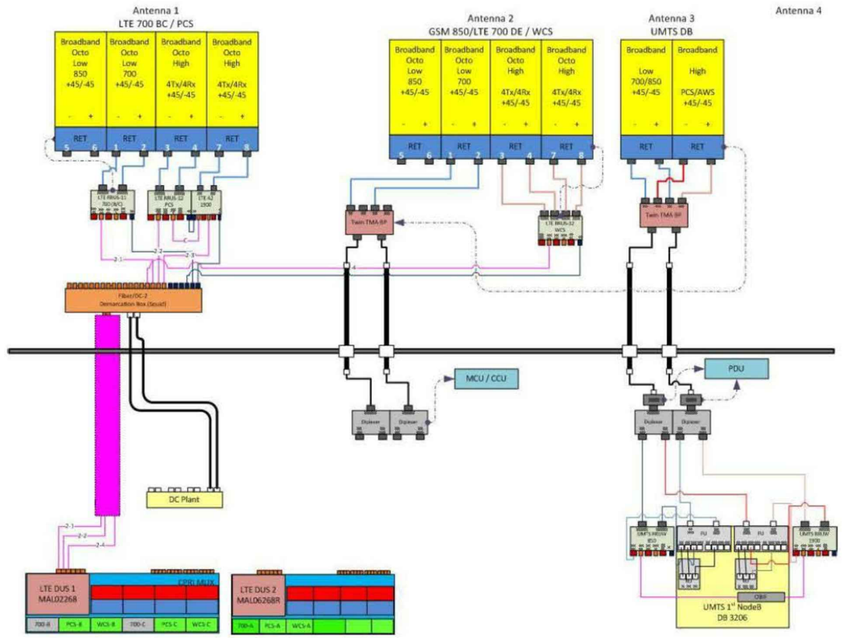


RF PLUMBING DIAGRAM @ ALPHA & GAMMA (1 / RF–1)
SCALE: N.T.S



RF PLUMBING DIAGRAM @ BETA (2 / RF–1)
SCALE: N.T.S

NOTES:

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

NOTE:

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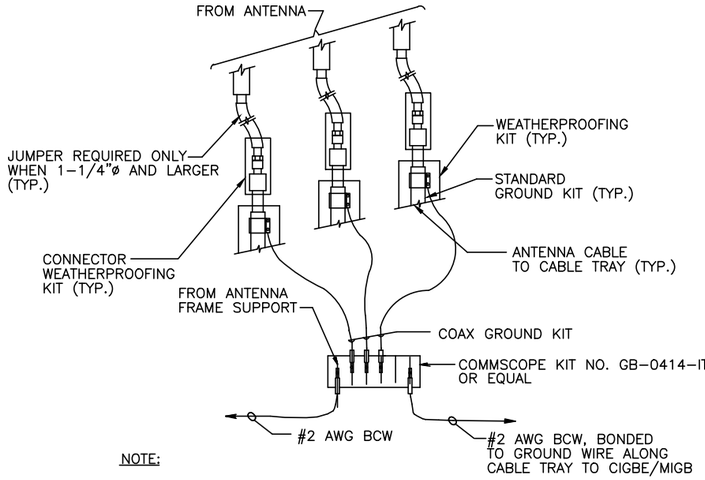
RF PLUMBING DIAGRAMS
(LTE 3C)

JOB NUMBER	DRAWING NUMBER	REV
MA2268	RF–1	2

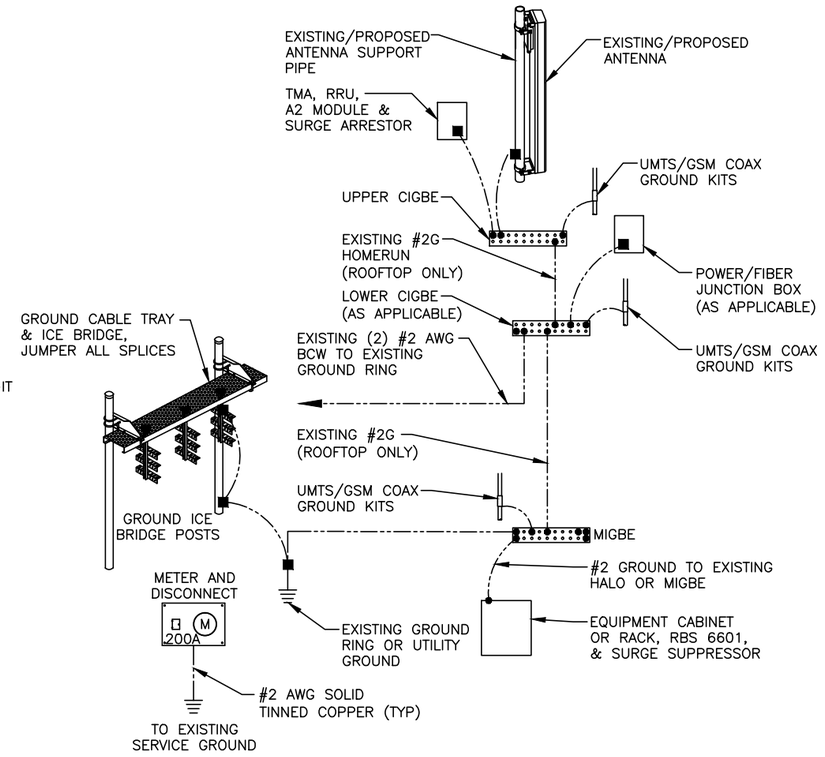


NOTE:

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

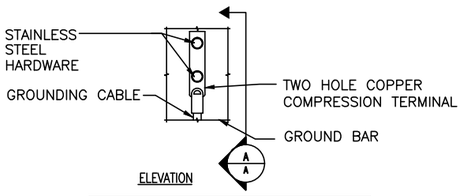
GROUND WIRE TO GROUND BAR CONNECTION DETAIL 1 G-1

SCALE: N.T.S



GROUNDING RISER DIAGRAM 2 G-1

SCALE: N.T.S

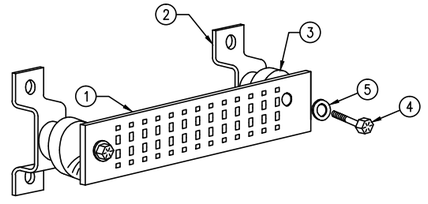


NOTE:

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

TYPICAL GROUND BAR CONNECTION DETAIL 3 G-1

SCALE: N.T.S



GROUND BAR - DETAIL 4 G-1

SCALE: N.T.S

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

SECTION "P" – SURGE PRODUCERS

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

SECTION "A" – SURGE ABSORBERS

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

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GROUNDING DETAILS
(LTE 3C)

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